UNIT 6 PHYSICAL AND MOTOR DEVELOPMENT

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6.1 INTRODUCTION
After going through the Unit on the Profile of an Elementary School Child, we are now aware that there are various aspects of development, Physical and Motor, Emotional, Social, Cognitive, Language and Moral. In the same unit, we also attempted to understand what these various aspects referred to and how they are interrelated. Going further, we proceeded to understand the various aspects in detail, with special reference to the Elementary School Years. In this unit, we will to deal with the Physical and Motor Development.

6.2 OBJECTIVES
After going through this unit, you will be able to:

- describe the important physical changes that take place in children during middle childhood;
- understand that the rate of physical growth varies from individual to individual and also across the life-span of an individual;
- set forth learning goals and choose activities in accordance with the child’s maturational level;
- describe how the level of physical and motor development affects the personality and social adjustment of child.
6.3 UNDERSTANDING PHYSICAL DEVELOPMENT

Let us take an example. Shiela has come to visit her sister after a gap of two years. She has brought a pretty frock for her niece, Radha. But, when she sees Radha, the first words she said are - 'Oh! How much have you grown'? The frock she had brought was too small for her. Shiela had seen Radha when she had been five years old and was not prepared for the tremendous amount of physical growth Radha had attained since then. Radha had increased in height. Can you think of the other changes that had occurred in these two years?

The other changes in Radha were:

Yes, Radha had also gained weight, her limbs had become longer, her body proportion had changed and the permanent teeth had made their appearance. We, thus, see that apart from increase in height, there are a number of other changes that occur during these years. Let us now take a look at the physical changes that take place during the elementary school years.

6.3.1 Height and Weight

By the time a child is 5 years old, the height becomes about twice as at birth and weight about 5 times birth weight. During the first two years, growth is very rapid. From 2 to 6 years, the growth rate slows down a bit and is not as rapid as it was up to 2 years of age. It is, however, still faster than the growth rate from 6 to 10 years of age when it slows down still more.

<table>
<thead>
<tr>
<th>Age</th>
<th>Boys</th>
<th>Girls</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Height (cm)</td>
<td>Weight (Kg)</td>
</tr>
<tr>
<td>6yrs.</td>
<td>108.5</td>
<td>16.3</td>
</tr>
<tr>
<td>7yrs.</td>
<td>113.9</td>
<td>18.0</td>
</tr>
<tr>
<td>8yrs.</td>
<td>119.3</td>
<td>19.7</td>
</tr>
<tr>
<td>9yrs.</td>
<td>123.7</td>
<td>21.5</td>
</tr>
<tr>
<td>10yrs.</td>
<td>128.4</td>
<td>23.5</td>
</tr>
<tr>
<td>11yrs.</td>
<td>133.4</td>
<td>25.9</td>
</tr>
<tr>
<td>12yrs.</td>
<td>138.3</td>
<td>28.5</td>
</tr>
<tr>
<td>13yrs.</td>
<td>144.6</td>
<td>32.1</td>
</tr>
<tr>
<td>14yrs.</td>
<td>150.1</td>
<td>35.7</td>
</tr>
</tbody>
</table>


From the chart given above, you may notice a rapid growth spurt in girls from age 10 to 14 and in boys from 12 to 16. This is again followed by a period of slow growth until 18 to 20 years when full adult height is attained.

Up to 10 years, boys are slightly taller and heavier than girls. Between 11 to 12 years, the rate of growth of girls is faster, but after 13 years boys grow faster and they are taller and heavier than girls.
The height of a child depends more on heredity, while the weight, though also influenced by heredity, depends more on environmental factors like nutrition, living standard, family surroundings, etc. The children of tall parents may thus be expected to be tall, while the children of these parents may not necessarily be fat.

The weight of a child at a certain age is influenced not only by heredity factors but also environmental factors. These include nutrition, diet and living standards, physical activity and exercise. Generally, children's weight conforms to the normal distribution in the population in which they live. Thus 68% of the children follow the average height/weight range typical of the geographical area they live in. For example, 'Indian girls' height ranges from 4'11" - 5'35" in 68% of population. The rest of the 32% are roughly either shorter or taller than the average population.

The height and weight of a boy or a girl may cause others to label him/her either normal, tall and thin or fat and short, etc. These labels greatly influence the child's personality and how he/she feels about oneself. These labels about physical proportions also influence the activities and interests of the children. For example, an overweight child will rarely be found exerting himself/herself in the play field.

