



11136CH01

# 1

# INTRODUCTION

## HUMAN ECOLOGY AND FAMILY SCIENCES

### Evolution of the discipline and its relevance to quality of life

Let us begin by trying to understand the title of this subject — ‘Human Ecology and Family Sciences’ (HEFS). The dictionary explains the term ‘ecology’ in two ways. Firstly, it is referred to as a branch of Biology that deals with relations between living organisms and their environment. Secondly, it is stated to be a complex of relationships between an organism and its environment. Borrowing from biology, in our context, the ‘living organism’ is the human being, and hence the term ‘Human’ precedes ‘Ecology’.

Through this subject you will be studying about human beings in relation to their environment. Additionally, there will be a study of dynamic relationships that children, adolescents and adults have with the various physical, economic, social and psychological elements in their ecology.

The expression ‘Family Sciences’ is an equally significant segment in the title. As you would agree, the family is central in most individuals’ lives. It is within the family that children are nurtured, so that they develop and acquire independent identities as adults. While studying this subject, the students will be guided in understanding the individual in the context of the family, which in turn is a critical social unit of society. ‘Human Ecology and Family Sciences’ follows an integrated approach in the teaching-learning process. More importantly it deals with the interaction of human beings as members of their families and the society with the environment. This forms a synergistic relationship with their ecology, which amalgamates within it physical, psychological, socio-cultural and economic resources.

In the Class XI curriculum, you would notice that particular attention has been paid to the stage of adolescence, as this period is known to be a turning point in one’s life. Thus, you will study how

adolescents develop an understanding of themselves, and what role food and other resources, fabric and clothing, as well as communications play in their lives.

A subject close to HEFS, though not exactly like it, is Home Science. It has been taught under this title at both the higher secondary and university levels in different parts of the country. With changing times, many disciplines of study have taken new forms and assumed a more contemporary nomenclature; for example, Life Sciences is being used to refer to biological sciences. There was a need to modernise the content of Home Science at the school level, and give it a title that would release it from being associated mainly with the home and with the tasks traditionally done by girls and women. At the university level the University Grants Commission undertook this exercise many years ago.

Here, a brief history of the evolution of Human Ecology and Family Sciences from the field of Home Science in India would be in order. In the early 20th century there were many institutions in different parts of the country that had introduced courses in Foods and Nutrition, Clothing and Textiles, as well as Extension Education. These different disciplines were brought under the rubric of Home Science in 1932, when an institution by the name of Lady Irwin College was set up in Delhi to promote women's education. This was the time before India's independence from the British rule, when very few girls attended school, and hardly any institutions for women's higher education existed.

A few eminent women were in the vanguard of the movement to liberate India. Among them were Sarojini Naidu, Rajkumari Amrit Kaur and Kamaladevi Chattopadhyay, stalwarts of the All India Women's Conference, who conceived of and established the Lady Irwin College. The British Viceroy in India at that time was Lord Irwin, and his wife, Lady Dorothy Irwin too supported the setting up the college. Hence, the College was set up in her name. The goal was to serve the home and society with equal resolve, so as to remove social and educational inequalities that prevented women from reaching their potential.

Thus, Home Science was not intended to be a subject only about the 'home', but to be an interdisciplinary field that would empower its students to enhance their own quality of life and that of other individuals and families. However, over time, the label Home Science (in the mind-set of lay people and non-Home Science professionals) became associated primarily with learning culinary skills, laundry and child-care. While at the higher education level an upgrading of the curricula as well as resetting of the professional standards took place several years ago, at the high school level, its gender-typing and association with 'cooking and laundry' remained. In fact, those were some of the reasons why boys were either not admitted to this area by the schools, or they themselves shied away

from studying it as it was seen as a subject only for girls. It was wrongly perceived as lacking in rigour.

The present curriculum that has guided the preparation of the textbook is contemporary in its content and approach. It is so designed and presented that you will identify with the issues discussed. The title 'Human Ecology and Family Sciences' was considered to be most appropriate to reflect the spirit of the course. As you read the chapters, you will realise that the subject is multi-disciplinary. It contains within it fields such as Human Development, Food and Nutrition, Fabric and Apparel, Communication and Extension, and Resource Management. Knowledge in these areas is essential to sustain and augment one's quality of life, whether one lives in a village or a town, and whether the person is female or male. The textbook, it is hoped, will answer some of the questions young people have about their lives, and not be perceived merely as a means to clear exams.

### Key Terms

Ecology, Family, Adolescence, Home Science, Gender-typing, Contemporary, Multi-disciplinary, Quality of life.

### ■ EXERCISE

- A. Do you know about the subject Home Science? Yes No  
If your answer is 'no', please ask your teacher.

List 5 terms/concepts that you associate with Home Science.

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_

- B. At the end of the year after you have studied this book 'Human Ecology and Family Sciences' list 5 areas of study that you would associate with the subject.

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_

■ **REVIEW QUESTIONS**

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1. Explain the terms 'Human Ecology' and 'Family Sciences'.
2. Do you agree that adolescence is a 'turning point' in one's life?
3. Name the eminent women who conceived of starting the first Home Science college in India.
  - a. \_\_\_\_\_
  - b. \_\_\_\_\_
  - c. \_\_\_\_\_
  - d. \_\_\_\_\_

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# UNIT I

## UNDERSTANDING ONESELF ADOLESCENCE

*Unit I focusses on the stage of adolescence — the stage of life to which you belong at present. This unit deals with understanding your own self in terms of your personal and social identity, your nutritional and health requirements, management of basic resources of time and space, fabrics around you, and your communication skills. The last chapter of the unit situates the adolescent in the context of the family and larger society, thereby linking it to the next unit that deals with the individual in relation to her/his family, school, community and society.*



11136CH02

# 2

## UNDERSTANDING THE SELF A. WHAT MAKES ME 'I'

### LEARNING OBJECTIVES

After completing sections A, B and C the learner is able to —

- discuss the importance of knowing oneself and the significance of developing a positive sense of self.
- list the factors that influence the development of selfhood and identity.
- analyse why the period of adolescence is critical for the development of self and identity.
- describe the characteristics of self during infancy, childhood and adolescence.

### 2A.1 INTRODUCTION

While we all have many things in common with our parents, siblings, other relatives and friends, each one of us is also a unique person, different from all others. This sense of being unique gives us our sense of self — the sense of 'I' which is different from 'you', 'them' and 'others'. How do we develop this sense of self? What we think about ourselves and how we describe ourselves — does it change over the years? What are the elements of the self? Why should we study about the self? Does our self influence the way we interact with people? In this unit we will study about these and other interesting aspects of the self.

Related to the concept of the self are two other concepts — identity and personality. While psychologists distinguish between these three concepts in terms of their definitions, the concepts are intricately related and we often interchange these terms in common usage.

## 2A.2 WHAT IS SELF?

The Webster’s Third New International Dictionary contains 500 entries that begin with ‘self’. The sense of self refers to the sense of who we are and what makes us different from everyone else. During adolescence — the period you are going through presently — we start thinking more than ever about who am I? What makes ‘me’ different from ‘others’? At this stage, more than at any other stage before this, we try to define our ‘self’. Some of you may have given this question a lot of thought, while some others may not be aware that they have been thinking of these aspects.

### ACTIVITY 1

Complete the following sentences starting with – I am.

1. I am.....
2. I am.....
3. I am.....
4. I am.....
5. I am.....
6. I am.....
7. I am.....
8. I am.....
9. I am.....
10. I am.....

Re-examine the statements you wrote to describe yourself, some of these described the physical aspects of yourself, you described your bodily self; in some you referred to your feelings and emotions; in some you described yourself in terms of your mental abilities; in some others you may have described yourself in relation to others, in terms of the roles you perform and the relationships you are involved in every day such as son/daughter, wife/sister, student, i.e., you defined yourself in terms of your social relationships in the family and community. Some of you may have described yourself in terms of your **potential** or **capabilities** and some others in terms of your beliefs. In some you described yourself as a doer, as a person performing actions, as an agent, while in others you described yourself as a thinker. Thus, you can see that the self has several dimensions. Very broadly speaking we can think of these various dimensions of the self as the personal and the social. The personal self

has those aspects which relate only to you while the social self refers to those aspects where you are involved with others, and includes aspects like sharing, cooperation, support and unity.

We can say that the term self refers to the totality of a person's experiences, ideas, thoughts and feelings with regard to herself/himself. It is the characteristic way in which we define ourselves. **The idea that we hold of ourselves is the notion of the self.**

You must have heard and used the terms self-concept and self-esteem with reference to yourself and with others. What do you mean when you use them? Write your thoughts in the box below and discuss these after reading the definitions given after the box.

For your thoughts....

**Self-concept** and **self-esteem** are elements of identity. Self-concept is a description of oneself. It answers the question of 'Who am I?' Our self-concept includes our qualities, feelings and thoughts and what we are capable of doing.

An important aspect of the self-concept is self-esteem. Self-esteem refers to our judgment of ourselves according to the standards we have set for ourselves which are largely influenced by society. It is one's evaluation of oneself.

## 2A.3 WHAT IS IDENTITY?

Refer to Activity 2 on this page. What did you conclude — ‘Yes’, you are the same person or ‘No’, you are not the same person, or was your answer both ‘Yes’ and ‘No’! Which is quite likely. Over the years your body has undergone many changes, you know many more people now as compared to earlier times, and you have developed a certain relationship with them. Your way of responding to and understanding events may have changed, you may have changed some of your beliefs and values, and your likes and dislikes may have also changed. So you are not really the same person as you were even a year ago! Yet, you have an unmistakable sense of having been the same person from as far back as you can remember. Most of us are able to maintain a sense of continuity and sameness throughout our lives despite the many changes and discontinuities that mark our life over the decades. In other words, we all have a sense of **identity**, a sense of who we are which we carry throughout our lives. Just as in the case of self, we can talk of personal identity and social identity. **Personal identity** refers to those attributes of a person that make her different from others. **Social identity** refers to those aspects of the person that link her to a group – professional, social or cultural. Thus, when you think of yourself as an Indian you have linked yourself with a group of people living in a country. When you describe yourself as a Gujarati or a Mizo, you are saying that you share some characteristics with the people living in that state, and that these characteristics seem to you to be different from people living in other states of India. Thus, being a Gujarati is one dimension of your social identity in the same way as being a Hindu, Muslim, Sikh or a Christian or being a teacher, farmer or lawyer.

### ACTIVITY 2

Are you the same person that you were five years ago? Reflect on this for some time, and write your views and the reasons for these views in the space below.

The self is thus multi-dimensional in nature. It also undergoes change as a person grows and develops from an infant to an adolescent. The next chapter describes the characteristics of self during infancy, childhood and adolescence.

### Key Terms

Self, Self-concept, Self-esteem, Identity

### ■ REVIEW QUESTIONS

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1. Explain what you understand by the term 'self'. Discuss its various dimensions giving examples.
2. Why is it important to understand the self?

## B. DEVELOPMENT AND CHARACTERISTICS OF THE SELF

# 2

The self is not something that you are born with, but which you create and develop as you grow. In this section we will read about the development and characteristics of the self in infancy, early childhood, middle childhood and adolescence.

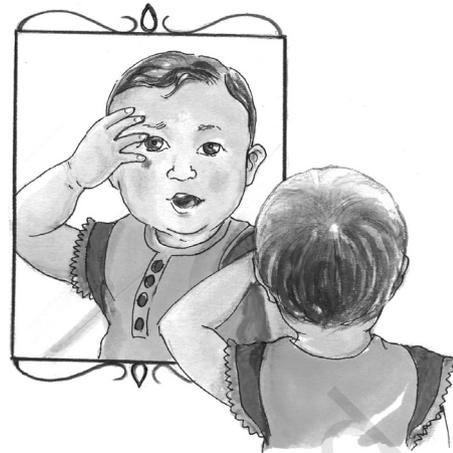
### 2B.1 SELF DURING INFANCY

At birth we are not aware of our unique existence. Does that surprise you? This means that the infant does not realise that she/he is separate and distinct from the world outside – she/he has no **self-awareness** or **self-understanding** or **self-recognition**. By each of these terms we mean the mental representation (a mental picture) of the self. The infant brings her/his hand in front of her/his face and looks at it but does not 'realise' that the hand belongs to her/him and that she/he is separate from other people and things she/he sees around her. The sense of self emerges gradually during infancy and self-image recognition happens around 18 months of age. One interesting experiment which has been carried out with infants in the age range 14-24 months is described below. You can try it out too.

#### ACTIVITY 1

Put a dot of red lipstick/colour on the cheek of the infant and then place the infant in front of the mirror. If the infant has an awareness of the self, she/he will touch her own cheek after looking at the red spot on the face in the mirror. If the infant does not have self-awareness, she/he will touch the reflection in the mirror, or just play with the reflection in the mirror as if it is another infant.

Towards the latter half of the second year, infants begin to use the personal pronouns – I, me and mine. They use these pronouns to indicate possession of persons or objects – “my toy” or “my mother”; to describe themselves or actions they are doing or their experiences – “me eating”. Infants also begin to recognise themselves in photographs at this time.



## 2B.2 SELF DURING EARLY CHILDHOOD

Since children are able to talk quite fluently by the time they are 3 years old, we need not rely only on self-recognition to know young children’s self-understanding. We can use verbal means by involving them in conversations about themselves. Researchers have found that the following are the five main characteristics of young children’s understanding of themselves.

1. They use **physical descriptions** of their self or material possessions to differentiate themselves from others – they may use descriptive words like ‘tall’, or ‘big’ or refer to the clothes they wear or the toys or objects they have. Their self-descriptions are in absolute terms – this means they do not see themselves in comparison with others. To give an example, instead of saying, “I am taller than Kiran”, the child will say, “I am tall.”
2. They describe themselves in terms of **things they can do**. For example, in terms of their play activities – “I can ride a cycle”; “I can make a house”; “I can count”. Thus, their self understanding contains active descriptions of themselves.
3. Their self descriptions are in **concrete** terms – i.e., they define themselves in terms of things they can do or what is visible to them – “I have a television.”
4. They often **overestimate themselves**. Thus, a child may say, “I am never scared” or “I know all the poems”, but may not remember them completely.
5. Young children are also **unable to recognise** that they can possess different attributes – that they can be ‘good’ and ‘bad’, ‘mean’ and ‘nice’ at different points in time.

The following is a brief interaction between an adult and Radha, a girl aged 3 years 8 months, which reveals the child’s perception of herself. The

interaction is presented in the form of questions asked and the answers given by the child.

वयस्क अपने बारे में कुछ बताओ।

Adult Tell me something about yourself

राधा मैं खाना खाती हूँ, मैं गाजर भी खाती हूँ, रोटी भी खाती हूँ। मैं बैट-बॉल खेलती हूँ। तीन दिन बाद मेरा जन्मदिन होगा क्योंकि जनवरी में मेरा जन्मदिन है। मैं लाइन में खड़ी होती हूँ। मैं मम्मी के साथ पढ़ती हूँ।

Radha I eat food, I eat carrots as well, I eat *chappati* also. I play with bat and ball. After three days is my birthday because my birthday is in January; I stand in a line; I study with my mother.

वयस्क अगर कोई तुमसे पूछे कि राधा कैसी बच्ची है, तो तुम क्या कहोगी?

Adult If someone asks you 'What is Radha like', what would you say?

राधा मैं अच्छी हूँ क्योंकि मैं लिखती भी हूँ। (वयस्क ने और बताने को कहा पर बच्ची ने कुछ नहीं कहा)

Radha I am good because I write as well. (The adult asked her to explain more but she did not respond).

वयस्क तुम्हारे मम्मी-पापा को तुम्हारे बारे में क्या अच्छा लगता है?

Adult What do your mummy-papa like about you?

राधा मैं अच्छी-अच्छी बातें करती हूँ और अच्छी-अच्छी कहानी सुनाती हूँ।

Radha I talk about nice things – I tell good stories.

वयस्क तुम्हें अपने बारे में क्या अच्छा लगता है?

Adult What do you like about yourself?

राधा मेरे गुलाबी जूते अच्छे लगते हैं, बेबी अच्छा लगता है, अपनी सहेलियाँ अच्छी लगती हैं...

Radha I like my pink shoes, I like baby, I like my friends...

वयस्क और बताओ...?

Adult Tell me more...?

राधा मुझे समझ नहीं आ रहा... मुझे अपने बारे में कुछ नहीं पता...।

Radha I don't understand... I don't know anything about myself...

## 2B.3 SELF DURING MIDDLE CHILDHOOD

During this period, children's self-evaluations become more complex. There are five key changes that characterise this increasing complexity:

1. The child shifts towards describing herself in terms of her **internal characteristics**. The child is more likely to name her/his psychological characteristics (such as preferences or personality traits) in her self-definition and less likely to name physical characteristics. Thus, the child may say, "I am good at making friends", "I can work hard and finish my homework on time."
2. The child's descriptions include **social descriptions and identity** – they may define themselves in terms of groups they belong to, "I am in the music choir in school".
3. Children begin to make **social comparisons** and differentiate themselves from others in comparative rather than absolute terms. Thus, they begin to think about what they can do in comparison with others, for example, "I can run faster than Kiran."
4. They begin to **distinguish between their real self and ideal self**. Thus they can differentiate between their actual competencies and those that they want to have or those which they think are most important.
5. The self-descriptions become more **realistic** as compared to those of the pre-school child. This may be because of the ability to see things and situations from the point of view of others.

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## 2B.4 SELF DURING ADOLESCENCE

Self understanding becomes increasingly complex during adolescence. Adolescence is also seen as a critical time for identity development. What are the characteristics of this more complex self understanding? Let us discuss the first two aspects and then we shall discuss the features of the adolescent's self.

### ACTIVITY 2

Make friends with a 5-year-old, a 9-year-old, and a 13-year-old. Ask them to describe themselves and note what they say. Do you find that their self-descriptions correspond with what you have read in this section?

### Why is adolescence a critical time for identity development?

According to a well-known psychologist Erik H. Erikson, at each stage of our development, from infancy to old age, we have to accomplish certain tasks which enable us to move on to the next stage of development. For example, a task during late infancy and early childhood (between 2-4 years

of age) is to achieve bowel and bladder control. Without this, participation in most social and community activities would become impossible for the child. The task during the period of adolescence, according to Erikson is to develop a sense of identity, a satisfactory self-definition.

The reason why the stage of adolescence is critical for identity development is because there is an enhanced focus on the development of the self. It is believed that the adolescent faces an identity crisis. This is because of three reasons—

1. This is the time when the person, more than at any other point of her/his life before this, is preoccupied with trying to know oneself. This means that the person is intensely concerned with understanding herself/himself.
2. Towards the end of adolescence the individual creates a relatively lasting sense of selfhood and identity and can say – “This is who I am”.
3. This is also the time when the individual’s identity is influenced by rapid biological changes and changing social demands.

#### **Let us understand this in more detail**

The adolescent is now expected to behave in an adult-like manner and begin to take on responsibilities related to family, work or marriage. This social transformation from dependent child to independent person occurs differently in different cultures. Western cultures generally emphasise independence in terms of ‘separation’ from parents (both physical and psychological). On the other hand, non-western cultures, such as the Indian, focus on interdependence within the family. In all cultures, however, adolescence is reported to be accompanied by dilemmas and disagreements. For instance, it is common to see that an adolescent may rebel against being treated “like a child” but at the same time may herself/himself seek comfort as a child would. The parents too may often tell the adolescent to “behave like a grown up”, but their other actions may indicate to the adolescent that they do not think that she/he is quite grown up. This may be somewhat different for girls and boys depending on the expectations of the family, in a particular culture. Thus, the adolescent herself experiences conflicting feelings and also receives conflicting messages and social expectations from the people around her/him. You may have experienced this for yourself. For example, the family members may expect you to behave in an adult-like manner in social situations as far as talking or dressing is concerned, but may still think you are too young to discuss the family budget.

Since individuals are different they may respond differently to situations. The conflicting expectations from familial and societal sources, one’s own changing needs and conflicting emotions may interfere with integrating

the newly emerging selves during adolescence. Thus, the adolescents may experience what is known as role confusion or identity confusion. They may show behaviours like the inability to concentrate on the work at hand, difficulty in starting or finishing work on time, and a general difficulty in coping with schedules. It is important to stress that the difficulties that the adolescent experiences in the process of developing an identity are a **normal part of development** – there is nothing inappropriate with the contradictory feelings and emotions the adolescent experiences during this period. The feeling of identity crisis or role confusion arises when the adolescent feels that there is a significant gap in terms of what she/he is expected to do and how she/he is expected to behave as compared to earlier times. However, for many adolescents, especially those who are involved in family occupations, this sense of break may not be distinct and may not cause much emotional upheaval. For example, if a child in a village is assisting the family in agriculture, her/his role does not change much from when she/he was 12 to when she/he is 16, except may be in terms of being given more responsibility.



The following are the characteristics of an adolescent's sense of self.

1. Self-descriptions during the period of adolescence are **abstract**. Adolescents are likely to lay less emphasis on describing themselves in physical terms as "tall", or "big"; they emphasise the abstract or inner aspects of their personality. Thus, they may describe themselves as quiet, sensitive, cool headed, brave, emotional or truthful.

2. The self during adolescence carries several **contradictions**. Thus, adolescents may describe themselves as “I am calm but get easily disturbed” or “I am quiet and also talkative.”
3. The adolescent experiences a fluctuating sense of self. As adolescents experience diverse situations and respond to different experiences, their understanding about their own self fluctuates over situations and over time.
4. The self of the adolescent contains ‘the ideal self’ and ‘the real self’. The ideal self becomes more prominent now. Each one of us has an idea of what and how one would ideally like to be. This could be called the ideal self, towards which we would like to develop. For example, a girl may want to be tall but is actually quite short.
5. Adolescents, more than children, are self-conscious and preoccupied with themselves. This gives them a feeling of always “being on stage” – a feeling that they are always being noticed. This is the reason why most adolescents are over-concerned about their physical appearance.

We now know about the different characteristics of self during certain life stages. But how do we develop a sense of self in the first place? What influences the development of a person’s identity? The next chapter focusses on this aspect.

### Key Terms

Infancy, Early childhood, Middle childhood, Adolescence, Identity development, Real vs. Ideal self

### ACTIVITY 3

Do you feel that you are experiencing any of the feelings and thoughts we have described above? Do you feel you are able to handle these feelings or do you experience confusion? Have you discussed these aspects with your friends or family members? Talk to your friend about it.

### REVIEW QUESTIONS

1. Describe, giving examples, the characteristics of the self during—
  - infancy
  - early childhood
  - middle childhood
  - adolescence
2. “Adolescence is a time when all adolescents experience identity crisis”. Do you agree with this statement? Give reasons for your answer.

# C. INFLUENCES ON IDENTITY HOW DO WE DEVELOP A SENSE OF SELF?

2

You have read that we are not born with a sense of selfhood or identity. How does it develop then? How does it evolve and change over time? The self develops as a result of what you learn about yourself through the experiences you have and through what others tell you about yourself. Each person lives in a web of relationships – these relationships are in the family, school, workplace and community. The sense of self develops as a result of interaction with the people around you and through your actions. Thus multiple people shape the development of your self and the construction of the self is a continuous dynamic process. The word ‘construction’ implies that the self is not something that you are born with but which you create and develop as you grow.

## ACTIVITY 1

Recall any significant experience you have had. Did it influence the way you think about yourself? Note your observations in the space below.

.....

.....

.....

.....

.....

.....

Let us trace how the sense of self develops from the early years. From the earliest days, parents address the children by a particular name or names in a variety of situations. The children begin to associate the name with themselves. Along with this they also point to the child in the mirror

and in photographs with that name. They use the pronouns 'you' and 'your' and when they are able to speak, the use of the pronouns 'me' and 'mine' appears. The child understands that 'you' and 'your' refer to another person. Parents play various 'body games' pointing and labeling various parts of the child's body and ask the child to point out body parts in turn. All this helps the child to gradually learn to see herself/himself as distinct and separate from others.

Second, as the child grows during infancy she begins to realise that her actions have an effect on the environment. For example, when she touches a toy it moves. All such experiences help her/him have a sense of being separate from other people and objects around her. If you recall the earlier discussion, this is also the time (around 18 months) when the child is able to identify that the spot of red is on her/his face and she/he does not treat the reflection in the mirror as another child.

Third, as the child grows older and can talk, the parents encourage the child to provide self-statements and ask her/him to give reasons. They ask the child, "Why did you do this?" or "How do you feel?" These questions help the child understand what she or he is experiencing or the reasons for certain actions; in this way they help the child in defining the self.

Fourth, during the course of the day the child has several encounters with people and objects around her/him which help to develop an idea about abilities. People also give the child a feedback about her or his behaviour and abilities. To a 6-year-old who helps in cleaning up the food area after the meal, the father may say, "That was a good thing to do. You are a good boy." All this feeds into the child's beliefs about herself/himself. The child thus constructs and re-constructs selfhood and sense of identity through the verbal-social interactions she/he has with caregivers and others.

### **Developing a sense of self and identity**

The reasons why each one of us has a unique identity is because

- each one of us (except identical twins) has a unique combination of genes.
- each one of us has different experiences.
- even if we have similar experiences, we respond to these in different ways.

In this section we will study the influences on the formation of identity.

These can be classified as—

- Biological and physical changes
- Socio-cultural contexts including family and peer relationships
- Emotional changes
- Cognitive changes

## 2C.1 BIOLOGICAL AND PHYSICAL CHANGES

The period of adolescence is marked by certain universal physical and biological changes in the body which take place in particular sequences. These changes lead to the attainment of sexual maturity. The time when sexual maturity is reached is called **puberty**. Menarche (first menstruation) is usually considered the point of sexual maturity for girls. There is no corresponding definite event marking puberty for boys, although a criterion sometimes used is the production of spermatozoa. Puberty occurs at different average ages in different cultures. A criterion of puberty that has been found useful for both boys and girls is that of maximum yearly increase in height. The age of most rapid growth comes just before menarche for girls and before certain adult characteristics in boys. This period during which physical and biological changes occur, leading to puberty is called **pubescence**. For most girls this period ranges from 11 years to 13 years, and for boys it is 13 years to 15 years. Following is the list of changes in girls and boys showing normal sequence for development during pubescence.

### Girls

Initial enlargement of breasts  
Straight, pigmented pubic hair  
Kinky pubic hair  
Age of maximum growth  
Menarche  
Growth of axillary hair

### Boys

Beginning growth of testes  
Straight, pigmented pubic hair  
Early voice changes  
First ejaculation of semen  
Kinky pubic hair  
Age of maximum growth  
Growth of axillary hair  
Marked voice changes  
Development of the beard

While the physical changes that take place in the body with the onset of puberty are universal, the psychological and social impact of these changes on the person vary from culture to culture and within a culture from person to person. We will discuss these aspects under the next two headings – socio-cultural contexts and emotional changes.

## 2C.2 SOCIO-CULTURAL CONTEXTS

It has been stated that physical changes in the body and the changing social expectations are the two main aspects that influence the process of identity formation during the period of adolescence. But to what extent these physical and social changes impact the process of identity formation varies with cultural, social and familial contexts. In this section, let us first see how cultural and social contexts influence adolescent development and then we will read about the influence of the family.

Different sections of the society may respond differently to the physical changes during adolescence. In traditional Indian society, the onset of puberty places many restrictions on the girls while the boys retain their freedom of movement. Certain avenues of entertainment or work are not seen as appropriate for girls. The elements of the self and the identity of a girl from a traditional community would be very different from that of a girl living in urban areas.

Let us now compare our culture with Western cultures. In most Western cultures (such as the U.S. and U.K.) adolescents are expected to be fairly independent — in many cases they are expected to move away from the family to set up their own home. In the Indian context, a large majority of adolescents continue to be fairly dependent on parents as they are expected to be, and the family continues to exercise control over them. While many adolescents in India, especially in rural and tribal settings, begin to contribute towards the family income, and in this sense begin to assume adult roles, yet they do not break away from the family. Instead their efforts at earning are often aimed at the welfare of family members. The development of the self of an adolescent in these two cultural settings would be quite different. Even within India, the experiences of adolescents would be quite different in different communities. In traditional communities and regions where technology is not yet advanced and where occupational opportunity and choices for alternative lifestyles are limited, children are trained in the traditional family occupations, such as weaving, up to the time they reach adolescence. Such adolescents are, therefore, ready to assume adult roles – this means they are seen as persons with responsibilities of beginning work, getting married and bearing children, like adults. Thus, in these communities the identity of the adolescent would be drawn more from familial sources. The adolescent may not enter into much conflict with elders since they are largely doing what adults expect of them. As a result, there are likely to be fewer confusions and doubts while developing a sense of self. On the other hand, in communities and families where a variety of occupational choices are open for the adolescent, where technology makes available many experiences and options to the individual, the adolescent may need to enter into an extended period of training to prepare herself/himself for the chosen occupation. During this period the adolescent still remains dependent on the parents. While the period of adolescence is thus extended, that of adulthood is delayed. Also, the increase in choices and exposure to alternate lifestyles may bring the adolescent in conflict with parents and other authority figures in society.

There is another reason why the development of identity is likely to vary in traditional cultures and cultures of the West. In traditional Indian communities, open reflection on oneself and the idea of talking about oneself is not a common activity among adolescents. In fact, such an attitude is often neither encouraged nor tolerated. Many Indians define themselves

primarily in one or the other roles that they play – son/ daughter, mother/ father, sister/brother. To put it differently, they often speak of themselves in terms of the family and the community – as “we” – rather than as “I”. For example, while talking about her views on marriage, an adolescent girl would say, “In our family marriages are arranged by parents”, rather than saying, “I would prefer my parents to arrange my marriage”. Thus we can see how important the socio-cultural context is in the construction of a sense of self. Of course the impact of these cultural influences will vary from family to family and person to person.

Having discussed how the culture and society impact adolescent identity development, let us read how the family can impact the development of the sense of identity. During adolescence identity formation is enhanced by family relationships where adolescents are encouraged to have their own point of view and where there is a secure relationship between family members which provides the adolescent with a secure base from which to explore her widening social world. It has also been found that firm and affectionate parenting fosters healthy development of identity. ‘Affectionate’ parenting means that the parents are warm, loving and supportive of the child’s effort and accomplishment. They often praise the child, show enthusiasm in her/his activities, respond sensitively to her/his feelings, and understand the child’s personality and points of view. However, such parents are also firm in disciplining. Such parenting style fosters independence and self-reliance in children.

Adolescence is the period in which the growing individual develops a strong need for support and acceptance from the peers. At times, parental and peer values can be in conflict with each other and the adolescent may tend to lean more towards friends. This can cause disharmony in parent-child relationships. Conforming to peer pressure can be both positive and negative. The negative effects become evident when adolescents indulge in harmful behaviours such as smoking or consuming, drugs or alcohol or bullying. However, often peers and parents serve complementary functions and fulfil different needs of the adolescents. It has been seen that a family atmosphere that promotes both **individuality** and **connectedness** is important for the identity development of the adolescent. By ‘**Individuality**’ implies greater opportunity and the ability to have one’s own point of view. ‘**Connectedness**’ suggests greater sensitivity to and respect for others’ views and openness to others’ views.

### 2C.3 EMOTIONAL CHANGES

The adolescent experiences many emotional changes in the process of growing up. Many of these changes are a consequence of the biological and physical changes that the adolescent is undergoing. It is true that adolescents are preoccupied with their physical body. They imagine that

others are noticing each and every aspect of their body and behaviour. A young person with pimples on the face may feel that everyone is first and foremost noticing that. However, there are individual differences in the way adolescents react to the bodily changes. A boy who does not have adequate growth of facial hair as compared to all the other boys of his age may feel peculiar about it. However, this same lack of facial hair may not disturb another boy. A sense of pride or comfort with the way one is developing physically will contribute positively to the adolescents' sense of self. On the other hand, if the adolescent is dissatisfied with one's appearance beyond a point, it can prevent from concentrating on other aspects of her/his personality, work or studies. This can cause a dip in performance at school and a lowering of self-image or self-esteem. A negative self-image can cause a person to feel insecure and also generate negative feelings about the body. An adolescent with a physical disability may not experience herself/himself as any less than others, whereas a well-built adolescent boy may feel conscious and inadequate because he feels that his body is not "good enough".

The adolescent also experiences mood swings – for example, desiring the company of family members and friends at one time and wanting to be alone at other times. There may also be sharp bursts of anger. A lot of this happens as the adolescent is trying to make sense of and understand the variety of changes she/he is experiencing at different levels.

## 2C.4 COGNITIVE CHANGES

You will read in detail about the changes in thinking (cognition) that takes place from infancy to adolescence in Unit III titled 'Childhood'. At this point we are briefly describing the cognitive changes that have an impact on the development of the sense of identity.

The child develops from a person who has no sense of a separate identity or sense of the individual self to one who describes the self in concrete and absolute terms during early childhood years. While the self-descriptions during middle childhood are also concrete, the difference is that these descriptions are now in comparative terms. By the time the child is 11, the self descriptions are fairly realistic enabling the child to differentiate between the 'real' and the 'ideal' self.

During adolescence, the leap that takes place is that adolescents can think in abstract terms, i.e., they can think beyond what is present and what they see and experience. Further, as thought becomes flexible, they can think of hypothetical situations — in other words, they can imagine the various possibilities and their outcomes without necessarily having to go through them or act out the steps of any outcome. The implication for identity formation is that adolescents can imaginatively link up their present with a future they imagine for themselves. For example, the

adolescent can think of the possible careers that she/he can take up as an adult which are suited to her/his situation and temperament, and plan the current direction of her/his studies accordingly.

Thus, adolescence is a crucial stage for the development of identity. In fact, adolescence is a significant period of development involving many changes and opportunities. If the adolescent is healthy, she/he is able to deal with the changes in the best possible manner and realise one's full potential. Appropriate food and nutrition are the key elements of good health. The next chapter discusses food, nutrition, health and fitness concerns during adolescence.

### Key Terms

Puberty, Pubescence, Menarche, Personality, Peer pressure

### ■ REVIEW QUESTIONS

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1. Discuss the concepts of puberty and pubescence. Explain the major physical and biological changes in girls and boys during puberty.
2. What is the role of family in shaping the personality of the adolescent?
3. To what extent does culture shape the adolescent identity? Explain with examples.
4. List the major emotional and cognitive changes during adolescence.

■ **PRACTICAL 1**

**Development and Characteristics of the Self**

**Theme** Study of one’s physical self

- Tasks**
1. Recording of height, weight, hip size, round waist, round chest/bust
  2. Recording of age of menarche (girls) and growth of beard and change in voice (boys)
  3. Recording of colour of hair and eyes

**Purpose of practical:** You have read about physical growth and development during the age of adolescence. This practical will help you to understand your physical self better and also help you to know the average rate of growth and development of adolescents in your region as you compare your data with those of others. The measurements stated in Task 1 above are also important for you to know for the purpose of garment sizing–

**Conduct of practical:** Take your own measurements as stated in Task 1 above. Alternatively you can take each other's measurements in the class. The following measurements can be taken as described–

- **Around Hip:** Use a measuring tape around the widest portion of the hips with two fingers between the tape and the body.
- **Around Bust/Chest:** Hold the tape and measure across the fullest part of the bust/chest. Hold tape firmly but not tight.
- **Around Waist:** Hold the tape around waist and let it settle into the smallest portion of the body (that is the waistline). Take the measurement with one finger between tape and body.
- **Around neck:** Lay a still measure tightly around the neck and gently tap it down until the lower edge settles at the base of the neck where the measurement is taken.
- **Across back:** It is measurement taken between the lateral ends of scapulae (shoulder blades). Take one more measurement 10–12 cms below the waist measurement over the fullest part of back.

Record information required as per Tasks 1, 2 and 3 in the table below:

Your name .....	Age .....
Gender .....	Colour of hair .....
Colour of Eyes .....	Age at menarche .....
Age at growth of beard, change in voice .....	Weight .....
Height .....	Around chest/ bust .....
Hip size . .....	Around neck .....
Around waist .....	Across back .....

Now form yourself into groups of 10 students each and pool all your individual data together.

1. Note what the range is for each of the above measurements of the body in your group. For example, weight in your group ranges from .....kgs to .....kgs.
2. Note the range for age of menarche and the range during which growth of beard and change in voice takes place.
3. Correlate the size of ready-made garments you purchase with your measurement.

■ **PRACTICAL 2**

**Influences on Identity**

**Theme** Emotions experienced by self

- Tasks**
1. Making a record of your emotions experienced during a day
  2. Reflecting on the reasons for experiencing the emotions
  3. Identifying ways of handling them

**Purpose of the practical:** We all experience a variety of emotions each day and these influence the way we respond to situations. Being more aware of our emotions and the reasons for feeling the way we do, can help us to manage them better and respond appropriately to situations. This practical has been designed with this objective in mind.

**Conduct of practical:** Identify a particular day and bring to your awareness the emotions you experience since morning during that day. Keep a notepad and pen with you and record the emotion, the context situation and the reason for the emotion as soon as you become aware of it. You can use the following table for recording.

<b>Time of the day</b>				
<b>Emotion</b>				
<b>Situation / context</b>				
<b>Your reaction on experiencing the emotion</b>				
<b>Specific comment or observation you wish to note</b>				

Make groups of 4-5 students per group and in your group compare your notes with those of others. Discuss the following:

1. Whether similar emotions were experienced by other group members?
2. The common features in the various situations that lead to the group members experiencing these emotions.
3. Whether each person handled the emotions appropriately?
4. Could there have been alternate ways of handling the emotions?



11136CH03

# FOOD, NUTRITION, HEALTH AND FITNESS

## 3

### LEARNING OBJECTIVES

After completing this chapter the learner will be able to —

- define the terms — food, nutrition, nutrients, health, fitness and the role of food and nutrition in maintaining health.
- understand the term, balanced diet and apply the concept in planning and consuming diets.
- understand the basis for defining the Recommended Dietary Allowances (RDAs) and the difference between Dietary Requirement and RDA.
- understand the basis for classifications of foods into appropriate groups.
- analyse the factors which influence adolescent food habits.
- identify the causes, symptoms and nutritional interventions related to eating disorders.

### 3.1 INTRODUCTION

The onset of adolescence brings with it many profound changes. The growth rate speeds up dramatically. This growth spurt occurs due to the activity of hormones that affect every organ of the body and this makes healthy eating very important. The nutrient needs rise throughout childhood, peak in adolescence and then level off or even diminish as the teenager becomes an adult. The saying “You are what you eat” seems to be proven true. We eat different kinds of food such as *dal*, chapatti, bread, rice, vegetables, milk, *lassi*, etc. All these different kinds of food provide us with nutrients to keep us healthy and active. It is important to know what food to eat in order to stay healthy. The science of food and nutrients and their action on our health is called **Nutrition**.

Nutrition and health, in fact, are two sides of the same coin. They are, therefore, inseparable. Health depends to a large extent on nutrition, and nutrition depends on the food intake. So **food**, is the most important single factor for health and fitness.

### Let us define and describe food, nutrition, health and fitness

- **Food** can be defined as anything solid or liquid which when swallowed, digested and assimilated in the body provides it with essential substances called nutrients and keeps it well. It is the basic necessity of life. Food supplies energy, enables growth and repair of tissues and organs. It also protects the body from disease and regulates body functions.
- **Nutrition** is defined as the science of foods, nutrients and other substances they contain; and of their actions within the body including ingestion, digestion, absorption, metabolism and excretion. While this summarises the physiological dimensions, nutrition has social, psychological and economic dimensions too.
- **Nutrients** are the constituents in food that must be supplied to the body in suitable amounts. These include carbohydrates, proteins, fats, minerals, vitamins, water and fibre. We need a wide range of nutrients to keep ourselves healthy. Most foods contain more than one nutrient such as milk has proteins, fats, etc. Nutrients can be classified as macronutrients and micronutrients on the basis of the required quantity to be consumed by us everyday. The figure on the next page shows us the distinction between macronutrients and micronutrients.

## 3.2 BALANCED DIET

A balanced diet is one which includes a variety of foods in adequate amounts and correct proportions to meet the day's requirements of all essential nutrients such as proteins, carbohydrates, fats, vitamins, minerals, water, and fibre. Such a diet helps to promote and preserve good health and also provides a safety margin or reserve of nutrients to withstand short durations of deprivation when they are not supplied by the diet.

The safety margin takes care of the days we fast, or the short-term deficiency of certain nutrients in the daily diet. If the balanced diet meets the Recommended Dietary Allowances (RDAs) for an individual, then the safety margin is already included since RDAs are formulated keeping extra allowances in mind.

### Recommended Dietary Allowances = Requirements + Margin of safety

A balanced diet takes care of the following aspects.

1. Includes a variety of food items
2. Meets the RDA for all nutrients
3. Includes nutrients in correct proportions

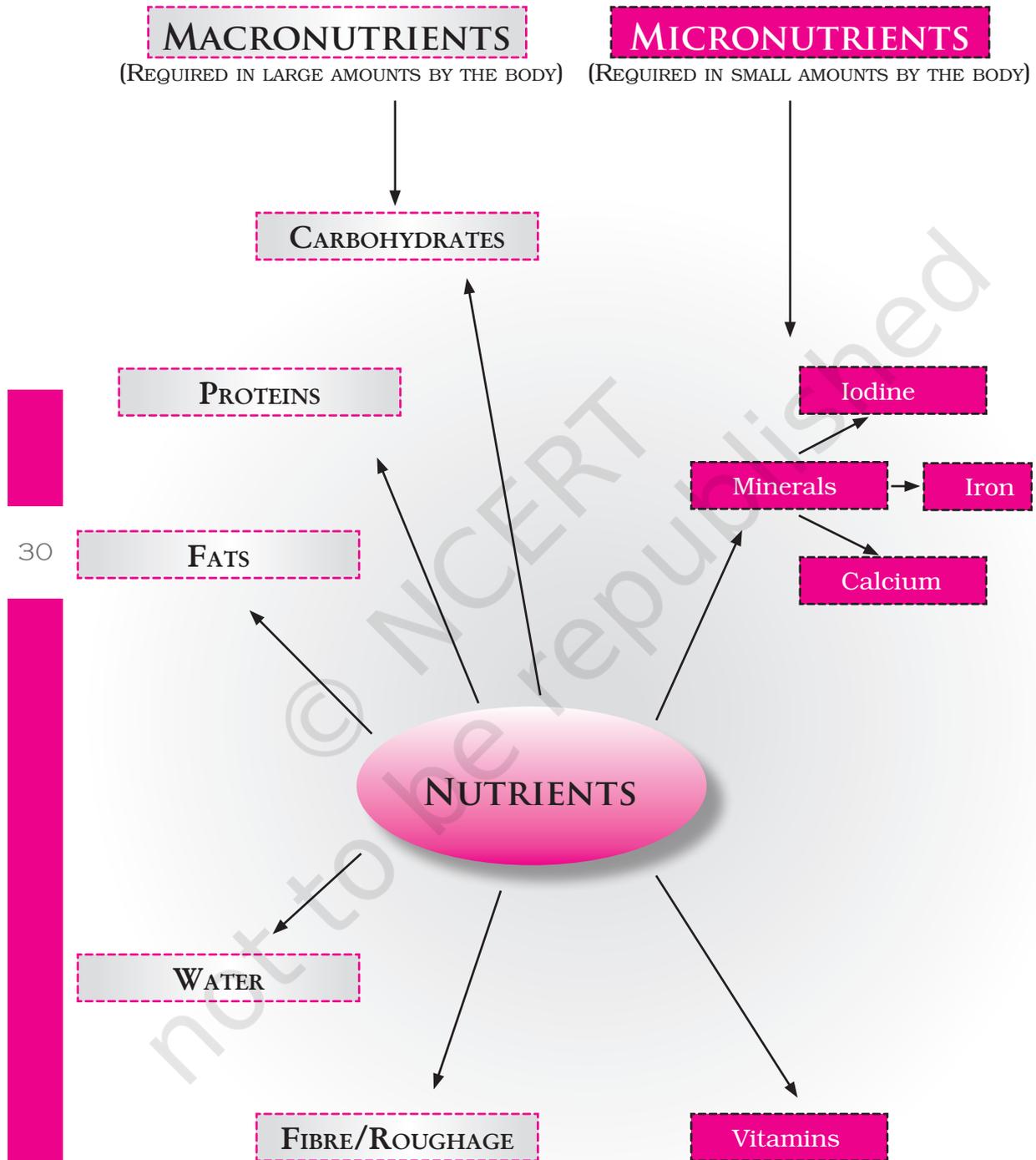


FIGURE 1: BASIC NUTRIENTS IN OUR FOOD

4. Provides a safety margin for nutrients
5. Promotes and preserves good health
6. Maintains acceptable body weight for height

### 3.3 HEALTH AND FITNESS

According to World Health Organisation (WHO) “**Health** is the state of complete physical, emotional, and social well-being, not merely the absence of diseases or infirmity.” This definition has remained unchanged since 1948.

All of us want to maintain positive health, i.e., a perfect blend of physical, social and mental. Taking adequate amounts of essential nutrients in our diet is necessary to maintain positive health.

Physical health is probably the most easily understood aspect. Mental health can be defined as a **state of emotional and psychological well-being in which an individual is able to use her or his cognitive and emotional capabilities, function in society, and meet the ordinary demands of everyday life**. In other words, the absence of a recognised mental disorder is not necessarily an indicator of mental health. One way to assess mental health is to see how effectively and successfully a person functions. Feeling capable and competent, being able to handle normal levels of stress, maintaining satisfying relationships, and leading an independent life; and being able to ‘bounce back’ or recover from difficult situations are all signs of good mental health.

**Physical fitness** is good bodily health; it is the result of regular exercise, proper diet and nutrition, and proper rest for physical recovery. The term physical fitness is used in two ways: general fitness (a state of health and well-being) and specific fitness (a task-oriented definition based on the ability to perform specific aspects of sports or occupations). Physical fitness is the capacity of the heart, blood vessels, lungs, and muscles to function at optimal efficiency. Earlier, fitness was defined as the capacity to carry out the day’s activities without undue fatigue. Automation, increased leisure time, and changes in lifestyles following the Industrial Revolution meant that this criterion was no longer sufficient. In the present context, optimum efficiency is the key.

Physical fitness is now defined as the body’s ability to function efficiently and effectively in work and leisure activities, to be healthy, to resist diseases and to meet emergency situations. Fitness can also be divided into five categories: aerobic fitness, muscular strength, muscular endurance, flexibility, and body composition. Being fit prepares one to meet mental and emotional challenges. One feels strong and energetic if one is fit. Fitness provides one with the ability to meet routine physical demands with enough reserve energy to rise to a sudden challenge, such as running to catch a bus.

Thus, health is a state of complete mental, physical and social well-being whereas fitness is the ability to meet the demands of a physical task. A well-nourished and fit person is better able to learn and has more energy, stamina, and self-esteem. A healthy eating pattern along with regular exercise will certainly help to remain fit. Teenagers between the ages of 12 and 18 who have unhealthy eating behaviours and are undernourished develop eating disorders.

### 3.4 USING BASIC FOOD GROUPS FOR PLANNING BALANCED DIETS

One of the simplest ways to plan a balanced diet is to divide foods into groups and then make sure that each group is included in the meals. A food group consists of different foods which have common characteristics. These common features may be the source of food, the physiological function performed, or the nutrients present.

