Nova’s Guide to Skeletons and Muscles

Learning objective: To describe the functions of skeletons and muscles in humans and animals, and identify how they work together to enable movement.

Read the passage below carefully. Use the information to answer the questions that follow in full sentences.

Nova the barn owl loves soaring through the night sky, but she often wonders how her wings flap so perfectly. She explains that all vertebrates, including humans, rely on a skeleton to provide structure. Our skeleton is a framework of bones that gives our bodies shape, supports our weight, and protects delicate organs like the brain and heart. Without it, we would be soft and unable to stand.

However, bones cannot move on their own. This is where muscles come in. Muscles are attached to bones by tough cords called tendons. To create movement, muscles work in pairs. When one muscle contracts, or shortens, it pulls on the bone, while the opposite muscle relaxes. This clever partnership happens at joints, which are the places where two bones meet. Whether you are running, jumping, or reaching for a book, your muscles and skeleton are working as a team. Nova finds it fascinating that humans have over 600 muscles, all helping to keep the body active and strong. By eating healthy food and staying active, we keep our skeletal system and muscles in top condition for every adventure.

Word bank: vertebrae · skeleton · muscles · tendons · joints · contract · support · protect

1. According to the text, what are the two main purposes of the skeleton besides giving the body shape? (2 marks)

2. What do we call the tough cords that attach muscles to bones? (1 mark)

3. Why would it be difficult for a person to move if their muscles could only relax and never contract? (2 marks)

4. Explain why Nova says muscles work in 'pairs' rather than alone. (2 marks)

5. Why do you think it is important for children to take care of their skeletons and muscles as they grow? Give a reason for your answer. (2 marks)

Draw: Draw a diagram of a human arm showing the bicep muscle attached to the bone by a tendon, and label where the joint is located.

Extension challenge: Research one animal that does not have an internal skeleton (an invertebrate). Write a short paragraph explaining how it moves without bones.