

Adult Guidance

Functions of a Skeleton

In this lesson, the children will need to distinguish between these 3 functions and associate different parts of the skeleton with the appropriate functions. In addition, this lesson allows children to rehearse the common/scientific names of bones and the different types of skeletons - therefore recalling, recapping and reinforcing learning from previous lessons in this unit.

The main functions of a skeleton are:

1. To protect
2. To support
3. To enable movement

1. Protection

Part of the Skeleton:	What it protects:
Skull/ Cranium	Brain and Eyes
Rib cage /Thoracic cage	Heart and Lungs
Backbone /Vertebrae in the Vertebral Column	Spinal Cord

2. Support

The skeleton supports the body and enables it keep its shape and keep vital organs in their place. If animals with endoskeletons didn't have them, they would just be a heap on the floor! It is useful to explore children's ideas about this.

To further the children's understanding of this function think about which bones in particular support the body and keep the human body upright. Which bones in particular do you need to stay supported? What if you took away the arm bones would the skeleton still be supported? Demonstrate removing bones from an interactive skeleton to see the bones that are essential to supporting the body - such as the vertebral column and those that are less so, such as the rib cage /thoracic cage.

However, it needs to be remembered that the skeleton of any animal is a holistic structure. An endoskeleton allows weight to be distributed, therefore if some of the bones were removed then the weight would not be distributed in the same way and still lead to collapse albeit with the bones intact.

3. Movement

Remind children that bones by themselves would not allow the full range of movement by themselves. Joints are essential to the type of movement that can be made and without these actions such as jumping, holding a pencil, rotating arms simply would not be possible. The joints combined with muscles (see Lesson 6) is what enables animals including humans to move in the way they do.

There are three main types of joints:

1. Ball and Socket - e.g. hip joint
2. Hinge - e.g. elbow joint
3. Gliding - e.g. wrist joint

All of these types of joints enable different types of movements. Encourage children to move their joints to see what the range of movement each allows. Facilitate children hypothesising about what would happen if their joints were a different type - e.g. could you catch a ball with ball and socket joints in the wrists instead of gliding joints? How would arm movements be different if the elbows consisted of a gliding joint?

Types and Functions of a Skeleton (Answers)

		Functions of a Skeleton			
		protection	support	shape	movement
Types of Skeleton		✓	✓	✓	✓
		✓	✓	✗	✓
		✗	✓	✓	✓