Foods can be grouped on the basis of the predominant nutrients present in them. This classification varies from one country to another depending on many factors. The five food group classification is used in India as a guide to meal planning. Many factors have been considered while compiling these groups such as availability of food, cost, meal pattern, and deficiency diseases prevalent. Not all foods in each group are equal in their nutrient content. That is why a variety of foods from each group should be included in the diet.

A classification based on nutrients present will ensure that all nutrients are made available to the body and offer greater variety within the group.

There are five basic food groups suggested by the Indian Council of Medical Research (ICMR). These include:

- Cereals, grains and products
- Pulses and legumes
- Milk and meat products
- Fruits and vegetables
- Fats and sugars

#### ACTIVITY 1

List 10 foods that you commonly eat. Identify the food group to which each food belongs. Then list the macronutrients and micronutrients present in the foods listed. Identify the foods which are the richest sources of energy.

The five food groups are summarised in the table below:

Table 1: Five Food Groups		
Food group		Main Nutrients Supplied
<p><b>I. Cereals, Grains and Products</b> Rice, Wheat, <i>Ragi</i>, <i>Bajra</i>, Maize, <i>Jowar</i>, Barley, Rice flakes, Wheat flour.</p>		<p>Energy, protein, Invisible fat, Vitamin – B1, Vitamin – B2, Folic Acid, Iron, Fibre</p>
<p><b>II. Pulses and Legumes</b> Bengal gram, Black gram, Green gram, Red gram, Lentil (whole as well as <i>dals</i>) Cowpea, Peas, <i>Rajmah</i>, Soyabeans, Beans.</p>		<p>Energy, Protein, Invisible fat, Vitamin – B1, Vitamin – B2, Folic Acid, Calcium, Iron, Fibre.</p>
<p><b>III. Milk, Meat and Products</b> <b>Milk</b> Milk, Curd, Skimmed milk, Cheese</p> <p><b>Meat</b> Chicken, Liver, Fish, Egg, Meat.</p>		<p>Protein, Fat, Vitamin – B12, Calcium.</p> <p>Protein, Fat, Vitamin – B2</p>

**IV. Fruits and Vegetables**

**Fruits**

Mango, Guava,  
Tomato Ripe, Papaya,  
Orange. Sweet Lime,  
Watermelon.



Carotenoids,  
Vitamin – C, Fibre.

**Vegetables (Green Leafy)**

Amaranth, Spinach,  
Drumstick leaves,  
Coriander leaves, Mustard  
leaves, Fenugreek leaves.



Invisible Fats,  
Carotenoids,  
Vitamin – B2.  
Folic Acid, Calcium,  
Iron, Fibre.

**Other Vegetables**

Carrots, Brinjal, Ladies  
finger, Capsicum, Beans,  
Onion, Drumstick,  
Cauliflower.



Carotenoids, Folic Acid,  
Calcium, Fibre

**V. Fats and Sugars**

**Fats**

Butter, Ghee,  
Hydrogenated oils,  
Cooking oils like  
Groundnut, Mustard,  
Coconut.



Energy, Fat, Essential  
Fatty Acids

**Sugars**

Sugar, Jaggery



Energy

Source : Gopalan, C., Rama, Sastri, B.V. & Balasubramanian, S.C. (1989). Nutritive value of Indian foods. Hyderabad. National Institute of Nutrition, ICMR.

**Remember**

**One gram of**

- carbohydrate releases 4 Kcal. of energy
- protein releases 4 Kcal. of energy
- fat releases 9 Kcal. of energy

**Guidelines for using the basic food groups**

The five food group system can be used both for planning and assessing balanced diets. It is a simple daily food guide which can be used for nutrition education as well. Guidelines could be adopted depending on the food groups.

- Include at least one or a minimum number of servings from each food group in each meal.
- Make choices within each group as foods within each group are similar but not identical in nutritive value.
- If the meal is vegetarian, use suitable combinations to improve the overall protein quality of the diet. For example, serving cereal-pulse combinations or including small quantities of milk or curds in the meal.
- Include uncooked vegetables and fruits in the meals.
- Include at least one serving of milk to ensure a supply of calcium and other nutrients as milk contains all nutrients except iron, vitamin C, and fibre.
- Cereals should not supply more than 75 per cent of total Kcal/Calories.

In planning balanced diets, food should be chosen from each group in sufficient quantity. Cereals and pulses should be taken adequately, fruits and vegetables liberally, animal foods moderately and oils and sugars sparingly.

Now let us look at the concept of the food guide pyramid.

## Food Guide Pyramid

The following figure (Figure 2) illustrates the food guide pyramid for Indians.

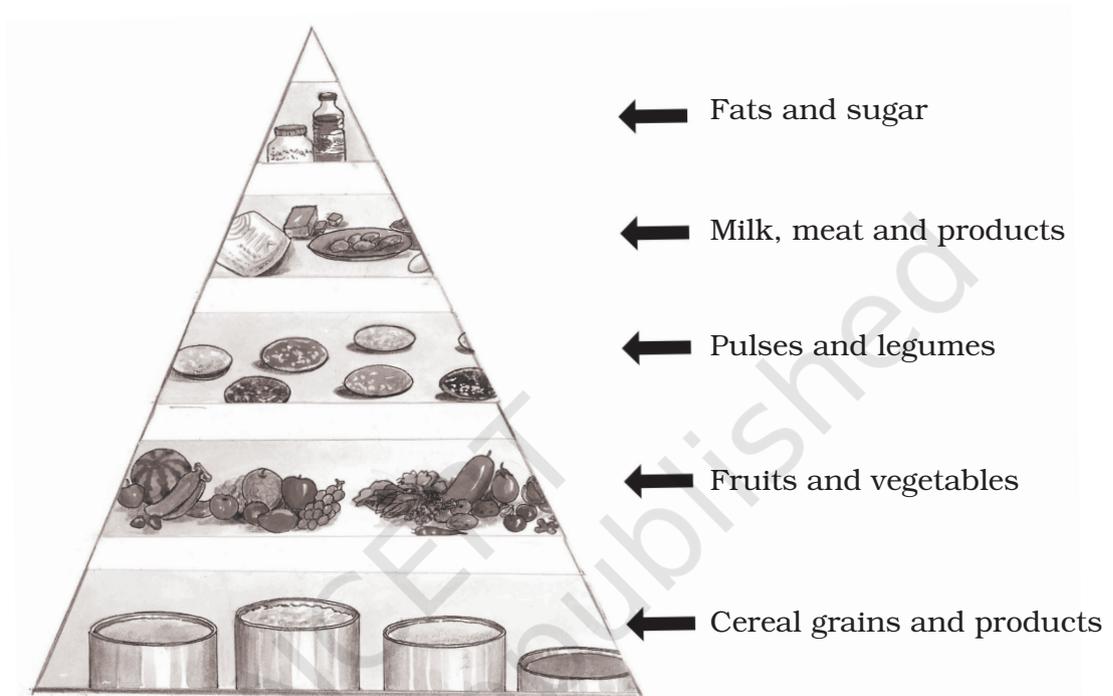


FIGURE 2: FOOD GUIDE PYRAMID

The food guide pyramid is a graphic depiction of the daily food guide. The illustration was designed to depict variety, moderation, and also proportions. The size of each section represents the number of daily servings recommended. The broad base at the bottom conveys the message that grains should be abundant and form the foundation of a healthy diet. Fruits and vegetables appear at the next level, showing that they have a less prominent, but still important place in the diet. Meats and milks appear in a smaller band near the top. A few servings of each can contribute valuable nutrients such as proteins, vitamins and minerals, without too much fat and cholesterol. Fats, oils and sweets occupy the tiny apex, indicating that they should be used sparingly.

Alcoholic beverages do not appear in the pyramid, but they too, if consumed, should be limited. Items such as spices, coffee, tea and diet soft drinks provide few, if any, nutrients, but can add flavour and pleasure to meals when used judiciously.

The daily food guide plan and food guide pyramid emphasise grains, vegetables, and fruits. These are all plant foods. Some 75 per cent of a

day's servings should come from these three groups. This strategy helps all people obtain complex carbohydrates, fibre, vitamins, and minerals with little fat. It also makes diet planning for vegetarians easier.

### 3.5 VEGETARIAN FOOD GUIDE

Vegetarian diets rely mainly on plant foods: grain, vegetables, legumes, fruits, seeds, and nuts. Some vegetarian diets include eggs, milk products, or both. People who do not eat meats or milk products can still use the daily food guide to create an adequate diet. The food groups are similar and the number of servings remains the same. Vegetarians can select alternatives to meat such as legumes, seeds, nuts, tofu and for those who eat them, eggs. Legumes, and at least one cup of dark leafy greens, help to supply the iron that meats usually provide. Vegetarians who do not drink cow's milk can use soy 'milk' – a product made from soyabeans that provides similar nutrients if it has been fortified with calcium, vitamin D, and Vitamin B12 (i.e., these nutrients are added).

The food guide pyramid emphasises foods from the five food groups shown in the three lower sections of the pyramid. Each of these food groups provides some, but not all of the nutrients you need. Foods in one group cannot replace those in another. No one food group is more important than another – for good health you need all of them.

The pyramid is an outline of what to eat each day. It is not a right prescription, but a general guide that lets you choose a healthful diet that is right for you. The pyramid calls for eating a variety of foods to get the nutrients you need, and at the same time, the right amount of Calories to maintain a healthy weight.

### 3.6 DIETARY PATTERNS IN ADOLESCENCE

Healthy eating is vital for the teenager's health and well-being. The nutritional needs of adolescents vary tremendously, but generally increase due to rapid growth and changes in body composition that occur during puberty. Adequate nutrition is vital for ensuring overall emotional and physical health. Good eating habits help prevent chronic illness in the future, including obesity, heart disease, cancer and diabetes.

Studies of nutrient intakes have shown that adolescents are likely to obtain less vitamin A, thiamine, iron, and calcium than recommended. They also ingest (consume) more fat, sugar, protein, and sodium than is currently thought to be optimal.

While concern is often expressed over the habit of eating between meals, it has been shown that teenagers obtain substantial nourishment from foods eaten outside of the traditional meals. The choice of foods they make is of greater importance than the time or place of eating. Emphasis

should be placed on fresh vegetables and fruits as well as whole-grain products to complement the foods high in energy value and protein that they commonly choose.

What are the commonly adopted eating habits of adolescents and why are they important to recognise? Understanding diet patterns will help us to be better prepared to evaluate the nutritional adequacy of diets and ensure that they are meeting the minimum requirements to maintain health and well-being. Among the more common eating idiosyncracies include skipping meals, consuming fast foods in a routine way, avoiding fruits and vegetables, snacking frequently and dieting. By addressing each of these issues individually you can ensure that you are meeting the minimum nutritional requirements.

**Irregular meals and skipping meals:** The numbers of meals teenagers miss and eat away from home increases from early adolescence to late adolescence, reflecting the growing need for independence and time away from home. The evening meal appears to be the most regularly eaten meal of the day. Girls are found to skip the evening meal, as well as breakfast and lunch, more often than boys. In some homes with limited resources, the adolescents may not even receive adequate number of meals or amounts, leading to nutrient deficiency.

Breakfast is frequently neglected and is omitted more often by teenagers and young adults under 25 years of age than by any other age groups in the population. A likely explanation as to why girls are more apt to miss breakfast than are boys is the pursuit of thinness and frequent attempts at dieting. Many teenage girls believe that they can control their weight by omitting breakfast or lunch. In fact, this approach is likely to accomplish just the opposite. By mid-morning or lunchtime they may be so hungry that they overcompensate for the “saved kilocalories.” As a matter of fact, skipping breakfast can slow your metabolism contributing to weight gain and poor performance.

**Snacking:** Snacking is probably a survival technique for teens. Snacking does not have to be a bad habit. It can help maintain energy levels, particularly in active and growing adolescents. Many adolescents fail to eat three regular meals per day because of the ‘skipping meal’ factor. Thus snacking can actually be beneficial to ensure adequate intake of essential nutrients. However, surviving only on snacks is harmful to health.

**Fast foods:** Adolescents, particularly in urban areas, are more apt to eat fast food because it is convenient and typically a social affair, and they may believe it is the fashion of the day. Fast food is often packed with fat and “empty calories”. We should make smart food choices even when visiting fast food restaurants. Table 2 provides important information about fast foods.

**Dieting:** Obesity is becoming a crucial problem among adolescents. Intervention is needed to maintain ideal body weight among the entire

population. If this is not maintained, 80 per cent of them will stay overweight as adults. This can put them at risk for many medical problems, including diabetes, high blood pressure, high cholesterol and sleep apnea (a sleep disorder).

**Table 2: Nutritional Limitations of Fast Foods**

The following factors appear to be the major nutritional limitations of fast-food meals.

**Calcium, riboflavin, vitamin A:** These essential nutrients are low unless milk or a milkshake is ordered.

**Folic acid, fibre:** There are few fast food sources of these key factors.

**Fat:** The percentage of energy from fat is high in many meal combinations.

**Sodium:** The sodium content of fast food meals is high, which is not desirable.

**Energy:** Common meal combinations contain excessive energy when compared with the amounts of other nutrients provided.

Although fast foods can contribute nutrients to the diet, they cannot completely meet the nutritional needs of teenagers. Both adolescents and health professionals should be aware that fast foods are acceptable nutritionally when they are consumed judiciously and as a part of a well-balanced diet. But when they become the mainstay of the diet there is cause for concern. A nutrient imbalance may not appear to be a problem until a number of years have gone by, unless some specific problem such as a chronic disease exists. However, evidence is accumulating to show that food intake patterns of teenagers affect their health in later life.

However, adolescents with normal weight often diet because of the perception that “thin is in”. Girls are bombarded with messages from the media about thinness, images of what is considered a beautiful body, and ways to achieve a lower body-weight. The images, in the context of a society that places a high value on physical beauty, sends mixed messages to teenagers and may result in unhealthy, unnecessary attempts to lose weight.

Dieting unsupervised by experts can lead to dangerous outcomes including eating disorders in teens. Some symptoms of dieting include: skipping meals, ‘binge’ eating, fasting or use of laxatives or diet pills. Consequences of such dieting include its possible association with cycles of weight loss and regain that increase the likelihood of developing eating disorders and obesity, lowered self-esteem and other psychological problems. This can lead to increased cardiovascular risk (heart problems) and possible mortality.

One approach to overcome the problems related to dieting is to attempt to eliminate the term ‘diet’ and replace it with ‘healthy eating’. If you regularly incorporate healthy lifestyle and dietary practices into your life, you are less likely to diet on a consistent basis. Recognising good eating habits is the first step towards encouraging healthy diets. It is best to adopt a healthy lifestyle that incorporates sound eating habits and regular exercise.

### 3.7 MODIFYING DIET RELATED BEHAVIOUR

As you have read in the chapter on 'Self', adolescence is a time when an individual begins to question authority and tries to establish her/his status. Eating behaviour is one of the mediums through which individuality may be expressed by adolescents. Thus, rejection of routine home food (which may be healthy) and eating outside (not so healthy), sometimes in order to conform to peer preferences, is not uncommon in adolescence.

It is easier for us to change lifestyle and diet patterns if we are convinced that we want to do so. What are the ways in which adolescents can modify their own behaviour? The next section tells us more about how to adopt healthy dietary practices.

**Limiting television viewing:** Television viewing should be limited to about one or two hours each day (this includes playing video games or using the computer). Watching television does not use up many Calories and it encourages eating erratically, since it is common to eat while watching TV. Overeating and under-eating is common among those who do it.

**Healthy eating habits:** Eat three balanced meals of average size each day, plus two nutritious snacks. One must try not to skip meals.

**Snacks:** Snacks should be limited to two each day and they can include low calorie foods, such as raw fruits or vegetables. Avoid using high calorie or high fat foods for snacks, especially potato chips, biscuits and fried foods. Of course, favourite snacks can be consumed once in a while, but this should not be made a habit.

**Drinking water:** Drinking four to six glasses of water each day, especially before meals is a good habit. Water has no calories and it will create a feeling of fullness. Avoid drinking soft drinks and fruit juices too frequently, as they are high in energy (150-170 calories per serving).

**Diet journal:** It helps to keep a weekly journal of food and beverage intake and also of the amount of time that is spent in watching television, playing video games and exercising. Recording body weight each week is a good practice.

**Exercise:** This is essential for healthy life. Participating in extra-curricular activities such as sports helps to keep activity levels high.

Some tips to increase physical activities include:

- Walk or ride a bicycle for short distances.
- Use stairs instead of elevators in a building.
- Do regular exercise for 20-30 minutes, 3-4 times each week. This can include walking, jogging, swimming or bike riding. Playing games and sports, such as skipping rope, hockey, basketball, volleyball, or football, and doing yoga are also advisable at all ages.

**Substance use and abuse:** Substance use and abuse in adolescence is a public health problem of major significance and concern. The substances

most widely abused by adolescents are tobacco, alcohol, and marijuana and other addictive drugs. The abuse of drugs and alcohol has a harmful effect on the nutrition and health status of adolescents. Nutrition intervention, support, and counselling would play a major role in the physical and psychosocial rehabilitation process.

Much of what we have discussed may be more relevant for adolescents in urban and semi-urban areas. Rural environments would be different. Rural girls and boys are often engaged in agricultural tasks. They may also be helping their parents in enterprises such as poultry-keeping, cattle-rearing and bee-keeping. Boys may be helping in farming. Girls also help in looking after their younger siblings as well as cooking and cleaning while their parents earn livelihood. Then there are the tasks of collecting fodder for the cattle, firewood and water. In tribal areas many people are dependent on forest products like berries, flowers, leaves, roots. They spend time gathering and processing these products.

Girls and boys doing these tasks will have high activity levels and therefore, their energy needs will be higher. Protein needs are also higher due to the high growth rate at adolescence. The chances of adolescents being malnourished are, therefore, very high in rural areas among the poorer communities. Girls in particular are known to be anaemic (low iron in blood) and require iron rich foods to be healthy. Adolescents from rich families in rural areas would face many of the same problems as those in urban areas in the higher income groups. They would tend to be sedentary and enjoy rich food having plenty of fat and carbohydrate.

#### Adolescence and Anaemia

Anemia afflicts an estimated two billion people worldwide, mostly due to iron deficiency. It primarily affects women and girls. The latest National Family Health Survey-3 (NFHS-3) conducted in 2005-06 has revealed that 56 per cent of adolescent girls are anaemic as compared to 30 per cent of adolescent boys. Compare this with the figure of 70 per cent for young children in the age range 6-59 months. It has also been found that the incidence of anaemia is actually increasing when compared to the last survey conducted in 1991-92.

The prevalence of anemia is disproportionately high in developing countries like India, due to poverty, inadequate diet, certain diseases, repetitive pregnancy and lactation, and poor access to health services.

Adolescence is an opportune time for interventions to address anaemia. In addition to growth needs, girls need to improve iron status before pregnancy. Both boys and girls have access to information about anaemia through schools, recreational activities and via the mass media. This can be used effectively to transmit messages about iron-rich foods and iron supplements where necessary.

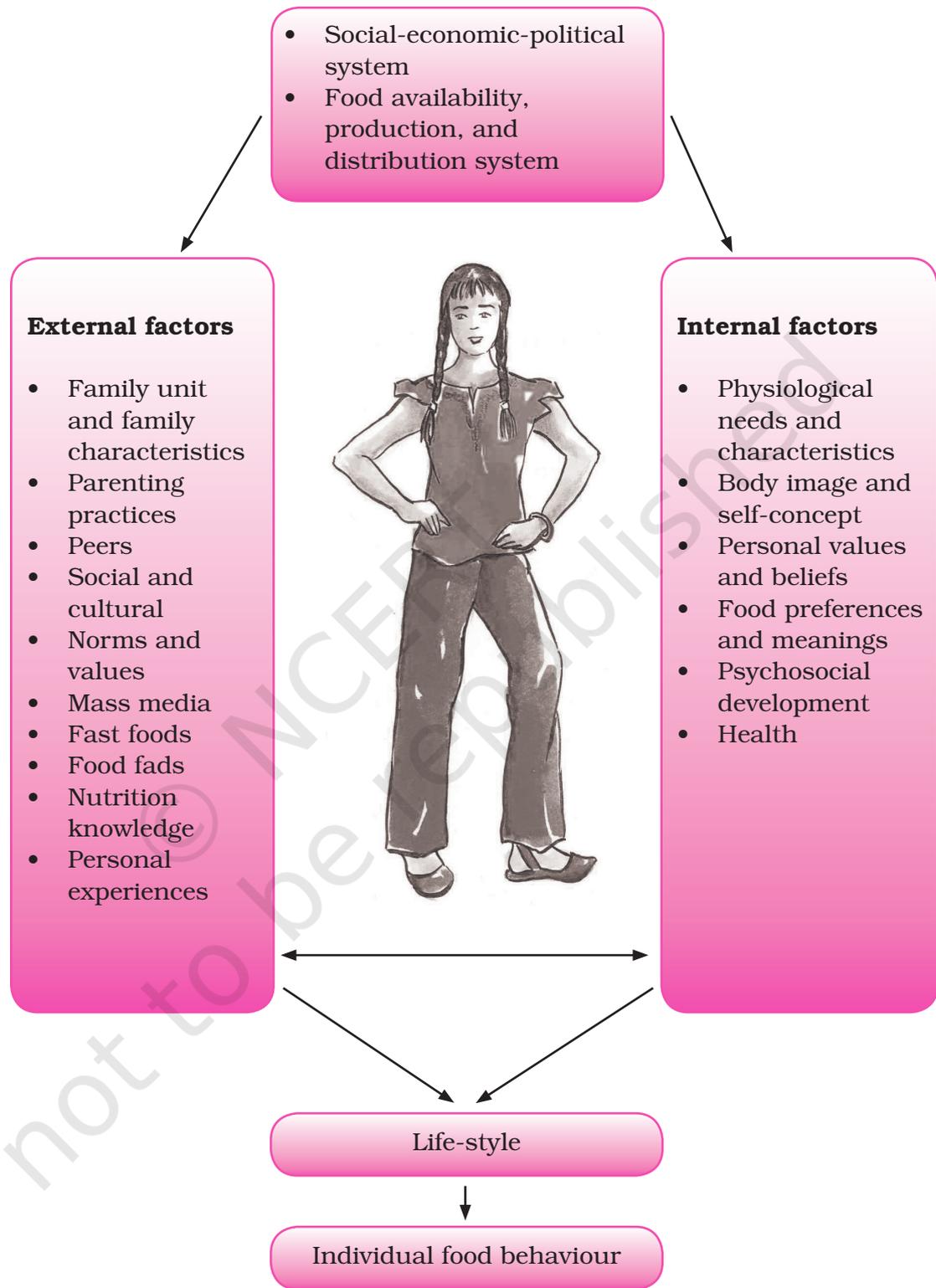


FIGURE 3: FACTORS AFFECTING FOOD BEHAVIOUR OF ADOLESCENTS

### 3.8 FACTORS INFLUENCING EATING BEHAVIOUR

By the time a person reaches adolescence the influences on eating habits are numerous and the formation of those habits is extremely complex, as shown in Figure 3. The growing independence of adolescents, increased participation in social life, and a generally busy schedule of activities have a definite impact on what they eat. They are beginning to buy and prepare more food for themselves and they often eat rapidly and away from home.

In order to encourage adolescents to form reasonably healthy eating habits **parents** should give their children the opportunity to choose from a range of nourishing foods as they are growing up. By the time they are teenagers they will need some freedom to use the kitchen; this is true for boys as well as for girls.

While the basic foundation for eating habits is found in the family, many influences on eating behaviour originate outside the home. The influence of **peers** can be a useful source of support, as well as a source of stress for the adolescent. Peer influence and support can be helpful for overweight teenagers, although the same peers can also target such adolescents for teasing.

Teenagers are very vulnerable to advertising messages. **Television** food commercials and eating habits portrayed in programme content have influenced people for more than a decade. The majority of advertisements are for products with a high concentration of sweetness and fat. Hence, adolescents have to be discerning while consuming such food products.

The ease of obtaining food that is **ready to eat** also influences the eating habits of teenagers. Through home delivery/vending machines, at movies, melas and sporting events, at fast-food outlets and convenience groceries, food is available at numerous times throughout the day. Hence, adolescents may eat more often as well as more of not-so-healthy food stuffs. Watching this tendency is advisable.

### 3.9 EATING DISORDERS AT ADOLESCENCE

Adolescence is associated with rapid physical growth and body-image development eating disorders are of special concern at this time. These changes intensify associated self-esteem problems. **Anorexia nervosa**, for example, is a disorder so tied to body image distortion that it is most commonly seen in adolescence, the period when a person is struggling with self-identity and most vulnerable to body image problems. Progress in adopting a normal adult body image will be interrupted for the teenager with an eating disorder.

To understand anorexia nervosa let us take the example of Sonam. She aspires to have a perfect body. She has been ignoring the advice of her parents and teachers and almost stopped eating. She has become obsessed with having a very thin body. Although her current weight is normal, she feels pressured to be “ideally” thin like some actresses in movies or models in magazines. She has a low self-esteem and remains depressed, and this has resulted in her withdrawing from her family and friends. She is unaware that she is undernourished and insists that she is fat. She is a clear case of the eating disorder called anorexia nervosa. She is unaware that drastic loss of weight can even lead to death.

**Bulimia** is another type of eating disorder. Bulimia often begins in late adolescence or early adulthood after a series of various unsuccessful weight reduction diets. Those with bulimia indulge in bingeing (overeating) and inducing purging by vomiting or using laxatives. Although more common in females, about five to ten per cent of all eating disorders occur in males too.

Anorexia and bulimia can have serious consequences such as convulsions, renal failure, irregular heartbeats and dental erosion. In adolescent girls, anorexia can delay the onset of menstruation, permanently minimise stature and result in osteoporosis (weakening of bones).

Perhaps a person’s best defense against these disorders is to learn to appreciate one’s uniqueness. Respecting and valuing oneself will certainly be life saving. Important dietary interventions include ensuring balanced diets, enhancing dietary fibre intake and using nutrient/food supplements to make up losses.

To sum up, physical, social and emotional changes experienced during adolescence can profoundly impact the adolescent’s nutritional status and eating patterns. Although young people are rarely motivated to learn about nutrition for the sake of longevity, learning how to apply sound dietary principles to reach our health goals can help build the foundation to a healthier life, now and in the future.

Health is a key resource of young people; it influences the availability and use of other resources that are important in everyday life. What are the other resources that an individual has? The following chapter on Management of Resources addresses this question and also discusses how best one can utilise and manage key resources such as time, energy and money.

### Key terms and their meaning

#### Activity level

Level of activity of a person, i.e., sedentary or light, moderate, and heavy. This is closely related to one’s occupation.

**Balanced diet**

A diet which includes a variety of foods in adequate amounts and correct proportions to supply all essential nutrients which promote and preserve good health.

**Food group**

A number of foods sharing common characteristics which are grouped together. Characteristic for grouping may be function, nutrient, or source.

**Lactation**

The period when the mother nurses her infant.

**Physiological state**

State when nutrient needs increase because of normal physiological events such as pregnancy and lactation.

**Recommended Dietary Allowances**

Allowances of nutrients which cover the needs of practically all healthy individuals. These are not requirements for any individual but guidelines which tell us the amount of nutrients to be consumed daily.

■ **REVIEW QUESTIONS**

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1. Differentiate between the terms RDA and requirement.
2. Explain how the use of food groups simplifies planning of balanced meals.
3. List 10 foods which belong to the protective food group, stating reasons for your choice.
4. Discuss the factors that influence eating behaviour at adolescence.
5. Explain the two eating disorders that may arise at adolescence. What would be the best way to prevent their occurrence?

■ **PRACTICAL 3**

**Food, Nutrition, Health and Fitness**

1. List 10 signs of good health. Evaluate yourself using the following format.

Signs of good health	Rating of yourself		
	Satisfactory	Normal	Below normal
1.			
2.			
3.			

4.			
5.			
6.			
7.			
8.			
9.			
10.			

2. Record your diet for a day. Evaluate each meal in terms of inclusion of the five food groups. Do you think the diet is balanced? Use the following format to write your response.

Meal/menu	Inclusion of five food groups	Comment on whether meal is balanced/not balanced

3. Interview members of your family such as your grandmother, mother or aunt to collect information about—

- food taboos giving reasons why the taboos are followed.
- food practices during fasting and festivity from the region of India to which you belong.
- preparations during fasting.

Tabulate the information as follows.

Region	Occasion (nature of fast)	Preparation	Nutrients present

Give two inferences on the basis of the information tabulated.



11136CH04

# 4

## MANAGEMENT OF RESOURCES

### LEARNING OBJECTIVES

After completing this chapter the learner is able to

- discuss the concept of a resource.
- identify various resources.
- classify resources into human and non-human.
- describe the characteristics of resources.
- explain the need for managing resources.
- analyse the management process.

### 4.1 INTRODUCTION

Everyday we carry out various activities. Think of any activity you do and you will find that to complete that activity you need one or more of the following.

- Time
- Energy
- Money for purchasing required material
- Knowledge
- Interest/Motivation
- Skills/Strengths/Aptitude
- Material goods like paper, pen, pencil, colours, etc.
- Water, air
- School building

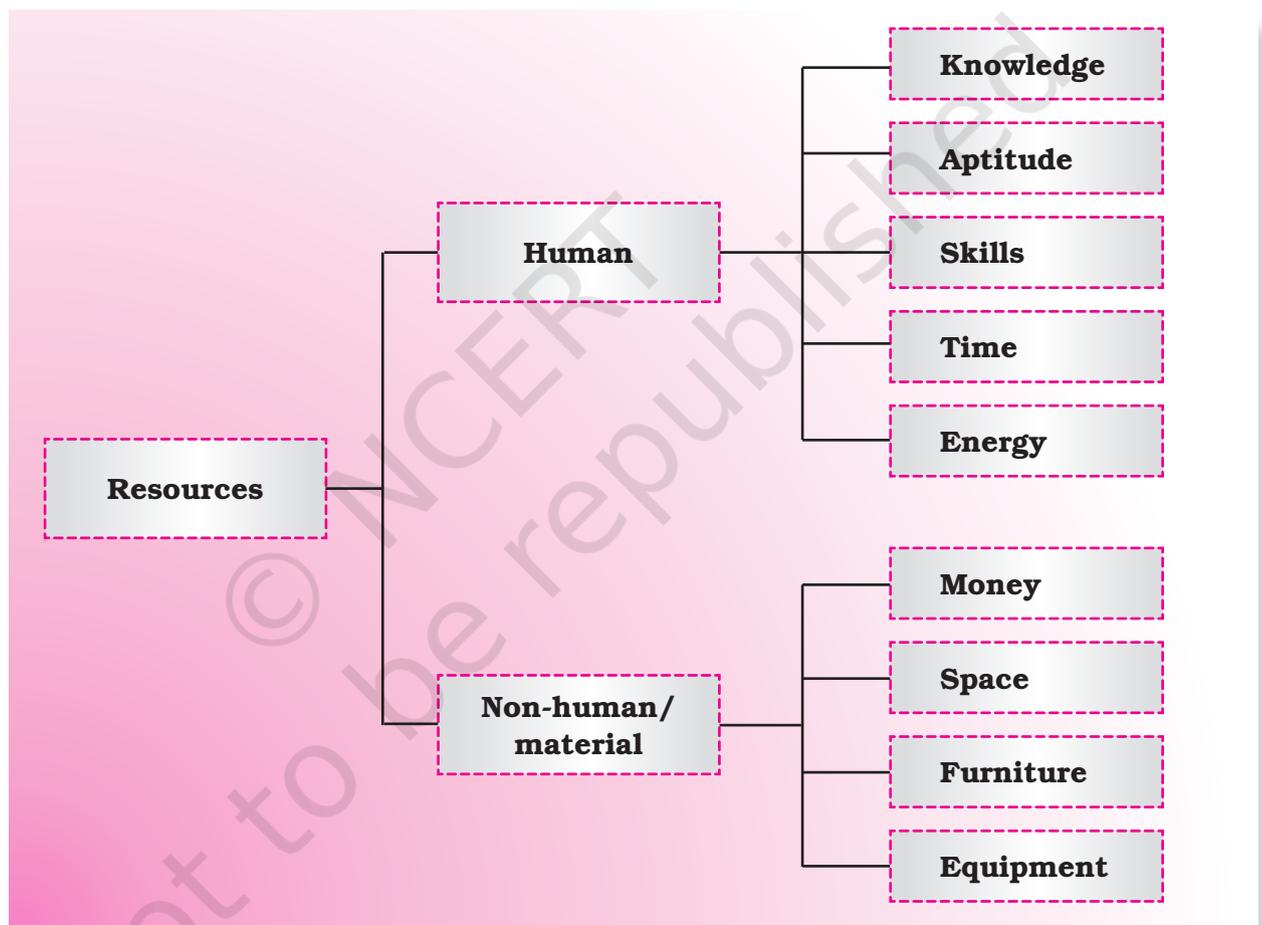
All these – time, energy, money, knowledge, interest, skills, materials – are resources. Resources are anything which we make use of while carrying out any activity. They help us in accomplishing our goals. You may need more of a certain resource for a particular activity as compared

to other resources. In the previous chapter, you have learnt about your own strengths. These are your resources.

Anything which is not used by us is not a resource. For example, a bicycle which has not been used for long and is just lying at your place may not be a resource for you. However, it may be a resource to someone else.

If you re-look at the list of resources above, you will find that resources can be classified as–

- Human resources
- Non Resources-human resources or material goods



### Resources

Resources can be classified in different ways.

- Human/non-human resources
- Individual/shared resources
- Natural/community resources

We will read about each of these classifications.

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## Human and Non-human Resources

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### Human Resources

Human resources are central to carrying out any activity. These resources can be developed through training and self-development. For example, knowledge regarding any field/task can be acquired, skill may developed which will help you to develop aptitude. Let us read about human resources in detail.

- (a) *Knowledge* – It is a resource one uses throughout one’s life and is a pre-requisite for carrying out any activity successfully. A cook must have knowledge of how to operate cooking gas or *chullah* before she/he starts preparing food. A teacher who does not have thorough knowledge of her/his subject, cannot become an effective teacher. One needs to be open to acquiring knowledge throughout one’s life.
- (b) *Motivation/Interest*: There is a common saying, ‘Where there is a will there is a way’. This indicates that to accomplish any task, the worker must be motivated and interested in doing it. For example, if a student is not interested in learning a task, even when other resources are available, she/he still may give excuses and not finish the task. We may pursue dance, painting, reading fiction, art and craft and other hobbies as per our motivation.
- (c) *Skills/Strength/Aptitude*: All individuals may not be skilled in performing all activities. Each one of us has an aptitude in certain areas. We can therefore carry out activities in these areas better as compared to others. For example, pickles and chutney prepared by different individuals will taste different depending upon their skill. However, we can acquire skills we do not have through learning and training.
- (d) *Time*: It is a resource available to everyone equally. There are 24 hours in a day and every one spends it in her/his own way. Time once lost cannot be regained. Hence, it is the most valuable resource. Managing time in a specific period and attaining the goal is very important. We need to continuously plan and be able to utilise the available time to finish the desired task.

Time can be thought of in terms of three dimensions — work time, non-work time, rest and leisure time. We need to learn and balance time across these three dimensions in order to be able to accomplish one’s goals. When one learns to balance all the three dimensions, it helps the individual to be physically fit, emotionally strong and intellectually alert. You should be aware of the peak periods when you are best able to work and use this precious resource effectively to accomplish your goals.

- (e) *Energy*: For sustaining individual growth and physical output, energy is essential. Energy levels vary from person to person, according to their physical fitness, mental condition, personality, age, family background

and their standard of living. To conserve energy and to use it most effectively, one must carefully think and plan through the activity so that one can complete the task efficiently.

### **Non-human Resources**

- (a) *Money*: We all require this resource but it is not equally distributed among us – some have less of this resource as compared to others. We need to remember that money is a limited resource and must be spent judiciously to fulfil our requirements.
- (b) *Material Resources*: Space, furniture, clothes, stationery, food items, etc., are some of the material resources. We require these resources to carry out activities.

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### **Individual and Shared Resources**

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- (a) **Individual Resources**: These are resources which are available to an individual for personal use only. These can be human or non-human resources. Your own skills, knowledge, time, your school bag, your clothes are some of the examples of individual resources.
- (b) **Shared resources**: These are resources which are available to many members of the community/society. Shared resources can be natural or community based.

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### **Natural and Community Resources**

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- (a) **Natural Resources**: Resources available in nature, like water, mountains, air, etc., are natural resources. These are available to all of us. In order to protect our environment, each one of us has the responsibility of judiciously using these resources.
- (b) **Community Resources**: These resources are available to an individual as a member of community/society. These are generally provided by government. These may be human or non-human. Consultancy provided by government hospitals, doctors, roads, parks and post offices are some examples of community resources. Every individual must strive to optimally use these resources and feel responsible in maintaining them.

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### **Characteristics of Resources**

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Though we can categorise resources in various ways, they also have certain similarities. The following are some characteristics of resources.

- (i) **Utility** : ‘Utility’ means the importance or usefulness of a resource in helping one to achieve a goal. Whether or not a resource has utility

## ACTIVITY 1

Think of your own self and make a list of the human resources you have. Use the following guidelines to reflect on this.

- Knowledge – which areas are you knowledgeable about
- Motivation/interest – what activities do you enjoy doing most
- Skills/strengths/aptitude – what are you particularly good at doing
- Time – which periods of the day are you most active
- Energy – Do you largely feel energetic or tasteless/tired?

depends on the goal and the situation. For example, cow dung is considered waste. However, it can be used as a fuel and can also be used to prepare humus (manure). Proper use of important resources available to a family or community leads to greater satisfaction.

- (ii) **Accessibility** : First, certain resources are more easily available as compared to others. Second, resources may be more easily available to some people as compared to others. Third, the availability of resources changes over time. Thus, we can say that accessibility of resources varies from person to person and from time to time. For example, every family has money as a resource. While some have sufficient money to meet their needs, others have limited budgets. The amount of available money is also different during the beginning of a month as compared to towards the end of the month.
- (iii) **Interchangeability** : Almost all the resources have substitutes. If one resource is not available, it can be substituted by another. For example, if your school bus does not arrive on time to pick you up, you can go to school in your car, tractor, bullock cart or scooter. Thus, the same function can be performed by a number of resources.
- (iv) **Manageable** : Resources can be managed. Since resources are limited, they should be managed properly and effectively for their optimum utilisation. Resources should be used in such a way that we attain maximum output with minimum input of resources. For example, we should avoid using two-three buckets of water to wash clothes if we can wash them using one bucket.

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## Managing Resources

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It is important to note that none of the resources are unlimited. All resources are finite. We need to utilise resources effectively to achieve our goals faster and efficiently. Resources, therefore, should not be misused and wasted. Thus, to achieve our goals, effective management of resources is extremely essential.

**Managing resources** is about getting the most from the resources which are available to us. For example, everybody has 24 hours in a day. While some plan their schedule everyday and utilise every hour to achieve their goals, others waste their time and are not able to do anything productive the entire day.

Management of resources involves implementing resource management procedures which include planning, organising, implementing, controlling and evaluation. We will read about these in detail in the following section.

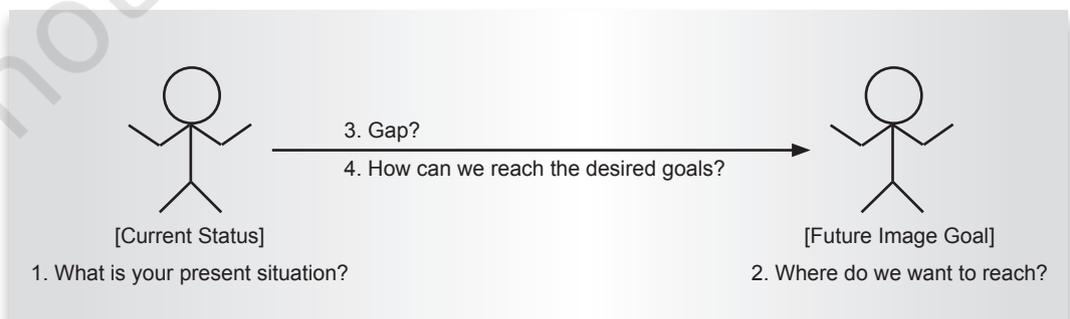
## The Management Process

As stated above, the management process involves five aspects – planning, organising, implementing, controlling and evaluation.

(a) **Planning:** It is the first step in any management process. It helps us to visualise the path to reach our goals. In other words, to plan is to produce a scheme for action to achieve specified goals by using the available resources.

Planning involves selecting the course of action. To plan effectively to achieve a goal, you must ask the following four basic questions. The answers to these questions will help you to develop a plan.

1. What is our present situation? This involves assessing the present situation, analysing what one has at present and what one would like to have in future.
2. Where do we want to reach? This involves setting specific goals or targets which we desire to achieve keeping in mind the present and future needs.
3. Gap. This is the difference between our present situation and the desired situation. We need to cover this gap in order to achieve our goal.
4. How can we reach our desired goals? Answering this question will help you to decide how to cover this gap. This involves making a plan to achieve goals.



- *Steps in planning : The basic steps in planning are–*
  1. Identifying the problem
  2. Identifying different alternatives
  3. Choosing between alternatives
  4. Acting to carry out the plan/Putting the plan into action
  5. Accepting the consequences

For example, there is only one month left for your annual examination and you have not completed your revision (present situation); your aim is to score good marks (goal). To achieve this goal you need to study five subjects in the specified time period (gap). You would think of a way of achieving this goal (prepare a plan of action), which will include the number of hours you will devote to each subject, prioritising subjects, curtailing other activities and so on.

ACTIVITY 2

List the resources you would need in order to secure good marks and study well. Compare your list with others.

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(b) **Organising:** It is collecting and arranging appropriate resources in order to implement plans in an effective and efficient manner. If we take the above example, you would organise and arrange all the resources which you may require to study and secure good marks.

Some resources could include books, notes, space to study, light, stationery, energy and time.

(c) **Implementing:** This stage involves carrying out the prepared plan. In the above example, you would put the plan into action by starting to study from the available resources (e.g., books, stationery, notes, etc.).

(d) **Controlling:** It refers to the task of ensuring that your activities are producing the desired results. In other words, the plan you have put into action is getting the desired results. Controlling helps monitor the outcome of activities and makes sure that the plans are being implemented correctly. It is important as it provides feedback and helps to check errors. Feedback helps you to revise your plan of action so you can achieve your goal. Therefore, while you are putting your study

plan into action, yet you are unable to complete your allotted chapter because you watch television, this gives you the feedback that you need to minimise your distractions. You will not watch T.V., play or chat with friends during the study hours, as it can affect the outcome of your formulated plan (i.e., study as per the decided number of study hours).

- (e) **Evaluation:** In the final stage, the outcomes that you have arrived at after putting your plan into action are evaluated. The end result of the task is compared with the desired result. All the limitations and the strengths of the task are noted so that they can be used in future to achieve one's goals effectively. With reference to the example of studying, evaluation is what you do when you get back the checked answer sheets of the examination. You evaluate your marked answer sheets as per the preparation you had done for the examination and the results you had wanted to achieve. If the scores for any subject fall short of your expectations, you try to identify the reasons for the same. At the same time, you also try to find out your strengths which helped you to secure good marks in other subjects. Then you use these strengths to overcome your limitations to secure better marks in your next examination.

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In addition to the different resources discussed in this chapter, there are some other non-human resources that form an integral part of our daily living. One such resource is fabrics. The following chapter tells us about the various fabrics that we come into contact with and their properties.

### Key Terms

Resources, Human Resources, Non-human resources, Planning, Organising, Implementing, Controlling, Evaluation

**ACTIVITY 3**

You wish to arrange a farewell party for Class XII students. Identify your resources and state the aspects you will keep in mind at each stage of the management process in organising the party.

Farewell Party for Class XII Students						
S.No.	Resources Available	Planning	Organising	Implementation	Controlling	Evaluation
1.	Human – Non-human	Venue? Menu?	Division of responsibility	(i) Decorating the venue? (ii) Keeping food ready?	Checking if the decoration is being done as per the plan?	Assess if the venue is looking good or not?
2.						
3.						
4.						
5.						
6.						
7.						

**REVIEW QUESTIONS**

1. Define a resource.
2. Classify resources in three different ways giving the definition of each resource and two examples of each.
3. Why should resources be managed?
4. Explain the steps in the management process, using one example to clarify each step.





11136CH05

# 5

## FABRICS AROUND US

### LEARNING OBJECTIVES

After completing this chapter the learner will be able to —

- discuss the diversity in fabrics.
- name and classify the fabrics commonly seen around.
- explain the concept of yarn and fabric making.
- describe the properties of each group of fabrics.
- make informed selection of textile products for specific end use.

### 5.1 INTRODUCTION

Fabrics are all around us. They are an important part in our lives. Fabrics give comfort and warmth, bring colour and decorative style, and add texture. Just think of a day's activity and recall how fabrics touch you. When you wake up from your bed, the bedsheets and pillow covers are fabrics. As you get ready for school the towel you use after bath is a soft and absorbent fabric, and the school dress you wear is again a fabric of a special type. The school bag in which you carry your books and other items is also a fabric, but again different in texture. It may be slightly stiff and coarse but strong enough to bear the load. If you observe your home you will find fabrics in almost all places, from curtains to kitchen dusters, floor mops and *durries*. Fabrics are of different kinds, weights and thickness and their choice is related to their end use.

If you take a typical fabric in hand, and unravel it, you may be able to pull out the thread like structures from it. These may be interlaced with each other at right angles or interlooped as in your woollen cardigan or T shirts, or knotted as in nets and laces. These are called **yarns**. If you try to untwist the yarn you will see very tiny and fine hair like structures.

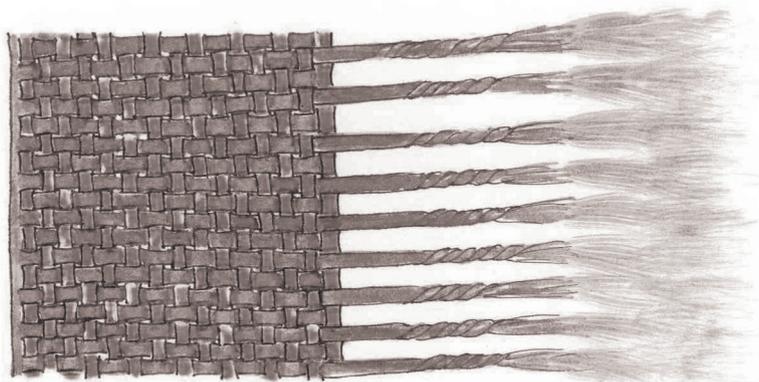


FIGURE 1: FABRIC TO FIBRE

These are called **fibres**. Thus fibres are the basic building blocks of fabrics. All these materials — **fibres, yarns** and **fabrics** are called **textile products** or simply **textiles**. After the fabric is ready it may be subjected to further processing which may improve its appearance (cleaning, whitening, colouring) or make it more lustrous or improve its touch and feel qualities or improve its service ability. This is called **finishing**. A large variety of fabrics are available in the market these days and each one behaves differently when in use. The behaviour of the fabric in use and in care and maintenance depends on various factors such as type of fibre, yarn, fabric and finishing.

