

A Spindly Spine

Segment 4

Purpose

To make a spine model

Background

The body is made up of 206 bones that vary in shape and structure. Each bone is designed for a special purpose. The skull, for example, is made up of over 20 flat bones that are joined together and do not move at all. These bones provide the helmet-like protection needed for the brain. Other bones, such as the backbone or spine, are designed to make movement easier. The backbone is made up of thirty-three bones called vertebrae. These small ring-shaped bones protect the spinal cord and allow a wide range of motion that includes bending, lifting, pushing, and twisting.

Procedure

1. Punch two holes next to each other in the rim of a small foam plate.
2. Thread a chenille stick through the holes and twist the end so it is attached to the plate. The plate represents your skull, and the chenille stick represents the spinal cord. See diagram 1.
3. Thread seven wagon wheel macaroni noodles onto the chenille stick. They represent the seven cervical vertebrae or neck bones.
4. Fold another chenille stick in half and twist it around the spinal cord below the noodles to represent your shoulder bones or clavicles. See diagram 2.
5. Thread 12 more noodles on the spinal cord chenille stick. These 12 noodles represent the thoracic vertebrae, or upper backbones.
6. Add five more noodles onto the spinal cord chenille stick to represent the lumbar vertebrae, or lower backbones. See diagram 3 on page 89.
7. Using scissors, carefully cut the rim off a foam drinking cup. With the hole-punch, punch a hole in the back of the cup's rim and attach the bottom end of the spinal cord chenille stick to the rim through the hole. The rim of the cup will represent the pelvis, or hipbones. See diagram 4 page 89.
8. Holding your model carefully, try moving your model in different directions.
9. Observe its movement and record your observations in your science journal.

Materials
small foam plate
foam cup
2 chenille sticks
24 wagon wheel
macaroni noodles
hole-punch
scissors

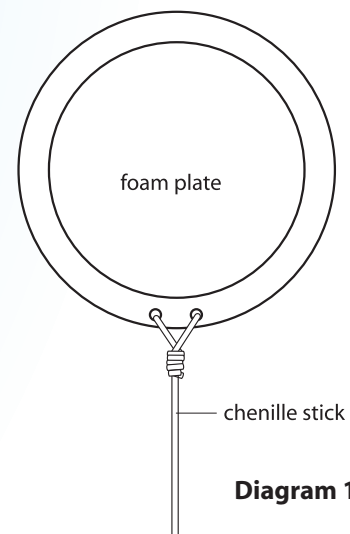


Diagram 1

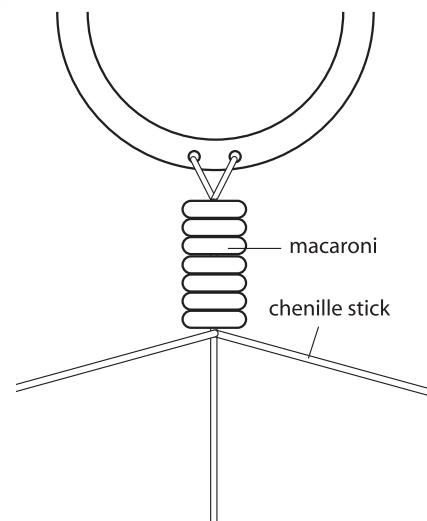


Diagram 2

A Spindly Spine

Discussion

1. How flexible is the model?
2. What would happen if the backbones were fused or stuck together?
3. Why is flexibility important to physical movement?

Extension

1. Put your hands on your back, just above the waist. Feel the muscles contract as you move from side to side or bend over. In your science journal, illustrate what you think your spine looks like and describe how it works with your muscles to move your body.

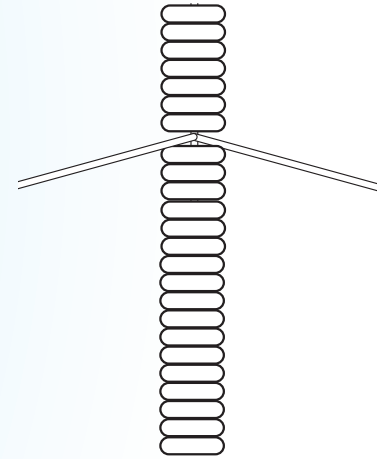


Diagram 3

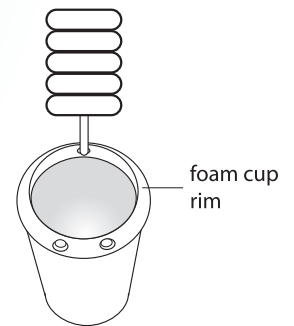


Diagram 4