Children who weigh less or more than average should not, therefore, be immediately labelled as underweight or overweight.

One should be careful in making comparisons and care should be taken to compare children as far as possible with the norms of a sample from the region to which they belong. Past growth record should be seen to see the child’s progress and, if she/he is not gaining any weight for some time, it should be investigated further.

### 6.3.2 Physical Proportions

Changes in the form and proportion of bodies occur as boys and girls grow from infancy to adolescence. In general, they progress from the chubbiness of infancy to the long-legged, more slender body of childhood. By adolescence, they are still slender and thin. However, the shoulders in boys and hips in girls tend to become broad.

Different parts of the body grow at different rates: some parts of the body attain mature proportions earlier than others. However, by sixteen years of age, different parts of the body assume their mature proportions.

During infancy the head of the infant is much larger in proportion to the rest of the body. It constitutes 1/4th of the total body length as compared to 1/8th in the case of adults. The head grows in width up to age 3, but continues to grow in length until eighteen years of age. The growth pattern is the same for boys and girls, though boys’ heads are slightly larger than girls’ heads at every age.

Until the second or permanent teeth have replaced the baby teeth, i.e., shortly before puberty, the mouth, chin and entire lower part of the child’s face are small compared with the upper part.

The forehead flattens, the lips fill out, and the eyeballs reach their mature size as the child approaches puberty. The nose is small and somewhat flat during the first few years of life. Gradually, it becomes larger and achieves its mature size by fourteen years of age.

By the age of six, the trunk is twice as long and wide as it was at birth. The child gradually becomes slim until pre-puberty, when the body widens out again.

The length of the arms and hands increases between 60 to 75% from birth to two years. At the age of 8 years, the arms are nearly 50% larger than what they were at two years and are thin in appearance, giving the child an adult’s look.
The legs grow at a slower rate than the arms. By 6 years of age, a child’s legs equal about half the body length. This ratio remains constant for the rest of the life.

The rate of increase in the height and weight are important for determining the normalcy of a child. These however, are not the only ones growing. There are other less apparent aspects of growth. Among these are the growth and development of muscles and bones.

6.3.3 Bones

It is rare to see a five-year-old sucking toes, while it is a common sight among the one to two years old. Have you ever wondered why a five-year-old cannot perform this task that a mere, one-year-old can? The answer is simple. It is because the bones of an infant are soft and flexible as they are composed mainly of cartilages. As the child grows, the bones become broader as well as longer. This process of hardening of the bones is known as Ossification. It begins early in the first year and ends during puberty.

Though the bones of an infant do not fracture easily, they are very susceptible to deformities as a result of their soft and flexible nature. Even in elementary school years, bone deformities can result from tight shoes or sitting in a wrong posture at a school desk. The primary school teacher, therefore, should make sure that the child is not slouching while sitting, standing or walking, not bending over the school desk while studying, wearing comfortably loose clothes and shoes, etc. Any bone deformities that occur during this age may last throughout the life of the child.

Along with an increase in size, bones also increase in number. At birth, the infant has approximately 270 bones. By puberty, this number increases to about 350.

At birth, girls are more advanced than boys in bone development. By 6 years, they are about one year ahead of boys and by 9 years, one and a half years advanced. There are also wide individual differences in skeletal development. The skeletal development of two children of the same age may show variation.
6.3.4 Muscles and Fat

Increase in weight at all periods of growth is due to the development and addition to the weight of the bones, muscle and fatty tissue. In the early years of childhood, the development of fatty tissue is more rapid, and during the early adolescent years there is a rapid development of the muscle tissue. You may have seen chubby little babies grow into slim and slender adolescents.

Muscles play an important role in the functioning of body organs like the heart, the digestive system, etc. They are also responsible for strength and co-ordination of activities.

Muscles develop as the child grows. The large muscles develop more rapidly than small ones and motor abilities progress from broad to precise.

A five-year-old can cut with scissors, catch a ball, etc., tasks that a two-year-old is unable to do. An eight-year-old, in turn, can do tasks that require even greater skill and co-ordination of muscles. For example, aim a ball, balance on a wall, do weaving, etc.

With time and practice, the small muscles mature and the child can perform increasingly complex activities. The child has better control over muscles and movements become more coordinated, efficient and refined. By adolescence, the small muscles too gain maturity.