### ACTIVITY 1

Collect different kinds of fabric samples from home, a tailor's shop, a cloth shop or friends. Name each fabric.

## 5.2 FIBRE PROPERTIES

The properties of fibre contribute to the properties of the final fabric. For a fibre to be really important and useful, it must be available in large quantities and be economical. The most essential property is its spinnability, i.e., a characteristic which is essential for ease of conversion into yarn and later into fabric. It is the sum together of properties such as length, strength, flexibility and surface structure of the fibre. From the point of view of consumer satisfaction, properties such as colour, luster, weight, moisture and dye absorption and elasticity are desired. Factors that affect care and maintenance of the fabric such as abrasion resistance, effect of chemicals, soaps and detergents, effect of heat, and resistance to biological organism are also important to the user.

## 5.3 CLASSIFICATION OF TEXTILE FIBRES

Textile fibres can be classified on the basis of their origin (natural or man-made or manufactured), general chemical type (cellulosic, protein or synthetic), generic types (animal hair or animal secretion) and common trade name (polyester, as terene or dacron). Further, fibres can be **staple**, i.e., short length like cotton, or **filament**, i.e., long length like silk, polyester, etc.

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### Natural Fibres

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**Natural fibres** are those which are available to us in nature. There are four types of natural fibres.

(a) *Cellulosic fibres*—

1. Seed hair-cotton, kapok
2. Bast fibres-flax(linen), hemp, jute
3. Leaf fibres-pineapple, agave(*sisal*)
4. Nut husk fibres-coir(coconut)

(b) *Protein fibres*

1. Animal hair-wool, specially hair (goat, camel), fur
2. Animal secretion-silk

(c) *Mineral fibre: Asbestos*

(d) *Natural rubber*

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### Manufactured Fibres (also called man-made fibres)

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Most of you must have seen a cotton flower with fibres sticking to the seeds, or sheep with long overgrown hair. You can also imagine how these may be used for yarn and fabric production. However, you may find it difficult to understand how the manufactured or synthetic fibres came to exist.

The first manufactured fibre-Rayon-was commercially produced in AD 1895, while most others are products of the 20th century.

The concept of creating fibres perhaps originated from human desire to produce a fibre like silk. Possibly, the thought process could have been like this: the silk worm, which basically feeds on mulberry leaves, digests them and spews a liquid through its spinnerettes (two holes), which on solidifying becomes the silk filament (cocoon). Thus if a cellulose substance is digested it should be possible to produce something like silk. Therefore for a long time the rayons were referred to as Artificial Silk or simply Art Silk.

The earliest manufactured fibres were made by modifying a non-fibrous material into a fibrous form. These were mainly from cellulosic substances

like cotton waste or wood pulp. The second group of fibres were synthesised completely from use of chemicals. Whatever may be the raw material the basic steps for converting it into a fibrous form are the same.

- The solid raw materials are converted into a liquid form of a specific viscosity. This may be due to a chemical action, dissolution, heat application or a combination action. This is called the spinning solution.
- This solution is passed through a spinnerette – a small thimble shaped nozzle with a series of very small holes, into an atmosphere which hardens it or coagulates it into fine filaments.
- As the filaments harden they are collected and stretched for further fineness and orientation or subjected to further processing like texurisation to improve its stretch and/or bulk characteristics.



FIGURE 2: SPINNERETTES

## Types of Manufactured Fibres

- (a) **Regenerated cellulosic fibres:** Rayon–cuprammonium, viscose, high-wet-modulus
- (b) **Modified cellulosic:** Acetate–secondary acetate, triacetate
- (c) **Protein fibres:** Azlon
- (d) **Non-cellulosic(synthetic) fibres**
  - (i) nylon
  - (ii) polyester – terelene, terrene
  - (iii) acrylic – Orlon, cashmilon
  - (iv) modacrylic
  - (v) spandex
  - (vi) rubber
- (e) **Mineral fibres**
  - (i) Glass – fibreglass
  - (ii) Metallic – lurex

## 5.4 YARNS

The textiles in the form of fibres cannot always be used for consumer products except in products like surgical cotton, stuffing for pillows, quilts, mattresses and cushions. To convert fibres into fabric form as we see around us, they have to be converted into a continuous strand. Although there are some fabrics like felts or non-wovens which are made directly from fibres, in most cases the fibres are processed to an intermediate stage called yarn.

**Yarn** can be defined as a continuous strand of textile fibres, filaments or material in a form suitable for knitting, weaving or otherwise intertwining to form a textile fabric.

### Yarn Processing

**Yarn processing** from natural staple fibres is called spinning, although spinning is the last stage in the processing.

Earlier young unmarried girls were commonly involved in spinning the finest yarn because of their nimble fingers. The term 'spinster' for unmarried women originated in that context.

Yarn processing, i.e., conversion of fibre into a yarn involves a number of stages.

Let us take them one by one.

- (i) **Cleaning:** Natural fibres generally contain extraneous impurities depending upon their source, like seeds or leafy matter in cotton, twigs and suint in wool. These are removed, fibres sorted out and converted into **laps** (rolled sheets of loose fibres).
- (ii) **Making into a sliver:** Laps are unrolled and subjected to straightening processes which are **carding** and **combing**. The process is similar to combing and brushing your hair. Carding disentangles the fibres and lays them straight and parallel to one another. For finer fabrics the laps are subjected to combing after carding. This process removes finer impurities and short fibres as well. The lap then passes through a funnel shaped device which helps to convert it into a sliver. **Sliver** is a rope like mass of loose fibres, 2-4 cms in diameter.
- (iii) **Attenuating, drawing out and twisting:** Now that the fibres have been converted into a continuous strand, it needs to be made to the size required. This is called **attenuation**. Several slivers are combined for uniformity. The slivers are gradually drawn out so that they become longer and finer. If a blended yarn is required (e.g., cotswol-cotton and wool) slivers from different fibres are combined at this stage. The resultant sliver is still of the same size as the original sliver.

The **sliver** after drawing is taken to the roving machine where it is further attenuated till it becomes  $\frac{1}{4} - \frac{1}{8}$  of its original diameter. It is given

a slight twist to keep the fibres together. The next stage is spinning. Here the strand is given the final shape as the yarn. It is stretched to the required fineness and the desired amount of twist given to it and wound on cones.



FIGURE 3: COTTON SPINNING

All manufactured fibres are first made as filaments. The yarn can be composed of a single filament or a multifilament yarn when a number of individual filaments are taken together and twisted as one. It is also possible to cut the filament into staple length fibres. These are then subjected to spinning process as for natural fibres and are called spun yarns. Staple length fibres are also required when a mixed fabric/blend like 'terecot' (terene and cotton) or 'terewool' (terene and wool) or 'polycot' (rayon and cotton) is required.

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### Yarn Terminology

- (a) **Yarn number:** You may have seen certain numbers 20, 30, 40, etc., on the labels of thread reels. If you observe carefully and compare the fineness of the thread you will realise that thread reel with a higher number is finer. There is a fixed relationship between the weight of the fibre and the length of yarn drawn from it. This is designated as yarn number which becomes the indication of the fineness of the yarn.
- (b) **Yarn twist:** As fibres are transformed into yarn, twist is added to hold the fibres together and is indicated as **t.p.i.** (twist per inch). Loosely twisted yarns are softer and more lustrous, whereas tightly twisted yarns may show as ridges such as in denim material of jeans.
- (c) **Yarn and thread:** Yarn and thread are basically similar. Yarn is the term usually used in the manufacturing of a fabric, whereas, thread indicates a product used to join pieces of fabrics together.

## 5.5 FABRIC PRODUCTION

There are many types of fabric available in the market. Variation in different fabrics is due to the basic fibre content (cotton, wool, e.g.) or as you have just learnt, the type of yarn. When you look at the fabrics you may be able to distinguish between different structures as well.

We will now discuss how these fabrics are produced. Most of the fabrics you see are made from yarns. However, a small group of fabrics can be made directly from fibres.

There are two main types of fabrics that are made directly from fibres—**felts** and **non-wovens** or **bonded fibre fabrics**. These fabrics are formed by laying the fibre (after carding and combing) in the form of a **matt** and then adhesion is caused between them. The matt can be made not only of required thickness but also of any shape.

As already mentioned, the majority of fabric constructions require the intermediate yarn stage. The main methods of fabric construction are **weaving** and **knitting** and to a small extent **braiding** and **knotting**.

## ACTIVITY 2

Try and note the difference between the structure of the material of your shirt or dress, pant/jeans, towel, socks, shoe laces, floor covering felts (*namdas*) and carpets.

## Weaving

Weaving is the oldest form of textile art, which was originally used for making mats and baskets. A woven fabric consists of two sets of yarns which are interlaced at right angles to each other, to form a compact construction. It is done on machines called looms. One set of yarns is fitted on the loom, which determines the length and width of the fabric to be woven. These are called **warp yarns**. The loom helps to maintain these yarns at a fixed tension and even space. The second yarn, which is the **filling yarn**, is then interlaced to form the fabric. The simplest interlacing is when the filling yarn moves over and under one warp yarn alternately in one row and reverses the process in the second row. By passing the filling yarn over and under different number of warp yarns, in a specified sequence, different designs can be created. Attachments like the dobby or jacquard to the loom can help to create figurative designs as well. These designs become clearer when different coloured yarns are used for warp and filling. Certain designs make use of an extra yarn which may run parallel to warp or filling yarns. This can be held up as loops during weaving, which may be left uncut or cut afterwards. This makes the texture like one sees in towels (uncut) or velvets and corduroy (cut).



The direction of the yarns in a woven fabric is referred to as **grain**. Warp yarns run along the length wise grain or **selvedge**. Filling yarns run along the width wise grain or **weft**. Thus the length and width in a woven fabric is called the selvedge and weft. When you buy a fabric, you see it has two cut sides and two bound sides. The bound sides are the selvedges. The fabric is strongest along the selvedge.

## Knitting

Knitting is the interlooping of atleast one set of yarns. It may be done by hand using a set of two needles for flat fabrics or a set of four needles for circular fabrics. Knitting may be done on machines. The process consists of making a series of loops along the knitting needle or machine bed. Each successive row is formed by interlooping with the first row of loops. The movement of the yarn is along the width of the material and therefore it is called **filling or weft knitting**. This method of knitting is used to produce articles which can be shaped while being constructed.

At the industrial level, the knitting machines used are like the looms for weaving. They have a set of yarns (like warp yarns) fitted on the machine. The interlooping occurs with adjacent yarns. This is known as **warp knitting**. This can produce continuous lengths of material, which unlike the weft knitted fabric can be cut and stitched.



FIGURE 4: WEFT KNITTING

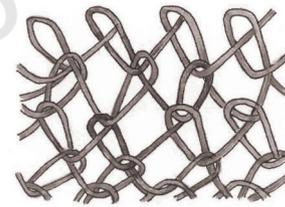


FIGURE 5 : WARP KNITTING

Knitted fabrics can be made more rapidly. Because of the system of loops they have more elasticity and thus are suitable for fitted articles like vests, underwear, socks, etc. They are porous and permit free circulation of air, are comfortable and allow freedom of movement and are therefore ideally suited for sportswear.

## Braiding

Braided fabrics have a diagonal surface effect and are made by plaiting three or more yarns that originate from a single location and lie parallel before interlacing occurs. Braids appear in items as shoelaces, ropes, insulation for wires and trimmings.

## Nets

Nets are open mesh fabrics with large geometric interstices between the yarns. These are made by inter-knotting of yarns by hands or machines.

## Laces

Lace is an openwork fabric consisting of a network of yarns formed into intricate designs. It is a product of a combination of procedures including yarn twisting, interloping and knotting.

## 5.6 TEXTILE FINISHING

If you see the fabric as it comes out from the loom you will not be able to recognise it as the material you see in the market. All of the fabrics that are available in the market have received one or more finishing treatments, and except for whites, colour has been added to them in some form or the other.

A **finish** is any treatment on the fabric which can change its appearance, its textures or its behaviour for specific use. Finishes that are considered absolutely necessary are known as 'routine'. The finishes may be durable (do not

get removed on washing or drycleaning) like dyeing, or renewable (need to be applied repeatedly as they get removed on washing) like starching or blueing. A few important finishes depending upon their functions are:

- *Change appearance* : Cleaning (scouring, bleaching), straightening and smoothening (calendering and tentering)
- *Change textures*: Starching or sizing, special calendering
- *Change behaviour* : Wash and wear, permanent press, water repellent or water proof, mothproof, flame retardant or fire proof, antishrink (sanforisation).

(a) **Finishing with colour**: Colour is often the most important factor in selection of fabric, whether it is to be used for apparel or in the house. Substances that can add colour to the fabric in a manner that it does not easily wash out are known as **dyes**. The method of dyeing depends on the chemical natures of the fibre and the dye, and the type of effect desired. Colour application can be done:

- at fibre stage – for yarns of different colours or designed felts.
- at yarn stage – for woven checks, stripes or other woven patterns.

### ACTIVITY 3

Collect five labels of fabrics. Match the information with what you have just read.

- at fabric stage – the most common method for solid colour dye, as also for designed dyeing like *batik* and tie and dye and printing.
- (b) **Printing:** It is a more advanced or specialised form of dyeing. It involves the localised application of colour which is restricted within the given limits of design. Printing uses special tools which cause the transfer of colour only to the specified areas. Thus, it allows the application of a number of different colours on the fabric. Printing can be done by hand tools like blocks, stencils or screens and at industrial level like roller printing or automatic screen printing.

## 5.7 SOME IMPORTANT FIBRES

### Cotton

Cotton is the most widely used fibre for apparel and home textiles. India is the first country where cotton was grown and used, and it continues to be one of the largest cotton growing areas. Cotton fibres are obtained from the seed pod of the cotton plant. Each seed has a large number of hair attached to it. When the seeds ripen the pod bursts open. The seeds are separated from the fibres by a process called **ginning** and sent as large bundles (bales) for spinning.

#### Properties

- Cotton is a natural cellulosic, staple fibre. It is the shortest fibre with length varying from 1 cm to 5 cms, therefore the yarn or the fabric made is dull in appearance and slightly rough to touch. It is heavier in weight than most of the other fibres.
- Cotton has good moisture absorbency and it also dries easily. Thus it is comfortable for summer use.
- It is available in fabrics of all types of weights, fineness, structures and finishes. Muslin, cambric, poplin, long cloth (*latha*), casement, denim, sheeting material and furnishing material are some of the cotton fabrics available in the market.

### Linen

Linen is a bast fibre, obtained from the stems of the flax plant. The term bast means the fleshy part inside the bark. To obtain the fibres the stems are steeped in water for a long time to rot away the soft parts, in a process called **retting**. After retting the woody parts are separated and the linen fibres are collected and sent for spinning.

#### Properties

- Linen is also a cellulosic fibre, therefore, many of its properties are similar to that of cotton.

- The fibre is longer and finer than cotton, so the yarn produced is stronger and more lustrous.
- Like cotton, linen also absorbs moisture readily and, therefore, is comfortable. However, it does not absorb dyes very readily and therefore colours produced are not so bright.

Flax plant is cultivated in very few areas worldwide. Also it requires longer processing time, therefore, linen is used less than cotton.

Jute and Hemp are also bast fibres like Linen. They are coarser fibres and do not have good flexibility, and are therefore used for making ropes, gunny bags and other such products.

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## Wool

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Wool is obtained from sheep hair. It can also be obtained from other animals like goats, rabbits and camels. These fibres are called speciality hair fibres. Different breed of sheep provide different types of hair. Some breeds are raised only for good quality of fibres they produce. Removal of hair from the animal is called shearing. It may be done once or twice a year depending on the climatic conditions. While shearing, effort is made to keep the hair in one piece which is called **fleece**. This makes the sorting of fibres easy because hair from different parts of the body vary in length and fineness. After sorting, the fibres are scoured to get rid of dirt, grease and dried perspiration. This is followed by carbonisation which removes entangled vegetable matter like leaves and twigs. Thereafter, the fibres are sent for spinning.

### Properties

- Wool is a natural protein fibre. The fibres vary in length from 4 cms to 40 cms and may be coarse or fine depending on the breed of the sheep and the part of the animal body. It is characterised by a natural crimp or a built-in waviness responsible for elasticity and elongation properties.
- Compared to other fibres wool has low strength but has good resilience, and elastic recovery.
- Wool has surface scales which are water repellent in nature. However, it can absorb large amount of water but does not feel wet on the surface. This ability is responsible for its comfort in humid and cold atmospheres.

Wool is also used as blends with cotton, rayon and polyester, which improves its care and maintenance properties.

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## Silk

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Silk is a natural filament fibre produced by the secretion of silk worms. If silk is produced in controlled conditions (cultivated or mulberry silk), it is smooth, and longer fibres are produced which results in a smoother, finer and lustrous fabric. If silk is produced in wild or natural conditions, the resulting silk is coarser, stronger and short in length, which results in a thicker, coarser but stronger fabric (e.g., tussar silk). For production of good quality silk, silk worm cultivation is carefully controlled. It is called **sericulture**. Being a filament fibre silk does not require the spinning process but has to be reeled carefully from the cocoon. The yarns are made by twisting a number of filaments together. If the filaments break or when the insects break the cocoon, the broken filaments are processed through spinning like cotton, and this is called spun silk.

It is believed that silk was discovered accidentally when the cocoon of an insect fell in the cup of tea of a Chinese princess. She took it out and discovered that she could pull out a long continuous filament from the cocoon. The Chinese kept the art of producing silk a secret for over 2000 years—until about 500 A.D.

### Properties

- Silk is a natural protein fibre and the natural colour of silk is off white to cream. Wild silk is brownish in colour. Silk filaments are very long, fine, smooth and have a relatively high lustre or sheen. It contains a natural gum which gives silk a crisp texture.
- Silk is one of the stronger fibres used in making fabrics. It has good elastic recovery and moderate elongation.

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## Rayon

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This is a manufactured cellulosic fibre. Cellulosic because it is made from wood pulp and manufactured because this wood pulp is treated with chemicals and regenerated into fibres.

### Properties

- As rayon is a manufactured fibre the size and shape can be controlled. It has uniform diameter and is clear and lustrous.
- Rayon being a cellulosic fibre has most properties like cotton. But it has a lower strength and durability.

The main advantage of rayon and manufactured cellulosic fibres is that they can be reprocessed out of waste material and have an appearance like silk.

## Nylon

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Nylon was the first true synthetic fibre (totally manufactured from chemicals) to be manufactured. It was first introduced as bristles for tooth brushes. In 1940, the first fabrics from Nylon were socks and stockings which were very successful. Thereafter, it was used for all kinds of fabrics. It also provided the impetus for other synthetic fibres which followed.

### Properties

- Nylon filaments are usually smooth and shiny, with uniform diameter.
  - Nylon has very good strength and abrasion resistance. Its resistance to abrasion makes it appropriate to be used in brushes, carpets, etc.
  - Nylon is a highly elastic fibre. Very fine and transparent fibres are used for 'one-size' garments like stockings.
  - Nylon is a popular fabric used in apparel, socks, undergarments, swimsuits, gloves, nets, sarees, etc. It is a leading fibre in the manufacture of hosiery and lingerie. For outerwear it may be blended with other fibres.
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## Polyester

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Polyester is another manufactured synthetic fibre. It is also referred to as Terylene or Terene.

### Properties

- Polyester fibre has uniform diameter, smooth surface and rod like appearance. It can be made in any strength, length and diameter as per the requirements of the end use. The fibre is partially transparent and lustrous.
  - The moisture regain of polyester is very low, i.e., it does not absorb water easily. Thus, it is not very comfortable to wear in hot dry summer months.
  - The most advantageous property of polyester is its wrinkle resistance. It is one of the most commonly used fibre for blending with rayon, cotton and wool and, to some extent, spun silk.
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## Acrylic

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This is another synthetic fibre. It resembles wool so much that even an expert may not be able to find the difference between the two. It is commonly called as Cashmilon. It is cheaper than wool.

### Properties

Like all manufactured fibres the length, diameter and fineness of the fibre are controlled by the manufacturer. The fibre can be made in varied degrees of crimp and luster.

- Acrylic is not very strong and its strength is similar to cotton. The fibres have high elongation with good elastic recovery.

Acrylic is used as a substitute for wool and is used in children's wear, apparels, blankets and knitted goods.

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### Elastomeric fibres

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Apart from the fibres mentioned so far, there are a few less known ones. These are elastic, rubbers like substances and can be produced in various forms. In its natural form they include rubber and the synthetic equivalent is spandex or Lycra. These are usually used as blends with any of the above fibres with low elasticity.

Having studied about fabrics in this chapter, you will be introduced to the world of apparel, i.e., clothes, made from fabrics later under the section 'Childhood'.

Knowing about fabrics is important for the adolescent as it would enable one to make wise selection of clothes – an interest that is commonly shared by all adolescents. Apart from clothes, another interest that binds adolescents from different contexts is media and communication. Let us learn more about these two interrelated aspects in the next chapter on Media and Communication Technology.

### Key Terms

Fabrics, Yarns, Fibres, Textiles, Textile finishing, Weaving, Knitting, Cotton, Linen, Wool, Silk, Rayon, Nylon, Polyester, Acrylic.

### ■ REVIEW QUESTIONS

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1. Name five articles of everyday use that are made from different types of fabrics.
2. How are textile fibres classified? Briefly discuss their characteristics.
3. What is a yarn? Explain different methods of yarn processing?
4. List the processes in fabric production.
5. Mention any three properties of each of the following fibres.
  - Cotton
  - Linen
  - Wool
  - Silk
  - Rayon
  - Nylon
  - Acrylic

## ■ PRACTICAL 5

### Fabrics Around Us

**Theme** Fabrics around us

**Task**

1. Make a record of fabrics and apparels used in a day
2. Analyse the suitability of the fabrics to the product

**Conduct of the practical:** Identify a particular day and note the fabrics and apparel that you use and experience throughout the day. You can use the following table for recording in various categories – (for self and ‘in surroundings’ like the examples given in the table).

E.g.

Time of day	Use	Product	Fabric
6:00 am	Self	Towel	Cotton
6:00 am	Surrounding	Pillow cover	Cotton

Form groups of 4-5 students and pool your observations; and also discuss the fabrics used for apparel worn by them in school and at home.

## ■ PRACTICAL 6

### Fabrics Around Us

**Theme** Thermal property and inflammability of fabrics

**Task** Burning test on various fabrics and analysis of its type

**Purpose of the Activity:** Inflammability of fabrics will help to test the behaviour of fabrics in flame and while approaching flame. This will help consumer in taking special care when in use. This is also a way of identifying fibre content of fabrics which are in five composition.

Heat affects different fibres in different ways. Some fibres scorch and flame, others melt and/or flame or shrink. Some fibres are self extinguishing, others are completely non-combustible.

Burning Characteristics of Fibres					
Fibre	Approaching flame	In flame	Removed from flame	Odour	Ash or residue
Cotton and Linen	Does not shrink, catches fire	Burns quickly	Continues burning, has an afterglow	Burning paper	Light, soft ash, retains shape

Wool and silk	Curls away from flame	Burns slowly	Self extinguishing	Burning hair	Brittle, curled, small amount, crushable ash
Rayon	Does not shrink, catches fire	Burns quickly	Continues to burn rapidly	Burning paper	Light, fluffy residue, very small amount
Nylon	Shrinks	Melts, catches fire	Continues melting	Acrid	Hard, tan coloured bead
Polyster	Shrinks	Melts, catches fire	Continues melting	Plastic burning	Hard, black coloured bead
Acrylic	Does not shrink, catches fire	Burns rapidly with melting	Continues burning	Acrid	Hard, black coloured, crinkly bead

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**Conduct of the practical**

1. Take a narrow strip of the fabric (  $\frac{1}{2}$  cm X 5 cm)
2. Hold the strip with a forceps or tongs and do the burning test by bringing it near a burning candle, or low flame of spirit lamp.

**Precaution**

Perform this experiment on a very low flame of a candle or spirit lamp under the supervision of a teacher.

3. Repeat the process by taking 4-5 samples of different fabrics and record the observations.

	Approaching flame	In flame	Removed from flame	Odour	Residue (colour and texture)	Conclusion



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# MEDIA AND COMMUNICATION TECHNOLOGY

## 6

### LEARNING OBJECTIVES

After completing this chapter the learner is able to —

- define the concept of communication.
- discuss the significance of communication in everyday life.
- enlist the different types of communication.
- describe the process of communication.
- explain the classification and functions of media.
- analyse the various communication technologies.

An important field of study that has an impact on adolescents is that of media and communication. In this chapter we will discuss how these two aspects of our everyday ecology have become an integral part of our lives, usually adding to the quality of our lives. We will begin with the concept of communication first.

## 6.1 COMMUNICATION AND COMMUNICATION TECHNOLOGY

Communication is very basic and vital for human survival and has existed since the inception of life on earth. In modern times, with fast developing technologies, new communication methods and gadgets are introduced in the market almost every week. Some of these have become more popular due to their cost effectiveness and utility, and have sustained over time.

Observe the following pictures and interpret the situation, feelings and thoughts of the different persons.



## What is communication?

Communication is the process of thinking, observing, understanding, analysing, sharing, and transmitting or transferring feelings to others through a variety of mediums in diverse settings. It also refers to seeing or watching, listening or hearing, and exchanging ideas, thoughts, experiences, facts, knowledge, impressions, moments, emotions, and the like with self or with others.

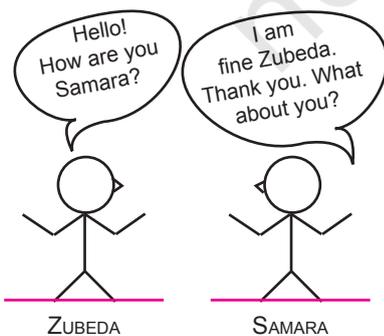
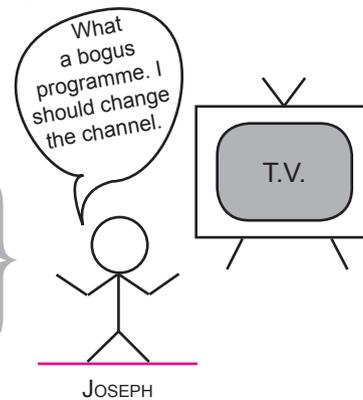
As the name suggests, the word **communication** stems from the Latin word **communis** meaning **common**. It is therefore, not only sharing of ideas, thoughts or imparting knowledge and information, but it also involves understanding the exact meaning of the content in a way that is common to both, the communicator and the receiver. Thus, effective communication is a conscious effort in creating a shared understanding about the intended meaning of the message among people involved in the communication. The process of communication is continuous and permeates all areas of social life, including home, school, community and beyond.

## Classification of Communication

Communication can be classified on the basis of the following depending on the levels, types, forms and modes.

### A. Classification based on the type of interaction

(i) *One-way communication*: In such situations the receiver receives information but is either never able to reciprocate to the sender or cannot respond immediately. Therefore, communication remains one-way. Speeches, lectures, sermons, listening to music on the radio or a music system, watching any entertainment programmes on television, using internet to search information on a website, etc., are examples of one-way communication.



(ii) *Two-way communication*: This is communication that takes place between two or more persons where all the parties communicating with each other share or exchange ideas, thoughts, information, etc., either silently or verbally. Some of the examples could be talking on mobile phone, discussing about future plans with one's mother, using internet for chatting, etc.

When a baby cries to communicate her/his hunger, she/he is fed by the mother in response. The cry of the baby is the message that communicates the hunger of the child and is vital for the survival of the baby. Thus, in this case the communication is two-way.

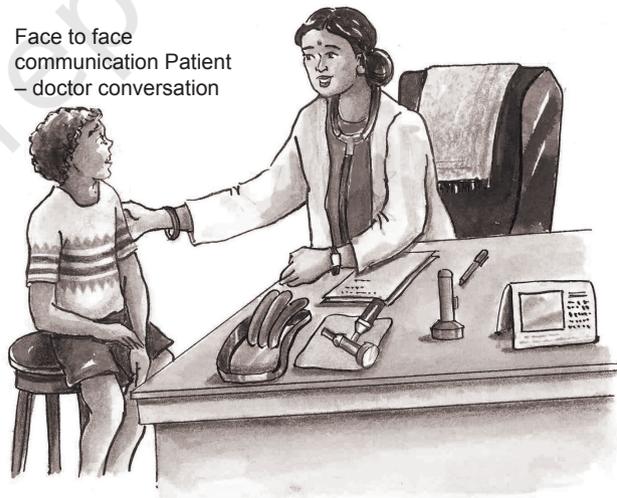
**B. Classification based on the levels of communication**

How can Polio drops be good for the health of my child?



(i) *Intra-personal communication:* This refers to communicating with oneself. This is a form of mental process involving observing, analysing, and drawing conclusions meaningful to the individual's present, past and future behaviour and life. It is an on-going process that transpires inside an individual. For instance, mental rehearsal before appearing in an interview or oral exam.

(ii) *Inter-personal communication:* It refers to sharing of thoughts and ideas with one or more people in a face-to-face situation. It can take place in a formal or an informal situation. Varied means of communication like body movements, facial expressions, gestures, postures, written text and verbal modes such as words and sounds can be used for this type of communication. Examples are talking to your friend about difficulties faced while studying or conducting an experiment or participating in a panel discussion followed by question-answer session.



Inter-personal communication is the most effective and ideal type of communication for two reasons. First, there is always proximity and direct contact between the communicatee and the communicator, and therefore it is easy to persuade, motivate and convince the communicatee for acceptance of the introduced idea or thought. Second, instantaneous and strong feedback with direct response of communicatee on the introduced idea is possible.

- (iii) *Group Communication:* This form of communication is direct and personal, such as inter-personal communication, but with the involvement of more than two persons in the communication process. Group communication helps to facilitate a participatory approach and collective decision-making, gives an opportunity for self-expression, and increases the individual's impact in a gathering, thereby augmenting one's status in the group. It also helps in recreation and relaxation, socialising and motivating. A range of audio-visual aids may be used to enhance group communication.
- (iv) *Mass Communication:* As a result of considerable advancement in technology, making thoughts, ideas and innovations reach the larger section of society has become possible. Mass communication can be defined as the process of multiplying messages with the help of any mechanical device and disseminating the same to the masses. The means and media of mass communication are radio, TV, satellite communication, newspapers, and magazines. The audiences of mass communication are very large in size, heterogeneous and anonymous, spread over a large area and separated from the communicator in terms of time and space. For these reasons it is not possible to take a correct, complete, direct and immediate feedback; rather there is slow, cumulative, expensive, and delayed feedback.
- (v) *Intra-organisational Communication:* Organisational communication takes place in highly structured settings. Just like human beings, when people work together in an organisation, organisations also establish and maintain relationships. They use various levels of communication within their environment and amongst their departments or sections. Every organisation has different levels or hierarchy of ranks working together for achieving common goals. The information flow in such organisations is expected to be two-way at the same level and one-way across levels.
- (vi) *Inter-organisational Communication:* This refers to the communication system developed by one organisation to communicate with other organisations with the aim of working in cooperation and coordination with each other. For example, for assistance in developmental activities of the country, both technical and financial support is provided by international agencies, whereas, administrative support is given by the Central government and State governments.

It is important to note that in both inter-organisational and inter-organisational set-ups, communication does not take place among the departments or organisations; rather it is always human beings working in these organisations who communicate with each other. Therefore, understanding of the human factor is very important.

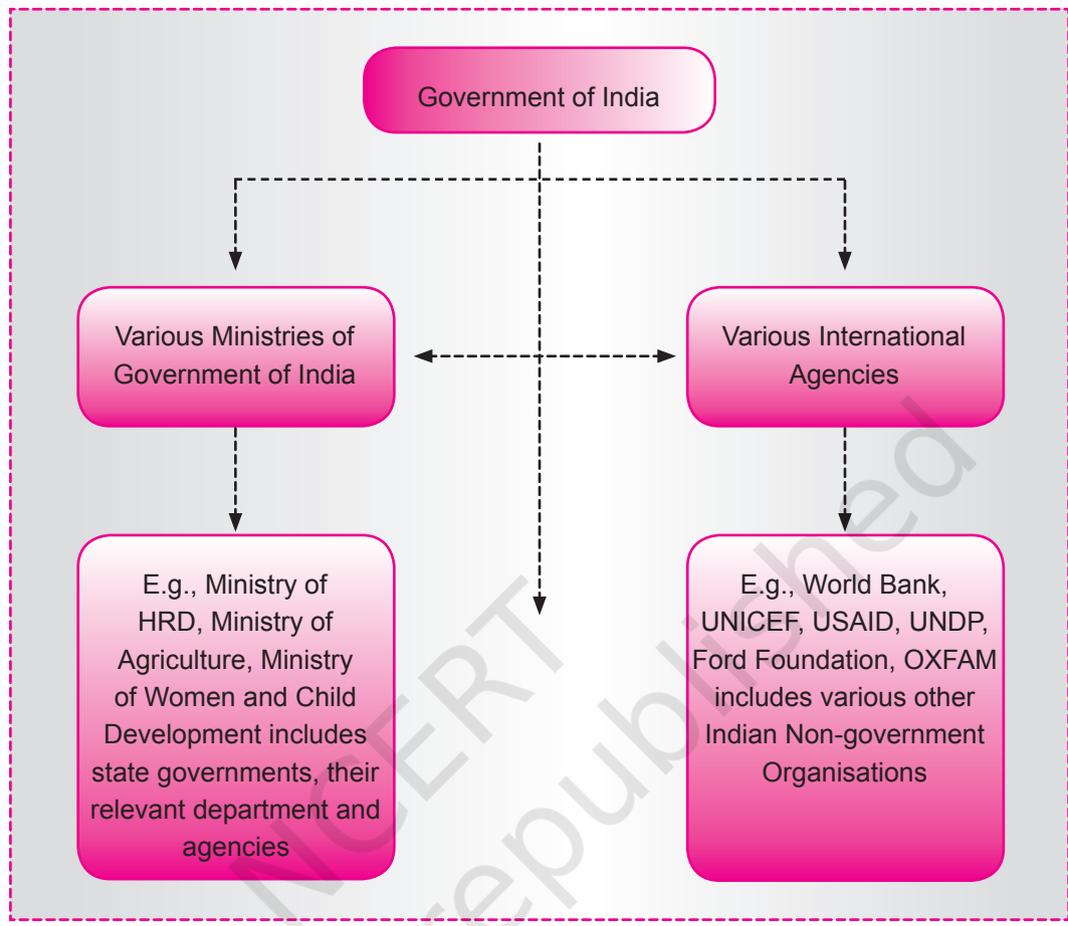


FIGURE 1: COMMUNICATION SYSTEM AMONG VARIOUS ORGANISATIONS

### C. Classification based on the means or modes of communication

- (i) *Verbal communication*: Auditory means or verbal modes like speaking, singing and sometimes even the tone of voice, etc., are of significance in verbal communication.

**Research shows that on an average, an individual spends about 70 per cent of her/his active time in communicating verbally, i.e., listening, speaking and reading aloud.**

- (ii) *Non-Verbal Communication*: Non-verbal means of communication are gestures, facial expressions, disposition, posture, eye contact, touch, para-language, writing, clothing, hair styles, and even architecture, symbols and sign language such as smoke signals used by some tribal people.

### D. Classification based on the involvement of number of human senses

Have you ever tried to know why learning about our rich traditional heritage by simply watching folk or classical dance performance live or on

television makes it easy to understand and more interesting than reading about them in a book?

Our senses and Communication			
• People retain 10% of what they	Read	visual	
• People remember about 20 – 25% of what they	Hear	audio	
• People keep in mind about 30 – 35% of what they	See	visual	
• People remember 50% and more of what they have	Seen, Heard	audio-visual	
• People remember 90% and more of what they have	Seen and Heard and Done	audio-visual	
<i>Involvement of more number of senses makes the learning more clearly understandable and permanent</i>			

Table 1: Classification of communication based on number of senses involved	
Type of communication	Examples
Audio	Radio, audio recordings, CD players, lectures, landline or mobile phones
Visual	Symbols, printed materials, charts, posters
Audio-Visual	Television, video films, multi-media, internet

**ACTIVITY 1**

List the various means or modes, types and levels of communication involved in the following experience. Pen down your observations—Did you have the opportunity to live or visit a rural area or a village or a small town in the country? What was your experience? Did you observe symbols of advanced technology and communication like mobile phones, fax machines and other equipments, electricity poles and other similar things? How was the experience of meeting and interacting with people—young, women and older persons? Discuss this in your class.

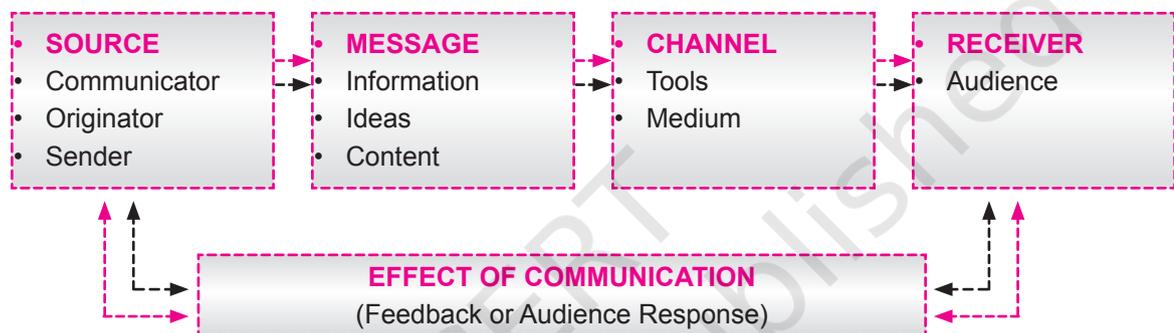
## How does communication take place?

### The process of communication

Communication is the process of transferring **information or content** from a **sender** to a **receiver** with the use of a **medium**. It involves flexibility to exchange information using several methods in which the information is correctly, clearly and completely understood by both sender and receiver.

It also takes the **feedback** of the audience on the message sent for further planning in the same way as carrying out market surveys before launching a product in the market.

Let us see the sequence in which the communication events occur. One way to describe it is as follows: **Who says, what, to whom, when, in what manner, under what circumstances and with what effect.** The basic elements of any communication process in general are arranged in a definite order to complete the cycle. Six elements have to be handled skillfully for effective and successful communication and can be easily understood by “**The SMCRE Model**” of communication.



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FIGURE 2: THE SMCRE MODEL OF COMMUNICATION

The SMCRE model (Figure 2) shows the complete process of communication and the elements involved in it.

1. **Source:** It is the person who initiates the process of communication. She/he is the key factor responsible for the effectiveness of the whole communication process. She/he gives the message to a specific group of audience in such a manner that it not only results in correct interpretation of the message but also yields the desired response.

## ACTIVITY 2

Identify the possible sources of information in villages/rural areas.

She/he could be your teacher, parents, friend or classmate, extension worker, leader, administrator, writer, a farmer or a tribal person from a remote area of the country possessing indigenous knowledge.

2. **Message:** It is the content or information a communicator wishes to receive, accept or act upon. It could be any technical, scientific or simply generalised information or ideas, specific or general to any field of knowledge or day-to-day life of an individual, group or even a larger section. A good message should be simple yet appealing and clear.

It should also be very specific, authentic, timely, appropriate and applicable for the channels selected and the nature and type of the receiver group.

### ACTIVITY 3

Collect one news story or a campaign or a social message from any two media such as radio, print or TV.

3. **Channel:** The medium of communication through which the information flows from a sender to one or two receivers is a channel. Face-to-face, word-of-mouth is the simplest and one of the most effective means of communication. It is perhaps the most widely used medium of communication in a majority of developing and less-developed countries of the world. But with the passage of time and social change in society the emphasis has shifted to advanced mass media and multi media technologies.

There can be two types of channels:

- (i) Inter-personal communication channels such as individuals and groups.
- (ii) Mass media communication channels, e.g., satellite, wireless and sound waves.

### ACTIVITY 4

Find out any one traditional method which tribal and/or rural people in the country use to make important announcements in their areas.

4. **Receiver:** It is the intended audience of the message or the target of the communication function. It could be an individual or group, men or women, rural or urban, old or young. The more homogeneous the receiver group, the greater are the chances of successful communication.

### ACTIVITY 5

As a receiver of information write down the type and quality of information you tend to get from your school.

5. **Effect of communication (feedback):** A communication process is incomplete unless the response to the message is received. It is the initiating step as well as the terminating element in any communication process. Termination occurs when the response to the message is the same as expected. In such a situation, since the objective is achieved, the cycle is complete. However, if the response of the intended audience does not yield the desired results, rethinking and recasting of message occurs and the entire communication process is repeated. Here are a few examples: (a) When a teacher has taught a lesson, at the end she/he asks the students questions to find out if the lesson has been understood. The activity of asking questions and finding out what themes and parts were understood and which topics need to be explained again is a feedback. (b) Letters from readers in newspapers and magazines are a form of feedback to the editor and writers. (c) The

ratings Television Rating Points (TRPs) of a television programme are another form of feedback from viewers.

## 6.2 WHAT IS MEDIA?

If you listen to the radio or watch television, perhaps you are aware that what you hear or see influences you in one way or the other. That is media influence. Let us see how the media influences us.

Identify the most common element in the following: Advertisements and programmes we see on television, films on TV or theatre, the news we read in the newspapers, the speech of a politician, instructions imparted by the teacher in the classroom, or a complaint that is registered when an appliance is not functioning well, or shopping through internet sitting at home.

You will find that the common element in all these is that some or the other **medium** has been used to pass on or share varied messages or information across diverse fields. For instance, when we talk to someone or hear someone talking, it is the air that acts as a medium through which the sound waves travel since no sound can be transmitted in a vacuum.

Therefore, if communication is a process, **media is the means that uses various methods of communication for disseminating and sharing, ideas, thoughts, feelings, innovations experiences, etc.** Mass media essentially uses modern technology for communication but the presence of technology does not always denote that mass communication is taking place. Mass media is always meant for heterogeneous, anonymous and large audience groups.

Does media mean only radio, and TV? No, all types of satellite transmission, computer and wireless technology are also included in it. Media has gone through a lot of change and development. Now numerous modern technologies are available as media for communication purpose.

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### Media classification and functions

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Media can be classified into two broad categories, traditional and modern media.

**Traditional media:** Till very recently most rural extension work was completely dependent on traditional media such as fairs and radio. The situation is no different even today. Inter-personal communication media largely remains the most used and effective medium of communication in rural and remote areas. Examples of other traditional folk media are puppetry, folk dances, folk theatre, oral literature, fairs and festivals, rituals and symbols, print media

such as charts, posters, newspapers, magazines, and other local publications from ancient times. Various traditional folk media are being used as indigenous channels of communication. Some very popular examples are – traditional folk theatre or drama like *Jatra* (Bengal), *Ramleela* and *Nautanki* (Uttar Pradesh), *Bidesia* (Bihar), *Tamasha* (Maharashtra), *Yakshagana*, *Dashavatar* (Karnataka) or *Bhavai* (Gujarat). Likewise various oral literature-cum-musical forms basically include folk or tribal songs and dances such as *Baul* and *Bhatioli* (Bengal), *Sna* and *Dadaria* (Madhya Pradesh), *Duha* and *Garba* (Gujarat), *Chakri* (Kashmir), *Bhangra* and *Gidda* (Punjab), *Kajri*, *Chaiti* (U.P.) and *Allha* (U.P. and Bihar), *Powda* and *Lavni* (Maharashtra), *Bihu* (Assam) and *Mand*, *Panihari*, and songs sung by *Charans* and *Bhaatt* (Rajasthan). There are various drum festivals with very rhythmic drum beats followed by dance and songs of the North-eastern and other tribal communities of the country. Different types of puppetry forms have also been common media for communicating messages along with providing entertainment. Among the most common are the string puppets or ‘*Sutradharika*’ mainly used in Rajasthan and Gujarat, and *Chhaya Putli* (shadow puppets) which are more common in the southern parts of the country. Besides, there are numerous festivals, fairs, social rituals and ceremonies, *yatras*, etc., for conveying messages, expressions, feelings and traditions of the diverse communities across the country.

With changing times it became apparent that traditional communication media were neither sufficient nor well-equipped to meet the diverse information needs of the modern audiences. Hence, new media technologies have been popularised.

**Modern media:** With the advent of modern technology the range of communication media has expanded tremendously. New communication technologies, such as the mobile phone, are emerging with exciting features that have improved the quality and capacity of broadcast. The handy size of equipments has made them convenient for use in rural as well as remote areas. It has also increased the reach of modern communication technology. The availability of and access to computers, particularly the internet facility, has ushered a completely new era of communication media. Radio, satellite television, modern print media, films projected through various type of projectors, audio cassette and compact disk technology, cable and wireless technology, mobile phone, video film and video conferencing are some examples of modern media.

#### ACTIVITY 6

Collect information on different folk media used in your state in both urban and rural areas. If there are tribal areas in your state, collect the folk media relevant there.

**Functions of media:** The previous chapters have made you aware that as an adolescent you are likely to be influenced by media. It has the following functions.

1. *Information:* It includes both, providing information and information exchange. These days information is power. Communication is facilitated through various media such as radio, television, magazines, newspapers.
2. *Persuasion/Motivation:* We are not always convinced about whatever idea or thought we come across. Suitable communication media can be used to persuade an audience to accept an idea. This needs a deeper understanding of audience psychology and their socio-cultural background.
3. *Entertainment:* Both, traditional and modern communication media provide a wide variety of entertainment options starting from folk media and oral tradition to Direct to Home (DTH) telecast. Even for educational purposes media is used in an entertaining form to make learning easy and interesting.
4. *Interpretation:* Use of communication media, particularly pictographic presentations, and facts and figures make many difficult and complicated concepts easy to understand. For example, it is easy to locate and understand a geographical area with the help of a cartographic map or model of a globe than merely reading about it in a textbook.
5. *Transmission of values:* Media is expected to foster development of a healthy society by the transmission of wholesome values. For example, use of puppetry and cartoon films for teaching values through the story format that are attractive options.
6. *Education or training:* New learning experiences with the help of appropriate communication media in local language, and focussing on local problems always enrich the teaching-learning experience. These include interactive instruction video and audio cassettes, and discs of basic printed teaching-learning material on various concepts.
7. *Coordination:* Due to the introduction of modern interactive communication technologies, distance and physical proximity has become less important. Pace, scope and accuracy of communication has expanded to such an extent that it has now become very easy to sit in one place and coordinate large projects spread over a vast geographical area.
8. *Behavioural change:* All extension education activities related to varied fields, be it health, literacy, environmental issues, empowerment programmes and adoption of innovations depend largely on the art and technique of effective communication. Media remains the main vehicle for the transmission of useful messages, acceptance of which leads to direct and indirect behavioural change in the target people.

