Year 6 Science Assessment: Skeletons and Muscles

Learning objective: To identify and explain the functions of the human skeleton and how muscles work in pairs to create movement.

Read each question carefully. Use your scientific knowledge to answer in full sentences where required. Ensure you use appropriate scientific terminology.

Nova the barn owl has been observing how animals move. She notices that while some creatures have soft bodies, humans and other vertebrates rely on a rigid internal framework and powerful tissues to interact with the world.

Word bank: skeleton · support · protection · movement · muscles · joints · antagonistic · contract · relax · tendons

1. Identify two main functions of the human skeleton, other than movement. (2 marks)

2. Name the specific tissue that attaches muscles to bones, allowing them to pull the skeleton into new positions. (1 mark)

3. Explain why joints are essential for the human body. What would happen if our bones were all fused together without joints? (3 marks)

4. Max the monkey is looking at his arm. Describe what happens to his bicep and tricep when he bends his arm at the elbow. Use the words 'contract' and 'relax' in your explanation. (4 marks)

5. Compare and contrast the skeletons of a human and an earthworm. Why is an internal skeleton an advantage for land animals? (4 marks)

6. Why is it important for the ribcage to be made of flexible, curved bone rather than one solid, rigid block? Think about the function of breathing and protection. (3 marks)

7. Extended Writing Task: Bea the honeybee wants to understand how our bodies are built for activity. Write a short report explaining the relationship between the skeleton and the muscular system. Describe how they work together as a system to allow us to walk, jump, and lift objects. Include why muscles must work in pairs. (8 marks)

Draw: Draw a diagram of a human arm showing the bicep and tricep. Label the muscles and show how they connect to the bones.

Extension challenge: Total: /25. Research task: Find out what 'osteoporosis' is and how a healthy diet involving calcium helps keep our skeletons strong as we grow.