During middle childhood, the muscles of the child are still developing. Children, therefore, need constant change of activities to activate different groups of muscles and to relieve fatigue from the tired muscles. Excessive strain at this age may injure the muscles. After illness, muscles loosen their tone and children get tired easily, but usually recovery is fast. When a child is recovering from illness, she/he should be prevented from taking part in strenuous activities.

Good food and a programme with regular rest and activities will enhance the development of muscles.

6.3.5 Teeth

Teeth begin to form when the foetus is six weeks old. When the baby is born the teeth are already in the process of development. Teeth appear in the same sequence in all children, but the age at that they erupt and the amount of discomfort experienced by the child are extremely variable. The first tooth usually erupts between 4 and 12 months of age, with the average at 7 months. By the age of 2½ years, children have 20 teeth. These teeth are temporary and are often called the milk teeth.

Around 6 years of age, most children begin to lose their milk teeth, beginning with joint teeth, and their permanent teeth start erupting. By age 12 years, all the 20 milk teeth are replaced by permanent teeth. We are likely to recognize this period of dental change through the familiar toothless grin of 7 years and 8 years old. The first molars appear at about the age of 6. These are permanent teeth just behind the milk teeth and are often mistaken for milk teeth.

By the age of 13, the second molars appear and the child now has 28 teeth. The last four teeth, called the wisdom teeth, erupt, if at all, between the age of 17 and 25 years.

The age for the appearance of teeth varies from child to child. However, generally girls' teeth appear earlier than boys'.

A balanced diet, supplemented with additional vitamins and fluoride with proper dental care, is essential to the development of sound teeth.
Check Your Progress

Note: a) Compare your answer with those given at the end of the block.

1. Choose the appropriate answer from the given choices.
   i) Physical development is indicated by increase in:
      a) height  b) weight  c) age  d) height and weight both.
   ii) By 5 years of age, the child is double the height at:
       a) birth  b) 2½ years  c) adulthood
   iii) Full adult height is attained by the age of:
       a) 20 years  b) 25 years  c) 30 years
   iv) While judging the normal weight for a child, care should be taken to consider:
       a) bone weight  b) body build  c) age
   v) The factors that affect the height of the child are:
       a) child  b) heredity  c) environment  d) all the three factors

2. Indicate whether the following statements are true or false.
   i) The arms grow slower than legs.
   ii) The length of the arms and hands increase between 60% and 75% from birth to two years.
   iii) Bones development in boys is more advanced than in girls.
   iv) By 16 years of age, different parts of the body assume their mature proportion.

3. Fill the most appropriate answer.
   i) The head of the infant constitutes.................of the total body length.
      a) 1/3rd  b) 1/4th  c) 1/2  d) 1/8th
   ii) The process of hardening of bones is called..........................
       a) ossification  b) teething  c) maturation
   iii) A baby can easily suck toes, while a 5 year old cannot, because..........
       a) the baby likes doing it while the older child does not
       b) this helps to prevent deformities in the bones of an infant
       c) the infant's bones are very soft and flexible
       d) it is an extension of the thumb sucking behaviour
we have so far been reading about the physical changes that occur during the elementary school years. Let us now try to understand the Motor Development during these years.

6.4 MOTOR DEVELOPMENT

'Mummy', I am going out for a ride on my bicycle, said Geeta, and ran out. How time flies, thought Geeta's mother. It seems like just yesterday when Geeta was a small helpless infant who could not grasp an object laid near her or could not move her body from the place where she had been laid. Today, she can run, jump, kick a ball, ride a bicycle, even do a bit of embroidery. She hardly ever needs any help in doing these things now. How did this happen?

Actually, it wasn't just yesterday that Geeta could not do all these things, it was eight years ago. And during these eight years as Geeta grew, she gained more and better control over her muscles.

It is not as if Geeta was born totally helpless, incompetent and passive. The activities like running, balancing, needle work, etc., that she can do today are actually based on certain competencies that she was born with. Let us take a look at these before going on to the competencies and skills acquired during middle childhood.

At birth, the child can display a variety of motor reflexes some of which are necessary for survival. Try placing a small object in an infant's palm or touching mouth slightly with a finger. The infant immediately grasps the object placed in palm and sucks on the finger. These, and many other reflexes are present since birth and can, therefore, be attributed to maturation. Source of these reflexes gradually disappears before the
first year, while others that are more useful in later life become stronger and better coordinated.

The following table gives a list of the major reflexes displayed by the newborn.