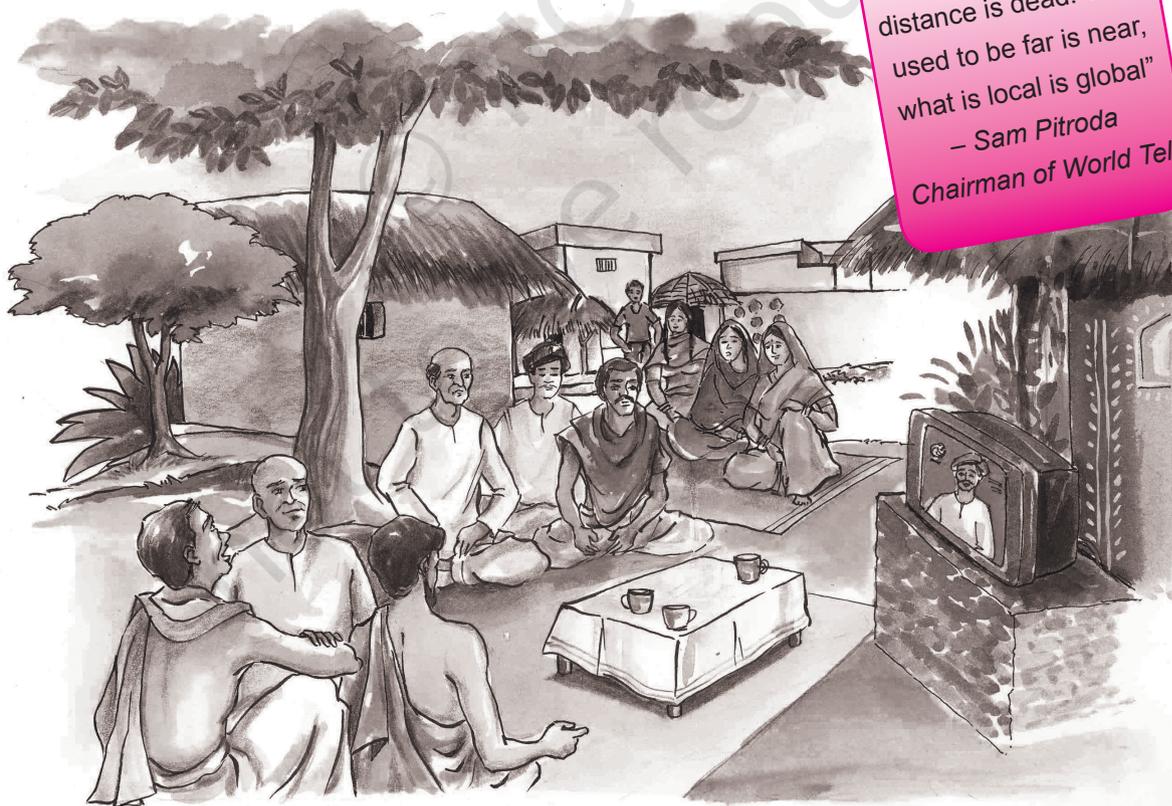
9. *Development:* Media is a catalyst (medium) in national development. Communication mediates between specialists and lay persons. Thus, communication occupies a pivotal position in the process of development. Media has accelerated the pace of development and made the world smaller by bringing people closer through communication.

Both communication and media employ modern technology for reaching out to people. We will read about this in the next section.

### 6.3 WHAT IS COMMUNICATION TECHNOLOGY?

The global scenario is passing through a communication revolution and communication technologies are changing very fast. What is new today may be obsolete tomorrow. People want to know everything in a very short span of time. There is information overflow and it is easily available and accessible to all through a wide variety of traditional and modern mediums. It is here that communication technology is playing a key role.

We have been using different mediums and communication technologies for communicating in different times (in the past and at present), in different settings, for example rural/urban/tribal.



“We all know that distance is dead. What used to be far is near, what is local is global”  
– Sam Pitroda  
Chairman of World Tel

Let us have a look around us. You may have observed that many new technologies related to electronic media have revolutionised communication media?

Do you know that Pij village in Gujarat acquired the first TV transmitter in India, which provided programmes in local language along with common programmes from Delhi via satellite.

**Communication technology** refers to **various technologies developed and used to handle information and aid communication**. This includes modern technologies that are used to transmit data, which could either be analogue (electronic signals) or digital. There are hardware, organisational structures, as well as social values which individuals access to collect, process, and exchange information.

### Classification of communication technologies

A wide range of communication technologies are available. These fall into two broad groups.

- (i) **Cable (land) based technologies:** These are comparatively cheap and less complicated. Landline telephone or a personal computer without internet are examples of such technology.
- (ii) **Wireless technologies:** These generally require less infrastructure, but can be more expensive to use than cable-based technologies. Some examples are radio, microwave and satellite wireless telephony, or use of 'bluetooth' technology in mobile phones and computers.

Two significant communication technologies that acted as media and changed the whole communication scenario are the radio and the television.

**Radio:** Radio commands a universal audience by geographical spread, income, education, age, sex and religion. Through on-the-spot broadcast or simulated broadcast it can overcome the barriers of time and space. With the use of small size transistors it was made possible to receive communication in the remotest parts of the country.

**Television:** TV was introduced in India in 1959 primarily to impact education and promote rural development. TV programmes are planned and produced using various techniques of visual magnification, sound amplification, super-imposition, split screen processes, fading, zooming,

#### ACTIVITY 7

Participate in a group discussion in your class on "Communication Technology – a curse or a boon?"

etc. These techniques make it more effective and strengthen the impact on the viewer.

## Modern Communication Technologies

The list of modern communication technologies is long and every other day we hear of innovation in the existing technology. Following are some of the major types of modern communication technologies used primarily for extension purposes.

1. **Micro Computers:** Computers are classified as mainframes (large and costly), mini computers (less powerful) and micro-computers (based on microchip technology). This classification is based on their power, speed of executing a set of instructions and the amount of memory available to store data as well as degree of inter connectivity that the computer offers.

The functions of micro-computer, particularly for extension work, include processing, keeping record of all kinds of information, performing accounting function, acting as repository of various cases, experiences to be used for research and field purpose in a very small space and publishing information material at reasonable cost. Computers can also communicate with each other if linked together and provide sourcing of information from across the globe.

2. **Video text:** Video text or view-data is an electronic text service transmitted from central computer to home TV-set via telephone network or cable system. It is interactive in the sense that the viewer has the option to access the desired data.
3. **Electronic mail (E-mail):** It is the system which passes information electronically from sender to receiver. E-mail system is like surface mail in which a message is typed on the computer and sent to another

### What is Bluetooth Technology?

Bluetooth Technology is a low-cost, short-range radio frequency (RF) link between mobile PCs, mobile phones and other portable devices capable of transmitting voice and data at the rate of 1 Mbps, which is from three to eight times the average speed of parallel and serial ports, respectively. It can transmit through solid, non-metal objects.

It allows wireless control of and communication between a cell phone and a hands free head set or a car kit.



computer via the mobile phone. It is a simple way of communicating between two or more persons through the provision of a mail box. The message is stored in the computer which acts as a post office, unless the receiver asks for it. The mail can be viewed using a modem connected to the telephone.

### Satellite Communication

In the last 30 years satellite communication has reached almost all the countries across the world and has brought about revolution not only in the field of communication but in multifarious aspects of human life.

#### What is it?

Satellite communication is a method of communication carried out with the help of satellite technology for various purposes. The satellite is placed in space and information is obtained or transmitted across the globe with the help of optical sensors mounted on an air-borne and space-born platforms.

#### Unique feature of Satellite Technology

- It has the ability to establish quick and reliable communication between any two points.
- It enables transmission of information from one location to many points over a vast coverage area simultaneously.
- It gathers information from many locations in a central place.

#### Advantages and applications of Satellite Technology

- Remote sensing, i.e., serving an object from a distance. Data is collected rapidly and repeatedly. The sensor data produces imageries which are further used in wide range of applications. For instance, images helps in getting the right status about the availability of natural resources thereby helps in using natural resources efficiently or the climate forecaste is helpful in agriculture and agro-based industries.
- Advancement in the application of space technology and Indian space development programme.
- High quality telecommunication system available all over the world and improved global competitiveness.
- Development benefits made available even in remote, isolated areas.
- Availability of quality and speedy communication has discouraged travelling and facilitated speedy decision-making thereby enhanced conservation of energy and other resources.

**SITE: A REVOLUTIONARY SOCIO-TECHNOLOGICAL EXPERIMENT**

- Satellite Instructional Television Experiment (SITE) was conducted in 1976 using USA's Application Technology Satellite (ATS 6) and was one of the world's largest experiments of its kind.
- SITE provided valuable experience in the field of development, testing and management of a satellite-based instructional television system, particularly in rural areas.
- SITE demonstrated the potential of satellite technology in the rapid development of effective mass communications in developing countries like India.

Overall SITE proved that the dissemination of communication infrastructure in remote areas is not only feasible, but it can concretely contribute to the promotion of national development. In all terms SITE was a very successful experiment in achieving both social and technical objectives. It paved the way for further applications of satellite technology particularly for the use of television for communication in India with rural orientation.

4. **Interactive video:** Interactive video refers to a video system which is a combination of computer and video. It uses multi-media approach, i.e., text, still photographs, video, audio, slides, overheads, etc. The messages stored in different forms are received by the users as per their choice. The users' response to the system determines the path to be followed.
5. **Teleconferencing:** Teleconferencing is interactive group communication. It refers to a system meant for creating dialogue between geographically dispersed participants and physically distant people. Advances in telecommunication have made it possible to hold meetings without travelling to long distances.

**ACTIVITY 8**

Write any two messages that you remember from the hoardings displayed on road sides. Also write your interpretation of the messages:

- Message: \_\_\_\_\_  
Interpretation: \_\_\_\_\_
- Message: \_\_\_\_\_  
Interpretation: \_\_\_\_\_

Communication Technology thus greatly facilitates communication; more and more people across the world are using these technologies. Yet the human touch cannot be ignored. In our everyday lives we need to engage in face-to-face communication with different people. Every individual hence, needs to develop certain basic skills for effective communication. The next chapter on Effective Communication Skills, will help us understand this.

### Key Terms

Communication, Group communication, Mass communication, Verbal and non-verbal communication, Media, Communication technology, Bluetooth technology, Satellite communication.

### ■ REVIEW QUESTIONS

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1. What do you understand by the term communication? What are the various modes of verbal and non-verbal communication?
2. Explain the process of communication with the help of an example.
3. “The more the number of senses involved in the communication process, the more effective and sustainable is the communication”. Write your comments with justification.
4. How does media affect our day-to-day life? Enumerate the different types of media.
5. How is the term communication technologies defined? Discuss two important communication technologies that have brought a revolution in the communication arena, giving justification for your answer.



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# EFFECTIVE COMMUNICATION SKILLS

7

## LEARNING OBJECTIVES

After completing this chapter the learner is able to —

- explain the meaning of communication skills.
- discuss the importance of communication.
- describe various communication skills.
- develop one's own communication skills further.

Every individual needs to be well equipped with the tools to communicate effectively, whether it is on the personal front or at work. According to experts, being a good communicator is half the battle won towards a successful personal and professional life. After all, if one speaks and listens well, then there is little or no scope for misunderstanding. Thus, the primary reasons for misunderstanding are the inability to express well, or listen effectively.

In the communication process we receive or send information using various skills, and effectiveness of the communication process depends on use of appropriate communication skills. Initiation of the communication process does not ensure that the intended receiver has received the message with common mutual understanding of the content as delivered by the sender. This is because distortions might occur at different sequential steps of the communication process. To minimise gaps in communication, one's communication skills need to be sharpened so that the communication process is more effective.

## 7.1 MEANING OF COMMUNICATION SKILLS

- Communication skills are the abilities to use language (receptive) and express (expressive) information. Thus, communication skills are the abilities that help us send and receive information effectively. These can be natural or acquired.
- Communication skills refer to the range of behaviours that serve to convey information to another individual. This process requires one or more of the skills of thinking, speaking, listening, reading, writing, visualising and body language. This set of skills enables us to express and receive information under different situations in different ways.
- Psychologically speaking, the set of behaviours that serve to transmit and share common information to create a mutual understanding of the content being shared are termed as communication skills.

Communication skills are thus the ability that enables a person to share information consistently and effectively with a variety of audiences to create mutual understanding of the content being shared. These include the art or technique of persuasion through the use of spoken and written words, code and content sequence, treatment to content and body language used, visualisation and thinking towards configuring the contents according to the audience and the situation.

Communication skills are needed both for sending and receiving information. The one who sends the message needs to have the skills to think, visualise and design the intended message considering the type of audience, their needs and interests. The five Ws and one H need to be taken care of by the sender: What? Where? Why? When? Whom? and How? Similarly, the one who receives the message needs to receive the message without assumptions, placing biases aside and actively listening, viewing or reading the contents, often in-between the lines. It is said that nature has provided us with two ears and one mouth just so that we listen more and talk less. But do we follow that? The receiver needs to use one ear for words and the other ear to feel what is being said. This will help the receiver to have better understanding of the message.

Do you know that 70 per cent of all communication is misunderstood, misinterpreted, rejected, distorted and not heard? Effective communication skills will enable us to minimise these limitations.

## 7.2 TYPES OF COMMUNICATION SKILLS

The way in which one communicates is as important or even more important, than what one is saying. Body language is equally or may even be more important than words. How effectively we are able to send or

receive information depends on how effectively we use one or more than one of these communication skills—

- Thinking
- Reading
- Writing
- Listening
- Speaking
- Non-verbal communication

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## Thinking

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This is an intra-personal communication skill. It implies individual reflection, contemplation and meditation. Thinking enables a person to select and organise one's thoughts, opinions, judgments and feelings. In a way, it is abstract as one cannot see the thinking process until it is expressed through words or feelings or writings. This is the fundamental step in communication. Your actions and expressions depend on what and how you think.

How can you develop the skill of thinking?

- Concentrate on what you are thinking during.
- Do not be distracted during your thought process.
- Strengthen thinking by developing skills in creativity, problem-solving, teamwork, criticality and flexibility.
- Be positive, always.

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## Reading

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This is the ability to acquire meaning from print or written matter. Recreation, gaining information and knowledge are some of the motivating factors for reading. In order to read proficiently one requires knowledge of language, reading fluency, vocabulary and reading comprehension, cognition and decoding. Typically one gains familiarity with language and its sounds by the age of 6 years. By 7 years of age, one is in the initial reading stage or decoding stage. Decoding skills continue to improve, and children develop speed in addition to accuracy in word recognition by the age of 8 years. One learns to read fluently around the age of 9 and develops liking for reading. By the ages 14 to 19 the reader begins to be able to analyse what one reads, understand different points of view, and react critically to what she/he reads.

How can you develop the skill of reading?

- Develop a liking for this skill, for example, by beginning with topics that interest you.
- Follow a kind of rhythm from left to right first and then from row to row while reading.

- Physical conditions such as adequate light from the left side, appropriate size of letters, and peaceful and quiet atmosphere are desirable.

### ACTIVITY 1

List the following to know your reading habits—

- Note down how many pages of a textbook, magazine or novel do you read on an average every week.
- Compare with five of your friends the type of literature you and your friends read.

## Writing

There are times when writing is the best way to communicate, and often the only way to get one's message across. In writing, one needs to be aware of the fact that once something is in the written form, it cannot be taken back. Communicating in this way is more concrete than verbal communication, with less room for error and even lesser room for mistakes. This presents written communicators with new challenges, including spelling, grammar, punctuation, writing style and wording. Today's technology (e.g., computers) provides reliable tools which make formal writing such as memos, letters or proposals much easier. There are spell-checks and grammar-checks. As students these skills are useful in writing essays, assignments, formal letters, and descriptive answers in exams.

Some guidelines for writing well—

- Avoid the use of slang words (e.g., 'kids' for children).
- Try not to use abbreviations (e.g., 'apt.' for apartment).
- Try not to use symbols unless it is writing for science, maths or technical subjects, or widely known and use symbols (e.g., '&' for 'and').
- Use clichés with caution (e.g., ..... is middle class).
- Spell the names of people, companies and words correctly.
- Numbers should be expressed as words when the number is less than 10 or is used to start a sentence (example: Ten years ago, my sister and I...) The number 10, or anything greater than 10, should be expressed as a figure (example: My brother has 13 matchbox cars).
- Appropriate punctuation should be used.
- Keep your sentences short.

### ACTIVITY 2

Collect samples of the following —

- Scientific writing (e.g., journal or textbook)
- Nursery school stories
- Magazine story
- Editorial in a newspaper

Study the difference in styles used in writing each of the above.

## Listening

In the communication process we either send or receive information. Effective listening is the key to receiving information. Everyday we all listen to a variety of messages from morning to evening. But we remember certain things more easily and forget other things. Listening is a combination of skills pertaining to hearing, the attitude towards the person sharing the message and the content of the message, along with our psychological connection with the sender and the message. Listening requires more than hearing words. It requires a desire to understand, an attitude of respect and acceptance of the message and speaker, and a willing tendency to judge and evaluate others' perception about the message. Listening requires a high level of concentration and energy. Listening skill can be natural or acquired. It can be acquired by using some basic principles.

Students spend 20 per cent of all school related hours in listening. If television watching and one-half of conversations are included, students spend approximately 50 per cent of their waking hours just listening. For those hours spent in the classroom, the amount of listening time can be almost 100 per cent.

How can you develop the skill of listening?

- Pay attention to the speaker with alertness and relaxation.
- Stop talking while listening.
- Listening requires setting aside the listener's thoughts and perception of the message with a feel of empathy. The listener needs to have the desire and willingness to try and see things from another's perspective.
- Listen to the words and feelings to understand the message and try to read between the lines.
- Be aware of the non-verbal messages such as the motive, expressions and attitude of the speaker.

"To listen is to move. To listen is to be moved by the talker – physically and psychologically . . . The non-moving, unblinking person can reliably be said to be a non-listener . . . When other visible moving has ceased and the eye blink rate has fallen to less than once in six seconds, listening, for practical purposes, has stopped."

– Franklin Ernst, Jr.

## Speaking

Speaking is one of the most basic communication skills. Speech refers to the processes of production, comprehension and use of sounds in a spoken language. In our day-to-day life we speak with family members, friends, and others for business and work to inform, share feelings and for many other reasons.

Speaking before a group and public speaking are the two types of important speaking skills. Public speaking is the process of talking to a group of people in a structured, deliberate manner with the intention to inform, influence, persuade, motivate, or entertain the listeners.



Most great speakers have a natural ability to display the skills and effectiveness that can help to engage and move an audience for a special purpose. Language and oratory are among the two most important aspects of public speaking and interpersonal communication. There are four obvious and simple actions to ensure that your verbal messages are understood and remembered. These are to —

- understand the purpose of the presentation.
- keep the message clear and concise.
- be prepared, rehearse well before speaking.
- be clear when delivering the message.

#### **How can you make your talk or presentation effective?**

Before you start working on your talk or presentation, it is vital that you understand—

**Who** are you speaking to? What are their interests, pre-suppositions and values? What do they share in common with others? How are they unique?

**What** do you wish to communicate? Adequate knowledge of the subject matter is crucial to your success. One way of answering this question is to

ask about the 'success criteria'. How do you know if and when you have successfully communicated what you have in mind?

**How** can you best convey your message? Choose your words and your nonverbal cues with your audience in mind. Plan a beginning, middle and end. If time and place allow, consider and prepare audio-visual aids.

**When?** Timing is important here. Develop a sense of timing, so that your contributions are seen and heard as relevant to the issue or matter at hand. There is a time to speak and a time to be silent. Remember '*It is better to be silent than to sing a bad tune.*'

**Where?** What is the physical context of the communication you have in mind? You may have time to visit the room, for example, and rearrange the furniture. Check for availability and visibility if you are using audio or visual aids.

**Why?** In order to convert hearers into listeners, you need to know why they should listen to you and tell them if necessary. What disposes them to listen? That implies that you know why you are seeking to communicate – the value or worth or interest of what you are going to say.

### ACTIVITY 3

Recall the best speaker that you have heard. Write down why she/he was good.

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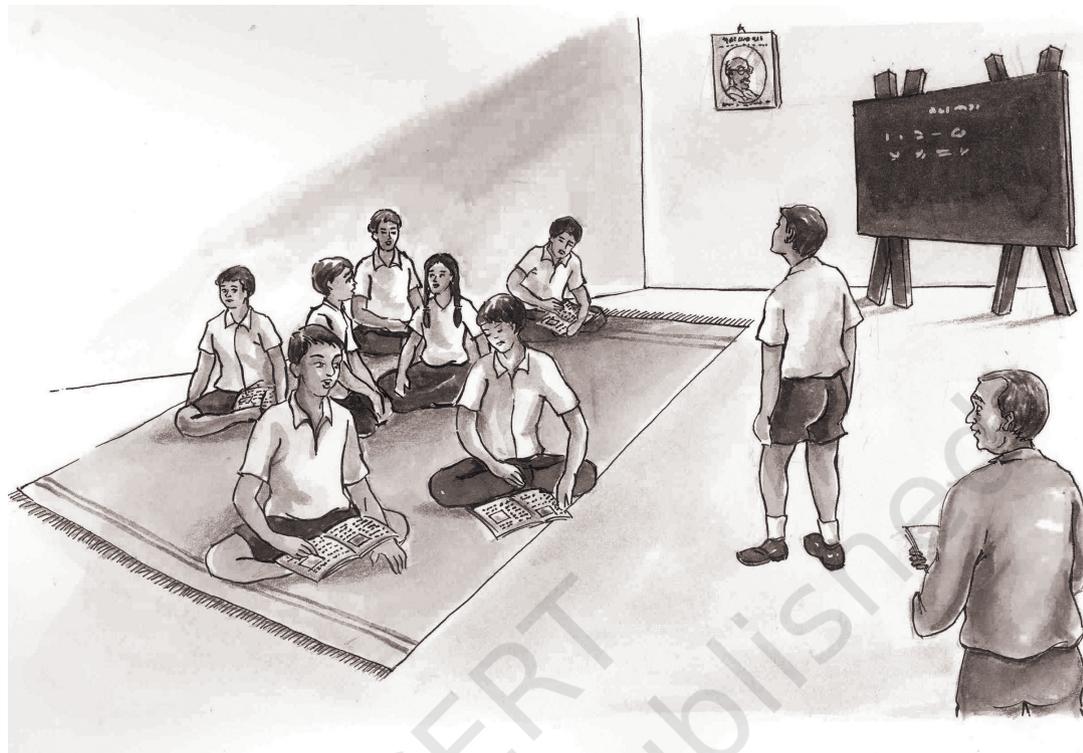
## Non-verbal communication

Non-verbal skills, sometimes also known as visual skills, convey the unsaid. They become a part of the communication process along with the written and typed modes of communication.

Non-verbal clues include–

- Body language (e.g., arms crossed, standing, sitting, relaxed, tense gestures, facial expressions, eye contact, posture).
- Emotion of the sender and receiver (e.g., shouting, speaking provocatively, enthusiasm).
- Other connections between the people (e.g., friends, enemies, professional similarities or differences, personal similarities or differences, age similarities or differences, philosophical similarities or differences, attitudes, expectations).

**Eye contact:** Eye contact, an important channel of interpersonal communication, helps regulate the flow of communication. It signals interest in others. Furthermore, eye contact with audiences increases the speaker's credibility. A speaker who makes eye contact opens the flow of communication and conveys interest, concern, warmth and credibility.



INAPPROPRIATE EYE CONTACT WITH THE AUDIENCE

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**Facial expressions:** Smiling is a powerful cue that transmits —

- Happiness
- Friendliness
- Warmth
- Liking
- Affiliation

Thus, if you smile frequently you will be perceived as more likable, friendly, warm and approachable. Smiling is often contagious and the listener will react favourably and learn more.

**Gestures:** If you fail to gesture while speaking, you may be perceived as boring, stiff and unanimated. A lively and animated teaching style captures attention, makes the material more interesting, facilitates learning and provides a bit of entertainment. Head nod, a form of gesture, communicates positive reinforcement and indicate that you are listening.

**Posture and body orientation:** You communicate numerous messages by the way you walk, talk, stand and sit. Standing erect, but not rigid, and leaning slightly forward communicates that you are approachable, receptive and friendly. Furthermore, interpersonal closeness results when you and your audience face each other. Speaking with your back turned or looking at the floor or ceiling should be avoided; it communicates disinterest.

**Proximity:** Cultural norms dictate a comfortable distance for interaction with others. You should look for signals of discomfort caused by invading others' space. Some of these are—

- Rocking
- Leg swinging
- Tapping
- Gaze aversion

Typically, in large college classes or in a large meeting room or a presentation room space invasion is not a problem. In fact, there is usually too much distance. To counteract this, move around the room to increase interaction with your listeners. Increasing proximity enables you to make better eye contact and makes it possible for the listeners to speak or to communicate.

**Paralinguistic:** This facet of nonverbal communication includes six vocal elements – tone, pitch, rhythm, timbre, loudness and inflection.

For maximum effectiveness in your speech, learn to vary these six elements of your voice. One of the common criticisms of instructors or communicators is that they speak in a monotone. Listeners perceive these instructors or communicators as boring and dull. In a formal setting students report that they learn less and lose interest more quickly when listening to teachers who have not learned to modulate their voices.

#### ACTIVITY 4

Find out the definitions of tone, pitch, rhythm, timbre, loudness and inflection. Practise with variations of each of these elements.

#### ACTIVITY 5

To improve your verbal and nonverbal skills, record a segment of your speaking or presentation on a video/audio tape. Then ask a colleague or friend to suggest refinements.

**Humour:** Humour is often overlooked as a tool to create a more pleasant and relaxed atmosphere. It is too often not encouraged in a classroom setting. Laughter releases stress and tension for

#### Let us recapitulate

- Every individual needs to be well equipped with the tools to communicate effectively, whether it is on the personal front or at work.
- Communication skills are the abilities that help us send and receive information effectively. They can be natural or acquired.
- Communication skills refer to a range of behaviours that serve to convey information to others. The process requires one or more of the skills of thinking, speaking, listening, reading, writing, visualising and body language.

both the communicator and the listener. One should develop the ability to laugh at oneself and encourage the listeners to do the same. It fosters a friendly environment that facilitates better communication.

The Chapter X on Living and Working in a Global Society, which is the last in this unit, highlights the different interrelated contexts of family, community and global society with which an individual interacts in the course of development.

### Key Terms

Communication skills, Thinking, Reading, Writing, Listening, Speaking, Non-verbal skills

### REVIEW QUESTIONS

1. Discuss the importance of communication skills.
2. Enumerate and describe each communication skill.
3. “Non-verbal skills are not as important as verbal communication skills”. Comment.
4. Write an effective dialogue between two strangers who have met on a train.
5. According to you, which three communication skills are most important? and Why?

### PRACTICAL 7

#### Effective Communication Skills

**Theme** Understanding Communication Styles and Skills

**Task** Analysis of own communication styles and skills

**Purpose of the practical:** Students will be able to analyse their own skills, i.e., personal strengths and limitations and practice to overcome these.

#### Conduct of the practical–

- You have understood in the chapter that our communication skills have two equally important components, i.e., verbal and non-verbal. Therefore, while analysing communication skills one must observe both the components.
- Observe each of your classmates when they speak to study their body language, proximity, and paralinguistic procedure.

**Step 1:** Ask students to think of one topic on which they can speak after putting their thoughts together for five minutes.

**Step 2:** Ask students to start presenting in the order they would like, either alphabetically by their names or they may volunteer their turns.

**Step 3:** Now analyse each speaker's style on the following checklist using one for each person.

Characteristics	Description	Rating		
		3	2	1
Content	Appropriate for young student like you			
Posture	<ul style="list-style-type: none"> <li>• Erect</li> <li>• Erect but rigid</li> <li>• Leaning slightly</li> </ul>			
Eye-contact	<ul style="list-style-type: none"> <li>• Frequency</li> <li>• Movement of head from corner to the one other</li> </ul>			
Facial expression	<ul style="list-style-type: none"> <li>• Happiness</li> <li>• Friendliness</li> <li>• Warmth</li> </ul>			
Proximity	<ul style="list-style-type: none"> <li>• Rockery</li> <li>• Tapping</li> <li>• Leg swinging</li> </ul>			
Paralinguistic	<ul style="list-style-type: none"> <li>• Tone</li> <li>• Pitch</li> <li>• Rhythm</li> <li>• Timbre</li> <li>• Loudness</li> </ul>			
<b>Total score</b>				

**Step 4:** After a group of students have presented, total the score and match it with the impression you made of the speaker.

**Step 5:** Make conclusions about each of the speakers and identify the characteristics for which each one needs to practise in order to improve one's communication skills.



11136CH08

# 8

## LIVING AND WORKING IN A GLOBAL SOCIETY

### LEARNING OBJECTIVES

After completing this chapter the learner is able to–

- understand the relationship among the individual, the family, community and global society.

In the previous chapters you have learnt a lot about yourself. Understanding oneself is the first step towards understanding others. Every individual lives and grows in a social context. Hence, to understand the development and behaviour of an individual it is necessary to understand the immediate context such as one's family and the larger socio-cultural milieu.

As the individual grows and develops, she/he forms a growing network of relationships with others. The family is the primary and most immediate environment for the individual. During childhood, one's activities, roles and interpersonal relations are generally shaped in consonance with the family context. As the child grows, her/his interactions with other settings such as the school, peers and neighbourhood enhances.

All these systems operate within the larger culture and context which include belief systems, norms, resources, opportunities and constraints. All aspects of daily living such as food, nutrition, clothing, resources, communication approaches and strategies, and interactions and relationships are affected by the larger systems in one's own society and increasingly by other societies as well. Any change, positive development or conflict, even in the distant environment, extends to the other settings and influences the individual too. This is particularly applicable in the present era of globalisation wherein the boundaries between countries are less rigid and the world is becoming more and more interconnected in different ways – geographically, economically, culturally, and politically. The term “globalisation” refers to increased inter-connectedness and

exchange between people across the world in the form of goods, services, money, and information. Although globalisation is not a new development, its pace has increased with the advent of new technologies, especially in the area of telecommunications.

Each society is increasingly influenced by events and developments occurring in other societies of the world. For example, the US sub-prime crisis of 2008 impacted economies across the world and the ripple effect was seen on the financial status of markets, families and individuals in India. Many people lost money invested in shares and stocks or even their jobs; hence they had to adjust their living standards markedly. Fashion trends are another example. Increasingly we find ourselves adopting international fashion trends in our dressing styles. Similarity the style of dress is prominent in urban youth across the world, and between rural and urban youth in India. Our everyday lives are thus influenced not only by what we experience in our families, schools and neighbourhoods, but also by events occurring at the global level.

What is important to note here is that we are not passive entities that simply absorb any influence that comes our way. Every individual is an active being who interprets the external influence or input according to her/his own unique personality and cultural sensibilities. An example from fashion is the adaptation of the Western style of wearing jeans with T-shirt to wearing jeans with *kurta*. Furthermore, each individual in turn also influences the environmental contexts or persons with whom she/he comes into contact. For example, it is not uncommon to find adolescents

or even younger children influence their parents on matters such as the brand and colour of a new vehicle or the place they want to visit during the holidays. Thus the influence is two-way. Even in your own family, you would find that not only are you being influenced

by your parents, but in some areas they too are being influenced by you.

Contexts and individuals are dynamic. Across the life course, an individual passes through different stages of development and situations. At the same time, the settings also undergo change. In the present times, the pace of change is so rapid that what we know as “generation gap” may occur not only between two generations, i.e., between parents and children or grandparents and grandchildren, but it may also be evident between older and younger siblings. What was an accepted practice or way of thinking three years ago may have now changed. Those of you who have older or younger siblings may be able to think of instances when you and your sibling argued about something because both of you felt that what you were saying was the right way to do something. Do you recall saying, “When I was of your age.....” to younger siblings or children?

### ACTIVITY 1

Think and note down two to five examples from your family where you may have influenced your parents' or other members decisions.

Thus, individuals are embedded in their context and both shape each other. This is a reiteration of what you read in the 'Introduction' Chapter, i.e., individuals have a close relationship with their environment. The quality of one's life is influenced by the different ecological contexts including the family, the neighbourhood, the community and the society, both local as well as global. In Unit II we will move from understanding oneself to understanding the contexts of family, school, community and society.

### Key Terms

Globalisation, Bi-directional ways, Culture, Adaptation, Context

### ■ REVIEW QUESTIONS

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1. Describe 'globalisation'. Identify some of your everyday practices and interests that may have been influenced by global trends or events.
2. Discuss the ways in which you think you have influenced your parents.
3. Think about your own family and identify two instances when you felt there was a generation gap between you and your parents.

# UNIT II

## UNDERSTANDING FAMILY, COMMUNITY AND SOCIETY

*The chapters in Unit I were all addressed to you for the understanding of self and of the factors that influence your decision making. Let us now move on to understanding the family, the community and the society that you are a part of. In the first section – Chapter 9 the focus will be on relationships and interactions with ‘significant others’, i.e., those important to you in these contexts. The second section – Chapter 10 will discuss concerns and needs, such as those of health, work, resources, education and textile tradition in the adolescent’s diverse social contexts.*



11136CH09

# RELATIONSHIPS AND INTERACTIONS WITH ‘SIGNIFICANT OTHERS’

## A. FAMILY

9

### LEARNING OBJECTIVES

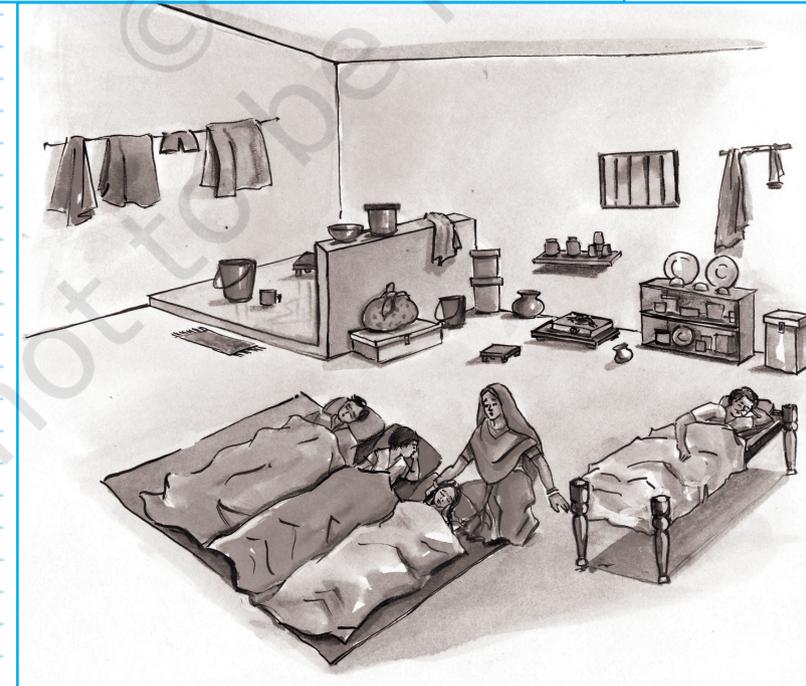
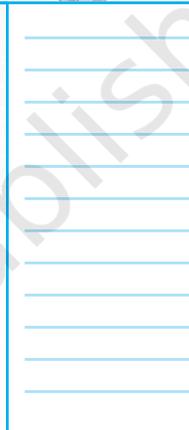
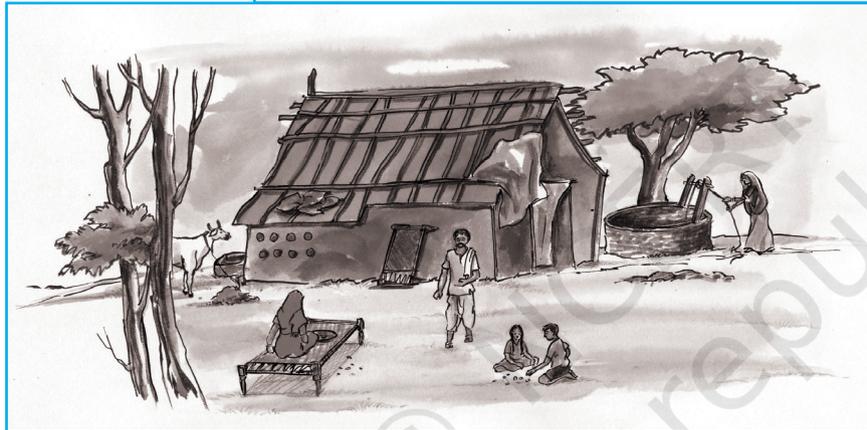
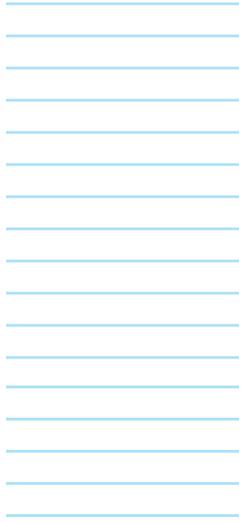
After completing this section the learner is able to—

- understand the meaning and definition of family.
- explain the importance of the family and its functions.
- describe the functions of family for overall development of the individual.
- gain knowledge of the family life cycle.
- analyse dynamics within the family.
- understand the importance of effective communication in the family.

### IMPORTANCE OF FAMILY

The pictures show you scenes of children in their homes. Notice that there are adults taking care of children, including some older people. In some pictures there is only a mother or father and children. They are all related to each other by blood or through marriage or adoption. One thing common to all situations regardless of the socio-economic or cultural variation is that there are at least two or more than two generations of persons staying together, i.e., mother and children, grandparents and children, parents and adult unmarried children, related to each other by blood or marriage. An exception is that of two adults, a husband and wife, who are of the same generation, and yet they form the beginning of a family.

RELATIONSHIPS AND INTERACTIONS WITH 'SIGNIFICANT OTHERS'



## 9A.1 INTRODUCTION

You and all of your classmates live with your families. **Families** are basic units of society. Families are needed to meet the needs of individuals, both children and adults. The family also helps to continue the culture of any society. It provides care and nurturance to all the children, thus contributing to their wholesome development. In the earlier chapters you have studied how adequate nutrition and other experiences contribute to the physical well-being of the child. Similarly, for a baby to grow into a caring and productive member of the society, she must have positive socio-emotional experiences, relationships and a feeling of belongingness. Through parenting, families attempt to provide all these experiences to children. You could recall incidents in your family when you were down with fever. How did your parents take care of you? Or the times when you were not feeling cheerful and happy, and the other members of your family may have tried to make you feel better. There are numerous such examples in everyone's life where parents, or siblings or other members may have given a comforting hand or encouragement. Thus families not only nurture, they also provide stability and support in times of need. Every child has a right to be reared in a family.

Not all children are so fortunate to have families with both parents staying together, under one roof. In your neighbourhood, you may know that there are some children who have lost a parent due to death. In such cases, the other parent, usually fulfil the tasks of father as well as mother, may be helped by an aunt or grandmother. We are also aware that many times mothers and fathers have problems living together and decide to separate. In such circumstances children may be cared for by a single parent.

As far as possible, children should not be removed from their families. You may now think about those children who, due to unfortunate circumstances, such as flood or earthquake, may become destitute. How can they seek experiences of living in a family? In such instances adoption or care in an institution are the available options. It is the responsibility of the state to care for these children.

You may be familiar with the sight of young children or adolescents who appear to be homeless. Some of them have left home or children's institutions on their own in search of livelihood. Some others may have been abandoned by families or may have got lost. Such children are referred to as 'street children'. They usually do live in their families of origin, but the other children they live with on the street become like family to them. Sometimes, these children return to their families.

We could hence define the term family as “a group of persons united by – the ties of marriage, blood or adoption constituting a single household, interacting with each other in their respective social roles of husband and

*wife, mother and father, son and daughter, brother and sister or any other, creating a common culture”.*

When you fill up your examination forms, you had to write the name of the head of the family. Whose name did you write? Reflect on your own name; your first name is a name given by your parents but the second name for many, that is surname, is common for all family members. This is mostly the father's family name. Among tribes in the North-East and South, the second name is that of the mother. The families that use father's name for identification are called **Patrilineal** and the ones that use the mother's name are known as **Matrilineal**. Being patriarchal or matriarchal decides the authority, i.e., father's or mother's, and more importantly the rules of inheritance are also governed by this.

Patrilocal and matrilocal residence refers to the living arrangement where patrilocal families are those that reside in the father's native home and matrilocal ones are those where the residence is in the mother's native home.

On the basis of who all live together, the family could be identified as nuclear or extended. If you are living with your parents, brothers and sisters, then it is called a **nuclear family**. Some of you must be having grandparents and/or uncles and aunts living with you, which is called an **extended family**. A **joint family** is one where several generations of members live together; specifically a couple with married children (usually sons) and unmarried children and their offspring live together as a joint household. These can be of a very large size, and are often also joined by the same occupation. In families where there are adults other than parents, usually work and responsibilities are shared, especially the care of children. In nuclear families, the parents are largely on their own for the care for their children. In some families you will see that though the grandparents or other family members do not stay with the family, they keep coming regularly to stay. Sometimes if both the parents are going out to work, they may leave the children at a relative's place. Therefore, even when children are living in a nuclear family, they have the experience of interacting with others. There are advantages and disadvantages of having large families, but the well-being of members depends mostly on the individuals concerned.

## 9A.2 FUNCTIONS OF THE FAMILY

Whatever the structure or number of members or location of the family, this institution is committed towards providing some essential functions for its members, especially children. These are:

1. **Providing nurturance:** All families provide legitimate platforms for couples to live and reproduce, and continue the lineage. Recalling your own experiences as children, you would know that all families

make efforts to provide nurturance to their children by looking after their needs. The provision for emotional needs through affection and care are equally important in nurturing a sense of belongingness. As we grow older our need of being wanted and loved does not diminish. These needs for affiliation and affection are present at every age, although the expression and manifestations can be different. A young adolescent boy may not appear as if he needs to be nurtured due to sudden physical change in his body and the need for autonomy, but he does not stop needing the loving support of a caring family. A grandmother may also be eagerly awaiting the arrival of her grandchildren to share her time and do things with them. Thus the family attempts to provide love, care and support to its members at all ages, and through various experiences and situations.

2. **Socialisation:** This is the process of teaching the young generation about social processes through everyday interactions. We can see that the family is in a unique position to act as a link between continuity and change through the process of socialisation. The 'We' feeling within the family is helpful in transmitting attitudes and sentiments. How often have you heard your mother or father saying "No, you can't do this because it is not done in our family" or "In our family children have to study very hard". The values that families pass on to the young ones are often filtered and adapted from the general social scenario of the community, the region and the nation. Although there are many common practices, each family adopts these in its own unique way.

#### ACTIVITY 1

Make a list of do's and don'ts in your family for boys and girls. Discuss these in class and make comparisons with children from other families. This should help you to understand that although there are similarities, each family provides a unique experience to its members.

3. **Conferring a status and role to individuals:** Do you realise that here in school, you have the status of a student regardless of your gender; but in your home setting, you have a different status which can vary

#### ACTIVITY 2

Convene a debate in the class on the topic, "Traditions are a hindrance to modern living". Conclude in the class by noting the positive and negative dimensions of traditions.

from family to family. An adolescent boy may be playing the roles of a son, a brother and a brother-in-law. Each role carries certain responsibilities and features that are socially defined. These arrangements bring stability and predictability in an individual's life because of which it becomes easier to perform day-to-day responsibilities.

4. **Economic function:** Parents all over the world are busy earning a livelihood to generate income to provide for the family. Families provide for their children and also for other adults, older persons, and developmentally challenged children/adults, who may be temporarily non-productive. Your own experiences in and around your family and community can substantiate this point.

The family is a primary unit of society. Maintaining relations with the community and the society are also within its purview. Thus the family also needs to spend resources for maintaining relations with relatives, friends, the community and the country. For instance, we contribute to different groups like *panchayats* and welfare associations, give gifts at marriages and birthdays, and we participate by giving our time to social events. These are all examples of active participation of families in the larger society.

### ACTIVITY 3

Interact with your parents and make a note of a recent expenditure that was special, like a gift for a relative or friend. Note the amount and choice of gifts, and any comments your parents may have.

5. **Fulfilling the need for psychological support:** Everyday, family members travel out of the home to various places, for example, children go to school and parents go to their workplaces. Yet at the end of the day there is often a feeling of comfort of returning to the familiar space of the family. Along with the basic needs of food, clothes and shelter, a person needs intimate human response, acceptance and love. This feeling of security is known to be quite important for the development of a healthy all-round individual. The absence of a positive atmosphere at home can be a likely cause of stress and disturbance at any age.



Thus, maintaining harmonious relationships and supportive roles for all of its members remains one of the significant responsibilities of the family. Within a family, members are likely to have caring and reciprocal relationships. We learn to give and take affection from each other. This formulates the basis for later development. Most societies rely almost entirely upon the family for affectionate responses.

It is important to reiterate here that there is a small minority of street children who lack social and psychological support from their biological family. They may seek such support from their peers or adults in similar situations. Many children who are abandoned or orphaned may find themselves in children's homes run by the state or various NGOs. All of them have a right to care and education.

6. **Other functions:** The family also fulfils other functions which are recreational, religious and social and are important for the continuity of society.



Families usually visit others (family or friends) for social functions like birthdays, puja ceremonies or other such activities.

Another important task that the families have been doing is in socialising its young ones for community duties. Family is the 'school' of civic values. Can you recall your first lessons regarding ownership of property or things when, by mistake, you may have brought home another child's pencil or eraser, and you were asked to return it? Similarly if you look back at your childhood experiences you will be able to recollect incidents which are evidence of families providing opportunities for learning to share, love, cooperate, tolerate, sacrifice and obey. These qualities enable one to grow into a healthy citizen.

## 9A.3 FAMILY LIFE CYCLE

Saguna had gone to the wedding of her elder sister. She came back home and asked her mother. “Could Sudhadi and jijaji be called a family? Or are they a couple?” Her mother took some time to reflect and then said that “Look Saguna, Sudha and her husband are a couple; yet they are at the beginning stage of the family”. Now does that make you wonder about the stages in family life? Look around and you will find that there are families at different stages. If we continue the example of Sudha and her husband they may soon have children who will grow from infancy to adulthood and then they are likely to establish their own families. When they are old, Sudha and her husband will probably be left as husband and wife in the household. The cycle that started with their being a couple brings them back to being a couple again. Thus, you will see that the entire family life is cyclic in nature. That is why it is called the “Family Life Cycle”. In the box you will find the different stages of the family life cycle. Each stage has challenges and tasks to be performed which are beneficial for the development of its members, at that phase of family life.

The family life cycle adopts a longitudinal view of family life. It is based on the recognition of successive phases and patterns as they happen over the years.

