UNIT 17 DEVELOPING PHYSICAL STRENGTH AND MOTOR COORDINATION

Structure

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17.1 INTRODUCTION

You have read in Block 3 that by the time children are three years old, they can walk, throw, catch and use their hands for eating. You will read in this Unit how the stiff, uncertain movements of the toddler become more graceful and confident during preschool years and learn how the child develops control over body movements and becomes self-sufficient in many tasks. Preschoolers are ready to explore the larger environment. They are curious and want to find out more about things. They want new challenges to test themselves and in this effort, develop greater physical strength and coordination.
The Child: Development During Preschool Years

Objectives

After studying the Unit you should be able to:

- describe the physical changes that take place in the child's body during the preschool years, i.e. increase in height and weight, change in body proportions and development of internal organs
- identify and list the gross and fine motor skills acquired by preschoolers
- understand the need for immunization and state the schedule to be followed during preschool years
- discuss the nutritional requirements of the preschool child
- emphasize the role of practice in furthering motor skills

17.2 PHYSICAL GROWTH

The rate of physical growth is slow during the preschool years compared to infancy and toddlerhood. However, preschool children show a steady gain in height and weight. They gain two to three inches, that is, five to seven-and-a-half cms. in height every year. At the same time, the weight increases by about two kilograms every year. The following table gives the average height and weight of normal healthy preschoolers.

Table 17.1: Average Weight and Height of Preschool Children

<table>
<thead>
<tr>
<th>Age in years</th>
<th>Weight in Kgs</th>
<th>Height in Cms</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Boys</td>
<td>Girls</td>
</tr>
<tr>
<td>3+</td>
<td>14.78</td>
<td>13.79</td>
</tr>
<tr>
<td>4+</td>
<td>16.12</td>
<td>15.85</td>
</tr>
<tr>
<td>5+</td>
<td>19.33</td>
<td>18.67</td>
</tr>
<tr>
<td>6+</td>
<td>22.14</td>
<td>21.56</td>
</tr>
</tbody>
</table>

Source: Nutrient Requirements and Recommended Dietary Allowances for Indians, ICMR, 1990

You know that height and weight are used as indicators of physical growth. A steady gain in height and weight usually indicates good physical growth. You have read about growth monitoring and the use of the growth chart in Unit 7, Block 2. The growth chart given in Unit 7 can also be used for recording the weight of toddlers and preschoolers. Below is given the weight of Reshma as recorded over a period of four months. Use the growth chart printed in Unit 7 to comment on the health status of the child.

Reshma's Age: 4 years, 1 month; Reshma's Weight: 12.0 kgs

After you have recorded the weight on the growth chart, you will find that the child's weight falls in the area called 'road to safety' and the line formed on joining the points looks something like this (— — —). This implies that this child is healthy and gaining weight steadily. However, if the child's weight does not increase in the next two months, it will fall below the 'road to safety'. This would mean that she needs special care.

During preschool years, along with the changes in height and weight, there are other changes in the muscle tissue, adipose tissue, internal organs and various systems of the body.

You know that the bones of infants are soft. You also read that they begin to harden and grow during the years of toddlerhood. This process of hardening and growth continues during the preschool years. However, the preschoolers' bones do not break easily and when damaged, mend more rapidly than bones that are mature. The bones of the arms and legs and trunk grow rapidly. By the age of six years, the legs of the preschooler account for half of her body length. This ratio is the same as the ratio of the adult body.
The brain continues to develop and reaches 75 per cent of its adult weight by five years of age and 90 per cent of its adult weight by the time the child is six years old. As a result of this development, the control over movements becomes better.

Preschool children tend to be farsighted as the eyes are still developing. It is only when the child is about eight years old, that the eyes are fully developed. The implication of this fact is that the reading material for preschoolers should be in large and bold print.

Around the age of four years, the muscles of the child grow rapidly. This growth in muscles accounts for more than half of the increase in weight. As the muscle fibre thickens and becomes stronger, the body movements become more efficient. Consequently, the child is able to participate in many more physical activities and games. The muscular growth, along with the steady increase in height, brings about a change in body proportions. You would recall that the toddler has a round abdomen and a short, stubby appearance. The preschooler, on the other hand, looks more slender. This is because during the preschool years, the muscles around the abdomen become firm, the baby-like round stomach flattens and the child’s arms and legs become longer. At the same time, the layer of fatty tissue becomes thinner.