**Table 6.1: Major Reflexes Present at Birth**

<table>
<thead>
<tr>
<th>Reflex</th>
<th>Stimulus</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Palmar or grasp</td>
<td>Any object placed on palms or soles</td>
<td>Hands grasp the object, toes curl downwards</td>
</tr>
<tr>
<td>2. Rooting</td>
<td>Touch cheek</td>
<td>Head turns towards touch</td>
</tr>
<tr>
<td>3. Sucking</td>
<td>Touch lips</td>
<td>Sucking movements</td>
</tr>
<tr>
<td>4. Moro or startle</td>
<td>Any loud noise or sudden movement</td>
<td>Legs draw up, back arches, arms are brought forward in hugging or embracing motion</td>
</tr>
<tr>
<td>5. Withdrawal</td>
<td>Heat, pin-prick</td>
<td>Recoil from pain and cry</td>
</tr>
<tr>
<td>6. Babinsky</td>
<td>Stroke the sole</td>
<td>Spreading of toes</td>
</tr>
<tr>
<td>7. Walking</td>
<td>Hold the object in an upright position, with feet touching a solid surface</td>
<td>An automatic walking response, with foot placed down in a heel toe sequence</td>
</tr>
<tr>
<td>8. Babkin</td>
<td>Press both palms</td>
<td>Mouth opens, head turns from side to forward and is often raised</td>
</tr>
</tbody>
</table>

At birth, the child’s senses can function, though of course not as well as in later life. Children can experience heat, cold, pain, etc., and react to these. They can also distinguish between certain sounds, smells and tastes. They can also distinguish between darkness and light and some colours. The infants get to know the world around them through the senses.

As children grow from infancy into middle childhood, they gain more and better control over their muscles. In the initial years of childhood, children gain control over their gross or large muscles, which enables them to control gross movements, involving large areas of the body, e.g., walking, running, jumping etc. Later, children gain control over their smaller muscles, which enable them to acquire skills like throwing and catching balls, writing, sewing, etc. Children will, therefore, walk before they can run, throw the ball before they are able to catch it and scribble before they are able to write.

As explained earlier, the control children achieve over their body depends on whether they are ready for it. Motor skills like grasping, walking, running, balancing, aiming, etc., are acquired by children only when their body and brain are mature enough. Unless children are ready for it, they should not be forced to try a skill, for, no amount of urging would help. For example, a six year old cannot be expected to aim a dart as accurately as a child of twelve.

However, once children are ready to perform, they should be encouraged to do so and given plenty of opportunity to practice.

**6.4.1 Development of Motor Abilities and Skills**

**a) Large muscle activities**

One of the most important milestones in children’s life is walking. Walking enables them to move around more efficiently and frees their hands, thus enabling them to explore and manipulate the things around them.
Delay in walking may be an indication of some kind of problem with the child, related to physical, mental or socio emotional well being.

The average ages for unassisted walking is between 13 and 14 months. Some children, however, may start walking a little earlier or later than this. The ability to walk develops in a series of stages.

As children reach preschool years, they discover that they can do many things as there are great advances in strength, speed and coordination.

By about five years of age children are capable of jumping, running, climbing, etc. Between 2 and 5 years, children’s play consists largely of these large muscle activities. By the age of 6, most children have mastered the basic motor skill such as sitting, walking, running, jumping, pushing, pulling, grasping, throwing, etc. They can balance themselves on a rail, a wall, a chalk mark of the floor, etc.

Children of 6, 7 and 8 continue to enjoy strenuous physical activity. Any activity that uses the large muscles is likely to be enjoyed by all children of these ages. Games that involve running, jumping, climbing, etc., are enjoyed more than sitting.

b) Fine muscle activities

By 5 or 6 years of age, children are ready to begin to coordinate fingers and hands in simple small muscle activities, such as writing, sewing, craft work, etc. At this age, the fine motor skills that a child has are rudimentary. However, these improve as children grow. From age 6 to 10, there is a progressive improvement in the attainment of these skills. You can observe clearly the difference in the writing, craft work and other activities involving fine muscles as they go through elementary school. If given the opportunity to learn and practice, they can easily acquire these skills.

There is a great variation in the achievement of fine motor skills. Children learn to do the things for which they have the ability, the opportunity to practice and are given encouragement for accomplishment. Rama, for example, learned how to weave because weaving is taught in her school. Another child, Gopal, learned how to sew because his father is a tailor. Rama cannot sew and Gopal cannot weave because they have not been exposed to these activities. If given the opportunity to learn and practice, they can easily acquire both the skills.