### Stages in the family life cycle of a nuclear family

The family life cycle generally consists of seven stages. These include—

1. Married couple (without children)
2. Child bearing family
3. Family with preschool-age children
4. Family with school-age children and adolescents
5. Family launching young adults into higher education/work
6. Middle-aged parents with grown up/married children
7. Ageing couple—retirement to death of both spouses

## 9A.4 FAMILY DEVELOPMENTAL TASKS

Shri and Shrimati Kumar live in Ravi's neighbourhood. They are taking care of their newborn baby and their older daughter goes to school. The Patels who stay upstairs have school going children and they are always worried about the marks the children are getting in school. In Ravi's family the maid who comes to help is anxious because her daughter wants to pursue her studies further, but she does not have the money. In all these stories you will notice that the parents are performing different tasks for the family. The variety in the tasks that the parents perform depends

**ACTIVITY 4**

Pick out the family developmental tasks related to the stage which your family is in and observe the tasks that your parents have been doing. Report in the class noting the variations in the performance of tasks due to family structure, number of children and adults present.

on the age group of their children. Therefore, we can say that family developmental tasks are those responsibilities that are specifically related to the needs of the family members.

**9A.5 FAMILY DYNAMICS**

Family members perform their roles while interacting with one another. Each family has its own patterns of interaction. These are called family dynamics. They are influenced by factors such as the structure of the family — the number of children and adults, and how they are related — the personalities of family members, cultural background, values, and personal or family experiences.

Understanding and relating with parents is one of the most important activities in the family. Parents have a very powerful influence over children's personality and future life. When parents and adolescents share an easy communication based on positive understanding together they could build a happy, successful family life. To accomplish this understanding all members need to value and respect each other.

**ACTIVITY 5**

How well do I know my mother/father?

- What is your mother's full name?
- What is her birth place?
- What is your father's full name?
- Who gave you your last name?
- Where did your mother spend most of her childhood?
- Where did your father spend most of his childhood?
- What is your mother's level of education?
- What is your father's level of education?
- What makes your mother happy?
- What makes your father happy?
- What does your mother want you to become?
- What does your father want you to become?

**Note for the teacher–**

*By the end of this session the students will be able to assess their own understanding and knowledge of their parents as individuals. Moreover this is likely to sensitise them to their parents' needs, perceptions and aspirations.*

## 9A.6 HANDLING SITUATIONS

Parents' advice to young people is sometimes seen as interference by children. However, it is important for children to realise that parenting is a difficult and challenging task that requires life-long commitment. Similarly, parents and other adults also need to realise that children have a need to make their own place in the family and society. It is important for each member to appreciate the responsibilities of others without conflict and tension. Career choices, dresses young people wear, choice of friends, sharing household responsibilities and television watching are some areas of family disagreements and conflicts. Each family has different ways of handling such conflicts. In single parent families where either parent is absent for one reason or the other, the responsibility of the remaining parent becomes more crucial. As a young person one needs to show extra sensitivity and understanding to a mother/father who is trying to do the job of both the parents. Understanding the other person's perspective is an effective way of conflict management.

### ACTIVITY 6

#### Perspective taking

1. Choose a conflict situation, e.g., career choice.
2. Teacher could point out that there are four perspectives to it — (1) Adolescent's (2) Mother's (3) Father's (4) the fourth perspective could be that of the teacher/ school counsellor.
3. All four perspectives could be role-played by the students in class.
4. After 10 minutes of role play the parts should be exchanged, i.e., the student who played Father shall now play the part of an Adolescent and the one who became the counsel or could be the Mother.
5. The activity could be concluded by discussing how the experience may have helped them in having better insights into the other persons' perspectives.

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## 9A.7 SUPPORT AND STRENGTH TO MEMBERS

You have learnt in the earlier unit on development of self that one of the developmental tasks of a person of your age is learning to act as adults among adults. Middle-aged parents may develop problems such as poor health, a set-back in career, transfer of either parent to a distant place, death in family, added responsibility of an older relative, financial crisis, etc. The understanding and contribution of young people and children during difficult circumstances cannot be underestimated. The presence and company of children have the potential to help families through even the most difficult crisis.

Let us now see what helps family members understand one another's needs and emotions. It has been found that **communication** has an important role in this.

## 9A.8 COMMUNICATION IN THE FAMILY

You must have often heard that human beings are social animals. But, did you know that 70 per cent of our active time, that is waking hours, are spent communicating in some form or the other? Perhaps your day begins with someone in the family or an alarm clock waking you up to get ready for school, and then go to school with friends, all this while talking to someone or the other. From morning assembly, to interacting with school teachers, class mates and the principal, the entire learning experience involves formal and informal communication. The ability to communicate effectively in a variety of settings is essential for leading a happy and productive life.

Similarly, while we are at home, we communicate differently with elders, our siblings—younger or older, grandparents, neighbours and helpers at home. Thus family communication is the way verbal and non-verbal information is exchanged between family members. These interactions develop over time among a group of related individuals who share common living space.

**Communication within the family is extremely important because it enables members to express their needs, wants, and concerns to one another and offer social and emotional support.** It is a unifying element since speaking and listening behaviours are intertwined. Communication involves the ability to pay attention to what others are thinking and feeling. In other words, an important part of communication is not just talking, but listening to what others have to say. It is through communication that family members are able to resolve the unavoidable problems that arise in all families. Open and honest communication creates an atmosphere that allows family members to express their differences as well as love and admiration for one another.

Four styles of communication have been identified which are as follows—

- (i) **Clear and direct communication:** Clear and direct communication is the healthiest form of communication and occurs when the message is stated plainly and directly to the appropriate family member. An example of this style of communication is when a father, disappointed about his son failing to complete his chore, states, “Son, I’m disappointed that you forgot to take your grandmother to the doctor today”.
- (ii) **Clear and indirect communication:** In this second style of communication, the message is clear, but it is not directed to the

person for whom it is intended. Using the previous example, the father might say, "It's disappointing when people forget to complete their chores." In this message the son may or may not know that his father is referring to him.

- (iii) **Masked and direct communication:** Masked and direct communication occurs when the content of the message is unclear, but directed to the appropriate family member. The father in our example may say something like, "Son, people just don't pay attention as they used to."
- (iv) **Masked and indirect communication:** Masked and indirect communication occurs when both the message and intended recipient are unclear. In unhealthy family relationships, communication tends to be very masked and indirect. An example of this type of communication might be the father stating, "The youth of today are very lazy and irresponsible."

It is important to note here that the communication styles are also mediated by culture. For instance, direct and open communication may be more acceptable in a western society (e.g., U.S.); however in the hierarchical structure of Indian families, indirect communication may be preferred as direct communication with older persons may be considered disrespectful.

## 9A.9 KEYS TO BUILDING EFFECTIVE FAMILY COMMUNICATION

With increased professional commitments for urban families and anxiety and competition experienced by young people in rural areas, it is important that our communication behaviour equips us to face these daily challenges rather than feel. There are many approaches that families can adopt to become more effective communicators, and in turn, to improve the quality of their relationships. Following are some suggestions for building effective family communication.

- *Communicate frequently:* One of the most difficult challenges facing urban families today is finding time to spend together. With our busy schedules, it is difficult to find sufficient time to spend with one another in meaningful conversation. It is extremely important for members in families to make time to try and communicate regularly to and directly. Sometimes, eating meals together is a good idea, without the TV turned on. It can be a good idea to switch off the TV and eat dinner together; or sit together on a Sunday afternoon to talk about important issues that effect the family. Similarly, spending time with elders in the family will strengthen family bonds, and talking with them will help young persons relax and make the elders feel that they are important, thus inducing a feeling of mutual love and respect.

- *Communicate clearly:* It has been found that families that appear happy, usually communicate their thoughts and feelings in a clear manner. This is especially important while attempting to resolve problems that arise between family members (e.g., between spouses, parents and children). Indirect and vague communication will not only fail to resolve problems, but it will also contribute to a lack of intimacy and emotional bonding between family members.
- *Be an active listener:* An essential aspect of effective communication is listening to what others are saying. Being an active listener involves trying one's best to understand the point of view of the other person. It is important to pay close attention to the verbal and non-verbal messages and cues. As an active listener, one must acknowledge and respect the other person's perspective. Another aspect of active listening is seeking clarification. This can be done by simply asking, "What did you mean when you said?" or "Did I understand you correctly?" Active listening involves acknowledging and respecting the other person's point of view.

Family will always remain a significant context for an individual. With development; however, the child's universe of interaction widens. After the family, for most children school is another vital context which offers the opportunity to interact with other people who are likely to have a significant influence on their lives. The school also provides the opportunity to build multiple, significant non-family relationships. The next chapter on 'School: Peers and Educators' discusses this aspect.

### Key Terms

Family, Patrilineal, Matrilineal, Nuclear family, Extended family, Family life cycle, Family developmental tasks, Communication in family

### ■ REVIEW QUESTIONS

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1. Define the term family. Discuss the different variations in family types.
2. Discuss any three functions of the family with examples.
3. Write short notes on—
  - (a) Family life cycle
  - (b) Family developmental task
  - (c) Family dynamics
  - (d) Conflict situations in the family
4. What is the significance of communication in the family? Using your own family as an example, describe the communication patterns. Suggest how communication between family members can be improved.

■ **PRACTICAL 8**

**Family**

**Theme** Areas of agreements and disagreements with family members, friends and teachers.

- Tasks**
1. Listing the areas of agreements and disagreements
  2. Identifying ways of resolving disagreements

**Purpose of practical:** Adolescence is a time when you are forming a sense of your identity. Often, but not always, this process may bring you in conflict with your family members and significant others as your views on particular aspects may be different from theirs. This can cause stress in relationships. This practical will help you to identify sources of disagreements and will also encourage you to reflect on how you can minimise and resolve these differences.

**Conduct of practical:** Form yourself into groups of 4-6 students. For the first 10 minutes, reflect individually upon your interactions with your family members, friends and teachers in the past few months. Use the following format to record the areas of agreements and disagreements.

Person	Area of Agreement	Area of Disagreement	Comment
Father			
Mother			
Sister			
Brother			
Friends			
Teachers			

Now share your data with the other members of the group and discuss the following—

1.
  - (a) Whether there are areas where most of you have disagreements with a particular family member, friends, teachers.
  - (b) Why do you think this happens?
  - (c) What are you doing presently to resolve the disagreements?
  - (d) What can be done to resolve/minimise the differences?
  
2.
  - (a) Whether there are areas where only you seem to be having differences while the rest of the group members do not have disagreements in that area?
  - (b) What could be the reason for this?
  - (c) Can you do something to resolve the disagreements?

3. (a) Which are the areas where most of you are in agreement with the family members, friends and teachers.
- (b) Can you use these areas of agreement to build a stronger relationship with the persons around you and thus reduce the areas of disagreements?



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## B. SCHOOL PEERS AND EDUCATORS

### LEARNING OBJECTIVES

After completing this section the learner is able to—

- discuss the role of school in developing new relationships.
- understand how relationships with peers transform as the child grows.
- know the importance of developing friendships.
- analyse the influence of education and teachers on students' development and achievement.

### 9B.1 SCHOOL

In your view is school just a place to study or something more? What is the first thing that comes to your mind when you hear/read/think of the word 'school'? Studies and examinations, most of you would say! Hard work and some degree of fear, you may want to add! But school is also a place where you meet friends and some of these friendships lead to lasting, even life-long relationships. You also meet adults in the role of teachers and many of them shape your attitude towards learning, towards new subjects, and in fact towards life! Most of you would have a special feeling about one or more teachers who have taught you during your school life – teachers whom you admire and look upto. Thus school, apart from serving an academic function in our lives, is also a network of social relationships that influence our values, behaviour and thinking, both directly through the process of teaching-learning, and indirectly, as we interact with peers and educators in the school. In other words, it is one of the agents of socialisation. In this chapter we will focus on the role of school as a place for developing relationships and interactions with 'significant others' in our life.

## 9B.2 PEER RELATIONSHIPS

Infants as young as six months show an interest in other infants. When placed together they may attempt to touch each other, smile and look at each other. But at this time they treat the other just as an object – they do not respond to or see them as persons in the ways that we understand. Between one and three years of age, the child begins to realise that other children are persons and begin to have social interactions with them. In the early years, a friend is someone who lives close to you; in other words one who is available for play. These friendships usually have nothing to do with liking the person or her/his qualities. At this age, most children do not show a preference for any one playmate. They play together occasionally, using the same toy or interacting with each other, but most of the time they play on their own.

In the preschool years the child starts relating to others in a more sustained manner. But early friendships are superficial. They are quickly formed and quickly broken – the child may be friends with another child who has a toy that she wants; however, the friendship may not carry over to the next day, unlike the friendships of an older child. Thus during the preschool age, a friend is someone with whom the child ‘does things’ such as playing with toys. During the later part of preschool years, interactions between children become more sustained. Older preschoolers play with each other, cooperate and take turns during play. They may also prefer some peers over others. By the beginning of middle childhood years, the child begins to realise that friends are those with whom one shares common interests and feelings and not just those who have things one likes. The child begins to realise that trusting each other, responding to each other’s needs and presence of desirable qualities such as kindness and considerateness in friends are critical features of friendship. They understand that friends help each other. During the middle childhood years the child’s circle of friends usually increases – the child spends more time with friends and their influence also becomes more powerful. By adolescence friendships become deeper and friends share each others’ innermost thoughts and feelings.

You have read in the chapter on ‘self’ that by the time the child becomes an adolescent, friends may become even more important than the parents. Most adolescents usually have a small group of close friends – called ‘clique’ – and a larger number of friends who are at some distance – called ‘crowd’. The crowd is a loosely organised group of peers who tend to be together because of shared interests and activities. However, members of the crowd are not close to each other as members of cliques are. Thus young people watching a stage show form a crowd and a group of adolescents planning an outing together are part of a clique.

## 9B.3 THE IMPORTANCE OF FRIENDSHIPS

Friendships at every age are important because they help the child feel accepted by people who are like her. This gives the child a sense of emotional security which is important for the development of social and emotional relationships in adult life. Children who are rejected by peers are likely to show aggressive behaviour and are also likely to interrupt group activities through deviant behaviour. They tend to remain alone or; may join deviant subcultures whose values and activities may be markedly different from those of the mainstream culture. This can cause a lot of harm to the child.

During adolescence there is a tremendous pressure on the adolescent to conform to the values held by the peer group and behave in ways considered appropriate by them. These values and behaviours may be contradictory to parental values, and this coupled with decline in conformity to parents' values and demands by the adolescents, can lead to tremendous conflict with the parents. However, it is important to understand that experiencing such a peer pressure to conform is a normal feature of growing up. In fact, **being able to express feelings and experiences with friends which the adolescent would not be able to share at home helps the adolescents feel 'normal' and not alone**, as they realise that their friends have similar concerns and experiences. Also, by the end of adolescence, peer pressure tends to decline and the growing adult is able to look at issues from multiple perspectives. However, it is also true that under pressure to conform many adolescents can get involved in anti-social activities which are dangerous to the self and the society. These include experimenting with drugs and sex without adequate protection and information. Adolescents and their parents need to understand each others' points of view and concerns. This can happen when there is free-flowing communication between parents and adolescents – something which both parties have to work towards.

It is also important to remember that in many cultures peer values may be quite similar to values held by adults in the society, in which case adolescents would not experience as much conflict with parents. In such a situation, peers would serve to reinforce the values held by the society.

### ACTIVITY 1

You have read about many aspects of friendship in various stages of a child's development. Reflect upon your own experiences and think of friends who have influenced you in different ways.

### ACTIVITY 2

As adolescents, are there aspects in which you agree with your friends but disagree with parents? Discuss these in the class.

## 9B.4 INFLUENCE OF THE TEACHERS

Teachers are a major influence in the school. Like parents, they set limits, make demands, communicate values and foster development. Teachers are powerful role models and often impact a child's development. Children are most likely to imitate the behaviour of teachers they like and value, and they also tend to enjoy subjects taught by teachers whom they admire.

Teachers' expectations of students often, but not always, have a major influence on student performance and behaviour. It has been found that teachers' expectations influence student achievement, motivation, self-esteem, expectancy for success and actual achievement. This has both positive and negative aspects. The positive aspect is that, by and large, teachers may behave more positively towards students from whom they have high expectations. They smile at them more frequently, praise them more often, supervise their work more closely, and press them harder to find answers. And when they perform poorly, the teachers are likely to encourage them to work harder. Thus they communicate to these students that they are expected to succeed. The negative aspect is that the teachers are not likely to press or motivate the students from whom they have lower expectations. The teachers' expectations become a **self-fulfilling prophecy**, with the children becoming, achieving and behaving as the teacher expect them to become. Studies have shown that if a student has average ability, but the teacher is informed that the child has tremendous potential, the teacher modifies her/his ways of relating to the child so that the child actually improves upon past performance.

The implication of the above discussion is that teachers need to be conscious of the harmful effects of low expectations. There is need to avoid pre-judgment of children's abilities. Also, even if the child is not performing adequately at any given time, there is every chance that the child can do better in the future, given adequate support and encouragement. Teachers need to have reasonably optimal demand of achievement from all students and not merely from a few. Children's achievement needs to be judged against their own past performance and not compared only with the class average.

The teacher-taught relationship is the essence of the teaching-learning process. Philosophers and educators in India and the world have visualised the teaching-learning process as one where knowledge is co-constructed between the teacher and the learner. The *Guru* in the ancient learning tradition of India had a vibrant role – his role as revealed in the *Upanishads* was to make the pupil completely independent and himself completely superfluous. However, this independence was believed to be achieved after years of hard work, learning, dedication and devotion. They encouraged questioning, probing and sustained enquiry by the students so that the students' own creativity came to the fore. In the contemporary

Indian context, the role of the school and educators is mediated by factors such as the pressure of ensuring that students get high marks in their examinations. There are teachers who merely dictate lessons to their students, allowing no questioning. When students do not experience the school and the learning process as one of psychological safety, it is doubtful that the education system would succeed in helping them form healthy relationships with their teachers. However, there are teachers who play a very constructive role in the education of their students, and act as their mentors and guides for future.

School is thus a significant context influencing the adolescent's development. In the next chapter we shall learn about Community and Society, the larger contexts in which the micro-contexts of family and school are situated.

**Key terms and their meaning**

**Clique:** a group of a few close friends

**Crowd:** a larger number of peers who are at some social distance from each other

**Peer pressure:** pressure on the adolescent to conform to the values held by the peer group and behave in ways considered appropriate by them.

**Co-construction:** when the teacher and the student both contribute to the development of understanding and knowledge, it is a perspective that holds that knowledge is not a static body of information that is passed on from the all knowing teacher to the 'empty' student; rather both the student and the teacher recreate knowledge during the teaching-learning process as they bring their own experiences and understanding to the teaching-learning situation and try to re-discover and re-interpret the knowledge as stated in the books or as being stated by the teacher

**Psychological safety:** an atmosphere where the person does not experience threat to her/his self-esteem; where the person experiences a sense of self-worth and a positive regards of her /his abilities. In such an atmosphere the person is able to participate freely with a sense of security about the negative reactions of others.

**Here is a brain teaser for you. Check your skill in solving the puzzle**

In **Column 1** are some words you have read in the chapter above. Unjumble the words and match them with the meaning after locating it in **Column 2**.

Column 1	Column 2
1. dowcr .....	• larger number of friends who are at some distance
2. quelci .....	• a group of small number of close friends

3. need to conform to the values and behaviours	• need to conform to the values and behaviours
4. children becoming, achieving and behaving as the teacher expected them to become	• children becoming, achieving and behaving as the teacher expected them to become
5. encourages questioning, probing and sustained enquiry by the students	• encourages questioning, probing and sustained enquiry by the students

### ■ REVIEW QUESTIONS

1. Explain how the school is a place for forming relationships and interacting with significant others?
2. Explain how the nature of friendship changes from infancy to adolescence?
3. Why are friendships important?
4. What is meant by the term 'peer pressure'? How can this be a source of stress for the adolescent?
5. Discuss how teachers and their behaviour can influence students' achievement and motivation?

## C. COMMUNITY AND SOCIETY

### LEARNING OBJECTIVES

After completing this section the learner is able to—

- discuss the concepts of community and society.
- describe the significance of society in the lives of individuals and families, and its relationship to culture.
- explain the role of media as a social influence.
- elaborate on the responsibility of individuals towards community living.

### 9C.1 INTRODUCTION

In the preceding chapters, you have learnt about the importance of the family, school and friends in the lives of individual people. Human beings are a social species; we live in close connection with other people in our lives. After birth, the human infant is the most dependent of all newborns across all mammals, and remains so for the longest period in comparison. This period of dependence allows for close interactions between the caregiver and infant and facilitates important developments in early life that lay the foundations for the future. **Sociability is a critical attribute in human life.** We like to be among other people, we build our idea about ourselves from listening to others and seeing their reactions to us, we learn about our society and culture by engaging with people around us; and we develop a sense of right and wrong by looking around us. These are some of the examples of the ways in which groups can influence individual development. This does not imply that the reverse cannot be true. As sentient living beings (beings that have sensory organs) we are deeply affected by what we experience. This is one of the primary reasons

why we are deeply affected by our experiences; our dealings with other people are one of the main influences on our lives.

## 9C.2 COMMUNITY

The idea of a community is of a group that shares common values, beliefs, spaces, interests and a common heritage. The size of the group does not matter; a community can be a small group of people who share common activity, or even a group of people who may temporarily gather for common purposes like a chat community on the internet, or a group of children getting together to play regular sports in a field. The term ‘community’ is also used to refer to people who live within a common area and share a common environment. Due to these shared features, community members are of importance to each other, whether they are aware of it or not. The terms society or ethnic group also imply the same shared reality as ‘community’. In common usage, these terms can be used interchangeably.

From ancient times, individuals have lived in clusters where work, food, shelter, children’s care and many other activities are shared with other people. Although the family has sustained as the longest standing group over centuries, people outside the family also provide very important input in people’s lives. Even people whom you never meet may play a critical role in your life. In some sense, people living in a country, and indeed, people of the world can also be considered as a community. For instance, if we wish to speak about the consequences of global warming, we can discuss the consequences of collective action on the people of the world as a community. Citizens of a country share a government, a constitution, and an economy. **Thus community is an abstract idea of a collection of people, and is not limited to any one shared characteristic.** In Sociology, the terms community and society have slightly different meanings. Society implies a larger, more abstract concept of human grouping, whereas, a community is defined as a grouping with a more cohesive unit. Family and kinship are considered examples of communities, with a great deal of shared knowledge and experience, beliefs and values.

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### Different types of communities

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Let us consider examples of communities around us, that is, people with whom we share certain experiences. The simplest starting point after the family is the neighbourhood. A neighbourhood is an important social unit since these are the people among whom we live, with whom we share our daily activities. Of course this does not imply that all members of a neighbourhood are exactly the same. Far from it! However, there is a sharing of life circumstances that makes us similar in some ways. For



instance, most neighbours use services of the locality that are provided, like marketplace, health care, schooling and play areas for children. This brings people together, and often results in conversations, friendships and even cooperation. During festival time, for example, people belonging to different religious groups may bring food specially prepared for families to share their celebrations with others. Neighbours are also very important in times of crises. In emergencies, sometimes neighbours are the first people towards whom we can turn, even before family and friends. People usually help each other in such moments, although there are differences in the extent of support that different people are willing to offer. It is true that we will be more willing to assist someone living near us, whom we know, than we are to help a stranger on the street, about whom we may know nothing. At this point, it is important to discuss the organisation of community living and social institutions that are different in different ecological settings like a village and a city.

There are differences between cities, towns and villages in the way the homes, the services and the society are organised. We do find that homes in a neighbourhood of a big city can become quite distant and many people do not often talk to or know each other very well, although there are many exceptions to this. In villages and towns, in contrast, there is a greater sense of belonging and closeness among neighbours. People usually know all the families living in their locality in a village, and if the village is small, then they would even know all the families that reside within. People would recognise each other by name, at least of the head of the family, and any stranger would be spotted instantly. This does not mean the city people

are not friendly; sometimes the pressures of dual incomes and city life can leave little time for interactions such as these. Further, the increasing mobility in urban spaces, where everyone does not own the house they live in, can also result in lower interaction. In villages, on the other hand, it seems that everyone knows everyone else. Families are identified by their members, and not by address. Life in townships is somewhere in between these extremes, where some of the character of village life sustains, since people do know each other reasonably well; and yet there is some mobility, higher employment outside the home, and other factors common with city life. That is why social scientists tend to differentiate between rural, urban and tribal societies, since these are organised somewhat differently from each other. Another important feature to note is that social institutions, like schools, community centres, health clinics, local political bodies, are also differently organised in rural and urban areas. There is a greater sense of anonymity in urban spaces, which remains an important characteristic in the social interactions, social control and changing social reality.

Apart from the neighbourhood, village, town or city, we also have other kinds of communities. For example, people who speak a common language or belong to the same native place (in a large city, for example) get together for specific occasions. For instance, we can see that during the period around September/October, *Durga Puja* is an important event for the Bengali speaking community. We find several *pandals* put up for the days of the prayer where people come and celebrate, eat and worship together.



Children have fun and games in these areas, young people dance for worship and older members sit and watch and pray to the goddess for her blessings.

In the state of Maharashtra, as another example, the celebration of *Ganesh Puja* is performed with a lot of pomp and show during *Ganesh Chaturthi*. People get together, collect funds and organise special activities regularly over a period of several days and then finally culminate the celebrations with the immersion

of the Ganesha idols in sea/river water. Thus we can see that religious membership, ethnic group and common language are some of the ways in which larger society can be organised into smaller, more identifiable groupings.

**Note that one person can potentially be a member of many communities.** For example, a child from a Parsi family is also attending a school, and automatically becomes a member of the school community. She may also be learning dance under the guidance of a teacher, so she is also a member of that dance group. This girl may be a part of a group of people who have got together to prevent cruelty to animals on the street. This makes her a member of that animal lovers group also. Thus, at any given time, we are all members of several groups and communities and sometimes we may not even be aware of these memberships. However, these memberships are important for us in the formation of our identity and our sense of belongingness to a group.

### ACTIVITY 1

List the names of a few communities that you can think of including your own. List the common characteristics of these communities. Discuss this with your peers as well as the teacher to get ideas about the communities of which you are members. Sometimes you may not realise that these are your characteristics too.

## Functions of communities

As discussed already, communities play an essential role in a person's life. However, it is also true that communities cannot exist without people. Thus there is a dynamic, co-constructive relationship between the individual person and her/his community. Although the community provides a person with identity, support, social control (what to do and what not to do), goals and activities, individuals comprising a community do the actual work in order to make things happen. Without the participation of the individual members of a community, there can be no social organisation. For instance, when a family gets together to fulfil the function of teaching new members the rules of any given community, it is transacted through the participation of individual family members. The mother is commonly expected to fulfil the responsibility of bearing and rearing young

children, the father often provides support to the mother for fulfilling these responsibilities by providing for the family in terms of protection and income. These responsibilities can be shared between fathers and mothers, and with other members of the family, or even others like friends and neighbours. For instance, when the mother goes out of the home for employment, the care of her children may be shared with the father or/and grandparents. Sometimes even neighbours can help to keep the child until the parents return home. Often older members of a family who share the home can be the caregivers of young children and therefore participate actively in the care of the child. Let us now attempt to enumerate some of the **functions of a community**, any community, whether it is a family, a kin group, a residential community or a country. A community attempts to do some of the following things for its members—

- Provide a sense of identity to a person.
- Provide opportunity for survival, learning, livelihood, entertainment, security and care. This is especially true during periods of vulnerability (when a person is at risk), for example, illness during old age.
- Prepare younger generations for social participation.
- Ensure the survival of the group.
- Participate in the transformation of a person into a functional member of community and society.

### ACTIVITY 2

For each of the above functions, discuss with a classmate examples from your own life. Share them in the class as a whole.

## 9C.3 SOCIETY AND CULTURE

As discussed in the previous section, the concept of society is more flexible in comparison with community. Society can be seen perhaps as people in general, without the notion of sharing specific features, the way we define a community. However, the two terms can also be used interchangeably in ordinary language. The term culture refers primarily to the way of living of a people. Culture consists of all those elements of a person or a group's environment, both tangible (material things) as well as intangible (beliefs, values, practices) that are created by people for their own use. This term (culture) is also used in different ways in ordinary language. Sometimes, culture is used to imply 'high society' when we refer to a person as very 'cultured' for example. This is not the way the term is used in our subject.

**We use culture to simply mean the beliefs of people and their ways of living.** It includes the food we eat, the clothes we wear, the language we use and the celebrations that we participate in, among other things. Culture also consists of ideas of people. Thus we can say that culture is a dynamic and complex construction of a variety of things that are part of our present, our past, as well as our future. Like a community, a cultural

group is seen as a group that has shared ideas about things, usually living in close proximity to each other. Also culture should not be confused with country, especially in a country as large as ours where there are countless ethnic groups, several ecological settings and thousands of languages. Our country can be called a multi-cultural society. Officially our country has 22 scheduled languages as per the Eighth Schedule to the Constitution of India when four new languages were added. These are: Bodo, Maithili, Santhali and Dogri. For each scheduled language, there are many other dialects that are spoken in the concerned states. These official languages can be counted very easily on a 10 rupee note (see Activity 3). You will find only 18 languages on it since this note was printed prior to the addition of the last four. In your counting, do not forget that Hindi and English appear in larger fonts on the note.

### ACTIVITY 3

Take a 10 rupee note and look very carefully at all the images and words printed on it. You will see the term Ten Rupees written in both Hindi and English. Note that there are many other languages listed, all of which say the same thing: Ten Rupees. Try to identify all the languages listed here. Hint: These are arranged in alphabetic order.

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## 9C.4 MEDIA AND SOCIETY

Media is an important factor in modern society. Along with the legislature, judiciary and executive, it is the fourth pillar of modern society. Whereas, the other three are concerned with social organisation, social control and functioning, media is the means whereby communication takes place at an organised, group level. The different media that we have, keep us abreast with the events, personalities, and advances in society, local, national and international. Some of the different media that we encounter in our daily lives in modern society include television, newspaper, radio and internet. Each of these sources provides us with a window to the world. If it were not for the media, then we would know only what we discover for ourselves or what people tell us. Media provides us with information from the past and the present, from near and far away. It also exercises an influence on the social trends. For example, television advertisements have been found to have an important influence on the consumption patterns of its viewers. That is why businesses use television for advertising their products. Advertising is now a powerful and vibrant career today.

Media also provides us with information about events related to education and careers. For example, information about examination dates, careers and scholarships are all advertised in national dailies. This way we can access possible places to apply for further education or occupation.



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However, it is important to note that the influence that media information has upon an individual depends on several factors like the person's age, sex, education, ethnic background and of course, temperament. Whenever a new technology is introduced (take for instance mobile phones) it is usually seen that younger generations are more impacted by the invention if it is available to them.

#### ACTIVITY 4

From a recent newspaper/magazine, identify one article in each of the following areas and bring to the class:

1. Article related to sports
2. Article related to entertainment
3. Matrimonial advertisements
4. Advertisement for a product

Discuss the articles collected in the class. You may classify them in different ways.

Apart from TV and newspaper, we are also connected with the world through the **internet**. Today, we find cyber cafes even in small towns and villages. The information available on the internet is much more varied and detailed than any other media source. Like every powerful medium, there is as much potential harm the internet sources can do; and like any other media source, the most important factor that determines its positive impact on society is the judicious use of the internet. For instance, when we access information on the internet, we can also access sites that have material that may be potentially damaging to the minds of young people. Internet is also a powerful source of sharing information by criminals who work towards harming other people and therefore society in general. It is very important for parents and other concerned adults to be aware of the media accessed by their children. Without being overly strict, parents, teachers and others can guide children towards the optimal use of media sources, and can thus gather important information, receive entertainment and also network with other people.

Thus we can say that **no medium is harmful in and of itself; it is the way in which it is used** and the purpose for which it is used that makes it good or bad. In the following box, there are a few simple guidelines to parents or caregivers for facilitating responsible **television viewing** among children.

**In order to facilitate responsible TV viewing the following points are helpful for caregivers.**

- Always be aware of what programmes your children are watching; preferably watch WITH them rather than using the TV as a substitute for you.
- TV viewing is a habit, so set the trend early.
- If you expect the child to be watching limited hours, remember your own pattern of watching TV is the biggest guide for the child.
- Recommend to the child the programmes that are fun and informative for children.
- It is often useful to place a TV in a central place so that everyone can watch.
- Do not use the TV as a punishment (switching off) or reward (can see all the time); this adds unnecessary complication to the dynamics around viewing for long hours.
- During exams, children want movement and entertainment; let the child watch some TV, BUT ensure that the child gets adequate outdoor activity. This is good for the memory and emotional stability during exams.
- Explain to the child that the violence and bloodshed (even if it is the news) is hurtful for the people experiencing it, even if you cannot feel the pain.
- Limit TV viewing to a few programmes a day rather than leaving it on all the time.
- Avoid viewing late into the night with young children, since many of the programmes are unsuitable for children.
- Have a variety of activities like indoor games, board games, stories and book reading along with TV.

Another important social influence on individuals is **films**. India is the largest producer of films and it is no surprise that some of the most influential role models are film stars. The fan following of Amitabh Bachchan must include millions of people. These fans look up to him as a role model and try to follow his actions, his appearance and sometimes even his lifestyle. People want to become like him. Actors are therefore charismatic and have a lot of influence on the society. Their conduct is always under scrutiny and our newspapers and TV channels follow their every move very closely. We also listen carefully to news items about them and discuss their lives with our family and friends. Apart from actors, films both reflect and affect social reality. For example, over the years, the image of women in movies has changed, and we are now accepting a greater variety of stories in film. Meanwhile we also see that a number of films are banned by the censor board or a religious community. If films were inconsequential, no one would ban them. The truth is that the multicultural fabric of Indian society provides rich material for film scripts, as well as multiple challenges to movie makers. Films also bring home to us the cultures of different countries. Through foreign films, we learn about new places and people and may know some of their ways of living, whether it is in Europe or America or Australia.

In this manner, different media provide us with windows to the world, through which we are entertained, informed, emotionally moved and socially networked with people around and all over the world. It is thus a critical dimension of social reality and cultural dynamics.

#### ACTIVITY 5

Name the latest film you have seen or heard about, recall the story of the film and focus on any one character/role that you liked and one that you did not like. List the reasons for each of your choices.

## 9C.5 THE INDIVIDUAL CHILD, COMMUNITY AND THE SOCIETY

Individual children enter into the world, in the company of several members, that comprise a family. In previous chapters, you have been able to grasp the importance of the family in the lives of individuals. The family is the primary unit of social life that forms the intersection between the larger social reality, the community life and the individual. It is family members who decide (consciously or unconsciously) what values and practices of larger society they will adopt and which they will oppose. In this manner, every family of a community or a culture will not have identical values. Human beings are diverse on account of personal experiences, social

historical factors and individual temperament, that makes each individual unique.

In some instances, like due to natural or man-made disasters, personal constraints or social difficulties can sometimes lead to the absence of a caring group for the child to grow up in. Sometimes, a family may also be too poor to care for the child adequately. In situations like these, it is important to remember that the State or Central Government is responsible for providing adequate care for the child. The Fundamental Rights in our Constitution state the basic provisions for individual needs. Due to the economic situation in our country, the lack of resources, inadequate distribution and sometimes also lack of outreach, the care of children and families in difficult circumstances by the Government remains unfulfilled. This is a distressing fact of the Indian society; despite the many success stories that we have in the field of technological and educational development, we have not been able to ensure that all children receive adequate food, and that every child has access to schooling and health care. In India, we have a long way to go before the community becomes organised and is involved more effectively in the care of people in difficult circumstances. Undoubtedly, the NGO sector has provided an alternative movement for developing programmes and advocacy for such situations, but we need a more concerted will of the Government machinery along with improved work ethics and better funding to take responsibility for health care, education, entertainment and overall well-being of children and people in difficulty.

All of us have to be aware that if a community provides us with security, and if we have rights in any community, we also have individual and group responsibilities. **Giving back to society and communities from where we have taken is a very important duty of every individual member.** Remember that communities cannot survive without individual will and participation. Therefore, you must resolve to be an active member of your family, community, society, country and the world, in order that you can play your role in the betterment of the future for the generations to come. That is the strength of the relationship between any individual and the group; that there is an exchange of mutual dependence, of rights and responsibilities which we all have to fulfil.

In the next four chapters we shall learn about some crucial concerns that are relevant to all individuals in society. These are – health and nutrition, work and work place, resource availability, learning and education and textile heritage of our country.

## Key Terms

Community, Society, Culture, Social control, Television, Internet, Rights and responsibilities

### ■ REVIEW QUESTIONS

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1. Briefly discuss the meaning of a community. What are some of the functions of a community?
2. What do you understand by the term society? How is it different from community or similar to it?
3. What is culture? Discuss using examples.
4. How do TV and internet impact society?
5. Discuss the ways in which an individual can contribute to the society.

### ■ PRACTICAL 9

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#### Community and Society

**Theme** Observing and recording group dynamics in different situations

**Tasks** Observing group dynamics at home, eateries, playfield, school, recreation areas

**Purpose of practical:** Each of the above constitutes distinct communities. People in a community have certain ways of responding and interacting with each other, depending on the purpose for which the community is organised, the degree of closeness of the community members and the duration for which they are together.

**Conduct of practical:** Spend one hour each at each of the following locations and observe the group dynamics that takes place while you are present:

Home, eateries, playfield, school, recreation areas

You are not required to interact with the people present – just observe; however if someone initiates interaction with you, respond in a natural manner. Some of the aspects you can note in each of the above communities are the following–

- Number of people present at the location
- Whether all the people were together as a cohesive group or were there many smaller groups of people
- The age range of people in the group
- What was the role of different members? Were some members of the group more active as compared to others? For example, was someone the leader in the group and others were following him?

RELATIONSHIPS AND INTERACTIONS WITH 'SIGNIFICANT OTHERS'

- What was the communication style among the group members: formal–informal; democratic-hierarchical?
- What was the language used for communication among the group members- mother tongue, English? Was the language used formal or informal?
- The duration for which the group members were together: Will the group form again on another day with the same members or was it a one-time coming together of people?

Record the observations using the following format :

Community	Group Dynamics			
	Number of people present; age range	Role of members	Communication style; language used	One time group or sustained group

In the class, form groups of 4-5 students and present your findings to each other. Discuss amongst yourself whether the group dynamics were similar or different in different communities. Each group should then make its presentation to the entire class.

# CONCERNS AND NEEDS IN DIVERSE CONTEXTS



11136CH10

## A. NUTRITION, HEALTH AND HYGIENE

# 10

### LEARNING OBJECTIVES

After completing this section the learner is able to—

- discuss the importance of health and its dimensions.
- understand the interrelationship of nutrition and health.
- identify the consequences of undernutrition and overnutrition.
- select appropriate and healthy food choices.
- identify the interrelationship between nutrition and disease.
- explain the importance of hygiene and sanitation for preventing food- borne diseases.

### 10A.1 INTRODUCTION

Every person wants to live a good quality life and have a sense of well-being. As far back as 1948, the Universal Declaration of Human Rights stated: “Everyone has the right to a standard of living adequate for the health and well-being of oneself and one’s family including food”. Yet, many of the environmental conditions and our own lifestyles affect our health, sometimes having harmful effects. At the outset let us define “health”. The world’s premier organisation concerned with health, the World Health Organisation (WHO) defines health as “a state of complete mental, physical and social well-being and not merely the absence of disease”. Disease means impairment of body health, alteration/disruption/derangement in function of some part or organ of the body, interrupting normal functions and deviating from a state of complete well-being. Health is a fundamental human right. All persons, irrespective of age, gender, caste, creed/religion, place of stay (urban, rural, tribal) and nationality, throughout their lives,

should have the opportunity to achieve and maintain the highest attainable state of health.

It is the aim of every health professional (persons who deal with various aspects of health) to promote good health; in other words, to promote maintenance of well-being or wellness, quality of life.

## 10A.2 HEALTH AND ITS DIMENSIONS

You must have noticed that the definition of health includes various dimensions—social, mental and physical. Let us briefly deal with all three dimensions before we discuss physical health in greater detail.

**Social health:** It refers to health of individuals and of a society. When we are concerned with society, it refers to a society in which there is equal opportunity and access for all citizens to the goods and services essential for good health. When we refer to individuals, we refer to each person's well-being – how well the individual gets along with other people and with social institutions. This includes our social skills and the ability to function as a member of the society. When we are faced with problems and stress, social support helps us to cope with them and solve the problems facing us. Social support measures contribute to positive adjustment in children and adults, and encourages personal growth. Emphasis on social health is gaining importance as scientific studies have shown that persons who are socially well adjusted, tend to live longer and recover faster from disease. A few social determinants of health are:

- Employment status
- Safety in workplaces
- Access to health services
- Cultural/religious beliefs, taboos and value systems
- Socio-economic and environmental conditions

**Mental health:** This refers to emotional and psychological well-being. An individual who experiences a sense of well-being can utilise his/her cognitive and emotional capabilities, function well in society and meet the ordinary demands of daily life. The box below lists the indicators of mental health.

- A person who has positive mental health—
- feels that he/she is capable and competent.
  - can handle normal levels of stress he/she faces in daily life.
  - has satisfying relationships.
  - can lead an independent life.
  - if faced with any mental or emotional stress or events, he/she can cope with them and recover from them.
  - does not fear things.
  - does not feel defeated or depressed for unusually long periods of time when small difficulties/problems are encountered.

**Physical health:** This aspect of health encompasses physical fitness and functioning of the body. A physically healthy person is able to undertake normal activities, does not feel unusually fatigued and has adequate resistance to infection and disease.

### 10A.3 HEALTH CARE

Every individual is responsible for his/her own health, but it is also a major public concern. Thus the government assumes considerable responsibility and provides health services at various levels to the citizens of the country. This is because good health is the foundation for good quality of life and standard of living for the individual and the family, and is the key for ensuring social, economic and human development of a community and a nation.

Health care consists of all the various services provided to individuals or communities by agents of health services or professions for the purpose of promoting, maintaining, monitoring or restoring health. Thus health care includes preventive, promotive and therapeutic care. Health Care services are delivered at three levels – primary care, secondary care and tertiary care levels.

**Primary Health Care:** The first level of contact between individuals with the health care system is known as Primary Health Care.

**Secondary Health Care:** When patients from primary health care are referred to specialised hospital also like district hospitals, it is called as Secondary Health Care.

**Tertiary Health Care:** When patients are referred from primary and secondary health system for specialised intensive care, advanced diagnostic support serious and medical care, then it is called as Tertiary Health Care.

### 10A.4 INDICATORS OF HEALTH

Health is multidimensional, with each dimension being influenced by several factors. Therefore, several indicators are employed to assess health. These include indicators of mortality, morbidity (illness/disease), disability rates, nutritional status, health care delivery, utilisation, environment, health policy, quality of life, etc.

### 10A.5 NUTRITION AND HEALTH

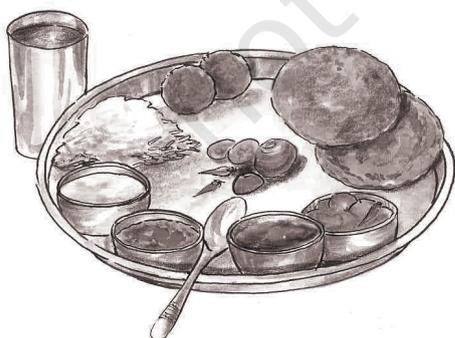
Nutrition and health are intimately interlinked. In the global campaign of 'Health for All', promotion of nutrition is one of the primary elements. Nutrition is concerned with maintenance of body organs and tissues in structure and function. It is also concerned with growth and development of the body. Good nutrition enables the person to enjoy good health, resist infection, have adequate energy levels and perform daily tasks without

feeling fatigued. In case of children and adolescents, nutrition is vital for their growth, mental development and achieving their potential. For adults, adequate nutrition is crucial to lead a socially and economically productive and healthy life. In turn, the health status of an individual determines the nutrient requirements of a person and food intake. During illness, nutrient requirements increase, and breakdown of nutrients are higher. Therefore, illness and disease adversely affect nutritional status. Hence, nutrition is a 'fundamental pillar' of human life, health and development.

## 10A.6 NUTRIENTS

There are more than 50 nutrients in food. Nutrients are broadly classified into macronutrients (required in relatively larger amounts) and micronutrients (required in small quantities) based on the amounts required by the human body. Macronutrients are generally fat, protein, carbohydrate and fibre. Micronutrients include the minerals such as iron, zinc, selenium and the various fat-soluble and water-soluble vitamins, each of which performs important functions. Some of them function as co-factors and co-enzymes in the various metabolic reactions that occur in the body. Nutrients can also influence gene expression and transcription. Different organs and systems play a critical role in the digestion, absorption, metabolism, storage and excretion of nutrients and their end products of metabolism. In essence, each and every cell in all parts of the body requires nutrients. Nutrient requirements in the normal healthy state vary according to age, sex and the physiological state, i.e., during periods of growth such as infancy, childhood, adolescence, and pregnancy and lactation in women. Level of physical activity also determines requirements for energy and nutrients involved in energy metabolism, e.g., vitamins like thiamine and riboflavin.

Knowledge about nutrients, their metabolism and sources as well as functions are vital. One should consume a balanced diet which includes foods that will provide all the necessary nutrients in required amounts.



BALANCED MEAL

The science of nutrition is concerned with access to, availability and utilisation of food and nutrients for life, growth, development and well-being. Nutritionists (professionals who work in this field) are concerned with myriad aspects. These range from biological and metabolic aspects to what happens in disease states and how the body

is nourished (clinical nutrition). Nutrition as a discipline studies the nutritional needs of populations and their nutritional problems, including health problems caused by lack of nutrients (public health nutrition) and prevention of diseases such as heart disease, diabetes, cancer, hypertension.

We all know that when one is ill, one may not feel like eating. What and how much is eaten by a person not only depends on taste but availability of food (food security) which in turn is influenced by purchasing power (economic factors), environment (water and irrigation), and policies at the national and international levels. Culture, religion, social status, beliefs and taboos also influence our food choices, food intake, and nutritional status.

**How do good health and nutrition help?** Look around you. You will notice that people in good health are generally in a happier frame of mind and are more productive than others. Healthy parents are able to take adequate care of their children, and healthy children are generally happy and do well in school. Thus, when one is healthy, one is more constructive for oneself and can take active part in activities at the community level. It is therefore obvious that one cannot achieve good health and be productive, sociable and a contributory member of society if one is starving and undernourished.

Table 1: Optimum nutritional status is important because it—	
▪ maintains body weight	▪ provides resistance to infection
▪ maintains muscle mass	▪ helps to cope with physical and mental stress
▪ decreases risk of disability	▪ improves productivity

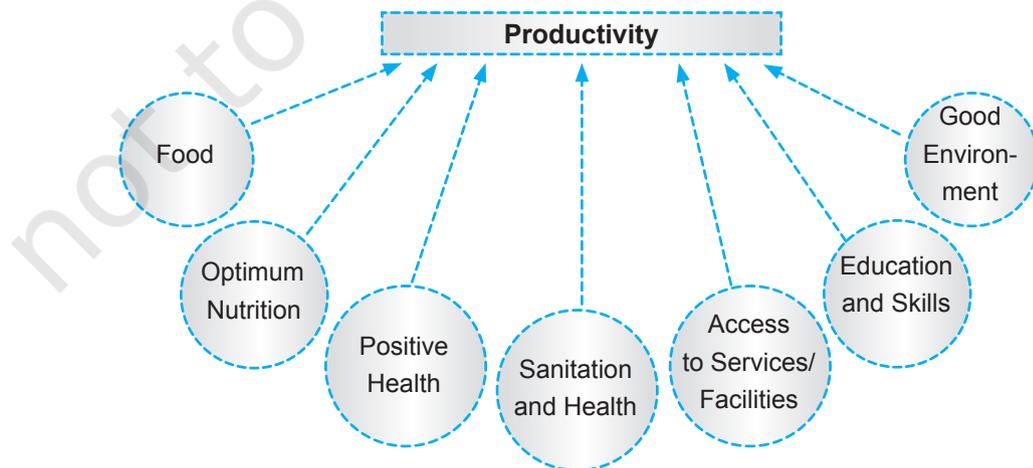


FIGURE 1: HEALTH AND NUTRITIONAL INPUTS REQUIRED FOR PRODUCTIVITY

Figure 2 summarises the benefits of good nutritional status for children’s education.