The change in body proportions along with the improvement in muscle tone and strength, skeletal development and maturation of the nervous system contribute to an improvement in the child’s balance and posture. This helps the preschool child to become steadier on her feet. Her movements become graceful and well coordinated.

In addition to the changes described above, many other physiological changes also occur during preschool years. As the expansion and contraction of lungs become better controlled, the child’s breathing becomes slower and deeper. The heart also beats more slowly and steadily. As a result of better breathing and better blood circulation, most children are ready for the increased physical demands that will be placed on them in middle childhood.

Check Your Progress Exercise 1

Read the sentences below and fill in the blanks with appropriate words.

1) The growth rate during preschool years, as compared to infancy and toddlerhood is ..................................................

2) With improved balance, the walk of a preschooler becomes ..............................................

3) More than half the weight gained by preschoolers is due to the development of..................................................

4) Better balance and posture during preschool years is a result of change in .............................................., improvement in muscle tone and strength and maturation of the .............................................. and .............................................. systems.

5) The weight of a six year old’s brain is ...................... per cent of its adult weight.

6) During the preschool years, the round abdomen of the child becomes ..............................................

17.3 DEVELOPMENT OF MOTOR SKILLS

The preschool years are marked by great advances in strength, speed and coordination. The child’s body in preschool years is flexible and this enables her to learn many more skills. The preschooler enjoys learning new skills and spends a lot of time practising and refining them. Despite falling and stumbling, she jumps from stools and runs across open stretches. She takes part in many more physical activities and also interacts more frequently with other children. Her physical and motor skills also give her greater independence and she uses these skills to explore the environment and to do things on her own. The preschool child is testing her skills and likes to have a sense of mastery in eating quickly, in running and in climbing to the top of the stairs.
17.3.1 Gross Motor Skills

We will now look at some of the gross motor skills achieved by children between three and six years of age.

As you know, while toddlers are able to climb stairs using the alternate foot pattern, they still have to place both feet on the same step while descending. In addition, they require the support of the railing for climbing down. Gradually, with practice, children do not need to hold the railing. They use their feet alternately as in walking, even while coming down the stairs. This skill of ascending and descending stairs, in a manner similar to that of an adult, is achieved by the time they are four years old. No longer satisfied by being able to use the stairs independently, they attempt many other variations. They hold on to the railing as they stand on the outside of the stairs and try to climb up the stairs using the edges of the steps. From walking up and down the stairs without holding on to the railing, they proceed to running up and down. They may even try to jump over a step while going up, and later, while coming down.
Most children between three and four years can run. At this age, as they strive for better control, they delight in running with sudden starts and stops and turn corners rapidly as they do so. By five years, they are able to control their speed and direction. They can now start and stop smoothly. The length of their strides increases. Preschoolers seem to prefer to run instead of walking from one place to another. This is evident as they race each other and go up and down the stairs, weaving through crowded places and dodging obstacles.

Children learn to jump in a coordinated and graceful manner only after they have gained the strength and balance to leave the ground with both feet at the same time. You know from Unit 12 that three year olds jump stiffly without bending their legs at the knees. This jumping pattern becomes smoother during the preschool years as they learn to crouch and use their arms to thrust themselves up while jumping. Their landing is better balanced as they are able to bend their knees. From simply stepping off low platforms they are now able to jump off low stools and boxes with both feet together. After they successfully negotiate platforms that are one to one-and-a-half feet high, they find higher platforms to jump off — a chair, a bed, a wooden crate, a large steel trunk — constantly challenging themselves to see how far they can go. By the age of six years, children can also jump over an obstacle, for example, over flower-beds or puddles. They can jump across a distance of 15 inches i.e. about 35 cms.

