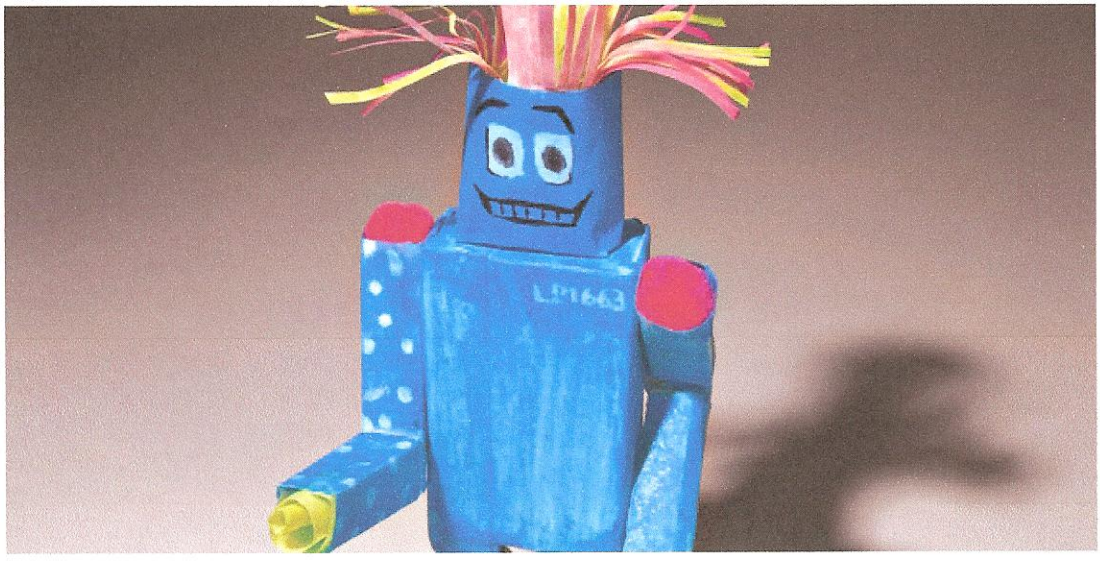
Measure a Recycled Robot



Crayola Supplies

Colored Pencils
Markers
Washable Watercolors
Watercolor Brushes with Wood Handle
Pointed Tip Scissors
Tempera Mixing Mediums
Shaper Paper

Household Supplies

recycled newspaper
recycled boxes
ruler
paper towels
container(s) of water
decorative craft items

Why?

These Earth-friendly robots engage scientific imaginations, creativity, and math skills. How will your Shaper Paper™ robots measure up?

