



LESSON 23 LEVEL C PAPER SCULPTURE

WHAT YOU WILL LEARN:

building a structure from paper tubes

WHAT YOU WILL NEED: note paper, white or colored, about 5 cm x 8 cm (3" x 4"); felt markers, various colors; model cement or white glue; toothpicks; a piece of cardboard to support the sculpture; a pencil or 5 mm (1/4") dowel

TIPS: White glue will work best when it is a little tacky. Squeeze out a teaspoonful onto a scrap of paper. Let it sit for a few minutes. Then apply it with a toothpick. Hold the cylinder for a short time until the glue dries. Model cement dries faster, but can cause headaches without good ventilation.

example, how can a steel pole be made to stand without any apparent support? Which is more rigid, a square made of nailed-together wooden sticks or a triangle? Modern sculpture often requires knowledge of math, physics, engineering and technology. It also requires artistic talent, as you will find as you explore this form of paper sculpture.

1. To make your structural units (the paper tubes) more attractive, design a pattern with felt markers 2.5 cm (one inch) wide along one edge of the notepad paper. Try to do different patterns on each tube.

2. Beginning at the end without a pattern, roll the paper snugly around a pencil. Seal it with a thin line of glue under the patterned edge. Remove the

TUBE TOWERS



David Smith [Cubi XXVI](#) National Gallery Washington DC

GETTING STARTED: Have you seen examples of modern abstract sculpture where there is much space between the structural parts? This is called "open" sculpture. Some of these sculptures are stronger than others because their makers were aware of the strength of materials and also the physics and engineering principles that make their construction possible. For



tube from the pencil. Let the tube dry thoroughly.

3. When several tubes are finished, put a dab of glue on one end of each and stand them on the cardboard. You can build with a plan in mind or simply let your sculpture "grow." Add more tubes by "welding" with a dab of glue wherever two tubes touch. Hold the joint until the glue sets. (What combinations give you the most rigid, strong forms?)

4. Build upward and outward, creating a balanced structure. You may want to "stockpile" quite a few tubes before you continue building. Will your sculpture be open or closed? Formally or informally balanced? Structurally strong or in danger of collapsing?

CLEAN UP: Put your materials away. (Oh no! Not that again!) Save leftover tubes for another sculpture or to add on to this one.

TALK ABOUT IT: Give your sculpture a name. What did you learn about physics, math, and engineering from this project?

MORE IDEAS: Invite some friends to join you in making a huge structure. Or each one of you can express yourself by building high, random forms; low, compact forms; soaring, geometrical structures; and so on.

CONNECTIONS: Consider the amazing triangle: Look for triangles in bridges, high-tension electricity towers, and windmill supports as well as in your own paper-tube sculpture. Why are triangular blocks used as braces for rectangular structures such as chairs, tables, and garden trellises? Why do so many houses have triangular gables?



Bill Age 11



Luis Age 10