Closely linked to jumping skills is the ability to hop. Three years olds can hop one to three times on one foot, but they are likely to lose their balance and fall. To balance themselves, they move their arms a lot as they hop. Five year olds can hop ten or more steps on one foot consecutively. But it is only by the age of six years that they can hop equally well on either foot. Games like hopscotch and hop and chase and those with a skipping rope are popular around six years and help the child in developing balance and locomotor skills. As the motor skills develop, they enable greater control, coordination and balance. Walking, running and jumping are basic skills that develop naturally during the early childhood years. However, some skills need to be learnt and practised after the child has acquired the basic skill. For example, riding a bicycle, turning cartwheels, climbing a tree, swimming etc.

To understand this, let us study the example of throwing a ball. As you know, the toddler is not able to throw a ball efficiently and mostly drops it in front of or behind her. Practice helps in developing the skill. Preschoolers steadily improve their ability to throw a ball. Between the ages of three-and-a-half and five years, they learn to rotate their body slightly to the right as they prepare to throw the ball and then rotate their body to the left while making the throw. At this stage the child’s feet are planted firmly on the ground. At age four, though children cannot throw a ball with much strength or accuracy, they can swing their arms freely without an exaggerated movement of the torso. Further refinement is achieved
The Child: Development During Preschool Years

When the child is given more opportunities to practise this throwing technique. By six years, she will slide one foot forward on the same side of the body as the throwing arm. Only after the child is six-and-a-half or older is she able to throw the ball in a more coordinated manner. She shifts her weight to the side on which she is holding the ball. Then as she throws the ball she shifts her weight to the opposite foot and throws the ball using the movement of both the arm and the wrist.

To catch a moving object is difficult since children must be able to judge the position of the object accurately, follow its movements with their eyes and then place their hands to catch and hold it. The technique for ball-catching used by a preschooler reveals a definite improvement over that used by a toddler. Between the ages of four and five years, the child learns to catch and hold the ball away from the body. The five year old keeps her eyes on the ball as it approaches. She extends her arms with elbows bent and held loosely at her side and prepares to catch the ball. By six years of age, children are skillful enough to be able to catch the ball by coordinating the movement of their hands, while they keep their eyes on the approaching ball.

Nearly all children develop their motor abilities in the same sequence as described above, but the age at which they acquire these skills varies considerably. Most of the basic motor skills like running, jumping and climbing are achieved by the age of five or six years. In the childhood years, children refine these skills and develop a wide range of new abilities. You will find many six year olds climbing up the incline of a slide instead of using the steps at the other end, or running down the slide instead of sitting and sliding down. They deliberately choose a more complicated way of doing something just to give themselves that extra challenge. Toys that the child can ride are fun after the age of three. Tricycles, other riding toys, toys with wheels that can be pushed and building toys which allow a lot of possibilities are also enjoyed by preschoolers.

17.3.2 Fine Motor Skills

You know that a child’s efforts to learn about the world involve the manipulation of materials. As the movements of their hands and fingers become coordinated, they become adept in manipulating and handling objects. The development of fine motor control can be seen in the way a child writes with a chalk or a pencil. If you give a crayon to a preschooler, you will notice that she holds the crayon like an adult, using the forefinger and thumb to grasp it close to its writing end. Control over scribbling emerges at the same time as the child masters other manipulative skills. Closed forms such as circles are only possible for the child of three years of age or above. The ability to draw vertical lines seems to precede that of drawing horizontal lines. Crosses, squares, triangles and diamonds follow in sequential order. While toddlers delight in the sheer physical activity of moving a crayon around and producing marks on paper, a child entering the preschool age attempts to control
her scribbling and discovers a connection between these marks and the world around her. Lines are no longer simply marks on paper but begin to have a meaning for the child.

Developing Physical Strength and Motor Coordination

Four year olds hold a crayon firmly and are better able to use the small muscles of their fingers. Their drawings comprise recognizable forms although one cannot decide what they are. By five years of age, the child’s drawings are quite distinguishable as people, animals or trees. Typically, the preschooler’s first representation of a human figure is drawn with a circle for a head and two vertical lines for legs. Heads of figures drawn are disproportionately large, and people tend to be larger than background objects. Six year olds include greater detail in their drawings and the figures begin to take on realistic proportions.