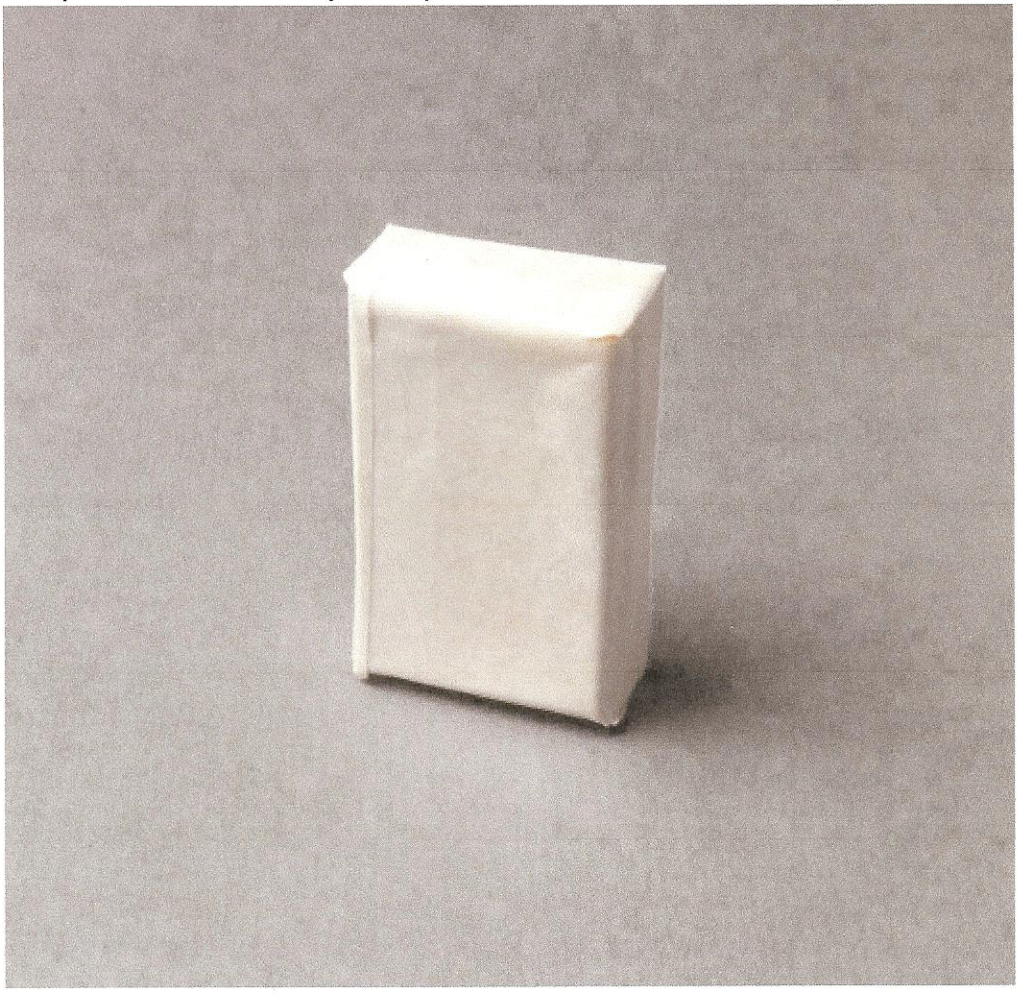
Steps

1. Imagine a robot with special skills! What will it be able to do? Design a

miniature robot, with recycled materials and Crayola Shaper Paper™, which can keep your room clean, desalinate ocean water—or do whatever job you choose!

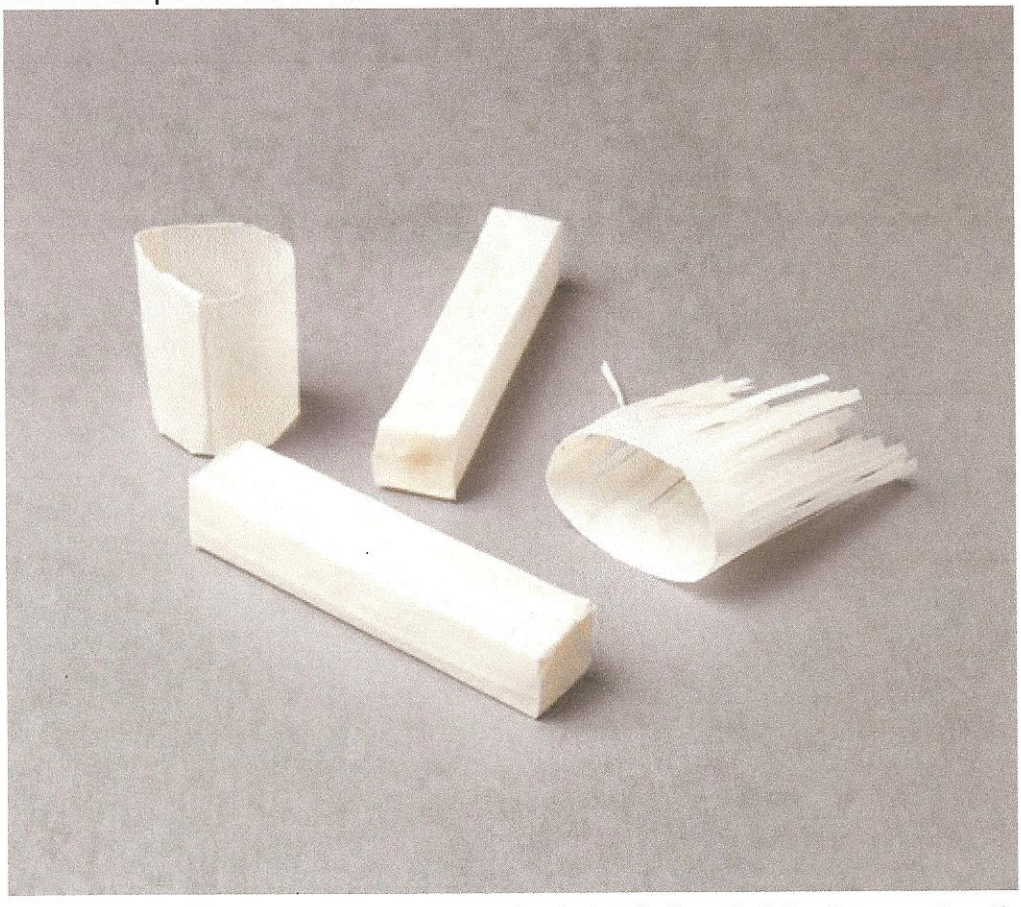
2. Select a small box, about the size of your palm, to recycle as the body for your robot. You might use a clean juice box, playing card box, or even an empty Crayola Crayon box. Measure the length, width, and depth of the box to determine how much Crayola Shaper Paper™ you need to cover your robot's body. Measure and mark the Shaper Paper. Fold crisp lines in the paper and gently pull apart or cut the paper. Shaper Paper easily separates on folded lines.

