

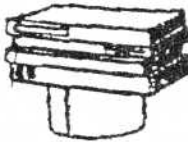
Making a Paper Bone

1.



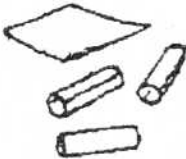
Trace two rectangles $2\frac{1}{2} \times 7$ inches onto plain white paper. Cut out both rectangles and glue or tape the short edges together to form a cylinder. You now have two identical cylinders.

2.



Test the strength of one of the cylinders by placing some paperback books on it, one at a time, until the cylinder crumbles. This represents a cross-section of a brittle bone. How many books could be stacked before the cylinder crumbled?

3.



Trace approximately 12 rectangles $2 \times 2\frac{1}{2}$ inches on plain paper. Cut out the rectangles and glue or tape the edges of each to create 12 small tubes. The rectangles are easier to handle if you wrap them around a pencil or pen. Hint: you may also substitute paper straws.

4.



Pack the small tubes into the second cylinder until it is full. Keep repeating step 3 until you have enough small tubes. This represents a cross-section of a dense bone.

5.



Stack paperback books on top of this cylinder until it crumbles. How many books did it take?

Discussion: Why do we need to "feed" our bones everyday to keep them strong?