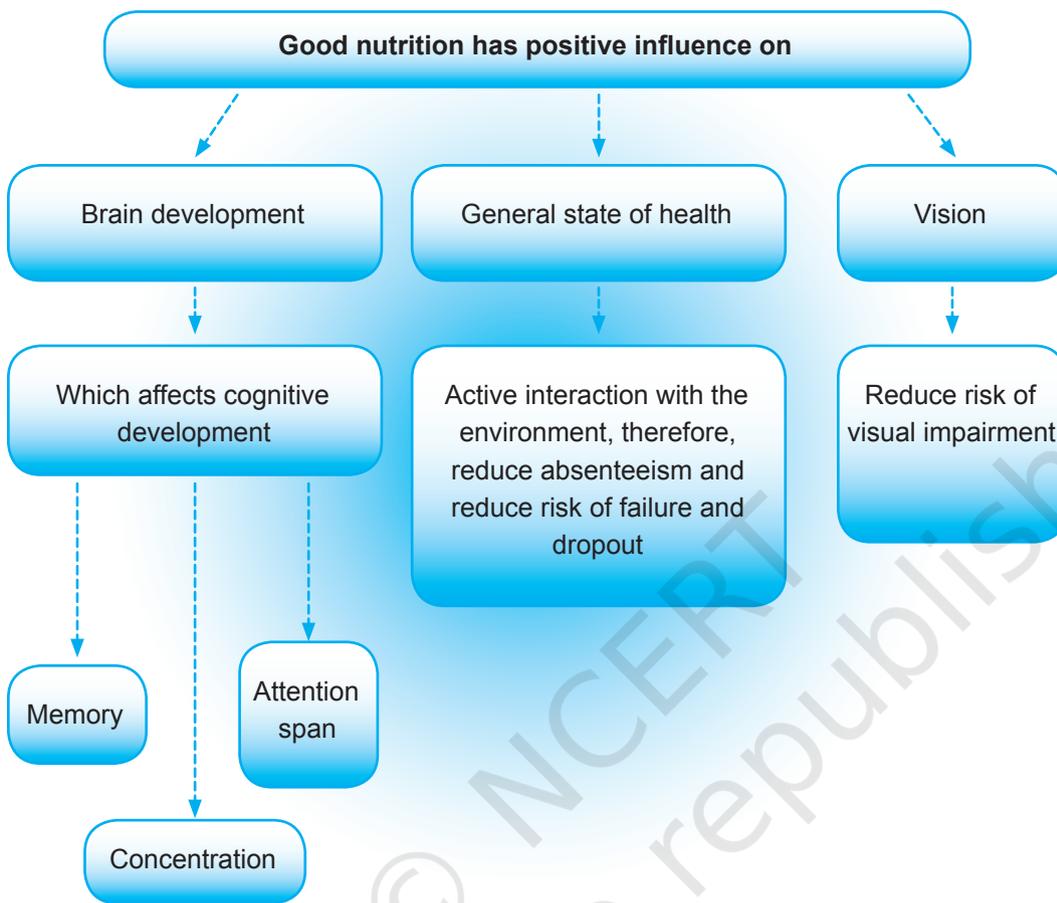
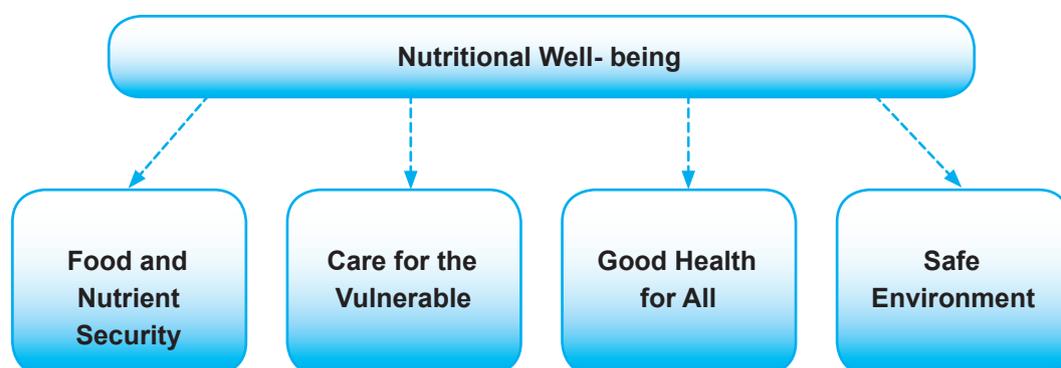


FIGURE 2: BENEFITS OF GOOD NUTRITIONAL STATUS FOR CHILDREN’S EDUCATION

**What is malnutrition?** Malnutrition is a deviation from the normal state of nutrition. When the intake of nutrients is less than the amount that is required by the body, or in excess of the requirements, malnutrition results. Malnutrition can take the form of overnutrition or undernutrition. Excess intake of nutrients results in overnutrition; inadequate intake results in undernutrition. Wrong food choices and combinations can be a very significant cause of malnutrition in adolescents.

## 10A.7 FACTORS AFFECTING NUTRITIONAL WELL-BEING

The World Health Organisation has listed four main factors (as shown in the diagram) that are important for nutritional well-being.



**Food and nutrient security** means that each and every person (regardless of age) has access to and can obtain adequate food and nutrients throughout the year, as per his/her requirements to enable him/her to lead a healthy life.

**Care for those who are vulnerable** means that each individual needs loving care and attention reflected by caring behaviour. In the case of babies it means whether the baby receives the correct type and amount of food as well as care and attention. In case of expectant mothers, it refers to whether they get all the care and support they need from the family, the community and in case of working mothers, from employers. Similarly, persons who are ill and suffer from any disease require care and support in various ways including food, nourishment, medication, etc.

**Health for all** includes prevention of disease and curing disease when it occurs. Special attention needs to be paid to infectious diseases since they can deplete the body of nutrients and lead to poor health and poor nutritional status. Every citizen should get a minimum amount of health care. Health is a basic human right. Some of the diseases that take their toll in India, especially among young children are diarrhoea, respiratory infections, measles, malaria, tuberculosis among others.

**Safe environment** focusses on all aspects of environment including physical, biological and chemical substances which may influence health. This includes safe, potable drinking water, hygienic food, and prevention of environmental pollution and degradation.

## 10A.8 NUTRITIONAL PROBLEMS AND THEIR CONSEQUENCES

In India, there exist several nutritional problems in the population. Undernutrition is a major problem which is reflected in the high numbers of pregnant women who are undernourished and have small babies with low birth weight as well as young children (below 3 years of age) who are

underweight and stunted. One-third of the babies born in India are low birth weight, i.e., less than 2500 gms. Similarly, considerable percentage of women too are underweight. There are other nutrition-related deficiencies such as iron deficiency anaemia, vitamin A deficiency and consequent blindness and iodine deficiency. Undernutrition has several negative effects on the individual.

**Undernutrition** not only reduces body weight but has devastating effects on children's cognitive development, immunity and can also result in disability, e.g., blindness due to vitamin A deficiency. Iodine deficiency is a threat to health and development, specially for young children and pregnant women since it results in goitre, still birth, and miscarriage in women, and deaf-mutism, mental retardation and cretinism in children.

Iron deficiency also has negative impact on health and well-being. In infants and young children, its deficiency impairs psychomotor and cognitive development, and thus adversely affects scholastic performance. It also decreases physical activity. Iron deficiency during pregnancy affects the growth of the foetus and increases risk of morbidity and mortality for the mother.

Conversely, overnutrition is also not good. Intake in excess of requirements leads to several health problems. In case of some nutrients it may lead to toxicity, and the person may become overweight and even obese. Obesity in turn increases the risk of several diseases such as diabetes, heart disease and hypertension. In India, we face problems at both ends of the spectrum, i.e., undernutrition (nutritional deficiencies) and overnutrition (diet-related chronic, non-communicable diseases). This has been termed "double burden of malnutrition". In our country, the third National and Family Health Survey shows that 28.9 per cent men and 22.2 per cent women from urban areas are overweight or obese, the percentage being much lower among rural men (8.6 per cent) and women (7.3 per cent).

**Nutrition and infection:** Providing enough food to fulfil nutritional requirements is not adequate. The influence of environment is also important. Nutritional status does not depend only on sufficient supply of food and nutrients but also on the person's health status, to a great extent. Nutrition and infection are intimately interlinked. Poor nutritional status decreases resistance and immunity, and thus increases risk of infection. On the other hand, during infection, the body loses considerable amount of its nutrient reserves (through vomiting and diarrhoea), while the nutrient requirements are actually increased. If nutrient intake is insufficient compared to the requirement due to loss of appetite or inability to eat (if there is nausea and/or vomiting), infections will affect the nutritional status adversely. Thus the risk of another infection increases, and all persons, especially children, the elderly and those undernourished are at the risk of contracting more infections/diseases.

In developing countries, food-borne illnesses such as diarrhoea and dysentery are major problems since they can lead to dehydration and death. Many of the infectious and communicable diseases are due to poor environmental sanitation, poor household, personal and food hygiene. The key therefore is to look into how these diseases can be prevented.

## 10A.9 HYGIENE AND SANITATION

Prevention and control of disease has to address both intrinsic and extrinsic factors which are linked with various diseases. The box below lists these factors.

Table 2: Intrinsic and Extrinsic factors linked with various diseases	
Intrinsic/host factors	Extrinsic/environmental factors
Age, sex, ethnicity, race	Physical environment – air, water, soil, housing, climate, geography, heat, light, noise, radiation
Biological factors such as heredity, blood groups, enzymes, levels of various substances in blood, e.g., cholesterol Functioning of various organs and systems	Biological environment includes the human being, all other living beings such as animals, rodents, insects, plants, viruses, micro organisms Some of these act as disease-producing agents, some as reservoirs of infection, intermediate hosts and vectors of disease
Social and economic characteristics, e.g., occupation, marital status, housing	Psychosocial factors-emotional well-being, cultural values, customs, habits, beliefs, attitudes, religion, lifestyle, health services, etc.
Lifestyle factors, e.g., nutrition, diet, physical activity, living habits, use of addictive substances such as drugs, alcohol, etc.	

Among these factors sanitation and hygiene, nutrition and immunisation are key inputs. When we speak of hygiene we are concerned with essentially two aspects: personal and environmental. Health depends to a great extent on the social environment as well as on lifestyle and behaviour, including food intake. It is also closely related to hygiene. Poor hygiene leads to several infections and infestations such as worm infestations.

**Environmental hygiene** comprises external matter, both organic and inorganic, at the domestic hygiene (home) and community levels. This includes **physical** factors such as water, air, housing, radiation, etc., as well as **biological** factors such as plants, bacteria, viruses, insects, rodents and animals.

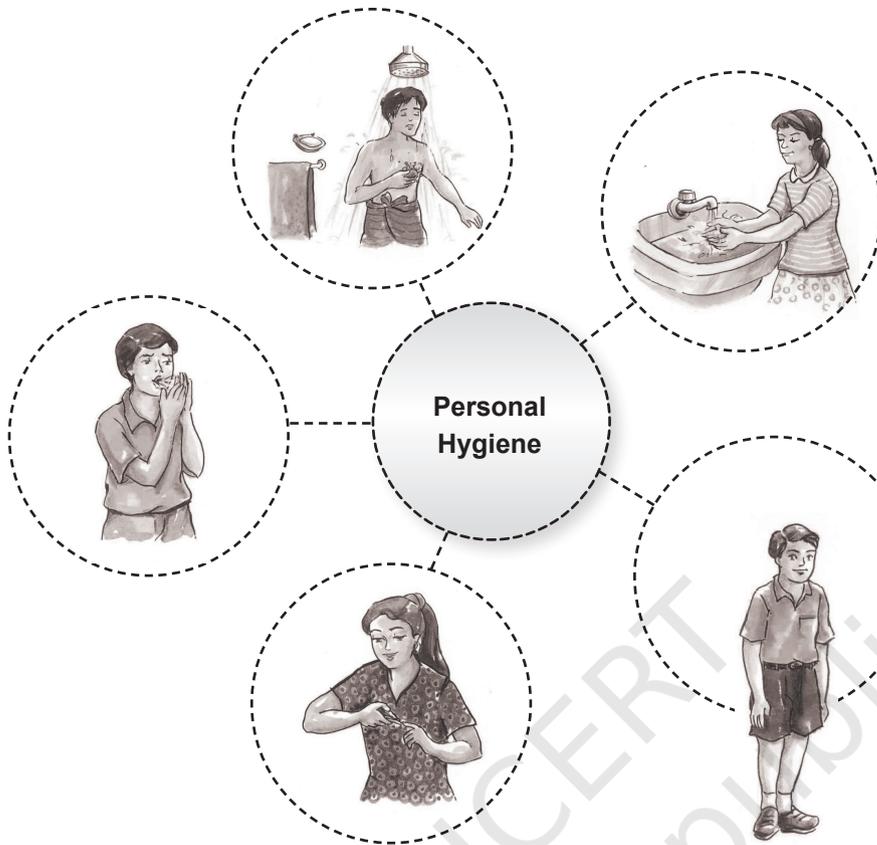


FIGURE 3: PERSONAL ASPECTS OF HYGIENE

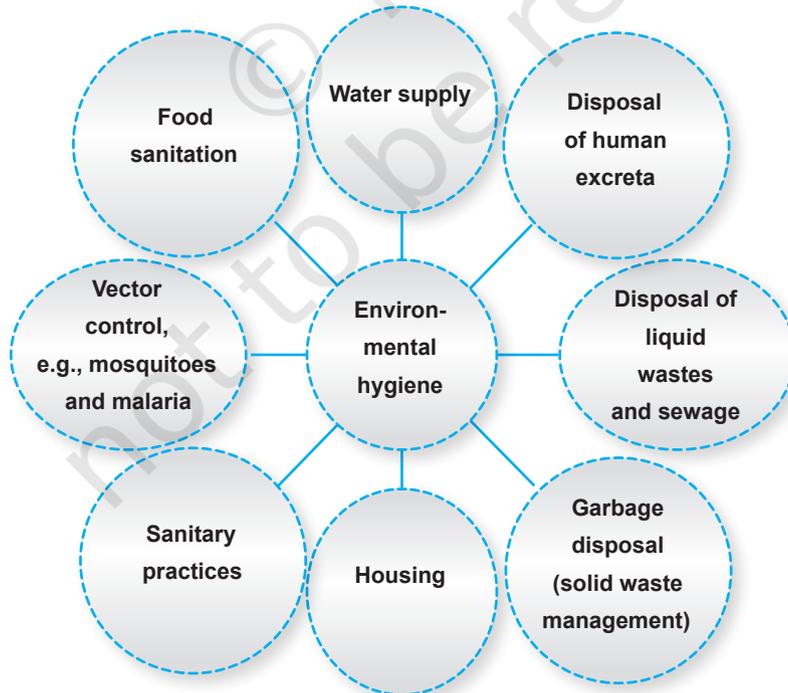


FIGURE 4: ENVIRONMENTAL ASPECTS OF HYGIENE

Environmental health needs attention so as to create and maintain ecological conditions that will promote health and prevent disease. Among these, safe drinking water and sanitation, especially faeces disposal, are of great importance. Similarly air and water pollution are of concern. Water quality is important as contaminated water is the cause for many diseases such as diarrhoea, worm infestations, skin and eye infections, guinea worm, etc.

**Food Hygiene:** Food-borne illnesses occur when we consume food that contains disease-causing (pathogenic) micro-organisms. Several factors are needed for a food-borne illness to occur.

- Either the organism or the toxin must be present in the food eaten.
- The number of pathogenic micro-organisms must be in sufficient numbers.
- The contaminated food must have been consumed in sufficient quantity.

The illnesses that are caused include diarrhoea, dysentery, amoebiasis, infective hepatitis, typhoid, listeriosis, botulism, cholera, gastroenteritis. Most of these are traced back to poor personal and food handling practices as outlined below.

- Use of food items that are spoiled/infected/unsafe, include water, spices, seasonings, mixes.
- Improper storage leading to multiplication of disease causing micro-organisms.
- Not practising insect and vermin control.
- Use of contaminated equipment, utensils and plates, spoons, glasses
- Inadequate cooking.
- Storage of foods at temperatures favourable to growth of microorganisms ( 4 to 60°C).
- Improper cooling.
- Improper/inadequate heating/reheating of cooked foods/left overs.
- Cross contamination.
- Leaving food uncovered.
- Use of contaminated substances for garnishing.
- Poor hygiene and sanitation of persons handling food, such as unclean clothes, not washing of hands, dirt and grime under the nails.

Effective practices related to nutrition, health and hygiene are essential to be productive in the work that one does, within home or outside the home. The next chapter discusses the relationship between work, worker and workplace.

### Key Terms

Health care, Nutrients, Malnutrition, Hygiene and sanitation, Food hygiene.

## ■ EXERCISES

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### 1. Look up the following websites and discuss them in the class

- UNICEF's report on State of the World's Children  
<http://www.unicef.org/sowc08/>
- Human Development Index  
<http://hdr.undp.org/en/statistics/>
- WHO's World Health Report  
<http://www.who.int/whr/en/>

### 2. Identify at least 5-6 key indicators that you think are important for health and see how India ranks among the various countries in the world.

Or

**Alternative for rural students:** Interview two mothers of young children in your village. Ask each mother how many episodes of diarrhoea have occurred in the case of her child in the last one year. Give your comments on the reasons given by the mothers.

### 3. There are so many dimensions of health. List the various occupations or professions which are involved in providing services for health and nutrition – including prevention of health problems, promotion of good health and therapeutic services.

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## ■ REVIEW QUESTIONS

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1. "Nutrition affects productivity, income and quality of life". Write your opinion about this statement.
2. How is nutrition linked to mental and visual disability and quality of life?
3. Divide the class into groups. Each group should visit a food service establishment, e.g., canteen/cafeteria, restaurant, street food vendor. Identify the poor hygiene practices related to (a) food hygiene (b) personal hygiene.
4. Have a class discussion on how hygiene can be improved and food can be rendered safer.

Or

Divide yourselves into three groups. One group will study the 'Food' aspect, the second will study 'People' and the third will assess 'Unit, facilities and equipment'. After listing the various aspects/parts/activities that increase risk of illness, the groups can be asked to give a presentation followed by a discussion on remedial measures.

**Note for Teachers**

Teachers may guide students to organise an exhibition on Health, Nutrition and Hygiene for the school children, parents and members of community.

**Note for students**

In the vicinity of (a) your school (b) your home, observe and rate as very good, good, fair, poor and very poor at least three factors that are related to environmental hygiene.

## ■ PRACTICAL 10

### A. Nutrition, Health and Hygiene

Compare the energy, protein, calcium and iron content of 150 g. edible portion of foods using the food composition tables provided—

#### (a) Cereals

Name of Cereal	Energy content (Kcal. per 150 g)	Protein content (g. per 150 g.)	Calcium content (mg per 150 g.)	Iron content (mg per 150 g.)
1. Bajra				
2. Rice (raw, milled)				
3. Maize (dry)				
4. Wheat (whole)				

#### (b) Pulses

Name of Pulse/ legume	Energy content (Kcal. per 150 g)	Protein content (g. per 150 g.)	Calcium content (mg per 150 g.)	Iron content (mg per 150 g.)
1. Bengal gram dal				
2. Black gram dal				
3. Lentil				
4. Soyabean				

#### (c) Vegetables

Name of Vegetable	Energy content (Kcal. per 150 g)	Protein content (g. per 150 g.)	Calcium content (mg per 150 g.)	Iron content (mg per 150 g.)
1. Spinach				
2. Brinjal				
3. Cauliflower				
4. Carrot				

(d) Fruits

Name of Fruit	Energy content (Kcal. per 150 g)	Protein content (g. per 150 g.)	Calcium content (mg per 150 g.)	Iron content (mg per 150 g.)
1. Mango (ripe)				
2. Orange				
3. Guava (country)				
4. Papaya (ripe)				

B. Identify the rich sources of carbohydrate, protein, fat, vitamin A, iron and calcium in your family’s diet. Can you suggest improvements? Use the following formats to record your answer.

Sources of carbohydrate	Sources of protein	Sources of fat	Sources of vitamin A	Sources of iron	Sources of calcium

Diet practices which need improvement	Suggestions

**Note for Teachers**

Teachers can encourage students to calculate the nutritive value of foods in their own region (which may not be listed in the table provided). A useful reference published by Indian Council of Medical Research (ICMR) is as follows.

**FOOD COMPOSITION TABLES**  
(Nutritive Value per 100 g edible portion)

**Cereals**

Name	Energy (Kcal.)	Protein (g.)	Calcium (mg.)	Iron (mg)
<i>Bajra</i>	361	11.6	42	8.0
Rice (raw, milled)	345	6.8	10	0.7
Maize (dry)	342	11.1	10	2.3
Wheat (whole)	346	11.8	41	5.3

**Pulses**

Name	Energy (Kcal.)	Protein (g.)	Calcium (mg.)	Iron (mg)
Bengal gram <i>dal</i>	360	17.1	56	5.3
Black gram <i>dal</i>	347	24.0	154	3.8
Lentils	343	25.1	69	7.58
Soyabean	432	43.2	240	10.4

**Vegetables**

Name	Energy (Kcal.)	Protein (g.)	Calcium (mg.)	Iron (mg)
Spinach	26	2.0	73	17.4
Brinjal	24	1.4	18	0.38
Cauliflower	30	2.6	33	1.23
Carrot	48	0.9	80	1.03

**Fruits**

Name	Energy (Kcal.)	Protein (g.)	Calcium (mg.)	Iron (mg)
Mango (ripe)	74	0.6	14	1.3
Orange	48	0.7	26	0.32
Guava (country)	51	0.9	10	0.27
Papaya (ripe)	32	0.6	17	0.5

(Source : *Nutritive Value of Indian Foods (1985)*, by C. Gopalan, B.V. Rama Sastri and S.C. Balasubramanian, Revised and Updated (1989), by B.S. Narasinga Rao, Y.G. Deosthale and K.C. Pant (Reprinted 2007))

## B. WORK, WORKER AND WORKPLACE

### LEARNING OBJECTIVES

After completing this section the learner is able to—

- identify the components of work.
- define work, worker and workplace.
- describe the importance of workplace design for better work efficiency.
- explain the interdependence among work, worker and workplace.

### 10B.1 INTRODUCTION

All of us work for long hours daily – while children study and attend to other essential tasks, parents earn livelihood and manage the home. Although we perform a lot of activities everyday, have you ever thought of the number of ways in which you can perform one activity? Why is it that you perform well in certain activities and not so well in others?

Nisha, a skilled labourer, is unable to perform well because of her inconsistency in work. Her place of work has a very poor work environment. The place is uncomfortable and the work-stations are also poorly designed. As a result, she has lost interest in her work. She can deliver better results and optimally utilise her resources (skills and knowledge) if the work environment improves. There can also be factors other than work environment that may affect work performance. Let us try to understand these.

For optimal performance, it is important to understand **work** in relation to the environment in which it is performed — the **workplace** and those who perform it — **workers**. This understanding helps to reduce the energy used and time spent on the task, thereby increasing work efficiency. At the same time, it will also prevent fatigue and other health problems. It is

therefore necessary to create a healthy work environment for the worker instead of forcing the worker to perform the task in an uncomfortable workplace.

For example, your mother works in the kitchen and has to bend again and again to pick up utensils which may be kept at a distance from the kitchen counter. In this case, she would be using more energy and spending more time to take out the utensils and will also experience fatigue and backache. On the other hand, if the utensils are kept near the counter and at a suitable height she will be able to work more comfortably, thereby, increasing her work efficiency!

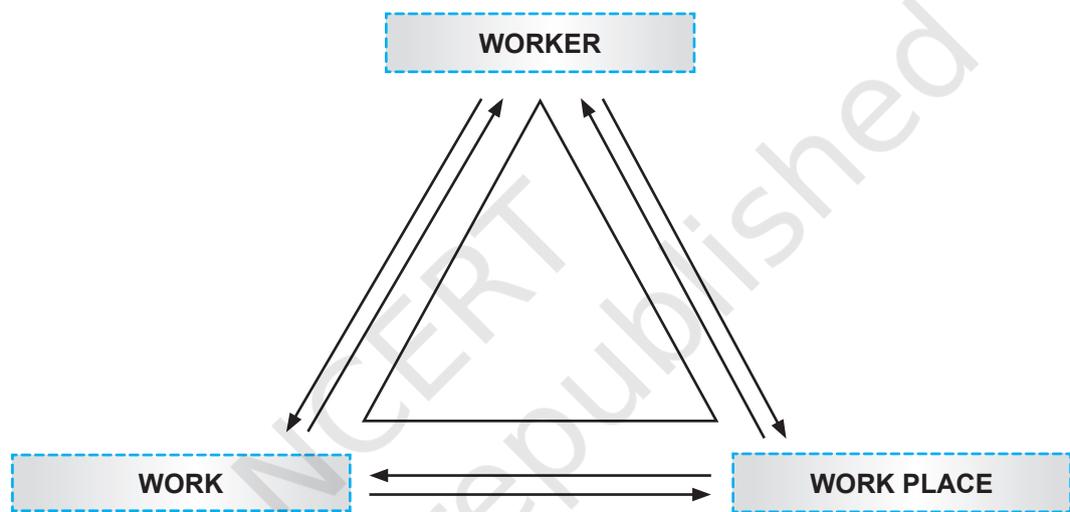


FIGURE 1: RELATIONSHIP BETWEEN WORK, WORKER AND WORKPLACE

The diagram above clearly shows the interdependence between work, worker and workplace. To understand this relationship well, the following three components should be studied in detail.

## 10B.2 WORK

To create a better match between worker, workplace and the equipments or tools used, understanding work is of prime importance. Work is defined as the activity directed towards making or doing something. Work is to exert oneself physically and/or mentally in order to do or complete a task. It forms the basis for accomplishing our goals. It is something that is done or performed, especially a duty, task or an activity. For a student, work primarily means studying to gain knowledge.

Work comprises many smaller jobs, tasks or sub-tasks. Such tasks become instrumental in achieving desired goals. But before deciding the tasks and sub-tasks one should be clear about goals or else work will suffer.

Work performed will be of good quality if the

- (a) Worker understands the goal well.
- (b) Worker sets certain standards for herself/himself for personal satisfaction.
- (c) Work is organised as per the goal.

However, there are certain forces like 'time' and 'attention requirement' which affect completion of certain tasks. To avoid this, **work simplification** is necessary. It is the management of both time and energy. Work simplification may be defined as accomplishing more work in the given amount of time and energy.

Therefore, it is essential to make the activity simple, perhaps, more interesting. If one likes the activity one gets involved in it and finishes it faster and more efficiently. (You will study about this in detail in the next chapter.)

### 10B.3 WORKER

A worker is a person who performs a particular task or activity to achieve productive outcomes. A student doing her/his school work, and a homemaker cleaning the house, are examples of a worker. The following aspects are involved in any work done by an individual.

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#### Physical

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It is related to the body of the worker. It includes human energy, physical activity, and growth.

- **Energy** : We all need energy to live and to work. Where does this energy come from? Energy is supplied by the food we eat. The dietary energy needs depend on the factors that include age, sex, body type, type of work and duration of work.
- **Physical activity** : The amount of energy needed by the individual to do any work depends on type of activity, intensity of work and duration of time, age and sex of the individual. The more the number of muscles used and the longer the duration of work, the greater is the energy demand or energy requirement.

The following table shows the energy required to perform different common activities that most of us perform on a daily basis.

Table 1: Energy costs of some common activities

S.No.	Activity	kcal per minute per kg body weight	
		Males	Females
<b>General Personal Activities</b>			
1	Sleeping	1	1
2	Lying	1.2	1.2
3	Sitting quietly	1.2	1.2
4	Standing	1.4	1.5
5	Dressing	2.4	1.6 - 3.3
6	Plaiting hair		1.8
7	Eating and drinking	1.4	1.6
8	Walking slowly	2.8	3
<b>Activities involving household tasks</b>			
1	Dusting		7.6
2	Mopping		12.2
3	Washing clothes		10.5
4	Ironing		7.9
5	Cooking		6.4
6	Storing water		13.9
7	Grinding masalas		9.7

Source: Varghese, M.A., Atreya, N., Bhatnagar, A., & Chatterjee, L. (1989): *Ergonomics in the home, DRS Report, Mumbai, S.N.D.T Women's University.*

- **Growth** : Energy is also required for growth. Hence when growth at a particular stage of life is faster, energy requirements are greater. For this reason infants, children and adolescents have higher energy needs.

### Cognitive

Cognitive or mental aspect includes the psychological features of the worker. These are attitudes, skills, knowledge, etc. To reach our goals we require **ability** and **aptitude**. Also we need to **gain knowledge** on the subject, develop **skills** by undergoing formal training and repeated practice, and have the willingness to improve performance — **attitude**. Significance of a positive mind-set can be seen in the following case.

Shobha, a young talented girl with a fertile imagination and drawing skills, aspired to be an artist. She had enrolled herself in a course where she improved her skills and acquired the knowledge she needed to achieve

her goal. With her efforts, hard work and available resources she achieved her goal to be a successful teacher of art.

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## Affective

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It includes likes, dislikes and preferences a worker has towards work. It concerns the worker's personal feelings about the activity and contributes towards achieving goals. Dissatisfaction leads to a feeling of fatigue, whereas satisfaction contributes to work efficiency.

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## Temporal

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This is concerned with time management. Sometimes the number of activities that one has to perform in a specified time period is large. This requires good management of time, which you will study in the next chapter.

Thus, an understanding of these components of the worker is an indicator that every worker is different and has different physical, cognitive, affective and temporal compositions. Perhaps tools, equipments and work spaces should be designed according to different body types. For example, tools such as scissors must be designed in order to suit both left-handed and right-handed workers. Equipments should also be designed such, that they fit the safety needs of all workers.

### ACTIVITY 1

Make a list of activities under the following headings—

- Physical activities that require extra energy expenditure.
- Activities which require mental work and skills.
- Activities you like and dislike.
- Activities that require time management.

## 10B.4 WORKPLACE

This is the place where a worker performs a job. Some examples of workplace are school, office, study room, kitchen, etc. A well designed workplace is important to prevent health problems related to poor working conditions, as well as for ensuring work performance and productivity. Every work station should be designed with both the worker and the task in mind so that the work can be performed comfortably, smoothly and efficiently with minimum energy expenditure.

A work place includes the following components–

## Physical and Chemical Environment

Workplaces typically contain a number of physical and chemical environmental factors. We cannot completely avoid being exposed to these factors, but we must ensure that we are not exposed to them to such an extent that our health is adversely affected.

The environmental factors which are of concern while selecting or designing a workplace are—

- **Noise** : Exposure to high levels of noise affects our concentration while performing a task. The source of noise can be indoor (like TV volume, whistle of a pressure cooker, running of a tap, machines, etc.), or outdoor (like road traffic, loud speakers, processions, etc.).
- **Illumination** : Illumination is the amount of light that falls on the work surface. A workplace should be well-illuminated depending on the task to be performed, age of the worker, duration of activity, placement of light fixture, colour scheme of the work area, etc.
- **Climate** : The four important factors which influence climate are air temperature, radiation temperature of hot and cold surfaces, air velocity and relative humidity. These factors also influence the energy cost for the individual at work. The indoor climate can be controlled by artificial means like fans, exhaust fans, room heaters, coolers and air-conditioners.
- **Radiation** : As you may have studied in Physics or Chemistry, when a substance sends out rays or waves that are electromagnetic in nature, it is called radiation. Radiation has some benefits and some harmful effects, depending on the type (alpha, beta, gamma, X-rays, UV rays), intensity and duration of exposure.
- **Microbiological pollution** : We are constantly exposed to micro-organisms in the environment because they are present in air, water, food, as well as in our bodies. When individuals do not maintain good standards of hygiene and cleanliness, it promotes micro-organisms. If they are harmful, they can cause disease. For example, a person preparing food should wash her/his hands before starting work or else the food will be contaminated with the micro-organisms on her/his hands.
- **Chemical substances** : At any given point of time, we are surrounded by chemical substances present in the environment in the form of liquids, gases, vapours, dust or solids. Some of these may cause discomfort and some may be hazardous to health.

## Work Surface

Apart from the physical and chemical environment of a workplace, work surface design also affects a worker's comfort and health. This concept is concerned with the height, width and depth of the work station. Appropriate **storage** design and **equipment** design are also important factors which affect work surface design.

While designing the work place the following points should be kept in mind—

- What tasks are done?
- How the tasks are done?
- How many tasks are done?
- In what order are the tasks done?

Workplace design is concerned with the workstation, the equipments and the body positions of the worker. Good workplace design reduces stationary positions, repetitive movements and awkward body positions, thereby improving the work quality.

Following points should be kept in mind while designing a good workplace—

- Equipments or tools should be kept in places and at positions where the worker can easily reach them. For example, in a kitchen, used utensils and washed utensils should be kept on either side of the washing area. Utensil detergents and cleaners should also be within easy reach of the worker.
- For work that needs detailing, the workbench should be at a lower position than for heavy work.
- Hand tools and other equipments used should be comfortable to handle and should not cause injury.
- While performing a task the worker should not stay in difficult positions, such as reaching or bending for long periods of time.

For most of the tasks that are performed, a worker may not have the option to choose her/his workplace. However, she/he can design it as per her/his needs and requirements.

A well designed workplace of a student should include a well lit study area, preferably with a table. Room temperature should be comfortable and there should be minimum noise in the room. If using a chair, the height of the chair should neither be too high nor too low, but according to the height of the study table. Books and stationery cupboards shelves should also be placed nearby and easily accessible to the student.

### ACTIVITY 2

Design your study area as per your requirements, keeping in view the three components—work, worker and workplace.

The interface between work, worker and workplace can thus be strengthened by judicious use of resources such as time and space. Let us learn more about these two important resources in the next chapter on Resource Availability and Management.

### Key Terms

Work, Worker, Workplace, Work environment, Energy cost.

### ■ REVIEW QUESTIONS

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1. What is work? List the components of work.
2. What components of a worker facilitate efficiency of work?
3. Discuss the environmental factors that can inhibit a student's work-related activities.
4. How will you explain the interdependence between work, worker and workplace?

## C. RESOURCE AVAILABILITY AND MANAGEMENT

10

### LEARNING OBJECTIVES

After completing this section the learner is able to—

- describe time and space as important resources.
- analyse the need for managing time and space.
- discuss ways of managing time and space.
- discuss tools in time management.
- explain the principles of planning space.

As you have learnt in the previous chapter, resources are possessions, material or funds which can be used to achieve goals. You have also learnt that money, time, space and energy are some examples of resources. These resources are assets for an individual. They are rarely in abundant supply and are also not equally available to everyone. Therefore, to achieve our goals appropriate management of all the resources that are available to us is important. If these resources are wasted or not utilised properly we may be hindered in reaching our goals.

Timely and efficient management of resources enhances their optimum utilisation. In this chapter, you will learn about **time and space management**. Money as a resource and its management will be dealt with in Unit IV.

### 10C.1 TIME MANAGEMENT

Time is limited and irreversible. Time is measured in years, months, days, hours, minutes and seconds. We are provided with 24 hours of time each day to use it as we like. The key is how we use that time. If not managed properly, time keeps slipping away in spite of our effort to control it. No

matter how important and valuable an individual may be, one cannot stop time, nor slow it down, or speed it up. Once passed, time can never be regained.

In today's fast changing lifestyle, our demands and responsibilities at home, at school and at work have increased. This has made the need for managing time very important. To be successful it is essential to develop time management skills. People who use these techniques become high achievers in all walks of life, from agriculture to business to sports to public service in all other professions and personal life. Time management allows one to have adequate rest and recreation along with work.

The principle of time management is to **concentrate on results, not on being busy**. People often spend their days getting anxious about the unfinished task, but achieve very little, as they do not concentrate on what matters the most— **time**. For example, some students may spend their time worrying about examinations rather than actually studying for them.

All time management begins with planning. A **time plan** is necessary. A time plan can be defined as an advance schedule of activities to be performed in a given time period.

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### How good is your time management?

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Before understanding the steps in time and activity planning, it is essential to determine how effective your own time management is. How often are you able to complete the task planned? Are you able to efficiently complete your weekly, daily or hourly work? For most of us, it seems that there is just never enough time in the day to complete all our activities.

#### ACTIVITY 1

The activity given below will help you identify your own time management skills.

**Instructions:** Score the questions given below and determine how well these statements describe you. The following are the ratings for your answers:

Not at all	= 1
Rarely	= 2
Sometimes	= 3
Often	= 4
Very often	= 5

**Examples:** If for the first question the answer of your choice is 'often', then write a score of '4' in the respective box, and if your answer is 'rarely' you may write your score as '2' and so on.

After answering all the questions add your scores across all the questions to get the final total.

Question	Not at all	Rarely	Sometimes	Often	Very often
1. Are you able to complete your highest priority tasks during the day?					
2. Are you able to place all your tasks according to their priority?					
3. Are you able to perform your tasks in the given time period?					
4. Do you keep separate time for planning and scheduling?					
5. Do you keep track of the time spent on the jobs done by you?					
6. How often are you able to work without distractions and interruptions?					
7. Do you do goal setting to help you decide the various tasks you would work on?					
8. Do you keep extra time margin in your schedule to deal with 'the unexpected'?					
9. Do you prioritise the importance of any new assignment given?					
10. Are you able to complete your task without being pressured by deadlines and commitments?					
11. Are you able to work effectively on important tasks because of distractions?					
12. Are you able to complete your work at the work place instead of taking it home?					
13. Do you prepare a "To do" list or an action programme before carrying out the tasks?					
14. Do you consult persons with experience before setting priorities for a given task?					
15. Do you consider whether the task would be worth the time put in, before you start your task?					

**Total =**

**Score Interpretation**

Score	Comment
46-75	You are managing your time very effectively! However, check the section below to make it even better.
31-45	You are good at some aspects, but there is scope for improvement elsewhere. Focus on the key issues in the section below and you will most likely find that work becomes less stressful.
15-30	The good news is that you have a great opportunity to improve your effectiveness at work for long term success! However, to realise this you have to improve your time management skills.

**Steps in time and activity plan**

- (a) Start your work as quickly as possible. Do not waste time in avoiding or delaying the task. When a student reaches home, she/he should relax for a while, have a meal and then start with the school work without postponing it for the end of the day.
- (b) Get into a routine every day. Choose a time to accomplish certain tasks, such as completing school work, doing household chores; and then stick to the routine activities. The student should make an everyday routine to complete work in time, without any delay.
- (c) Prioritise your tasks. Before picking up any new task make sure it does not impact the already existing activities. Do not undertake too many activities at a particular time. If the time available is less and work is more then keep the optional tasks for a later time and complete compulsory activities first. For example, if the student has a class test, she/he should first study for the test, then do homework and later get involved in other activities.
- (d) Do not commit yourself to unimportant and low priority tasks. Learn to say 'No'. If you have less time and more tasks in hand, you should be able to say 'No' to the tasks which are not very important. For example, the student can avoid watching television, if she/he has to complete a task for the next day.
- (e) Divide the big tasks into a series of small manageable activities. The day's school work (big task) can be divided into smaller tasks by dividing the work as per different subjects.
- (f) Do not waste energy and time on tasks which do not need much attention.
- (g) Deal with a task one at a time till it is completed or decide when to deal with it. Do not put it aside before completion.
- (h) Arrange 'start' and 'stop' times to schedule activities. Appropriate time should be allotted to each subject without spending too much time on each subject.

- (i) Make a schedule of your activities and tasks. This will help to effectively manage time allocated to each task. A proper time schedule should be prepared for the entire day, which must always include leisure time.

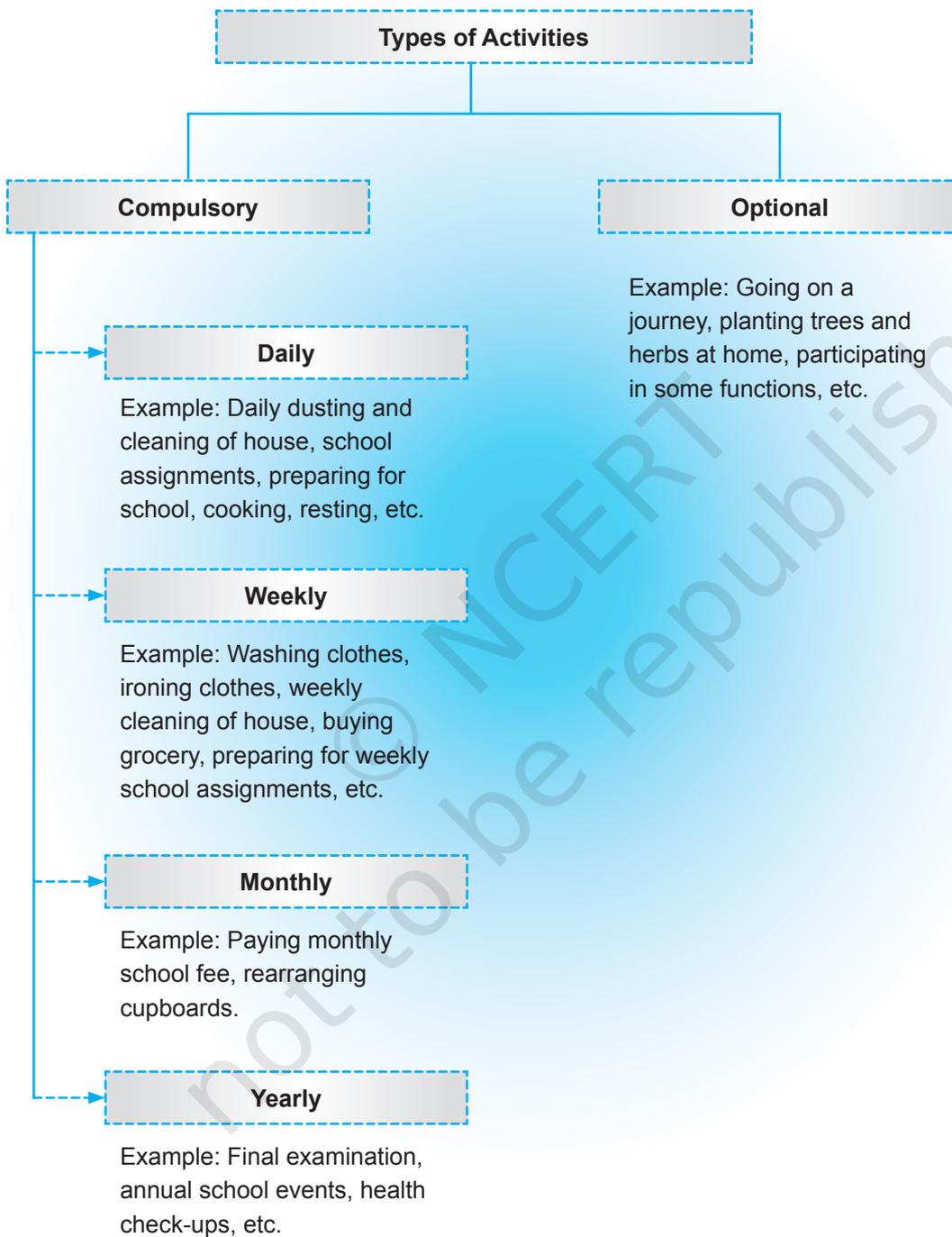


FIGURE 1: TYPES OF TIME SCHEDULES

## ACTIVITY 2

An example of a time and activity plan of a student studying in Class XII, who lives in a small town and lives near the school, is given below. In the next column write your own time and activity plan.

	Time Plan of a Student	Your Time Plan
5:00 am	wakes up	
5:00 am – 6:00 am	daily personal activities	
6:00 am – 7:00 am	studying/helping in kitchen work	
7:00 am – 7:30 am	bathing and getting ready for school	
7:30 am – 7:50 am	breakfast and reading newspaper	
7:50 am – 8:00 am	reaching school	
8:00 am – 2:00 pm	in school	
2:00 pm – 2:10 pm	reaching home	
2:10 pm – 3:00 pm	changing clothes, washing hands and face, eating lunch, etc.	
3:00 pm – 4:00 pm	Resting/sleeping	
4:00 pm – 6:00 pm	studying and completing school related work	
6:00 pm – 8:30 pm	playing outdoor, leisure time, watching TV, spending time with parents, siblings, and friends, etc.	
8:30 pm – 9:00 pm	Dinner	
9:00 pm – 10:00 pm	studying and preparing school bag for next day	
10:00 pm – 5:00 am	Sleeping	

Time plans are made according to the individual needs of a person. Every individual has different goals and requirements, and therefore, a different routine. For example a time plan for a student is very different from a time plan of a person who goes out to work.

**ACTIVITY 3**

	Time Plan of a Rural Homemaker	Your Mother's Time Plan
4:00 am	wakes up	
4.00 am – 5.00 am	feeds and milks the cow	
5:00 am – 5:30 am	bathes and offers prayer	
5:30 am – 7:00 am	cooks and serves meal to family	
7:00 am – 9:00 am	works in the fields	
9:00 am – 10:30 am	finishes other household chores like cleaning the house, utensils, washing clothes.	
10:30 am – 12:30 pm	rest period which includes activities like knitting, chatting with family members and neighbours, watching TV	
12:30 pm – 1:30 pm	serves lunch to the family and self	
1:30 pm – 3:00 pm	afternoon rest	
3:00 pm – 4:30 pm	fetches water for cooking and drinking	
4:30 pm – 6:00 pm	other household chores	
6:00 pm – 7:30 pm	prepares dinner	
7:30 pm – 8:30 pm	serves dinner and has it herself	
8:30 pm – 9:30 pm	finishes the remaining household chores and winds up	
9:30 pm – 10:00 pm	watches T.V., goes to sleep	

**Tips for effective time management**

**1. Create a simple “To Do” list**

It helps you to identify the activities, reasons for doing them and a timeline for completing them.