3. Cover your craft area with newspaper. To attach Shaper Paper to the box, dip a brush in water. Dab brush on a paper towel to remove excess water. Brush one side of the Shaper Paper with a small amount of water. Wrap the box with Shaper Paper with the wet side touching the box.



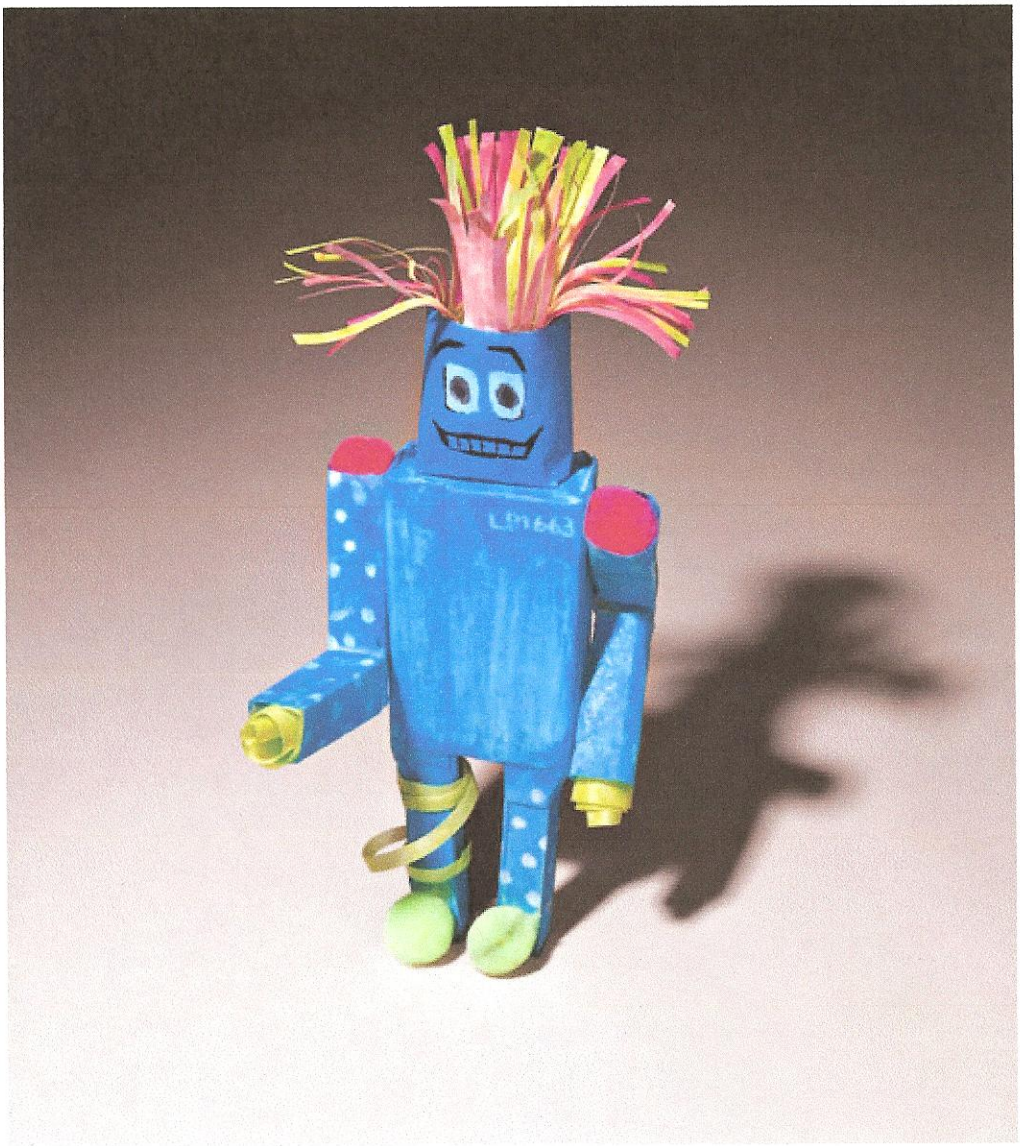
4. Experiment with Shaper Paper to create arms, legs, and other body parts for your robot. What skills will your robot have? What accessories does your robot need? Be inventive! Shaper Paper sticks to itself and holds its shape when wet, so be creative with your design! For example, measure and fold