There is a steady improvement in the acquisition of fine motor skills by children as they grow. They gain better control over their eye and hand movements. By 6 years of age, most children can make objects out of paper or clay, do simple craft work, and sewing, write, etc. Improvement in these skills continues not only during middle childhood but also in late childhood and adolescence.

There may be, however, a great variation in the motor skills in individual children. A child of 9 may still be doing what another did at 6. This is because the acquisition of fine motor skills depends upon the ability, opportunity and practice which may vary from child to child.

The pattern of development of motor skills is the same for girls and boys. But generally boys are found to be better in all physical activities as compared to girls. This could be due to the fact that males have larger muscles and more strength than girls. This may also be due to cultural reasons as boys are usually encouraged to participate in sports and games and tasks that involve a lot of physical activities. Girls, on the other hand, are encouraged to play quiet games and do more of activities that involve fine motor skills. The teacher should try to avoid this kind of discrimination and encourage boys and girls equally to participate in all kinds of activities.
6.4.2 The Development of Prehension

We have talked about how children are ready to perform skilled activities like writing, sewing, knitting, weaving, etc., only by the age of 5 years. Have you wondered why children do not acquire these skills earlier, say around 2 ½ or 3 years of age. What could be the reason for this? The answer lies in the term 'prehension'. Prehension is the ability to grasp objects with the forefinger and thumb working smoothly in opposition. Without the development of prehension, skilled activities such as those mentioned earlier would be difficult to perform.

The infant is born with the ability to grasp objects. By eight or nine months, the forefinger and thumb work smoothly in opposition and the infant can pick up and hold small things. Eye-hand coordination also improves. It is common to see one-year-old crawling and picking up small things like pebbles, seeds, grains, etc., from the floor and putting them into mouth.

By the time children reach preschool, they become capable of performing more complete tasks. They like to touch, handle and manipulate everything around them. This is the age when children ask endless questions, wanting to know everything about the world around them.

6.4.3 Handedness

Handedness means predominant use of one hand over the other. Most babies feel equally at ease with both hands and are able to use both hands, but by the age of two, they will show a definite preference for either the left or the right hand. People are said to be right handed if they use the right hand most, or left handed if they favour the left hand. People are referred to as ambidextrous if they use both hands equally well.

Right or left handedness does not make any difference to a person's intelligence, skills or personality. But children who have been forced to change show some difficulties like stuttering and stammering or reading disorders. In cases where left handedness appears to persist, the best way is to allow such children to pursue their natural pattern of development. But if you decide to change, start when the child is as young as possible. Do it gently and subtly and watch for difficulties. If there is resistance or difficulty, then the effort should not be pursued.

Whether handedness is hereditary, or the result of training and social conditioning, has been debated for many generations. But there is no conclusive evidence available to decide on the issue either way.

Check Your Progress

Note: a) Compare your answers with those given at the end of the block.

4. Choose the correct answer(s).
   i) At birth, an infant
      a) is totally passive
      b) displays a variety of motor reflexes
      c) displays all activities that an adult can do
   ii) When an infant's cheek is touched, his/her head turns towards the touch. This reflex is called
      a) Sucking reflex
      b) Withdrawal reflex
      c) Rooting reflex
iii) If the finger is placed in an infant's palm, child will
   a) Withdraw its hand
   b) Grasp the finger
   c) Start sucking the finger

5. Choose the correct answer(s):
   i) Which of the following activity(ies) can be called as large motor skills:
      a) Running        e) Skipping
      b) Hopping        f) Knitting
      c) Weaving        g) Writing
      d) Catching       h) Kicking
   ii) Children usually start walking unassisted only by the age of:
        a) 12-14 months
        b) 18-20 months
        c) 20-24 months
   iii) The acquisition of fine motor skills may depend upon:
        a) The age of the child
        b) The opportunity to learn the skills
        c) The amount of practice done
   iv) The ability to grasp objects with the forefinger and thumb working smoothly in opposition called:
        a) Handedness
        b) Eye-hand coordination
        c) Prehension

There is a significant relationship between physical development and personality of the child. This interrelationship is discussed in the following section.

6.5 PHYSICAL AND MOTOR DEVELOPMENT AND PERSONALITY

Arvind is a boy studying in class IV. He is thin and small built. There are around 40 students in his class, and all of them are part of small groups who eat, play and sit together in class. Arvind, however, is an exception. He is rarely seen with other children. He never initiates to participate in any activity, game or conversation. He prefers to sit alone in a corner while other children are playing and having fun.