While colouring and painting, preschool children no longer cover the paper with large strokes of the brush; instead they use short, deft strokes. They try to colour only within the boundaries of the shape drawn. You will read more about art and the preschooler in the subsequent Block.

The development of fine motor skills is also reflected in the way preschoolers manipulate materials. At three years of age, using a pair of scissors can be frustrating for the child, but by four years, the child can cut paper and use a pair scissors efficiently. Five year olds are able to cut along a straight line with scissors. By the time they are six years old, they can follow a line to cut out squares from thick paper. This would be difficult for them if the
paper is thin or limp as it would bend easily. When children discover that they can cut things and paste them together in new combinations or convert raw materials into a design, they have found a new field of creative play.

Improved eye-hand coordination permits preschoolers to lace a wire or thick string through holes punched on a board and roll and flick marbles more accurately. It becomes possible for them to put together jigsaw puzzles with four or five pieces. Paper-folding skills improve to the extent that six year olds are able to fold and crease a sheet of paper vertically, horizontally and diagonally.

Colouring and drawing are usually favourite activities. Stringing beads and paper cutting hold the preschool child's attention too. In the Blocks that follow you will read more about the kind of activities children enjoy in preschool years as a result of further development of motor skills.

The preschool years are the time when children become increasingly proficient in the area of self-help skills, i.e. they learn to look after their own needs. By the time they are five to six years old, most of them are able to bathe, dress and feed themselves. Washing themselves, putting on and buttoning clothes and combing and tying up hair are some things they will insist
on doing by themselves at this age, though they may take time to complete the tasks. While
eating, if a spoon is used, the preschooler is able to hold it using her fingers instead of her fist.

The advances in gross and fine motor control not only give preschoolers greater
independence, but also allow them to help in activities within and outside the home. It is not
an uncommon sight to find a five or six year old girl helping her mother in fetching fuel,
washing utensils and clothes and cleaning the house. She not only bakes and dresses
herself, but also looks after her younger siblings. She may also be helping her family on the
farm by picking vegetables or fruits.

Check Your Progress Exercise 2
The following example describes the activities of a preschool child, Rahul. Which of his
activities involve gross motor skills and which ones involve fine motor skills? Write in the
appropriate columns given below.

Six year old Rahul is getting ready to go to school. As he puts on his shirt, his mother
says, ‘‘You’re late again. This time the rickshaw is not going to wait for you. I’m sure
you’re going to miss it today.’’ She comes forward to help him with the buttons of the
shirt but he turns away and buttons his shirt carefully, checking that each button is
going into the right hole. He pulls on his shorts and then his socks and shoes. His
mother ties the laces of one shoe as Rahul attempts the other one himself. Tying shoe
laces is a tricky job but he has learnt to loop the two ends over each other and pull
them together to make a bow. After washing his hands, he picks up the slice of bread
in one hand and eats slowly, refusing all offers of help from his mother to feed him.
She tells him to hurry up while he gulps his milk holding the glass in both hands. She
brings his bag and opens the front door to take him down to the rickshaw stop. Rahul
takes his bag from her, slips his arms through the straps and pushes the bag up to his
back. His mother follows him as he runs down the stairs from his house, jumping off
the last step and landing firmly on both feet. He rushes across the garden, jumps over
a puddle and runs down the pavement. Seeing his other friends who are standing and
waiting for the rickshaw, he slows down, turns and waves to his mother and skips the
rest of the way to his friends.

<table>
<thead>
<tr>
<th>GROSS MOTOR SKILLS</th>
<th>FINE MOTOR SKILLS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
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<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

17.4 FOSTERING PHYSICAL AND MOTOR
DEVELOPMENT

You have already read in Blocks 1 and 2 that heredity and environmental factors interact to
influence all areas of development. You know that children need a healthy and stimulating
environment for optimal development. If an effort is made to keep children healthy and
provide them with nutritious food, they are more likely to proceed smoothly through the
various stages of development.

Good health and nutrition are key factors in ensuring optimal growth and development. If
the physical abilities of children are to reach their full potential, it is equally important that
we ensure that children get opportunities to practise their skills. Let us look at each of these
factors one by one.

