LESSON NOTE FOR WEEK 4  
TOPIC: **THE HUMAN SKELETAL SYSTEM AND MOVEMENT**  
MAIN OBJECTIVES: At the end of this lesson, student should be able to;   
(a) define Skeletal System  
(b) state the components of the skeleton   
(c) list the four types of vertebra

STEP I   
**INTRODUCTION**

The skeletal system is a collection of bones, joints and muscles which serve as supporting framework in humans which helps them in running, jumping, bending, picking objects and moving from place to place. The general term for performing all these activities is called **movement**.

**COMPONENTS OF THE HUMAN SKELETAL SYSTEM**

**A. BONES**

The skeleton is made up of two main parts:

1. **The Axial skeleton** which is made up of the skull and vertebral column and protects the organs in the head, neck and chest. There are about 80 bones

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| --- | --- | --- | --- | --- | --- |
| S/No. | Types | Position | Man | Rat | Rabbit |
| 1. | Cervical vertebra | Neck | 7 | 7 | 9 |
| 2. | Thoracic vertebra | Chest | 12 | 13 | 12 |
| 3. | Lumbar vertebra | Upper trunk abdomen | 5 | 6 | 7 |
| 4. | Sacral vertebra | Lower trunk abdomen | 5 | 4 | 3-4 |
| 5. | Caudal vertebra | Tail | 14 | 27-30 | 16 |

2. **The Appedicular skeleton** which skeleton which is made of the legs and hands, shoulder and hip bones has about 126bones.

The vertebra column is made up of small and numerous bones called vertebrae. The vertebra is joined together by a flexible connective tissue called cartilage. The cartilage serves as a shock absorber which prevents the bones from wearing out. There are five types of vertebrae in mammals or humans.

**B. JOINTS**

This is the point where two or more bones meet or join together. The components of joints are cartilage, ligament and synovial. There are four types of joints.

|  |  |  |  |
| --- | --- | --- | --- |
| S/No. | Type of joint | Characteristics | Position |
| 1. | Ball and socket joint | They can move freely.they join bones by ligaments so that organism can move freely | Shoulder and hip joints |
| 2. | Gliding or sliding joint | Allows the gliding and sliding of bones over another. | Wrist and ankle |
| 3. | Pivot joint | This bone allows rotation of on part of the body on another. | Between the head and the neck |
| 4. | Hinge joint | This allows movement only in one direction (back and forth). | Elbows, fingers, toes and knees. |

**C. MUSCLES**

Muscles are tissues that support the skeleton and are responsible for the actual movement of the parts of the body. The contraction and relaxation of muscles bring about movement in every part of the body. Muscles are attached to the bones at two ends, one to an immovable bone and other end to a moveable bone. There are two types of muscles.

**1. Voluntary muscles:** This is a muscle that one can move when one wishes. It controls the movement of the hands, legs, fingers, etc.

**2. Involuntary muscles**: These muscles cannot be moved and stopped at will. The organs of reproduction, excretion, digestion and circulation are controlled by involuntary muscles.

**MOVEMENT.**

Movement is the act of changing position from one point or position to another, or from one direction to another. This is brought about by the actions of muscles on the bones.

Most muscles act in pairs in such a way that when one the pairs contracts, the other relaxes. These muscles are called antagonistic muscles.

**Importance of Movement to Humans**

1. Movement from one place to another

2. Escape from danger

3. be able to respond to stimuli

4. Exercise the body

**Assignment:**

1. How many bones make up to skeletal system?

2. List four types of joint

3. State five reasons why humans need to move

4. Where are the immovable joints located?

5. What is a skeleton?