Bones in Action

Compare bone shapes and the jobs they support

HS-AP3-4 "Compare and contrast the different types of bone (e.g., long, short, flat, and irregular."

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Underline a shape clue and circle a job clue for each of the four bone types. Number two places where the passage compares different types.

Crossing the Stream

1. On a rocky path, your skeleton faces two demands: move your body forward and keep it steady. Bones are grouped by overall shape, not by how big they look beside another bone. A long bone, such as the femur in your thigh, has a shaft that is longer than it is wide. Its shape helps muscles move the leg as a lever. Short bones, such as the carpals in your wrist, are roughly as long as they are wide. Packed together, they spread force through the wrist while allowing small movements between neighboring bones.

2. Imagine bracing your hands on a rock as you step across a stream. Your ribs are flat bones: thin, curved plates that help form a cage around the heart and lungs. Flat does not mean perfectly straight or paper-thin. Vertebrae, the bones stacked along your spine, are irregular bones. Each has a complex shape with projections where muscles attach and an opening that helps enclose the spinal cord. Both ribs and vertebrae help protect vulnerable structures, but ribs make a broad cage while vertebrae also form flexible joints that let the trunk bend and turn.

3. The labels describe shape, not a bone's only job. When you cross uneven ground, the femur supplies leverage for a large step, while the small carpals adjust as your hand grips a branch. The ribs and vertebrae both protect vulnerable structures, yet their shapes serve different arrangements: a curved cage around organs versus a column of interlocking bones around a cord. Like other bones, all four types contain living tissue and can repair damage. Comparing them means looking for both a shared feature and a meaningful difference, rather than assuming that all bones in one body part have one shape.

2 ANSWER WITH EVIDENCE

Use the passage

1. How do the femur and carpals differ in shape and in the movements they support?

2. What protective job do ribs and vertebrae share, and how does each type's shape carry out that job differently?

3. Carpals and vertebrae both help your body move. Compare their shapes and the movements described in the passage.

4. Compare the femur and ribs by shape and by their main jobs in the passage.

3 YOUR TURN

Your own words

While climbing stairs, you carry a bag in one hand and hold a rail with the other. In four sentences, explain how a femur, a carpal, and a vertebra differ in shape and work together in this situation, and name one trait all three share.

ANSWER KEY

Bones in Action

PART 1 · READ AND MARK

Underline a shape clue and circle a job clue for each of the four bone types. Number two places where the passage compares different types. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	How do the femur and carpals differ in shape and in the movements they support?	**The long femur has a shaft longer than it is wide and acts as a lever for the leg. The short carpals are roughly as long as they are wide and allow small wrist movements.**
2	What protective job do ribs and vertebrae share, and how does each type's shape carry out that job differently?	**Both protect vulnerable structures. Thin, curved ribs form a cage around the heart and lungs, while complex-shaped vertebrae form a column that encloses the spinal cord.**
3	Carpals and vertebrae both help your body move. Compare their shapes and the movements described in the passage.	**Short carpals are roughly as long as they are wide and allow small wrist movements. Irregular vertebrae have complex shapes and form joints that let the trunk bend and turn.**
4	Compare the femur and ribs by shape and by their main jobs in the passage.	**The femur is long and provides leverage to move the leg. Ribs are thin, curved flat bones that form a protective cage around the heart and lungs.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

My long femur has a shaft longer than it is wide and helps move my leg up a step. The short carpals in my railing hand spread force through my wrist as it makes small adjustments. As I lean to balance, an irregular vertebra helps my trunk bend while protecting my spinal cord. Together, these differently shaped bones help me climb, and all three contain living tissue.

Accept accurate comparisons that use different wording. For Part 3, look for distinct shapes, roles connected to climbing, and a shared trait supported by the passage.