17.4.1 Immunization and Health Care

Preschool children often suffer from common illnesses such as cold, respiratory illnesses,
tonsill infection and skin allergies. Diseases such as chicken pox, mumps and measles are a
part of the experience of the growing years. Immunizing children at the proper time is an effective method of preventing some diseases.

You have already read about immunization in infancy and toddlerhood. These doses need to be followed up with booster doses in preschool years. The caregiver needs to ensure that between five and six years of age, the child is given the following vaccinations.

Five to six years:
- DT
- Typhoid – 1st dose
- Typhoid – 2nd dose after one month of the 1st dose

The following table gives the complete immunization schedule that should be followed from birth onwards.

<table>
<thead>
<tr>
<th>Age</th>
<th>Immunization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Birth</td>
<td>BCG and Poliomyelitis oral drops</td>
</tr>
<tr>
<td>1½ months</td>
<td>DPT and Poliomyelitis oral drops</td>
</tr>
<tr>
<td>2½ months</td>
<td>DPT and Poliomyelitis oral drops</td>
</tr>
<tr>
<td>3½ months</td>
<td>DPT and Poliomyelitis oral drops</td>
</tr>
<tr>
<td>9 months</td>
<td>Vaccine for Measles</td>
</tr>
<tr>
<td>16-24 months</td>
<td>DPT vaccine, Polio (Booster)</td>
</tr>
<tr>
<td>5-6 years</td>
<td>DT, Typhoid (Two doses)</td>
</tr>
<tr>
<td>10 years</td>
<td>Tetanus, Typhoid</td>
</tr>
<tr>
<td>16 years</td>
<td>Tetanus, Typhoid</td>
</tr>
</tbody>
</table>

In DECE-2, we shall read about some common childhood diseases and their management.

17.4.2 Nutrition

It is possible that one may be getting too little or too much of nutrients from one’s diet. If this situation continues for a period of time it can lead to malnutrition. This can lead to poor physical development. The term malnutrition means either undernutrition or overnutrition. Undernutrition is the case when the person is getting too little of nutrients from the diet and overnutrition is when the person is getting excessive nutrients from the diet. Malnutrition during the early years may have a permanent effect on some parts of the brain and nervous system. It also affects the child’s growth rate and motor coordination. Further, malnourished children are usually not very active and this affects the development of motor and cognitive skills.

A balanced and nutritious diet should be given to the child. You know from Unit 12 that a balanced diet is one that includes all the nutrients in the quantities required by the body. You have read about the five categories of nutrients namely carbohydrates, proteins, fats, vitamins and minerals. Each meal for the preschooeler should, as far as possible, include foods from all these categories. Because the activity level of children is high, they need plenty of energy foods. And because of rapid physical growth, the need for protein is also high. Therefore, food items that are rich sources of energy and protein should be given. Sources of energy and protein have already been mentioned in Unit 12. You have read in Block 3 that children in early childhood years need adequate amounts of iron, Vitamin A and calcium. During the growing years, the body’s requirements of these nutrients is considerable. Some foods that are rich in iron, Vitamin A and calcium, all important for growth and development, are listed below:

**IRON** : Green leafy vegetables, whole cereals and pulses, jaggery

**VITAMIN A** : Yellow and orange coloured fruits and vegetables such as papaya, mango, pumpkin, carrot and green leafy vegetables

**CALCIUM** : Milk and milk products such as butter, ghee, cheese, paneer
Along with ensuring that the preschooler gets nutritious meals that meet her needs, it is also important to know the timings of meals and snacks. You know from reading the earlier Block that the child cannot eat too much at one time and frequent meals should be given. The most important point is that there should be a regularity in the pattern that is followed. You must remember that the gap between the meals should not be too short or too long. In a day one can serve the preschooler about 2 glasses of milk, three main meals and snacks rich in energy, protein, calcium, vitamin A and iron in between the main meals.