S.No.	Activity	Day/date of completion	Reason for carrying out the activity

**2. Daily/weekly planner**

DAY	Hours														
	A.M.					P.M.									
	7-8	8-9	9-10	10-11	11-12	12-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	9-10	10-11
Mon															
Tue															
Wed															
Thur															
Fri															
Sat															
Sun															

**3. Long term planner**

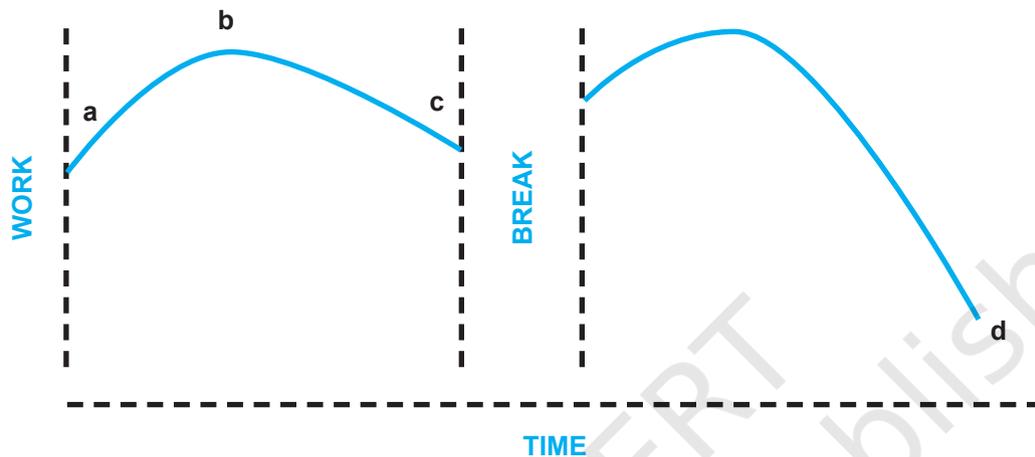
Use a monthly chart so that you can plan ahead. Long-term planners will also serve as a reminder to constructively plan time for oneself.

January	
February	
March	
April	
May	
June	
July	
August	
September	
October	
November	
December	

## Tools in time management

Following are the tools which help in managing time effectively—

- (i) **Peak load period:** It is the maximum load of work during a specified period of time. For example, early morning time or dinner time.



- (ii) **Work Curve:** A device to trace the work against time. Here, a to b is warming up period, c is plateau of maximum ability to do work and d is maximum fall due to fatigue.

- (iii) **Rest periods/break periods** are defined as unproductive interruptions of working time. The frequency and duration of rest period is very important. It should neither be too long nor too short.

### ACTIVITY 4

Identify your daily peak load and rest periods.

- (iv) **Work simplification** can be defined as the conscious seeking of the simplest, easiest and quickest method of doing work. It implies proper blending and management of two important resources, namely time and human energy. It aims at accomplishing more work with a given amount of time and energy, or at reducing the amount of either or both to accomplish a given amount of work. In order to bring change in work procedure as well as to simplify it, three levels of changes are important. These include the following—

- **Change in hand and body motions:** It involves changes in hand and body motion only, keeping the same work tools and product. Many tasks can be completed with less effort by—

- (i) Eliminating and combining certain process as, for example
  - Allowing dishes to dry on utensil racks eliminates the need to dry them by wiping.
  - Making a list of all the items required from the market and buying them together rather than getting each item separately.
- (ii) By improving the sequence and rhythm of work, for example
  - Doing like tasks together – while cleaning the house, all the processes of dusting, sweeping and mopping should be done in continuation in all rooms together, rather than cleaning each room separately. This also helps in maintaining rhythm.
- (iii) By developing skills at work – knowing and mastering a job well help to eliminate extra motions thereby saving both time and energy.
- (iv) By improving body posture – i.e., maintaining a correct and good body posture (see Figure 2 below), using muscles effectively, keeping the body parts in alignment and finally carrying the maximum weight on the bony framework, thus releasing the muscles of all strains. For example, use of long handle on the broom instead of bending and sweeping in order to maintain a stable posture (see Figure 3).

**Good Standing Posture** – a good standing position is one in which the head, neck, chest and abdomen are balanced one upon the other, so that the weight is carried mainly by the bony framework and minimum effort and strain is placed upon the muscles and ligaments.

Similarly, **Good Sitting Posture** for work is a well-balanced and poised position. The weight is carried by the bony support of the skeleton thus releasing the muscles and nerves of all strain. The poise is such that as much adjustment is done as is necessary to carry out the work.



FIGURE 2: FIGURE SHOWING ALIGNMENT OF BODY PARTS IN LINE WITH GRAVITY



FIGURE 3

- **Change in work, storage space and equipment used:** This requires organising storage spaces, rearranging kitchen equipment, planning work surfaces with proper height and width according to the user, using labour-saving devices like pressure cookers, washing machines, microwave oven, etc., which help in saving time as well as hand motions.
- **Change in the end product:** These changes result from the use of –
  - Different raw materials – for example, using readymade ground spices instead of whole spices, using organic seeds to grow produce, etc.
  - Making different products from same raw materials – for example, making *kulfi* instead of ice-cream, *lauki paranthas* instead of *kofta* curry, etc.
  - Changes in both the raw material and finished product – for example, using ball pen instead of ink pen, etc.

## 10C.2 SPACE MANAGEMENT

Space is utilised by people to carry out various activities at home, outside the home and at workplace. You must have observed that a well-designed room gives a sense of spaciousness, while a room with similar dimensions, if not managed well, results in the room looking apparently cramped or cluttered. Space management involves planning of space, organising it as

per the plan, implementing the plan in terms of its utilisation, and evaluating it in terms of achieving functionality and aesthetic appeal. A well-managed space not only offers comfort while working but also appears attractive.

### Space and the home

Sitting, sleeping, studying, cooking, bathing, washing, entertainment, etc., are the major activities to be carried out in the home. To conduct each of these activities and the actions that may follow them, usually specific areas are identified in the home. Wherever there is space available, specified rooms are built to carry out such activities. Most urban middle Socio-economic Status (SES) homes are likely to have sitting room/area, bed room/rooms, kitchen, store room, bathroom and toilet, verandah/ courtyard (optional).

Besides the above, some homes may additionally have other rooms like dining room, study room, entertainment room, dressing room, guest room, children’s room, garage (for scooter, car), stairs, passages, *puja* room, garden, terrace, etc. Let us learn, how to plan spaces?

#### ACTIVITY 5

Make a list of different rooms/areas in your house and the activities carried out in each of these. For example–

Rooms	Activities
Kitchen	Cooking

### Principles of space planning

Space must be planned for its optimal utilisation. Following are the principles to be kept in mind while assigning/designing work areas in the house–

- (i) **Aspect:** 'Aspect' indicates the arrangement of doors and windows in the external walls of a building which allows the occupants to enjoy the nature in the form of sunshine, breeze, scenery, etc.
- (ii) **Prospect:** 'Prospect' in its proper sense, is the impression or impact that a house is likely to make on a person who looks at it from outside. Therefore, it includes the attainment of pleasing appearance using natural beauty, positioning of doors and windows, and covering up of undesirable views.
- (iii) **Privacy:** Privacy is one of the most important principles in space planning. Privacy requires consideration in two ways:
  - *Internal privacy* : Privacy of one room from another is referred to as internal privacy. It is attained by careful planning in the house with respect to grouping, positioning of doors, provision of small corridor or lobby, etc. Internal privacy can be also be achieved by setting up screens and curtains. In some homes with large families separate sitting area is provided for women, ensuring their privacy.
  - *External privacy* : This means privacy of all parts of a house from the neighbouring buildings or houses, public streets and by-ways. It can be a shade secured by carefully planning the entrance and covering it with a tree or creepers.

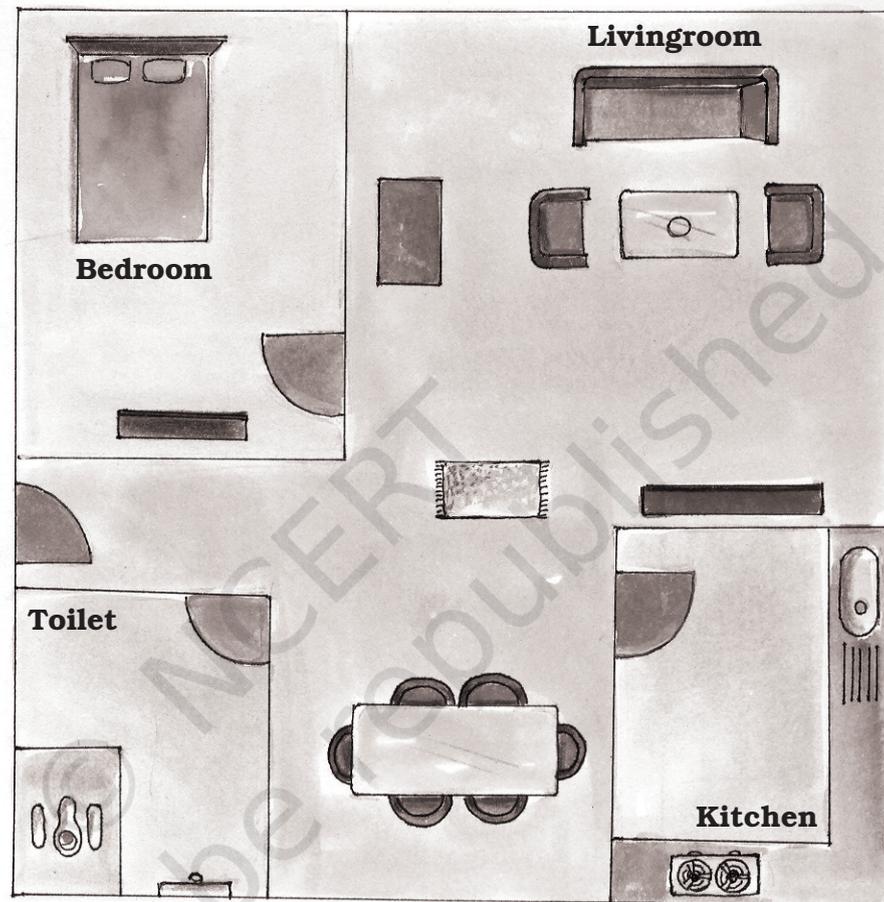


EXTERNAL PRIVACY – A HOUSE SECURED BY FENCE AND SHRUBS

## ACTIVITY 6

Talk to members of your family from different age groups and ask them what they understand by privacy.

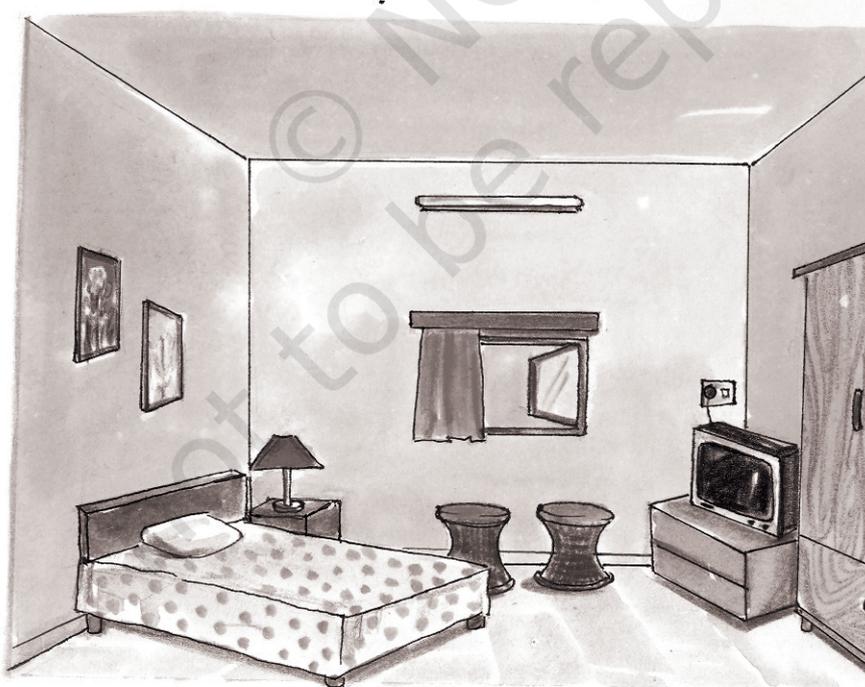
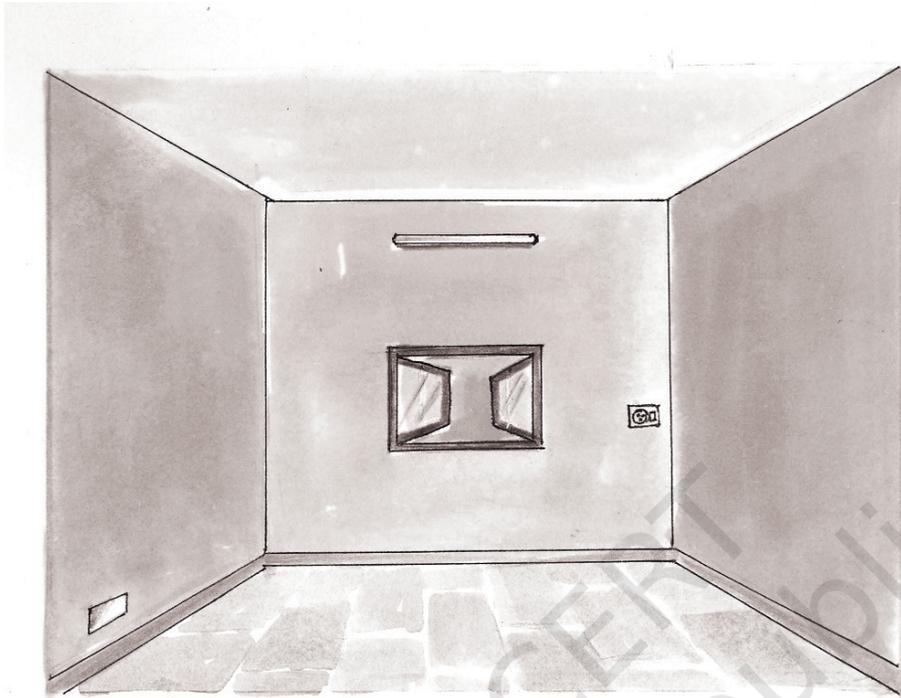
- (iv) **Grouping:** It implies the outlook of rooms with respect to their relative position with each other. For example, in a building, the dining area must be close to the kitchen and the kitchen must be away from the toilet.



HOUSE PLAN

- (v) **Roominess:** It is the spacious effect a room gives to those who live in it. The available space should be made use of fully. For example, one can have built-in wall cupboard, shelves and storage area so that the floor of the room is left free for various activities. In addition, the size and shape of the room, the furniture arrangement as well as the colour scheme used have a bearing on its roominess. Well proportionate rectangular room looks spacious compared to a square room of similar dimensions. Light colours make a room look more spacious than dark ones.
- (vi) **Furniture requirements:** The rooms must be planned with due thought to the furniture to be placed there. Every room in a building should serve its purpose well. Care must be taken to place only

required pieces of furniture. Furniture must be arranged in such a way so that one gets free circulation spaces.



**(vii) Sanitation:** Sanitation consists of providing ample light, ventilation, facilities for cleaning and sanitary conveniences in the following manner:

- (a) **Light:** Light has two-fold significance, firstly it illuminates, and secondly, it helps maintain hygiene. Light in a building may be provided by natural or artificial sources. Windows, bulbs, tube-lights are some sources of light.
- (b) **Ventilation:** It is the supply of the outside air into the building. Good ventilation is an important factor which affects comfort in the building or room. This is generally achieved by placing the windows, doors and ventilators such that they may allow as much breeze as possible. Windows, if placed opposite to each other, provide good ventilation. Lack of fresh air in the building may lead to headaches, sleepiness, inability to focus attention, etc. Ventilation may be natural or mechanical (using exhaust fan).
- (c) **Cleanliness and sanitary conveniences:** General cleaning and up-keep of the building is the responsibility of the occupants, but even then some provision to facilitate cleaning and prevention of dust are necessary in planning. Sanitary conveniences include the provision of bathrooms, water closets and lavatories in a building. Lavatories and bathrooms in rural houses are constructed as a separate unit, usually in the backyard or the frontyard, away from the other rooms, thus maintaining hygiene.

**(viii) Circulation:** Air circulation from room to room should be possible. Good circulation includes an independent entry to each living space through a common space. It also ensures privacy to members.



A SCHOOL BUILDING

**(ix) Practical Considerations:** While planning spaces, one may consider practical points such as strength and stability of the structure, convenience and comfort for the family, simplicity, beauty and provision for expansion in future. One should not economise by creating a weak structure.

**(x) Elegance:** 'Elegance' is the effect produced by the general layout of the plan. Without compromising on economy, the space plan should be aesthetically appealing.

The above mentioned principles when considered, aid in space planning and management.

In this chapter we learnt about two very important resources—time and space, and the efficient ways to use them. In the next chapter we shall learn about yet another significant resource – knowledge, and the ways in which it can be acquired. The processes of learning, education and extension are basic for knowledge acquisition.

### Key Terms

Time management, Space management, Time plan, Activity plan, Work simplification.

### ■ REVIEW QUESTIONS

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1. Describe time and space resources.
2. Why is time management necessary?
3. Discuss the steps in a time and activity plan.
4. What are the tools in time management?
5. Define space management. Discuss the principles of planning space inside the home.

# D. LEARNING, EDUCATION AND EXTENSION

10

## LEARNING OBJECTIVES

After completing this section the learner is able to—

- discuss the meaning and types of learning.
- describe the role of education in the context of family, school, community and society.
- explain the significance of extension education and methods.
- examine some of the extension programmes in India.

## 10D.1 LEARNING

**Introduction:** By now, so much learning must have taken place in your life that you do not need to be told what it means. You would agree that learning plays a very vital role in our lives. It is the key to our knowledge, understanding and behaviour. We start learning from the moment we are born. In fact, research has shown that the foetus learns even in the mother's womb! In other words, **learning** begins with life. Thus, learning can be described as—

- the acquisition of new behaviour or the strengthening or weakening of old behaviour as a result of experience.

The process of learning involves three main components—

- Learner, whose behaviour gets modified
- Training required for behaviour modification
- Resources, human and material.

**Learning can be of five types**

- (i) **Verbal learning:** Acquisition of verbal behaviour such as learning of languages is the result of verbal learning. Normally, we use communication devices such as signs, pictures, symbols, words, figures, sounds and voices as instruments for this type of learning. It also includes learning of semantics or procedural knowledge from written or spoken prose. For example, learning by reading lessons in a textbook.
- (ii) **Rote learning or memorisation:** This is also a form of verbal learning. However, this form gives less importance to understanding the deeper meaning and inferences of the subject being learned; instead it focusses on memorising the material. The major practice involved in rote learning techniques is learning by repetition. Rote learning is used in diverse areas, from mathematics to music to religion. For example: learning poems and multiplication tables or the *Surahs/Shlokas* (religious sayings) are examples of rote learning.
- (iii) **Motor learning:** In this type of learning we learn to use all types of muscles leading to physical dexterity and ultimately development of skill. Some examples are learning to swim, drive, sew, knit, type, play musical instruments, cycle, draw, paint, dance, etc. Acquisition and mastering of various skills through this type of learning provides confidence and satisfaction to the learner.
- (iv) **Concept learning:** In concept learning an image is acquired in our mind as a result of perception, previous experience, training and/or certain cognitive processes. A mental image denotes a generalised idea about something. For example, when we have developed a concept of an animal called dog, every time the word 'dog' is uttered a mental image with all the characteristics of a dog comes to our mind. Concept learning is useful in recognising, naming and identifying things and ideas. Gradually this enables learners to grasp theoretical concepts such as justice, truth and heterogeneity.
- (v) **Problem-solving:** As the name indicates problem-solving denotes higher order learning. It requires cognitive abilities like thinking, reasoning, discrimination, generalisation, imagination, ability to observe, to infer, and draw conclusions. People of all ages are engaged in problem-solving – an infant solves her/his problem of being hungry by crying for milk, while a student solves her/his problem of finishing an assignment by working on it in earnest. Thus in the process of problem-solving one learns a lot.

**To sum up****Types of Learning**

- Verbal Learning: e.g., learning a new language.
- Rote Learning: e.g., learning of poems, multiplication tables, religious hymns.
- Motor Learning: e.g., driving, typing, sewing, cycling, swimming.
- Concept Learning: e.g., national flag, liberty, emotion.
- Problem-solving: e.g., maths sums, puzzles, crossing a busy road.

**10D.2 EDUCATION**

**Have a look at the picture on this page and respond to the following statements. In your daily experience does education mean:**



- (a) Reading a lot of bulky books and memorising them?  
Yes  No  Sometimes
- (b) Something that is taught in the formal system using a pre-defined curriculum?  
Yes  No  Sometimes
- (c) Acquiring new concepts?  
Yes  No  Sometimes
- (d) Realising one's potential?  
Yes  No  Sometimes

In this section we will see how education contributes to our understanding of human ecology, i.e., the family, the school, community and society.

Education facilitates our understanding of the world through our physical, emotional, cognitive and transcendental experiences. It also helps in unfolding the potential that human beings have. Education can occur in various settings, both formal and informal. Formal education implies teaching through focussed instruction whereas informal education refers to learning that is accomplished with relatively little input, in every day, unstructured settings. It is critical to understand that teaching can only be meaningful when learning has happened; and that learning is a process that a student undergoes rather than something that is 'done to' a learner.

The central aim of education is the building of the powers of the human mind and spirit... it is the evoking of knowledge and will, and of the power to use knowledge, character and culture.  
– Sri Aurobindo, a 20th Century Indian Philosopher

As a student of Class XI you may wonder how the processes in education mentioned above are linked to your education so far. In school, you are a student in formal education, although a lot of your learning and education take place outside school as well. The figure that follows provides a graphic representation of the different components of institution-based education.

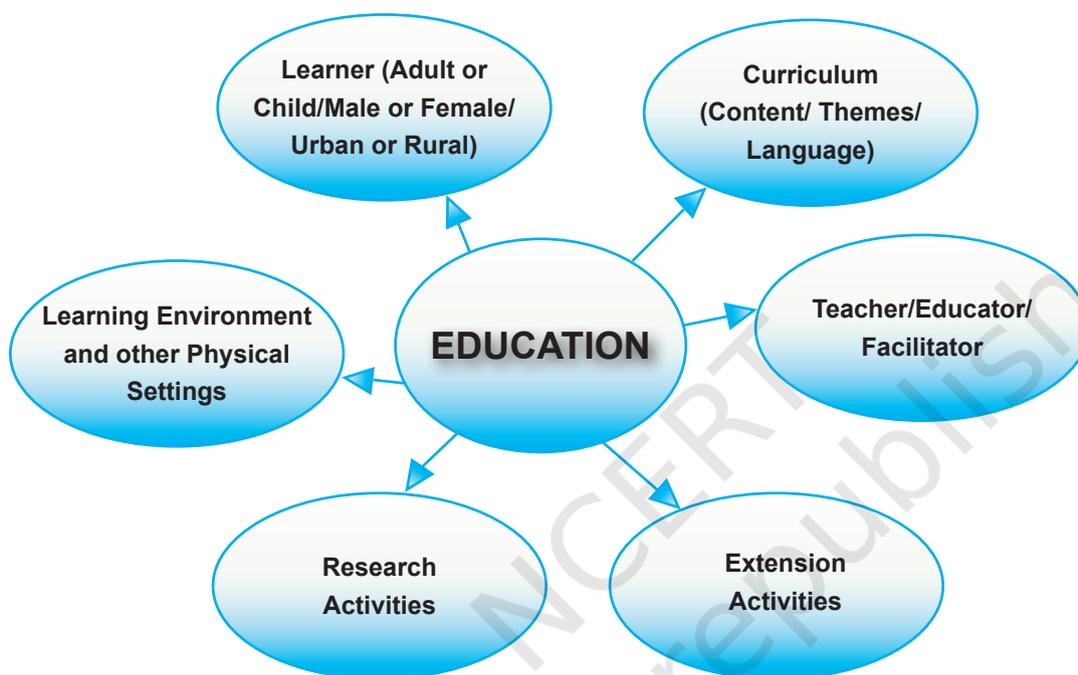
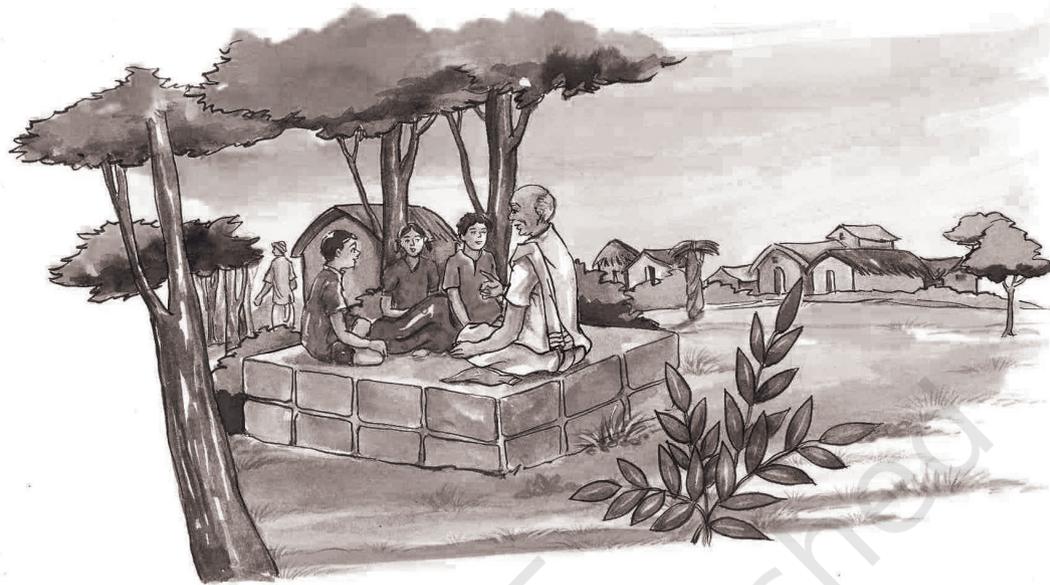


FIGURE 1: COMPONENTS OF EDUCATION

## Education and the family

You have read in the chapter on 'Family' in Unit II A that the family begins to perform the function of 'socialisation' from well before the child goes to school, and also while she/he attends different educational institutions. Socialisation includes 'educating' the child about the family's ways of living, its values, beliefs and attitudes. Thus the child not only learns to speak the language of the family, but also learns, for example, how to behave when visitors arrive, and what she/he must not do to displease the parents and others.

Now, the question is how does education contribute to our understanding of the family, its concerns and needs? From Figure 1 you can see that all formal education has content, referred to as curriculum. Throughout different stages of education, from primary to tertiary, there are many



lessons and subjects that inform us about the family. Starting from writing your first essay and drawing a picture of the family in a primary class, you began to form the broad concept of a family. Then many aspects of the Social Studies curriculum also provided information about diversity in families in the world. Subjects like Sociology, and now Human Ecology and Family Sciences enrich your knowledge further in this area. Thus, we get to know that there are urban, rural and tribal families with varied needs and experiences.

### ACTIVITY 1

Recall the first time you may have written an essay on 'My Family'. If you were to write on this topic today which five points will you highlight in it?

1. \_\_\_\_\_  
\_\_\_\_\_
2. \_\_\_\_\_  
\_\_\_\_\_
3. \_\_\_\_\_  
\_\_\_\_\_
4. \_\_\_\_\_  
\_\_\_\_\_
5. \_\_\_\_\_  
\_\_\_\_\_

## Education and the school

Most of you associate education first of all with school. You have read about the significance of school in forming relationships in a chapter in Unit II A.

In the present times the school is an important institution in providing formal education to children from Classes I to Classes XII. In many parts of the country, the preschool group is also attached to the formal school. In many systems after Class X, the students join a college to complete Classes XI and XII. We have used the term 'formal' education many times. It is also possible for a student to be in 'non-formal' education. What is the difference between formal and non-formal education? In what contexts are the two systems relevant?

(a) **Formal education:** Formal education is systematic teaching-learning activity, undertaken by institutions which may be run by the government or by recognised non-government agencies. Thus schools, colleges, universities, technical and professional institutions provide formal education. All formal institutions of education share certain characteristics. These are—

- Formal education is chronologically graded starting from primary schooling, reaching to higher secondary, and then tertiary education at the university level. It implies that before moving to a higher grade it is mandatory to formally pass the previous grade or level.
- The curriculum is pre-determined, although there is flexibility in how the teacher transacts it in the classroom.
- The learners have shared goals for seeking that particular kind or level of education.
- All learners are examined during the session and at the end of completion of the curriculum. After successful completion, they are awarded a certificate/diploma/degree.



- (b) **Non-formal education:** In India there are many children who are unable to go to school due to various reasons. These are listed in the chapter on 'Care and Education' of Unit-III. Then there are adults who could not attend school or complete their education when they were younger. The system of non-formal education provides opportunity to these learners to receive education.

Thus non-formal education is a systematic educational activity that is carried out outside the formal framework. There are non-formal centres for street and working children, and adult education programmes for older persons. While the goal of education here too is to gain knowledge and develop skills, some of the characteristics are different from formal education. These are given below:

- Since the learners are heterogeneous in age, previous educational experience and goals, the system is not rigidly graded.
- The instruction is learner-centred and learners' perspective is given importance.
- Teachers act as facilitators and the curriculum they impart is need-based.
- Local initiatives and self-help groups are encouraged to develop such programmes for meeting the needs in their community.
- The learners may receive certificates, however, diplomas and degrees are not awarded.

## ACTIVITY 2

Other than your school, name one formal government school and one private school in your city.

1. \_\_\_\_\_  
\_\_\_\_\_
2. \_\_\_\_\_  
\_\_\_\_\_

Find out if there is any centre of non-formal education in your city, town or village. Write down its name.

\_\_\_\_\_

## Education, community and society

All education that children, youth and adults experience must finally help in the development of the community around us and the society as a whole. Knowledge gain, personal development as well as skill acquisition through processes in education empower individuals to contribute to nation building, and at a global level to human development.

If you can look up Figure 1 on Components of Education, you will note that 'extension activities' are an integral part of education. The next section deals with Extension Education and its relevance to the development of communities.

### 10D.3 EXTENSION

**Three important processes in education besides learning are–**

- Creating new knowledge through research
- Disseminating knowledge through teaching
- Putting knowledge into practice, and applying it through extension.

Thus there is a close link between education and extension. Today, extension is a tool for national development through research, training approach, communication and technology, NGO movement and government interventions.

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#### Extension and extension education

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Extension means to extend knowledge from known to unknown. It is a two-way process of sharing knowledge and experiences for mobilising individuals and groups for personal and community development. For example, *Gram Sevaks* and *Gram Sevikas* working in the community take the problems of the people to the extension officers or other educational institutions; after these are discussed at the block level the solutions are carried back to the community.

Extension education is a full-fledged discipline, with its own philosophy, objectives, principles, methods and techniques which must be understood by every extension worker and others connected with community development. When learning and knowledge are put into practice, and extended to the community, it is referred to as extension education.

A look at the historical perspective reveals that this field has evolved as a result of the efforts of social reformers. Social reformers attempted to do reconstruction work to rebuild rural life through experiments.

Some of the examples are:

1. Sevagram in Maharashtra by Mahatma Gandhi in 1920 to provide basic education and achieve self sufficiency  
Website for more information: <http://wardha.nic.in/htmldocs/sevagram.asp>
2. Shantiniketan in Bengal by Rabindranath Tagore in 1921 to assist villagers in solving their pressing problems. A full-fledged university called the Visva Bharati University came up here later.  
Website for more information: <http://www.wb.nic.in/westbg/shanti.html>

## Principles of extension education

- (i) **Principle of interest and need:** Extension work must be based on the needs and interests of people. As these differ from individual to individual, from village to village, from block to block, and from one state to another, there cannot be one programme for all people.
- (ii) **Principle of cultural difference:** Extension work takes into account the cultural background of the people with whom the work is being done. This means that the extension worker has to know the knowledge level, and skills of the people, methods and tools used by them, their customs, traditions, beliefs, values, etc., before starting any extension programme.
- (iii) **Principle of participation:** Extension helps people help themselves. Good extension work is directed towards assisting rural and urban families to work out their own problems rather than giving them ready-made solutions.
- (iv) **Principle of adaptability:** An extension programme should be flexible, so that whenever required, necessary changes can be made to meet the varying conditions on the ground.
- (v) **The grassroot principle of organisation:** Extension work should be sponsored by the local community. The aim of organising the local groups is to demonstrate the value of new practices or programmes so that more and more people would participate to adopt them.
- (vi) **The leadership principle:** More extension work is based on the utilisation of local leadership. People have more faith in local leaders and hence their identification and training is essential so that new ideas are accepted in the community with least resistance.
- (vii) **The whole-family principle:** Extension work will have a better chance of success if it is carried out with the whole family, i.e., all men, and women, children and the youth members of the family.
- (viii) **Principle of co-operation:** Extension is a co-operative venture. It is a joint democratic enterprise in which people co-operate with their village, block and state officials to pursue a common cause.
- (ix) **Principle of satisfaction:** The end-product of the effort of extension teaching is the satisfaction that comes to the participants in the form of solving a problem, meeting a need, acquiring a new skill or bringing about some other change in behaviour.
- (x) **The evaluation principle:** Extension is based on methods of science, and it needs constant evaluation. Effectiveness of the work done is measured in terms of the changes brought about in the knowledge, skills, attitudes and adoption behaviour of the people, and not merely in terms of achievement of physical targets. For example, when *Gram Sevikas* inform women about immunisation of children against Polio, then afterwards they must try to evaluate whether or not the incidence of polio has gone down.

## Extension teaching methods

Extension work is carried out using several methods. These are:

- (i) **Farm and home visits:** These constitute the direct or face-to-face contact by an extension worker with the individual or/and the members of the family to exchange information and to get acquainted with their problems.
- (ii) **Result demonstration:** Result demonstration is an educational test to prove the advantages of recommended practices and to demonstrate their applicability to the local condition. This method can be used to show the superiority of certain practices, such as the use of fertilisers, insecticides and pesticides and high yielding varieties of seeds in farming.
- (iii) **Method demonstration:** It is used to show the technique of doing things or carrying out new practices, e.g., preparing a nursery-bed, treating seed with insecticides and fungicides, line-sowing, taking a soil sample, grafting fruit trees, etc.
- (iv) **Group discussions:** All the farmers cannot be contacted by extension workers individually because of their large number. It is convenient and feasible to contact them in groups. This method is commonly known as group discussion.
- (v) **Exhibitions:** An exhibition is a systematic display of information, actual specimens, models, posters, photographs, and charts, etc., in a logical sequence. It is organised for arousing the interest of the visitors in the items displayed. Exhibitions are used for a wide range of topics, such as planning a model village or demonstrating improved irrigation practices.
- (vi) **General meetings:** These are usually held for passing on certain information to the people for future action. For example to prepare the community for celebration of Van mahotsav, a national festival.
- (vii) **Campaigns:** Campaigns are used to focus the attention of the people on a particular problem, e.g., rat control, village sanitation and plant protection, the production of rabi crops and family planning. These build up community confidence and involve the people emotionally in a programme.
- (viii) **Tours and field-visits:** Conducted tours for farmers are used to convince them and to provide them with an opportunity of seeing the results of new practices, demonstration skills, new implements, etc., and to help them gain an idea regarding the suitability and application of these in their own area.
- (ix) **Use of Audio-Visual Aids such as:**
  - **Printed matter (literature).** Includes newspapers, magazines, bulletins, leaflets, folders, pamphlets and wall news-sheets for communicating information to a large number of literate people.

- **Radio** is a mass medium of communication and can reach a large number of people at any given time involving the least expense.
- **Television** is one of the most powerful medium of communication. It combines both audio and visual impact and is very suitable for the dissemination of all kinds of information.
- **Motion-pictures (movies)** are an effective tool for arousing interest among the people, because they involve seeing, hearing, and action, and sometimes to near life experiences.

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### Some of the Rural Employment Generation and Other Schemes

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There are many schemes planned by the government for improving the quality of life of people in both rural and urban areas. Knowledge about them will enlighten. Some of these are described below.

1. *Swarnajayanti Gram Swarojgar Yojana (SGSY)*: This programme was launched in April, 1999. It is a holistic programme covering all aspects of self-employment such as organisation of the poor into self-help groups, training, credit, technology, infrastructure and marketing.  
The **objective** of SGSY is to provide sustainable income to the rural poor. The programme aims at establishing a large number of micro-enterprises in rural areas, based on the potential of the poor. It is envisaged that every family assisted under SGSY will be brought above the poverty-line.
2. *Jawahar Gram Samridhi Yojna (JGSY)* is the restructured, streamlined and comprehensive version of the erstwhile *Jawahar Rozgar Yojana*. Designed to improve the quality of life of the poor, JGSY was launched on 1 April 1999. Its primary objective is the creation of demand driven community village infrastructure including durable assets (e.g., training centre) at the village level. These assets are created to enable the rural poor to increase opportunities for sustained employment. The secondary objective is the generation of supplementary employment for the unemployed poor in rural areas.
3. **MP Local Area Development Programme**: MPLADP was launched in December 1993 as a central sector scheme to enable members of Lok Sabha and Rajya Sabha to execute the schemes of their choice that are developmental and based on locally felt needs within the guidelines for this purpose.

The works which can be carried out under this scheme are construction of buildings for schools, hostels, libraries and shelter for old/handicapped, construction of link/approach roads, culverts/bridges, public irrigation and public drainage facilities, etc.

**Expand the following acronyms**

1. SGSY \_\_\_\_\_
2. JGSY \_\_\_\_\_
3. MPLADP \_\_\_\_\_

Locate one more extension programme in your area and write its name below.

\_\_\_\_\_

**Look up the following website for more information**

[http://www.krishiworld.com/html/agri\\_extension\\_edu1.html](http://www.krishiworld.com/html/agri_extension_edu1.html)

**Group assignment:** (make groups of 6-10, each group to select a separate field of study and target group)

1. Select an appropriate topic from the field of farming or agriculture or technology or health and hygiene for one of the following groups–
  - Adolescent girls from an urban slum
  - Adolescent girls from a rural area
  - Urban youth in the age group of 20-30 years
  - Rural youth in the age group of 20-30 years
  - Parents of primary school in rural/urban area
  - Your own classmates
  - Marketing management trainees to be posted in villages
  - Housewives
  - Working women
2. Search appropriate subject matter for the same.
3. Choose an extension method to teach selected topic to the selected group.
4. Give reasons for your choice of topic, subject matter and extension method.

One distinct advantage of being involved in extension activities at the grassroots level is that it offers the valuable opportunity to know the cultural heritage of our country. India has a rich and diverse cultural heritage. In the next chapter we shall learn about one aspect of this heritage – the Textile Heritage.

**Key Terms**

Learning, Education, Non-formal Education, Extension Education, Rural Employment Generating Schemes

■ **REVIEW QUESTIONS**

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1. Explain the term—learning and its types.
2. Describe any three components of education.
3. Differentiate between formal and non-formal education.
4. What do you understand by extension education? Enumerate its principles.
5. Select and describe two most suitable extension methods for the following situations. (Teacher's guidance may be required)
  - (a) To popularise education for the girl child.Or
  - (b) Importance of men sharing house work.

## E. TEXTILE TRADITIONS IN INDIA

# 10

### LEARNING OBJECTIVES

After completing this section the learner is able to—

- recognise the diversity of textile products produced in India since millennia.
- identify the areas associated with production of cotton, silk and wool fabrics.
- describe the concept of dyeing and its occurrence on textiles.
- explain the characteristic features of embroideries of different parts of the country.
- discuss the significance of prevailing traditions of textile production in the socio-cultural and economic setup of our lives.

### 10E.1 INTRODUCTION

In the earlier chapter 'Fabrics Around Us' you became aware of the diversity of the textile products and their usage. Have you ever wondered how these came to exist, and how in India they are considered an important heritage? If you ever visited a museum, you must have noticed a section where fabrics and apparel are displayed. You may have realised that not only there are fewer exhibits in this section, they are also not as old as other objects. This is because fabrics decay much more quickly than bone, stone or metal. However, archaeological records depicting clothed human figures on wall and sculptures indicate that humans knew the art of making cloth even 20,000 years ago. We also learn about them from references in ancient literature and paintings on walls in caves and buildings.

Textile materials have fascinated humans since ancient times and have been an essential part of civilisation. People of all ancient civilisations developed techniques/technologies for utilising the raw material available in their region. They also created their own distinctive designs and produced elaborately designed products.

## 10E.2 HISTORICAL PERSPECTIVE IN INDIA

The manufacture of sophisticated textiles in India is as ancient as the Indian civilisation. Fabric has been used as a symbol while describing the creation of the universe in the *Rig Veda* and the *Upanishads*. The universe, in these texts, is described as 'a fabric woven by the Gods'. The appearance of Day and Night, as they bring light and darkness over the earth, are compared to the movement of the shuttle in the loom by the weaver.

Weaving is one of the oldest arts and fine fabric products have been made from very early times. Cloth fragments, as well as terracotta spindles and bronze needles, that have been found at the excavation site at Mohenjo-Daro, are evidence that the traditions of cotton spinning, weaving, dyeing and embroidery in India are at least 5000 years old. India was first among the ancient civilisations to discover colour and perfect the technique of application on textile materials, especially on cotton. Dyed and printed cotton fabrics were exported to other nations and they were known for their colourfastness properties. Classical (Greek and Latin) literature has reference to them, e.g., "colour on Indian fabrics is as lasting as wisdom".

Throughout the period of recorded history there are references extolling the excellence of Indian fabrics made from cotton, silk and wool. They were known for their fabric characteristics as also for designs produced on them through weaving, resist dyeing, printing and embroidery. They soon became coveted items of trade, helped in political linkages and influenced the establishment of such industries in other countries. From around 15th century onwards India was the greatest exporter of textiles ever known. The setting up of the various East India Companies by the European nations was associated with textile trade from India.

## 10E.3 THE THREE MAIN FIBRES

Traditionally Indian fabric production is associated with three main natural fibres, which are cotton, silk and wool. Let us now discuss their significance.

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### Cotton

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India is the home of cotton. Cotton cultivation and its use in weaving are known since prehistoric times. The spinning and weaving techniques

developed here produced fabrics, which came to be known for their extreme fineness and decorations. Cotton travelled from India to all over the world. That it was a trade item is learnt from the material recovered from archeological digs in the ancient land of Babylon with *Harappan* seals. When the Romans and Greeks first saw cotton, they described it as wool that grew on trees.

The legends associated with cotton weaving are many. Dacca (now in Bangladesh) produced the finest fabric—the *mulmul khas* or the royal muslin. It was so fine that it was almost invisible and thus had poetic names; *baft-hava* (woven air), *abe-rawan* (flowing water), *shabnam* (evening dew). The *Jamdani* or the figured muslin traditionally woven in Bengal and parts of North India using cotton is one of the finest **brocade** products of Indian weaving.

In regular weaving, the filling yarn passes over and under the warp yarn in a specific sequence. But when **brocade** designs in silk, cotton, or gold/silver yarns are to be woven, these yarns are transixed in between regular weaving. Depending upon the fibre content used for patterning there may be cotton brocades, silk brocades, or *zari* (metallic yarn) brocades.

Besides the proficiency in making cotton fabrics, India's crowning textile accomplishment was the creation of pattern in the cotton cloth with brilliant fast dyes. Until the 17th century, Indians alone had mastered the complicated chemistry of cotton dyeing, which was not mere application of pigments to the surface, but produced fast and lasting colours. Indian Chintz (printed and painted cotton cloth) had revolutionised European fashion and market. Indian craftpersons were '**the master dyers to the world**'.

Cotton is woven universally all over India. Super fine yarn is still spun and woven in many places, though the bulk production may be thick. The materials are made in a variety of designs and colours and find specific usages in different parts of the country.

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## Silk

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Silk fabrics have been made in India since ancient times. We learnt in the earlier chapter that the origin of silk was in China. However, some silk must have been used in India as well. Silk weaving is mentioned as early as the 3rd century BC., and distinction is made between Indian and Chinese silk. The silk weaving centres developed in and around the capitals of kingdoms, holy cities or trade centres. As the weavers migrated, it helped in the development and creation of many new centres. Different regions in our country have specific silk weaving styles. Some of the important centres are—

**Varanasi** in Uttar Pradesh, which has an old tradition in weaving special styles. Its best-known product is the brocade or *kinkhwab*. Its splendour and elegance and the high cost of the fabric gave it its name—*kinkhwab* meaning something a person cannot even dream of or a fabric which is seldom seen in a dream or the golden (*kin*) dream (*khwab*).

**West Bengal** is traditionally famous for its silk weaving. By using a loom similar to that of *Jamdani* weavers, the weavers of West Bengal weave a silk brocaded sari called *Baluchar Butedar*. This style originated from a place called Baluchar in Murshidabad district. It is now successfully being produced in Varanasi. Here the plain-woven fabric is brocaded with untwisted silk thread. The most characteristic feature of these sarees is their *pallav* or the end piece. It has unique designs, depicting scenes from epics, royal court, domestic or travel scenes with riders and *palanquins*. Mango motif is most commonly used in borders and *pallavs*.

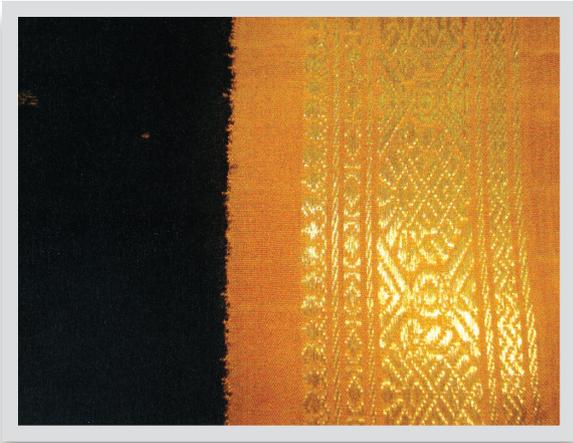
**Gujarat** developed its own style of *kinkhwabs*. Very fine textiles were produced in Bharuch and Cambay, which were popular in the courts of Indian rulers. The *Ashavali* sarees of Ahmedabad are known for their beautiful brocade borders and *pallavs*. They have rich gold or silver metallic background on which patterns are woven with coloured threads, giving the fabric an enamelled appearance. Human, animal and bird motifs are frequently incorporated into the pattern as they are an integral part of Gujarati folk tradition.

**Kanchipuram** in Tamil Nadu is a famous brocade weaving centre in South India from ancient times. The traditional sarees display bird and animal motifs with rich brocaded *pallav*. Dark colours like red, purple, orange, yellow, green and blue predominate in South Indian fabrics.

**Paithan**, located on banks of Godavari River near Aurangabad in Maharashtra, is one of the oldest cities in Deccan region. It is famous for a special silk saree with gold inlay weaving for borders and motifs. The tapestry weave used in Paithan is the oldest technique of decorative weaving. It is known for its closely woven golden fabric. In the shimmering gold background, various patterns (*butas*, the tree of life, stylised buds and floral borders) are worked in red, green, pink and purple glow like jewels.

Tapestry weave utilises the principle of discontinuous weft or filling yarns, thus allowing multicoloured yarns to be used. It results in the fabric appearing the same on its face and reverse side.