rectangles for arms and legs. Create a cube or cylinder for the head. Cut narrow strips for fur or hair.



5. Attach all of the pieces to your robot's body by slightly dampening the shaper paper.

6. Use Crayola Washable Watercolors, Tempera Paints, and/or Markers to add color and life to your robot! For extra sparkle, a pearly look, or sandy texture, brush on Crayola Tempera Mixing Medium. Glue on decorative craft items to complete your imaginative design. Air-dry the robot.
7. Explain what jobs your creation can do to your classmates. What talents were uncovered with this robot project?



Adaptations

Challenge your measurement skills even more by creating symmetrical robots! Can you create identical body parts and accessories on both the right and left sides of your robot?

Classroom challenge! Work in small teams with identical materials. Each team solves one problem, such as to build a robot that can play basketball and tennis at the same time.

Research information about how robots are used in manufacturing, health care, and other fields. What technologies are used? Which are still to be invented?

Assessment: Did each student measure accurately? Does Shaper Paper

cover the entire body of the robot? Does the robot stand on its own? Are robots decorated in unique and imaginative ways?

Benefits

Students utilize planning skills by choosing the sizes and shapes of recycled items they need to form robots.

Students measure objects used to build the robots' bodies and replicate those measurements on Shaper Paper.

Students create, display, and describe a unique, inventive robot that stands on its own and can perform an imaginary function.

Grades

Grades 4 to 6
Grades 7 to 12

Subjects

Math
Science
Visual Arts

Time

Multiple Sessions

Curriculum Standards Links

US: Research U.S. Standards
UK: Research UK Standards
Canada: Research Canada Standards

Safety Guidelines

Small Parts—⚠ WARNING: CHOKING HAZARD—Small parts. Not for children under 3 years.

Crayola Washable Paints—Not for use as body/face paint.

Scissors—ATTENTION: The cutting edges of scissors are sharp and care should be taken whenever cutting or handling. Blunt-tip scissors should be used only by children 4 years and older. Pointed-tip scissors should be used only by children 6 years and older.