In the main meals of breakfast, lunch and dinner the child can have the same food as the family. The mother should ensure that the child does not miss breakfast for any reason. Research studies have shown that a complete, nutritious breakfast helps the child to be physically active and to concentrate well. As regards the snacks, the following points may be kept in mind. The snacks should be such that only a small quantity provides a concentration of nutrients. If you give a large quantity of snacks, it will spoil the child’s appetite for the meal and the child will not be able to eat a full meal. In addition, the snacks should be easy to prepare and tasty to eat. The snack can be made so that the child can eat it with her hands. Biscuits, sandwiches, laddoos and chikki made from roasted nuts are nutritious snacks enjoyed by most children. You can make chikki using the recipe given in Annexure I at the end of the Unit. This snack is crisp and hard to bite. Some children may prefer soft foods. For an alternative you can make nutritious vegetable cutlets or sandwiches, which the children will enjoy. Try making the nutritious sandwich given at Annexure I.

All of us like to eat food that is good to look at, i.e. which is colourful and attractive. This becomes especially important in the case of a preschooler. Young children are very active and interested in exploring their environment and their attention is easily distracted from food. Giving them cutlets, biscuits, sandwiches and other snacks of different shapes would be a good idea. You have read in the last Block how you could make green puris. Would you like to try making a square puri that is green in colour? You can sometimes also try to involve the children in the activity of preparing a simple dish. You will find more ideas about this kind of an activity in the subsequent Blocks. Children when involved in this task will develop an interest in food.

When you are planning meals and snacks for preschoolers, you will also need to keep some points about their likes and dislikes in mind. Preschoolers may have strong likes and dislikes. Most of the children, you will find, do not like green leafy vegetables and milk. Do not force them to eat anything. As was mentioned earlier, you can change the form of the food and serve it. Also give a gap of some time and try again. The child may accept the food the second time. When you are introducing foods, give only one new food at a time and in small quantities. Children are also influenced by what they see and hear around them. The caregivers should not mention their own likes and dislikes in front of children. At the same time sharing the meals with the children is something that adults and children enjoy.

The food given to the child should not be too hot or too cold. If it is too spicy or very sweet or fried, it is not suitable for a young child because such foods irritate her digestive tract.
The atmosphere while eating should be relaxed and enjoyable. The child should not feel tense. This can happen if you restrict the child, reprimand her too much or force her to eat a particular food that she does not like.

When we talk of nutrition for preschoolers, we should remember the fact that it is in these formative years that the child learns many do's and don'ts and develops an interest in eating as a social activity. This interest of the child can be captured and good eating habits can be taught, such as washing hands before and after eating, not spilling and smearing food all over themselves, and throwing wrappers and peels in the dustbin.

This was only a brief look at nutrition during preschool age. We would study the factors that need to be considered while planning meals for preschoolers as well as learn how to plan balanced meals in DECE-2, which is on "Child Health and Nutrition".

Let us now talk about another important aspect that influences development of motor skills in children viz. opportunities to practise.

### 17.4.3 Opportunities to Practise Motor Skills

You have just read about the importance of good health and a nutritious diet in enhancing physical and motor development. In addition to this, for the development of motor skills, it is important that children get opportunities to practise these skills. You will read in Blocks 5 and 6 about the activities that can be organized for preschoolers to foster the development of motor skills. However, one must remember that no two children develop at the same rate. One may be highly skilled in an activity, while another may be unable to perform as well. Therefore, comparisons between children must be avoided. This would only make a child self-conscious and uncomfortable about her failure to develop a particular skill. Children must be encouraged to try out new activities but they should not be pushed beyond their limits. It would be beneficial to be patient and allow them to develop at their own pace.

**Check Your Progress Exercise 3**

1) State whether the following statements are correct or incorrect. In the space provided against each statement put a tick mark (✓) for the correct sentences and cross (X) for the incorrect.

   a) Maturation will determine the age at which a child is ready to learn a particular skill.  
      (✓)

   b) The preschool child can eat large quantities of food at a time and so needs only three meals a day.  
      (X)

   c) The energy level of malnourished children is low.  
      (✓)

   d) During the growing years, children do not need food rich in calcium, iron and vitamin A.  
      (X)

2) Indicate the ages at which the following vaccinations should be given to a preschool child.

