Shaping Up

Which of these shapes do you think is the strongest? No matter what materials you are working with you can make a structure stronger by simply changing its shape.

What to do: Fold the sheets of paper into various shapes, such as those shown in the illustrations.

1. Fold a sheet of paper in half and stand it on its edges.

2. Fold a sheet of paper in thirds and tape the ends together.

3. Fold a sheet of paper in half lengthwise, cut on the fold, and tape the two halves together at the top and bottom. Then fold the attached halves in half again from top to bottom. Spread the sheets to form the cube.

4. Roll a sheet of paper around the can, secure the paper with tape, then remove the can.

Put a light book on top of each shape. Some will collapse immediately. Keep piling books on the others until they collapse.

What happens: The round paper pillar holds a surprising number of books.

Why: A hollow tube is the strongest because the weight is distributed evenly over it.

YOU NEED

- four sheets of paper
- transparent tape
- can
- books