

Year 5 Science Assessment: Skeletons and Muscles

Learning objective: To identify and describe the functions of the human skeleton and muscles, including how they work together to support movement.

Read each question carefully. Use scientific vocabulary where appropriate. Ensure your answers are clear and precise. Total marks: 25.

Nova the barn owl has been observing how animals move. She has noticed that while her wings are perfect for flight, humans rely on a complex internal framework and powerful tissues to walk, jump, and lift objects. Understanding this system is key to knowing how we interact with the world.

Word bank: skeleton · muscles · joints · antagonistic · contract · relax · support · protection · femur · cranium

1. Identify two main functions of the human skeleton. (2 marks) (2 marks)

2. Name the bones that protect the brain and the heart. (2 marks) (2 marks)

3. Explain why joints are essential for movement. Use the word 'skeleton' in your answer. (2 marks) (2 marks)

4. Describe the process of how muscles work in pairs to move a limb, such as the arm. (3 marks) (3 marks)

5. Compare and contrast the role of a tendon with that of a ligament. (4 marks) (4 marks)

6. Justify why a human would struggle to perform daily tasks if their muscles were unable to contract. (4 marks) (4 marks)

7. Extended Writing Task: Imagine a scenario where a human skeleton had no joints. Write a paragraph explaining how this would change a person's ability to complete physical activities like eating, walking, or writing. (5 marks) (5 marks)

8. Max the monkey is trying to lift a heavy crate. Explain what might happen if the muscles in his arm were not attached to the bone via tendons. (3 marks) (3 marks)

Draw: Draw a diagram of the human arm showing the bicep and tricep muscles. Label the muscles and show where they attach to the bone.



Extension challenge: Critical Thinking Challenge: Research how an exoskeleton (like that of a crab) differs from an endoskeleton (like that of a human). What might happen if a human had an exoskeleton instead of an internal skeleton? Write a short report justifying your findings. Total: /25