

Nova's Science Journal: The Human Framework

Learning objective: To identify that humans and some other animals have skeletons and muscles for support, protection, and movement.

Help Nova the owl investigate how our bodies move! Use your scientific knowledge to complete this experiment-record style journal. Observe your own movements and use the technical vocabulary provided to explain how your skeleton and muscles work in harmony.

Word bank: Skeleton · Skull · Ribcage · Joint · Muscles · Contract · Protect · Support · Movement

1. The Purpose of the Skeleton: Explain why Nova needs a skeleton to stand tall. How do bones provide support and protection for vital organs? (3 marks)

2. Locating Joints: Identify two places in your body where bones meet to allow movement. Describe how these joints help you perform a specific action. (2 marks)

3. Muscles in Action: Explain why muscles must work in pairs to create movement. Use the word 'contract' in your explanation. (3 marks)

4. Compare and Contrast: Compare the function of the skull to the function of the ribcage. How are they similar and how do they differ in what they protect? (4 marks)

5. Justify Your Answer: If a human had no muscles but kept their skeleton, explain why they would be unable to walk or pick up a book. (3 marks)

6. What might happen if: Imagine your bones were made of soft jelly instead of hard tissue. Describe the effect this would have on your body's ability to move and stay upright. (4 marks)

Extension challenge: Design an original invention that mimics the way a muscle contracts to move a mechanical arm. Write a short paragraph explaining how your design functions and label the 'joint' and 'muscle' parts clearly.