How Joints Move

Classify joints by their structure and range of motion.

HAP.4.3 "Identify and classify types of joints and their movement."

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Underline the connecting tissue or cavity clue for each of the three structural joint classes. Circle the movement described for each of the five synovial joint subtypes.

Bones Meet, Bodies Move

1. A joint is a place where bones meet, but not every meeting point moves alike. Anatomists first classify joints by what connects the bones. In a fibrous joint, dense connective tissue holds bones together; the interlocking sutures of the skull allow virtually no movement. In a cartilaginous joint, cartilage connects bones, as it does between vertebral bodies through discs. These joints permit limited movement that adds up along the spine. A synovial joint has a fluid-filled cavity between the bones and usually permits a much wider range of movement.

2. A synovial joint's shape helps predict its motion. A hinge joint mainly bends and straightens in one plane, as the elbow does when you move your forearm. A pivot joint permits one bone to rotate around another; the joint between the first two neck vertebrae helps you turn your head from side to side. A ball-and-socket joint allows movement in many directions and rotation. The hip is one example: its rounded head fits into a socket. Although all three joints have synovial cavities, their shapes limit them in different ways.

3. Some synovial joints allow smaller, specialized motions. Plane joints between certain wrist bones let relatively flat surfaces slide past each other. At the base of the thumb, a saddle joint lets the thumb move across the palm and back, as well as away from and toward the hand. These motions help you grip objects without requiring every joint to work like a hip. To classify a joint, look for both its connecting structure and its possible movement. A description of a motion alone may suggest a subtype, but the body location and connected bones can help confirm it.

2 ANSWER WITH EVIDENCE

Use the passage

1. Two bones are held together by dense connective tissue and barely move. Which structural class fits? What clue supports your choice?

2. A joint has a cartilage pad between its bones and allows limited movement. Classify it by structure and amount of movement.

3. A freely moving joint lets one bone turn around another. Which synovial subtype fits, and what is its distinguishing motion?

4. A joint has a rounded head that fits into a socket. Name its synovial subtype and contrast its movement with a hinge joint.

3 YOUR TURN

Your own words

Choose an everyday two-step action not described in the passage. In three sentences, name two body joints with different synovial subtypes and explain the movement each joint makes during your action.

How Joints Move

PART 1 · READ AND MARK

Underline the connecting tissue or cavity clue for each of the three structural joint classes. Circle the movement described for each of the five synovial joint subtypes. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	Two bones are held together by dense connective tissue and barely move. Which structural class fits? What clue supports your choice?	**Fibrous joint. Dense connective tissue connects the bones.**
2	A joint has a cartilage pad between its bones and allows limited movement. Classify it by structure and amount of movement.	**It is a cartilaginous joint with limited movement.**
3	A freely moving joint lets one bone turn around another. Which synovial subtype fits, and what is its distinguishing motion?	**Pivot joint. It permits rotation around another bone.**
4	A joint has a rounded head that fits into a socket. Name its synovial subtype and contrast its movement with a hinge joint.	**Ball-and-socket joint. It moves in many directions and rotates, while a hinge joint mainly bends and straightens in one plane.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

I step over a puddle in two steps. First, my hip, a ball-and-socket synovial joint, lifts my thigh forward. Next, my knee, a hinge synovial joint, straightens my leg.

Accept accurate descriptions of movement rather than requiring formal motion terms. For Part 3, check that the two named body joints have different synovial subtypes and that each movement fits its subtype.