LESSON NOTE FOR WEEK 3  
TOPIC: **CHANGES IN LIVING THINGS**   
MAIN OBJECTIVES: At the end of this lesson, student should be able to;   
(a) define Growth   
(b) define Development   
(c) identify the characteristic features of the various developmental changes that occur in human beings.  
  
STEP I   
**INTRODUCTION**

There are two major changes that occur in living organisms. The first is called **growth** and the second iscalled **development**.

Growth can be defined as the quantitative increase in height, weight and size. For growth to occur there has to be cell division. Growth changes are observable and measureable and increases as age increases. Development on the other hand refers to the qualitative (functional) increase in a living organism.

**GROWTH CHANGES**

1. **Height**: this is the increase in length of an organism. It is measured in meters. The increase in height is determined by the food an organism eats, environmental conditions, diseases and hereditary.

2. **Weight**: this is type of growth changes that occurs making the organism or individual become heavier as its age increases.

3. **Size**: A change in height and weight brings about change in size. It is not directly determined by the age of the organism but on the height and weight.

**DEVELOPMENTAL CHANGES.**

In humans, development begins from the conception of the child to adulthood. It occurs in the following stages

1. **Infancy Stage (from 1-10 years)**

i. Rapid growth

ii. The child starts to stand, walk, run, feed itself and learn

iii. Increase in muscular coordination and the boys are usually taller and heavier than the girls.

**Characteristic Features of This Stage.**

i. Presence of hairs on the head.

ii. Inability to differentiate various odours and taste.

iii. Milk teeth predominant at this stage

iv. Bones are soft, hence the child’s inability to lift heavy loads.

v. the child is usually guided in most of his/her activities.

**Adolescent Stage (11-19)**

1. This stage marks the end of infancy

ii. Rapid growth

iii. Growth spurt known as puberty occurs at early stage of puberty 10-14 years, girls grow faster than boys, while from 15-20years the boys grow faster than the girls

**Characteristic Features of This Stage.**

For Boys:

i. development of deep voice

ii. Broad shoulders are observed

iii. The experience enlargement of testes.

iv. Their legs and necks become muscular.

v. hairs appear on the face, armpits, and private parts.

For Girls:

i. They develop wide and broad hips and pelvic.

ii. They experience menstruation.

iii. Their breast begin to enlarge

iv. Hairs begin to appear on the armpits and private parts.

**Adulthood Stage (20years and above)**

i. growth in height(length) ceases

ii. Increase in weight

iii. The body skeleton becomes more rigid and firm.

**Characteristic Features of This Stage.**

i. possession of permanent teeth

ii. Gradual setting of baldness or grey hairs

iii. Weakness of bones and organs

iv. Decrease in physical growth and development.

STEP II

**Classifying Growth and Developmental Changes as Temporary or Permanent Changes.**

|  |  |  |
| --- | --- | --- |
| S/NO. | GROWTH (TEMPORARY) | DEVELOPMENT (PERMANENT) |
| 1 | Growth terminates once the maximum size is attained | Development continues through life |
| 2 | Growth is quantitative | Development is both quantitative and qualitative |
| 3 | Growth is indicated by increase in body dimension | Development is indicated by increase in body dimension as well as expansion in the capacity to function intellectually, socially, emotionally, morally, etc. |
| 4 | Growth is not affected by learning | Learning enhances development |
| 5. | In every organism, growth takes place first before development; example fingers of a new born child has grown but not developed to handle tools. | Development proceeds after growth. |

**Assignment:**

1. Mention the stages of development in a cockroach and identify the observable features of the stages.

Use diagrams to illustrate your answer.