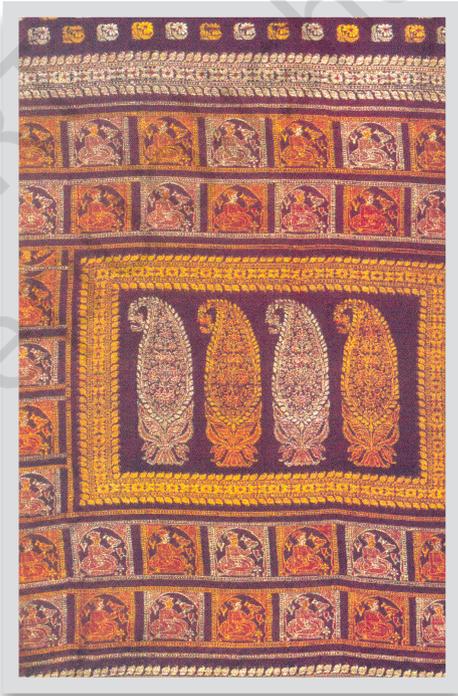
Surat, Ahmedabad, Agra, Delhi, Burhanpur, Tiruchirapalli and Thanjavur are other traditionally renowned centres of *zari* brocade weaving.



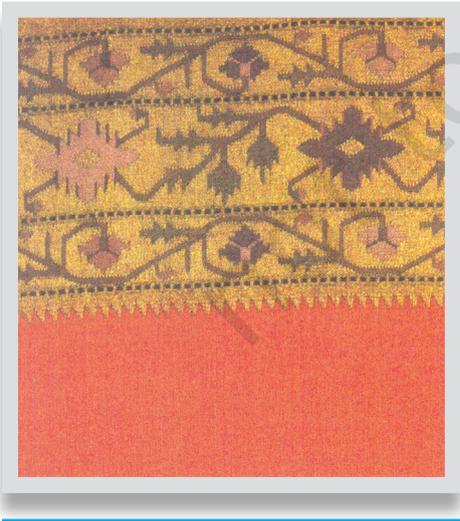
FROM KANCHIPURAM



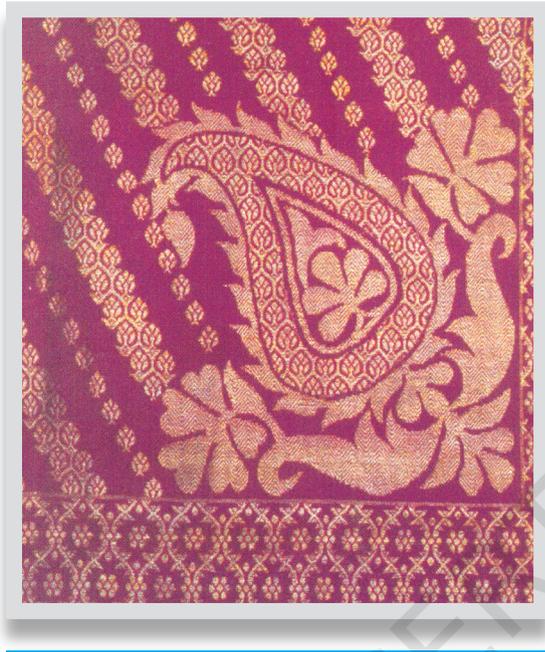
KINKHWABS



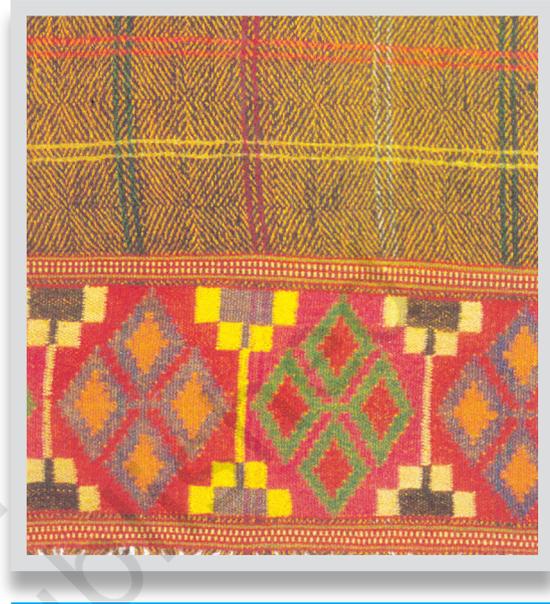
BALUCHAR BUTEDAR



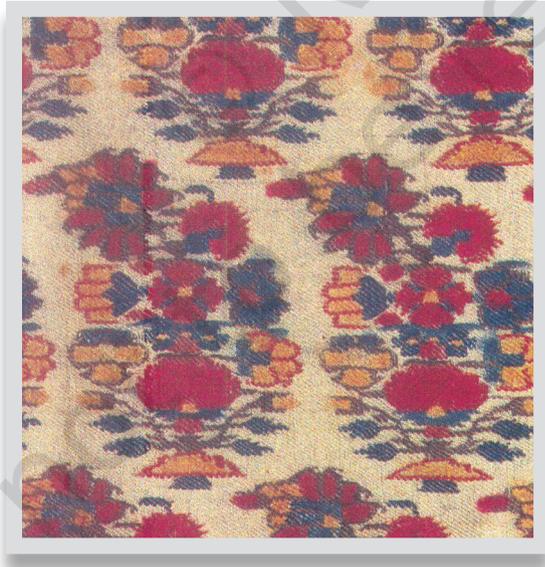
PIATHANI



BANARAS BROCADE



KULLU SHAWL



KASHMIR JAMWAR SHAWLS

## Wool

The development of wool is associated with the colder regions like hills of Ladakh, Jammu and Kashmir, Himachal Pradesh, Uttar Pradesh, hills of West Bengal, some N.E. states, Punjab, Rajasthan and a few places of Central and West India. Specialty hair, i.e., the hair of animals other than sheep, (mountain goats, rabbits and camels) have also been used in India. The earliest references of wool make mention of very fine hair obtained from mountain goats and some deer like animals.

**Kashmiri** literature of 11th century confirms the weaving of multicoloured woollen fabrics during the period. From the 14th century, the Persian influence led to the production of *shawls*. It utilised the most complex tapestry weave in a multitude of colours and intricate patterns. The best shawls were made from *pashmina* and *shahtus*, the hair of mountain goats. The Mughal emperors were responsible for promoting this art and shawls of Kashmir became world famous. Like the printed cotton these were a major export item from 18th century. Later embroidery was also introduced in shawls. The designs of the *shawls* copy the beauty of nature of Kashmir. The mango motif, also known as *paisley*, is seen in countless varieties and colour combinations.

Akbar is said to have introduced the style of *Jamawar* shawls. These were large *shawls* designed in a manner, which were also suitable for making garments (*Jama*, i.e., cloak and war meaning yardage). You may have noticed in paintings in museums or illustrations in books, the Mughal rulers usually have large shoulder wraps in intricate designs.

The *shawls* of **Himachal Pradesh** are mostly woven in angular geometrical motifs grouped in straight horizontal lines, bands and stripes, one or two placed vertically as well. Kullu valley specifically is known for shawl weaving and several other woollen fabrics like *pattu* and *dohru* (wraps for men).

In the recent years *shawl* weaving in other places have also gained importance. Special mention can be made of Amritsar and Ludhiana in Punjab, Uttarakhand and Gujarat.

## 10E.4 DYEING

We have already learnt that the history of dyeing in India is very old. Before the middle of 19th century the dyes were obtained only from natural sources. Most of the dyes used were from plants – roots, bark, leaves, flowers and seeds. Some insects and minerals also yielded colour. The analysis of the old samples confirms that Indians had a deep knowledge

of chemistry of dyes and techniques of dye application to produce fabrics, renowned for their colourfastness properties.

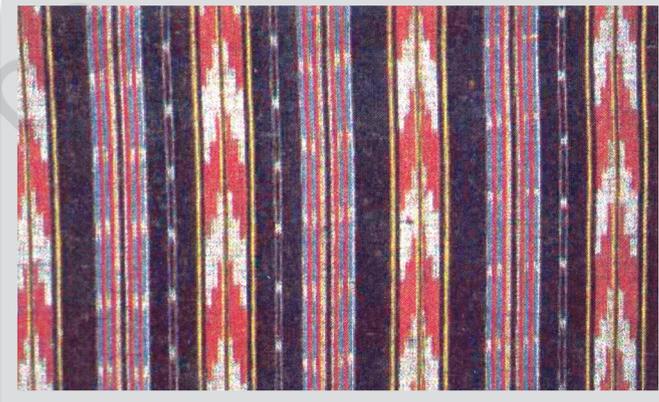
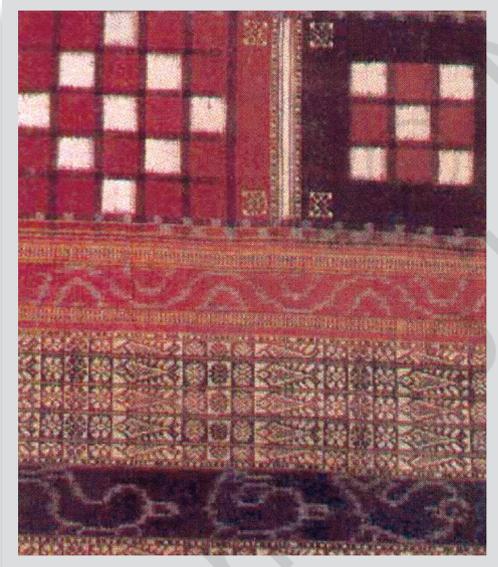
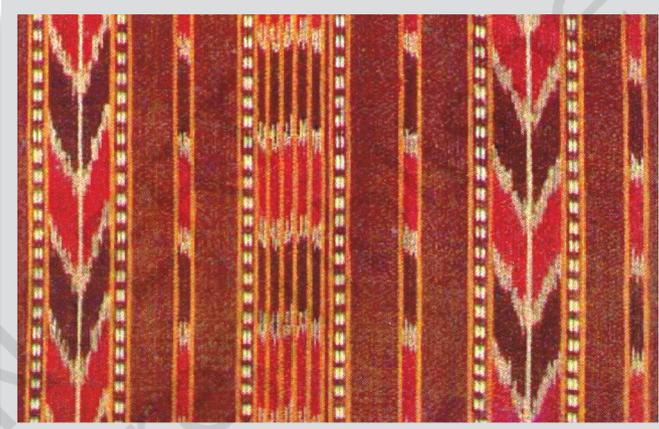
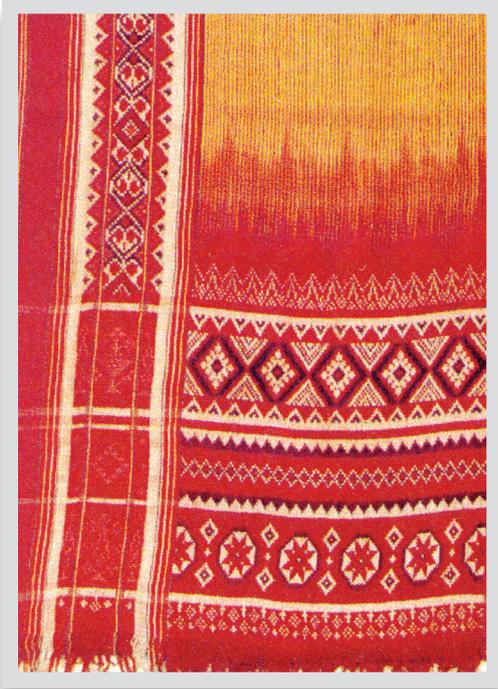
## Resist dyed fabrics

The oldest form of designing with colour is resist dyeing. Having perfected the art of dyeing, it must have been discovered that if certain parts of material were prevented from absorbing the dye, it would retain its original colour and thus appear designed. The resist material could be thread, pieces of fabric, or substances such as clay and wax that offer physical resistance. The most common method of resist is tying with thread. There are two methods of tie and dye fabrics produced in India; fabric tie and dye and yarn tie and dye. In both cases the part where design is required, is tied up by tightly winding a thread around it and dyeing. During the dyeing process, the tied areas retain the original colour of the ground. On drying, some tied up parts are opened and some more tied and dyed again. The process can be further repeated for more colours, always proceeding from light to dark colours.

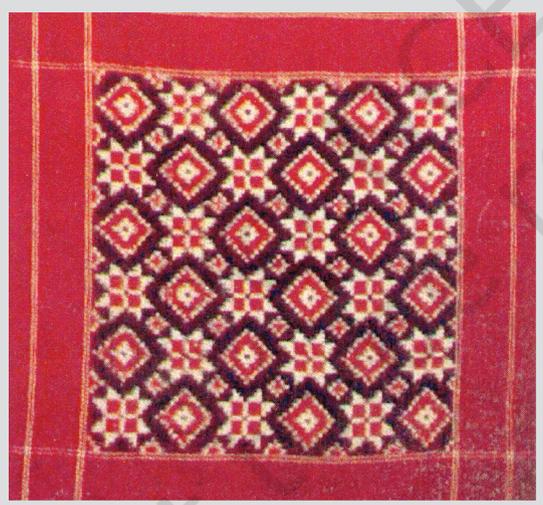
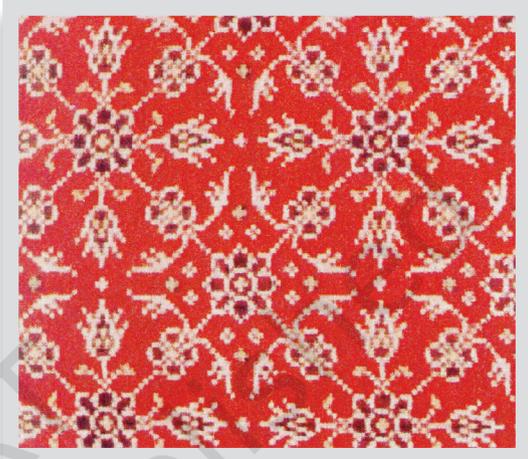
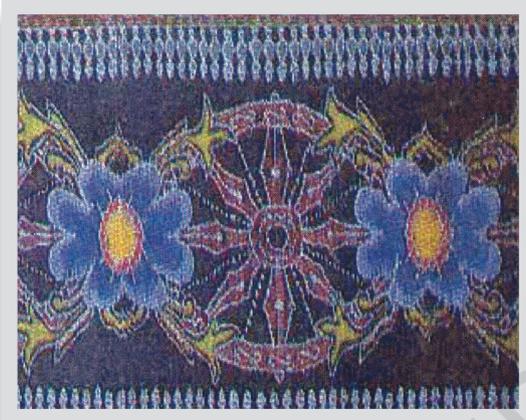
Tie and dye has a ritualistic significance. Among the Hindus, the thread tied around the wrist before any religious ceremony is white, yellow and red tie-dyed. Tie and dyed fabrics are considered auspicious for marriage ceremonies; the dress of the bride and turbans of male members are generally of these fabrics.

- (i) **Fabric tie and dye:** *Bandhani*, *chunari*, *laheria* are some of the names of materials in which the pattern is created by tie-dyeing the fabric after it is woven. A typical tie and dye design is *bandhej* where the patterns comprise innumerable dots; another is the *laheria* type where the pattern is in the form of diagonal stripes. Gujarat and Rajasthan are the homes of this type of fabrics.
- (ii) **Yarn tie and dye:** This is a complicated process of producing designed fabrics. These are known as *ikat* fabrics. Fabrics are produced by a technique in which the warp yarns or filling/weft yarns or both are tie-dyed before weaving. Thus, when the fabric is woven, a specific pattern appears depending on the dyed spaces of the yarns. If only one yarn, i.e., only warp or weft yarn is tie-dyed, it is called single *ikat*; if both yarns are so treated, it can be combined *ikat* (both are creating separate patterns) or double *ikat* (a unified pattern is created).

The *ikat* artisan is not only proficient in the art of dyeing; she/he also has the technical knowledge of weaving. The process consists of calculating the amount of warp and filling yarns required for the article to be made. The tying of the yarn and weaving it after dyeing require great expertise so that warp and filling yarns match to produce the design.



IKAT FABRICS



IKAT FABRICS

**Gujarat** has the richest tradition of *Ikat* weaving. *Patola* is the most colourful double *Ikat* sari made in silk. Its manufacture is concentrated in Patan, in Mehsana district. Apart from geometrical design patterns inspired from local architecture, other designs are flowers, birds, animals and dancing dolls. The colours most commonly used are red, yellow, green, black and white. They tend to flow into one another without the harshness of outline.

**Orissa** is another region where *Ikat* saris and fabrics of cotton and silk are produced. The process here is known as *Bandha*, which may be single or combined *ikat*. Compared to *Patola*, the designs here have a softer and curvilinear quality. They are also characterised by the addition of extra weft yarn woven in small figurative designs.

*Pochampalli* and *Chirala* in **Andhra Pradesh** have the tradition of production of cotton *ikat* fabrics called *Telia Rumals*. These were designed 75–90 cms. square pieces of fabric usually woven as a pair. The coarser ones were used as *lungis*, shoulder cloth or loincloth by the fishermen community and the finer ones as *dupattas* or veils.

## 10E.5 EMBROIDERY

Embroidery is the art of surface ornamentation of fabric with threads of silk, cotton, gold or silver using needle or needle like tools. Embroidery, an ancient art form, referred to as painting with a needle, was practised in many parts of the world. In India too it has been practised from very early times and there is evidence to indicate that embroidery was prevalent all over the country–

- at all socio-economic levels – from the nomadic cattlemen to members of royal households.
- on all kinds of fabrics – from the most coarse cotton and camel wool to finest of silks and *pashminas*.
- with all materials and threads – cotton, wool, silk or *zari* along with *cowrie* shells, bits of mirror and glass, beads, gems and coins.
- used in making varied articles – personal clothing, household use, home decoration, offerings for religious places and decorative items for their animals and cattle.

Embroidery is generally regarded as a homely handicraft, an occupation that women undertake during their leisure hours, mainly to ornament or decorate articles of apparel or household use. Nevertheless, certain embroideries became items of trade within country and also in different parts of the world. Let us now have a glimpse into some of the styles, which are being commercially produced today.

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### *Phulkari*

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*Phulkari* is the art of embroidery of Punjab. It is the term used for both the embroidery and the *chaddar* or shawl made with this type of embroidery. *Phulkari* means 'flower work' or a bed of flowers. The other term *bagh* (literally a garden) has also the same connotation. *Phulkari* was mainly a domestic craft, executed by the girls and ladies of the household and sometimes by women servants under their directions. The embroidery is done on coarse cotton (*khaddar*) material with untwisted silk floss called *pat*. In the heavily embroidered *baghs*, the embroidery covers the fabric so completely that the base colour of the fabric can only be seen on the reverse side. Traditionally, this embroidery was associated with wedding ceremonies and *baghs* were made by the maternal grandmother for her grand-daughter or by the paternal grandmother for her grand daughter-in-law.

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### *Kasuti*

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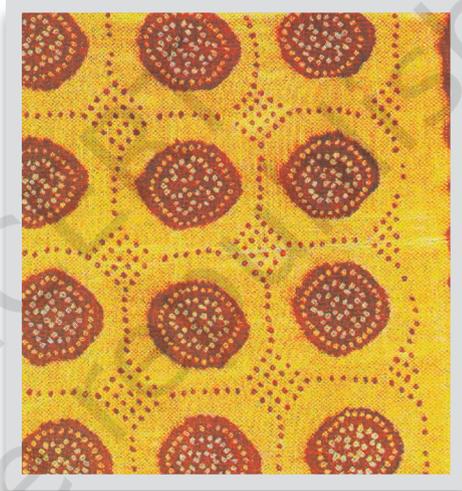
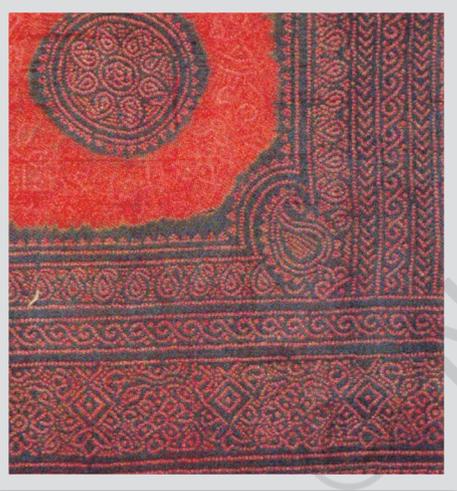
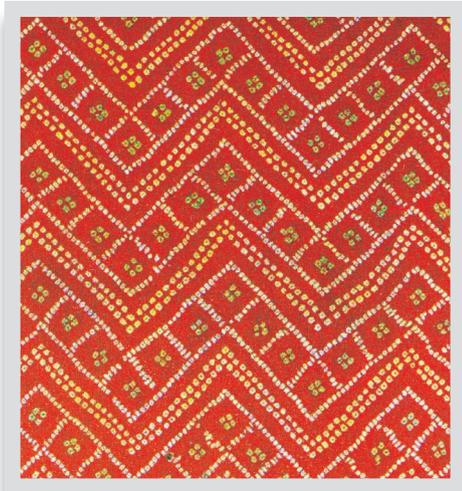
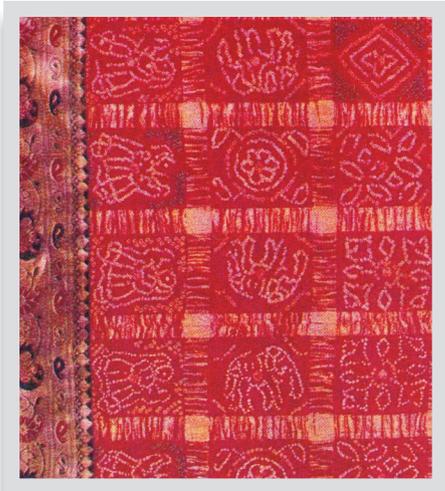
*Kasuti* is the term used for the embroidery of Karnataka. *Kasuti* word is derived from the Persian word *kashida*, which means embroidery. Like *phulkari*, it is also a domestic craft mainly done by women. This is the most subtle form of embroidery, where the embroidery threads follow the pattern of the weave of the fabric. It is done on silk material with fine strands of silk threads. Even the colours used tend to blend with the background material. The main designs seem to be inspired from the temple architecture of the area.

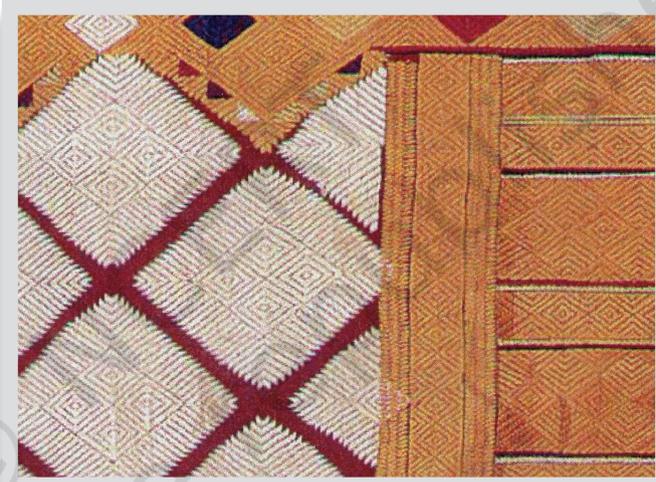
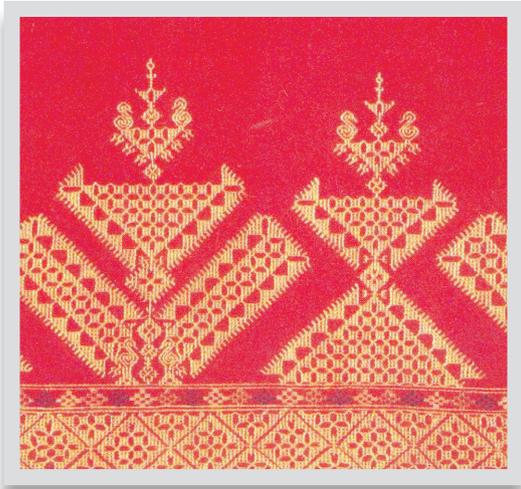
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### *Kantha*

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*Kantha* embroidery of Bengal is done on a base prepared by 3-4 layers of old cotton *sarees* or *dhotis*. The embroidery is like quilting – small running stitches going through all the layers of the base material. The article thus produced are also known as *Kantha*. This embroidery may have had its origin in darning to strengthen the worn-out areas, but now the stitches fill up the shapes that are drawn on it. It generally has a white base with embroidery in multi-coloured threads, which were originally pulled out from borders of old *sarees*. The articles made vary from small comb case and wallet to shawls of various sizes. There are also *kanthas* with ritualistic importance made for presentation to religious places or for use on special occasions.





PHULKARI EMBROIDERY

## *Kashida*

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*Kashida* is the general term used for embroidery in Kashmir. The two most important embroideries are *suzani* and *zalakdozi*. Kashmir being the land of wool, the embroidery is done on woollen fabrics – from the finest of shawls to medium thickness cloaks like ‘*pherans*’, to thick *namdas* used as floor coverings.

On shawls and fine woollens, perhaps the embroidery had its origin in repairing the defects that occurred during weaving. Later the multi-coloured weaving patterns were copied, to which were added the styles of Chinese embroideries like satin stitch and long and short stitch. The *suzni* embroidery includes all the stitches that lie flat on the surface and also show uniformity on both sides of the material. This embroidery is done with silk threads, in a multitude of colours, and shades to make the designs look natural.

The twill tapestry technique that was used for weaving often required small corrections and alterations. This was done like embroidery repeating the pattern of the weave, thus was called darning. The embroiderers in Kashmir are still referred to as *rafugars*, i.e., darners.

*Zalakdozi* is the chain stitch embroidery done with ‘*ari*’ – a hook like the cobblers use. Originally it was done mainly on *namdas*, but now it is done on all kinds of materials, including *shawls*. Unlike the other embroideries discussed so far, Kashmir embroidery is a commercial activity, done by men folk and thus caters to the demand of the buyers.

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## *Chikankari*

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*Chikankari* of Uttar Pradesh is the embroidery, which was commercialised at a very early stage. Although ladies do the main work, the master craft persons and organisers of the trade are mainly men. Lucknow is considered the main centre for the work. Originally it was done on white material with white thread. The main effects produced are shadow work by embroidering on the wrong side of the material, net like surface by tightening the yarns of the fabric with embroidering, and raised patterns on the face of the fabric by knotting stitch resembling rice or millet grains. The past few years have also seen the inclusion of *zari* threads, small beads and shiny discs (*sitara*) incorporated in the designs. Since it is a commercial activity, the designs and styles keep changing with fashion.

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## Gujarat has a very rich tradition in embroidery

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It has basically been a land of nomadic tribes who have thus been responsible for amalgamation of designs and techniques of various cultures. Here embroidery is used for all aspects of life; decoration of the doorways with *torans* or *pachipattis* and walls with *chaklas* or *chandrawas*, ganesh *sthapnas* (all these are important in a nomadic lifestyle), garments for men, women and children in styles specific to various tribes, coverings for cattle, horses, elephants. Many of the embroideries are known by the names of the tribes – *Mahajan*, *Rabari*, *Mochibharat*, *Kanbibharat*, and *Sindhi*. Most of the colours used are bright and loud.

**Appliqué work** in Gujarat has its own style. It is a patchwork, in which the pieces of fabric with different designs are cut in different sizes and shapes and sewn on a plain background. This is used mainly on household items.

**Bead work** of *Saurashtra* and *Kutch* is also an important art. It is not an embroidery, but interlacing of different coloured beads through a network of threads to create coverlets for utensils, hangings, purses, etc.

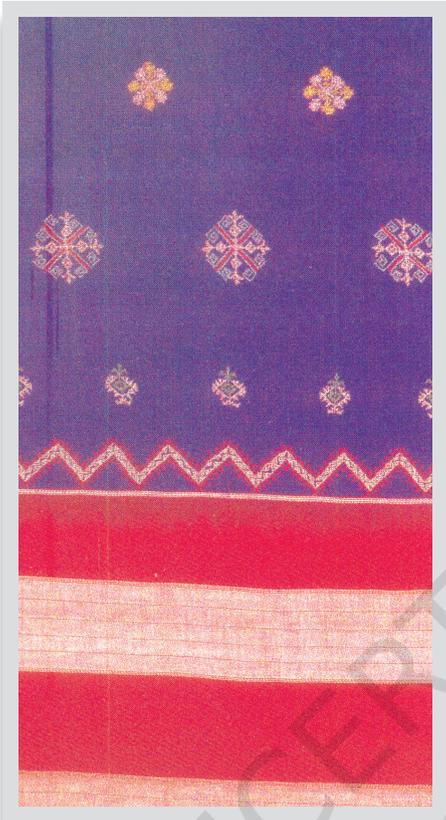
The close proximity of the states of Gujarat and Rajasthan, and because Rajasthan also has a tribal population has resulted in embroidery in a similar style. The colours and the motifs used vary between the tribes and the occasions for which they are produced.

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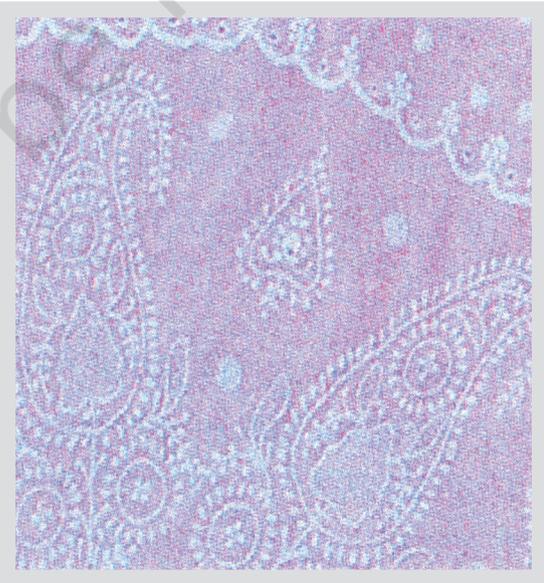
## *Chamba rumals*

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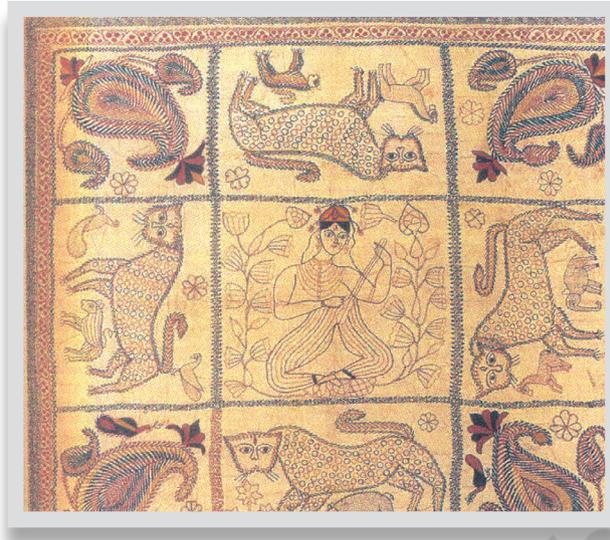
Chamba rumals, from the erstwhile hill state of Chamba in Himachal Pradesh were made mainly for covering trays of gifts, when being presented to dignitaries or special guests. They depicted mythological scenes similar to *Pahadi* Paintings, by using running stitch in outline and darn-stitch in filling. At their best, the scenes appeared the same on either side of the textile.



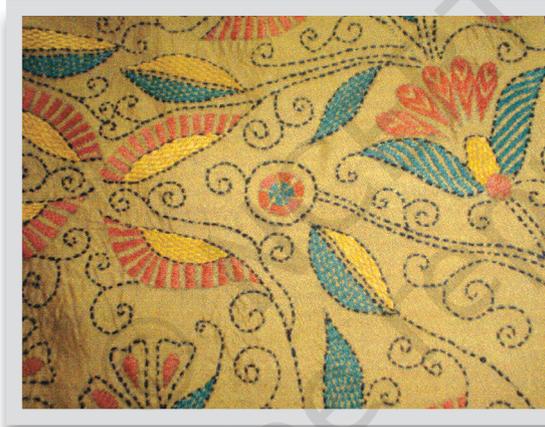
KASUTI EMBROIDERY



CHIKAN KARI EMBROIDERY



KANTHA EMBROIDERY



CHIKAN KARI



CHAKLA



TORAN

## 10E.6 CONCLUSION

India has beautiful textiles which have been recognised the world over for their beauty and craftsmanship. Repeated and persistent invasions, migrations, political upheavals and many other ups and downs led to a synthesis that enriched the textile craft of India. The richness and diversity of contemporary form of art practised in India owes much to the coexistence of numerous cultural strains on its soil.

Specific geographical regions in India have age-long traditions associated with fabric production. This is in terms of different fibre groups – cotton, silk and wool and different manufacturing processes – spinning, weaving, dyeing and printing and surface ornamentation. With changing times, the production centres have evolved their own grammar in terms of colour, design and ornamentation and their usage for specific products. A large number of such centres continue to be important in the social and economic life not only for the production of items associated with religious and social rites, also in their effort to make a statement which fits into contemporary usage. Thus they are making an effort to go in for product diversification and alternate usage of traditional textiles. Gradually the emphasis is also shifting from customised products to mass production.

Almost all the traditions of Indian textiles have survived. New design development has only enriched these age-old traditions. Numerous government and non-government organisations, along with many academic institutions, have joined hands to preserve, revive and contemporarise the textile traditions.

### Key Terms

Brocade, *Mulmul*, *Jamdani*, *Kinkhwab*, Shawl, Tapestry, Tie and Dye, *Ikat*, *Patola*, Embroidery, *Phulkari*, *Kashida*, *Chikankari*.

### ■ REVIEW QUESTIONS

1. From which historical sources of information can one learn about the antiquity of Indian textile art?
2. What are the two aspects of cotton production which made the Indian fabrics world famous?
3. Name some of the areas associated with silk brocade weaving. What are the special characteristics of each?
4. Why were the Indians called 'master dyers' *to the world*?
5. What do you associate with the following terms: *phulkari*, *kasuti*, *kashida*, *kantha* and *Chikankari*.

## ■ PRACTICAL 11

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### Textile Traditions in India

**Theme** Documentation of traditional textile art/craft of neighbouring area

**Task** Make a folder or catalogue giving information and pictures of traditional textile art and craft of any one selected area.

**Purpose of the practical:** Indian craft and its millions of practising craft people are a huge and important resource of traditional knowledge and indigenous technologies. It will help the students to understand and appreciate the craft traditions of India. They will be able to collect relevant information and develop their creative skills in expressing textile traditions. Also it is a means of linking rural and urban youth.

**Conduct of the practical:** Visit a nearby exhibition or craft *mela* or museum to collect information on selected textile craft in terms of origin/history, fabrics, techniques, colour, design and products of the selected craft. Present it in the form of a folder or a catalogue.

Craft could be associated with any one more of fabric production processes – spinning, weaving, dyeing, printing or embroidery.

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## NOTES

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## APPENDIX

### SYLLABUS

## HUMAN ECOLOGY AND FAMILY SCIENCES

### (CLASSES XI-XII)

#### **Rationale**

The curriculum in Human Ecology and Family Sciences (HEFS), formerly known as Home Science, has been framed keeping in view the principles of the National Curriculum Framework-2005 of the NCERT. Traditionally, the field of Home Science encompasses five areas, namely, Food and Nutrition, Human Development and Family Studies, Fabric and Apparel, Resource Management and Communication and Extension. All these domains have their specific content and focus that contribute to the study of the individual and the family in Indian socio-cultural context. The new curriculum has attempted to break away from the conventional framework of the discipline in significant ways. In the new conceptualisation, the boundaries between different areas of the discipline have been dissolved. This has been done to enable students to develop a holistic understanding of life in the home and outside. A special effort has been made to communicate respect for every student's life at home and in society by making the curriculum appropriate for both boys and girls, living in different contexts, including those who are homeless. It has also been ensured that all the units address, in their content, the significant principles of equity, equality and inclusiveness. These include gender sensitivity, respect for diversity and plurality in relation to rural-urban-tribal location, caste, class, value for both traditional and modern influences, concern for society and pride in national symbols. Additionally, the novel approach has made concerted efforts, to integrate learning at school by building bridges with other subjects in the sciences and social sciences.

The practicals have an innovative and contemporary character and reflect the utilisation of new technology and applications that would strengthen critical engagement with the lived realities of people. More specifically, there is a deliberate shift to field-based experiential learning. The practicals are designed to foster critical thinking. Further, conscious effort has been made to move away from stereotyped gender roles thus making the experiences more inclusive and meaningful for both boys and girls. It is imperative that the practicals are conducted keeping in mind the resources available with the family and community.

The course adopts a developmental framework in Class XI using the life-span approach, starting with adolescence, the stage of development being experienced by the student. Beginning with one's own stage of development would instill interest and enable identification with the physical and emotional changes that the student is undergoing. Following this is the study of childhood and adulthood.

In each unit, the challenges and concerns have been addressed along with the activities and resources necessary to meet these challenges.

For Class XI the 'self and family' and the 'home' are focal points for understanding the dynamics of individual lives and social interaction. The rationale for using this approach is that it will enable the adolescent student to understand herself/himself in the context of the family, which in turn is nested within the wider Indian socio-cultural milieu.

For Class XII, the emphasis is on 'work and careers' through the life-span. In this context, work is perceived as essential human activity that contributes to the development and sustenance of individuals, families and society. Its value is not linked only to its economic ramifications. The student will be helped to explore the significance of work, jobs and careers and their interrelationship. To understand this concept, the student will be imparted life skills and work skills in the respective areas of HEFS. This will facilitate the acquisition of basic skills and orientation to advanced professional skills needed for specialisation in the selected fields discussed in the course. It is significant that these skills will be useful for the student in her/his personal-social life, as well as serve as a springboard for pursuing a career in the future.

### Objectives

The Human Ecology and Family Sciences curriculum has been framed to enable the learners to

1. develop an understanding of the self in relation to family and society.
2. understand one's role and responsibilities as a productive individual and as a member of one's family, community and society.
3. integrate learning across diverse domains and form linkages with other academic subjects.
4. develop sensitivity and undertake a critical analysis of issues and concerns of equity and diversity.
5. appreciate the discipline of HEFS for professional careers.

## Class XI

### **THEORY**

**TOTAL PERIODS 180**

**Introduction: Evolution of the discipline and its relevance to the quality of life** **2**

**UNIT I: UNDERSTANDING ONESELF: ADOLESCENCE** **60**

- A. Sense of self – understanding ‘Who am I’?
- B. Characteristics and needs
- C. Influences on identity formation
  - Biological and physical changes
  - Socio-cultural contexts
  - Emotional changes
  - Cognitive changes
- D. Food, nutrition, health and fitness
- E. Management of resources - time, money, energy and space
- F. Fabric and apparel
- G. Media and communication technology
- H. Communication skills
- I. Living and working in a global society

**UNIT II: UNDERSTANDING FAMILY, COMMUNITY AND SOCIETY** **50**

- A. Relationships and interactions with ‘significant others’;
  - Family
  - School - peers and educators
  - Community
  - Society
- B. Concerns and needs in diverse contexts:  
Family, school, community and society  
Key areas:
  - (a) Health, nutrition and hygiene
  - (b) Activity, work and environment
  - (c) Resource availability and management
  - (d) Learning, education and extension
  - (e) Textile heritage of India

**UNIT III: CHILDHOOD****30**

- Survival, growth and development
- Nutrition, health and wellbeing
- Care and education
- Clothes and apparel
- Children with special needs
- Socio-cultural influences on children

**UNIT IV: ADULTHOOD****38**

- Health and wellness
- Financial planning and management
- Care and maintenance of fabrics and apparel
- Perspectives in communication
- Individual's responsibilities and rights.

**PRACTICALS**

1. Study of physical self with reference to:
  - (a) Age, height, weight, hip size, round chest/bust, round waist
  - (b) Age at menarche: girls
  - (c) Growth of beard, change in voice: boys
  - (d) Colour of hair and eyes
2. Understanding oneself with reference to :
  - (a) Developmental norms
  - (b) Peers, both male and female
  - (c) Health status
  - (d) Garment sizing
3.
  - (a) Record own diet for a day
  - (b) Evaluate qualitatively for adequacy
4.
  - (a) Record the fabrics and apparel used in a day
  - (b) Categorise them according to functionality
5.
  - (a) Record one day's activities relating to time use and work
  - (b) Prepare a time plan for oneself.

6.
  - (a) Record own emotions for a day in different contexts
  - (b) Reflect on the “why” of these emotions and ways of handling them
7. List and discuss five messages from print and electronic media which have influenced own self.
8. Collection of information from different regions in India and critical discussion on:
  - (a) Food practices including food taboos, fasting and festivity preparations
  - (b) Clothing practices related to rites, rituals and occupation
  - (c) Childcare practices in early years – gender similarities and differences
  - (d) Traditional forms of communication including festive and special occasions
9. List and discuss 4-5 areas of agreement and disagreement with:
  - (a) Mother
  - (b) Father
  - (c) Siblings
  - (d) Friends
  - (e) Teacher

How would you resolve the disagreements to reach a state of harmony and mutual acceptance?
10. Documentation of a traditional textile art/craft of neighbouring area.
11. Visit to any one programme/institution (Govt./NGO) for children; observation of activities in the programme and report writing.

Or

Observation of any two children of different ages in the neighbourhood and reporting on their activities and behaviour.
12. Construction of Quality of Life (QOL) and Human Development Index (HDI).
13. Relationship of fibre properties to their usage:
  - (a) Thermal property and flammability
  - (b) Moisture absorbency and comfort

14. Study one female adult and one male adult in the age range of 35 to 60 years with reference to:
  - (a) Health and illness
  - (b) Physical activity and time management
  - (c) Diet behaviour
  - (d) Coping with challenges
  - (e) Media availability and preferences
15. Calculation of nutritive value of foods to identify rich sources of nutrients.
16. Preparation of different healthy snacks for an adolescent suitable in her/his context.
17. Study of labels on:
  - (a) Food
  - (b) Drugs and cosmetics
  - (c) Fabrics and apparel
  - (d) Consumer durables
18. Observation and recording of group dynamics in different locations/ situations such as:
  - (a) Home
  - (b) Eateries
  - (c) Playfield
  - (d) School
  - (e) Recreation areas
19. Analysis of own communication styles and skills.
20. Plan a budget for self for a given situation/purpose.
21. List five problems faced by self or family as consumer. Suggest solutions to overcome the same.

## Class XII

### **THEORY**

**TOTAL PERIODS 140**

<b>UNIT I: WORK, LIVELIHOOD AND CAREER; PREPARATION, CHOICES AND SELECTION</b>	<b>35</b>
- Work, age and gender	
- Occupational heritage of India	
- Career options	
- Entrepreneurship and self-employment	
- Life skills for career building	
<b>UNIT II: CAREER OPPORTUNITIES, SCOPE OF HUMAN ECOLOGY AND FAMILY SCIENCES IN HIGHER EDUCATION AND CAREERS</b>	<b>5</b>
Major concepts, relevance and skills in the following areas;	
A. Nutrition, Food Science and Technology	20
Specific Careers and Areas	
- Clinical nutrition and dietetics	
- Public nutrition and health	
- Catering and food services management	
- Food processing and technology	
- Food quality and food safety	
B. Human Development and Family Studies	20
Specific Careers and Areas	
- Early childhood care and education	
- Guidance and counselling	
- Special education and support services	
- Support services for children in difficult circumstances	
- Management of institutions and programs for children, youth and elderly	
C. Fabric and Apparel	20
Specific Careers and Areas	
- Care and maintenance of fabrics in institutions	
- Design for fabric and apparel	
- Retailing and merchandising	
- Production and quality control in garment industry	
- Museumology and textile conservation	

- D. Resource Management 20  
Specific Careers and Areas  
- Human Resource Management  
- Hospitality management  
- Designing of interior and exterior space  
- Event management  
- Consumer services
- E. Communication and Extension 20  
Specific Careers and Areas  
- Management of development programs  
- Development communication and journalism  
- Media management and advocacy  
- Media design and production  
- Corporate communication and public relations

#### **PRACTICALS**

#### **SPECIALISATIONS IN HEFS**

#### **NUTRITION, FOOD SCIENCE AND TECHNOLOGY**

1. Qualitative tests on food adulteration
2. Development and preparation of supplementary foods for nutrition programmes.
3. Planning messages for nutrition, health and life skills using different modes of communication for different focal groups.
4. Preservation of foods using traditional and/or contemporary methods.
5. Packaging and study of shelf life of the prepared products.

#### **HUMAN DEVELOPMENT AND FAMILY STUDIES**

6. Preparation and use of teaching aids, using indigenous and locally available material to communicate socially relevant messages for children, adolescents and adults in the community.
7. Conducting mock sessions among peers in career guidance, nutrition counseling and personal counseling under supervision.

#### **FABRIC AND APPAREL**

8. Preparation of articles using applied textile design techniques: tie and dye/batik/block printing.
9. Application of quality control techniques in garment industry:

- (a) Fabric inspection
- (b) Quality of seams and notions
- (c) Size labels
- (d) Packaging

10. Care and maintenance of fabric products:

- (a) Mending
- (b) Cleaning
- (c) Storage

**RESOURCE MANAGEMENT**

11. Open an account in bank/post office. Learn basic banking operations (Mock exercises in the lab with real bank forms)

12. Application of traditional/contemporary techniques of home decorations:

- (a) Floor and wall decorations
- (b) Flower arrangement
- (c) Other forms of local decorations

**EXTENSION AND COMMUNICATION**

13. Analysis and discussion of print, radio, and electronic media with reference to focus, presentation, technology and cost

14. Communicating with groups on any one of the following themes.

- (a) Social messages- gender equality, AIDs, female foeticide, child labour, rights abuse and other such themes)
- (b) Scientific fact/discovery
- (c) Any significant incident/event

**PROJECTS**

1. Any one of the following may be undertaken and evaluated:

- (a) Analysis of traditional occupations prevalent in one's own local area, their beginnings, present status and challenges faced.
- (b) Analysis of gender roles, entrepreneurial opportunities, and future careers and family participation.

2. Documentation of any public/mass campaign being implemented in own area, with reference to:

- (a) Purpose of campaign

- (b) Focal group
  - (c) Modalities of implementation
  - (d) Stakeholders involved
  - (e) Media and methods used
- Comment on the relevance of the campaign.

3. Study of an integrated community- based programme being implemented in own area, with reference to:
  - (a) Programme objectives
  - (b) Focal group
  - (c) Modalities of implementation
  - (d) Stakeholders involved
4. Visit the neighbouring areas and interview two adolescents and two adults regarding their perception of persons with special needs.
5. Take a profile any one person with special needs, child or adult: to find out their diet, clothing, activities, physical and psychological needs.
6. Observe and document any event in your school/home or neighbourhood. Evaluate the same with respect to:
  - (a) Its relevance
  - (b) Resource availability and mobilisation
  - (c) Planning and execution of the event
  - (d) Financial Implications
  - (e) Feedback from stakeholders

Suggest modifications for the future.