You, as a teacher, may have come across an Arvind in your class. What could be the reason for his withdrawn behaviour? Sometime, the answer could very well be in the fact that the child is physically different from the others of the same age-group. A less
developed child who is shorter, weaker than others may tend to become shy and withdrawn. A child who feels physically different, e.g., taller, shorter or fatter, from others of the same age group, will have difficulty in social and emotional adjustment. On the other hand, a developed one, who is taller and stronger than others, often becomes a leader because of greater strength and skills. However, it may be noted that generalisation like this cannot be made.

Consider another child, Madhu, who always comes first in the races. The children in her class hold her in high esteem and everyone wants to be her friend. Similarly, other children who can jump farther, do craft work better, can fold paper to make beautiful things, are admired by the other children.

Throughout childhood, children become increasingly aware of their physical selves. This is accomplished not only by their awareness of their physical development, but also by their efficiency in various skills.

The attitude that children have towards their body make-up as well as how skillfully they can perform the various tasks together help in the formation of a positive self-image or self-concept.

Children whose motor skills are not well-developed, or who look different from other children of their age-group may be teased or ridiculed by others in the class and will have a poor self-concept, leading to poor social and emotional adjustment.

In the unit 5 on factors affecting development, we have seen in general the different factors affecting development. In the following section, we will attempt to see these factors specifically.

6.6 FACTORS AFFECTING PHYSICAL AND MOTOR DEVELOPMENT

We all often speak about the better developed and the less developed child. You must have noticed in your class children who are taller than others, children who can balance well, or do craft work better than others. You may have wished that all children could do these things as well as ‘that’ child or that if only this child was stronger, or...

What then must the teacher do to enhance the development of physical and motor skills in children? For this, one must first know about the factors on which physical and motor development depends.

The physical and motor development of a child depends upon both biological and environmental factors. To be able to perform a physical or motor task, the child has to be maturationally ‘ready’. This state of maturation is often called ‘readiness’ and until a child is ‘ready’ to perform a task, no amount of training or ‘pushing’ will be of much help. For example, a child will aim accurately, or balance well only when bones and muscles are developed; if any of these is immature, the child will not be able to perform these tasks despite all the coaching in the world. Too much pressure at this point may result in frustration and anxiety in the child.

This, however, does not mean that an enriched and stimulating environment will not be beneficial. The child’s diet, the health care, physical exercise, etc., all affect the physical and motor development of the child.

A nutritionally balanced diet, physical exercise and plenty of opportunity to practice skills would help the child achieve full growth potential and optimum motor development. This in turn will lay the foundation for the future progress of the child.
6.7 LET US SUM UP

Now that we have come to the end of this section, let us list all the major points that we have learnt in this unit.

Physical and motor development of a child depends on: i) Heredity and ii) Environmental factors. The child has to be “ready” before it can learn a given task. Growth in a child occurs continuously. However, while the rate of growth is very rapid during the first two years, it slows down between 2 to 6 years. The rate is still slower between 6 and 10 years of age. Rate of growth is different for girls and boys. Hardening of bones, called ossification, begins early in the first year and ends in puberty. Due to the softness of bones, children are more susceptible to deformities, which could be lasting through out their life.

Muscle development is enhanced by good diet and exercise. While teeth start forming when the foetus is 6 weeks old; it usually erupts between 4 and 12 months of age. By the age 13, children would have the entire set of teeth except the wisdom teeth, which would appear between the ages 17 and 25 years. At birth, children display variety of motor reflexes like palmar, sucking and so on. Control over muscles is attained by middle childhood. Children’s play consists of large muscle activities between ages of 2 years and 5 years. The fine muscle activities like coordinating hands and fingers in simple small activities start by age 5 or 6.

Individual differences are present in all development, be it muscle, bone, tooth and so on. The ability to grasp objects with the forefinger and thumb working smoothly in opposition is called prehension. This is very essential to perform skilled activities. The preference for using a particular hand, referred to as “handedness”, appears by the age of 2. Physical and motor developments also influence the personality of the child.

6.8 UNIT-END EXERCISES

1. Visit the primary schools in your neighborhood. Find out whether the facilities and equipment provided in these schools are conducive for the optimum physical and motor development of children. In your opinion, what further improvements can be made? Give suggestions.

2. Observe two children aged 5 and 9 years, respectively. Give a detailed account of differences in their physical and motor skills.