<table>
<thead>
<tr>
<th>VACCINATION</th>
<th>AGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>DT</td>
<td>........................................</td>
</tr>
<tr>
<td>Typhoid (1st dose)</td>
<td>........................................</td>
</tr>
<tr>
<td>Typhoid (2nd dose)</td>
<td>........................................</td>
</tr>
</tbody>
</table>

3) Described below is four-year-old Sunita's lunch. Read it carefully and comment whether it is a balanced and nutritious meal suitable for her age.

   Sunita's lunch: **Chupati** made from **besan** and wheat flour, spinach **paneer** vegetable, peanut **raita**, a slice of mango.
In this Unit you have read about the physical growth and motor development that takes place during the preschool years. As compared to infancy the rate of physical growth slows down in this period. However, the body proportions of the child continue to change and she acquires many new skills.

The height of a preschooler increases by two to three inches and her weight by two to two-and-a-half kilograms every year. Body proportions change as her limbs grow rapidly. The loss of body fat results in her looking more slender. Because of the change in body proportions, muscle tone and strength, her balance improves. Her movements are well controlled and this gives her a more steady gait while walking.

Preschoolers not only refine previously learnt motor skills but also acquire many new ones. Their physical and motor development gives them greater independence to explore the world around them. They begin to run, jump, hop, climb and catch and throw a ball efficiently by the time they are six years old. Along with the development of gross motor skills, the preschool child becomes adept at handling and manipulating materials. She also learns many self-help skills—she can bathe, dress and feed herself. These skills enable her to do tasks within and outside the home.

If children are kept healthy, given a balanced diet and provided with opportunities to practise skills, you would be able to enhance their physical and motor development.

17.6 ANSWERS TO CHECK YOUR PROGRESS EXERCISES

Check Your Progress Exercise 1
1) slower
2) steady
3) muscles
4) body proportions, nervous and skeletal
5) ninety
6) flat

Check Your Progress Exercise 2

GROSS MOTOR SKILLS
• Pulling on shorts, socks and shoes.
• Slipping bag on shoulder.
• Running down the stairs, across the garden and down the pavement.
• Jumping off last step; over puddle.
• Skipping towards his friends.

FINE MOTOR SKILLS
• Buttoning shirt.
• Tying laces.
• Holding the slice of bread and the glass of milk.

Check Your Progress Exercise 3
1) a) ✓
   b) ✗ — A preschool child cannot eat much at one time and so frequent meals should be given.
   c) ✓
   d) ✗ — During the growing years children need foods rich in calcium, iron and vitamin A.
The Child: Development During Preschool Years

2) VACCINATION
   AGE
   DT               5-6 years
   Typhoid 1st dose 5-6 years
   Typhoid 2nd dose One month after the 1st dose

3) Sunita got a balanced meal because there was a food item from all the five categories of nutrients namely carbohydrates (wheat flour), proteins (besan, paneer, peanuts and curd), vitamins and minerals (mango, spinach), fats (oil used for cooking vegetable and peanuts). She also got iron (spinach), vitamin A (mango) and calcium (paneer, curd). She got energy from the fats, chapati and peanuts.

17.7 ANNEXURE 1 — RECIPES

GROUNDNUT CHIKKI:
Take 30 gms of groundnuts. Roast the nuts and pound them coarsely. Heat 50 gms of jaggery in a frying pan over low heat until it melts completely. Add the groundnuts, take the pan off the fire and mix well. Spread this on the back of a greased tray and flatten it using a greased rolling pin till it is ¼" thick. Mark into squares. When cool, remove from the tray and break into pieces.

NUTRITIOUS SANDWICH:
Take boiled egg, coriander leaves and a little milk. Mash the egg and mix with coriander leaves and milk to make a paste. Add salt and pepper to taste. Spread this paste on bread to make sandwiches. If you use brown bread you will be ensuring that the snack contains iron. You can cut these sandwiches in a round shape to make them more interesting. If you don't want to use egg, you can substitute it with cheese, paneer or a little cream. In place of coriander leaves you can use mint for variation. This sandwich is rich in calcium, proteins, vitamin A, iron and energy.