a WOW Lab BLUEPRINT

One Cut

Inquiry Approaches

Initial Inquiry

What are some familiar two-dimensional shapes?

Two dimensional shapes include the square, rectangle, circle, triangle, pentagon, hexagon, star, rhombus, trapezoid, diamond, parallelogram and oval.

What is symmetry?

An object is symmetrical if each half of the object perfectly recreates the other half when reflected in a mirror. The letter "A" is symmetrical since it can be halved in such a way that the mirror image of one half perfectly recreates the second half, and each half and its mirror image can be combined to make the original shape. Likewise, an object is symmetrical if it can be folded in half and all of the sides match up perfectly.

Which of the shapes listed by the students have at least one line of symmetry?

The square, rectangle, circle, triangle, pentagon, hexagon, star, diamond and oval all have at least one line of symmetry.

Where can you find symmetry in nature?

Butterflies, humans, certain leaves and flowers, crystals and snowflakes all exhibit some form of symmetry.

What is a polygon?

A polygon is a closed shape made up of straight lines. Squares, rectangles, triangles and stars are all examples of polygons.

What makes two shapes congruent?

Two shapes are congruent if they have the same shape and size.

Experimental Procedure Inquiry

Why are some shapes easier to fold than others?

Shapes which are more symmetrical will need fewer fold lines. The fewer the fold lines, the easier they are to fold.

Can you explain how bisecting an angle helps to align the shape lines on top of each other?

The angle is halved when the angle is bisected. The lines of the shape are equidistant from the bisecting line, and thus if a shape is folded along the bisecting line, the shape lines will overlap.

Which letters have congruent shapes within them and why? (Grades 7 & 8)

A, B, C, D, E, etc. Any letter which has a line of symmetry will have congruent shapes on either side of the symmetry line.