

Unit Name/Theme: Math/Mirror Activity

What are we doing? Using pattern blocks, we will learn to recognize and name shapes and attributes. We will practice following directions while building 2 dimensional designs.

Purpose/Why? Children will learn about shapes, which is a geometry skill and supports early numeracy.

Kindergarten Readiness is the ability to identify two dimensional shapes. *(Characteristics of Children Entering Kindergarten – WaKIDS)*

Materials

Provided: Pattern blocks, list of the two dimensional figures and their names

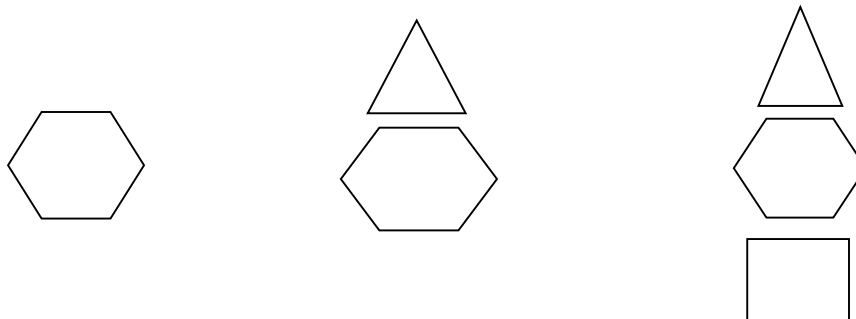
Books:

- “Colors Versus Shapes” by Mike Boldt
- “Go Shapes Go” by Denise Fleming
- “My Heart is Like a Zoo” by Michael Hall



Quick Start

After children have had time to explore and play with the shapes, begin to talk about the names and colors of the shapes. As children become familiar with the names of each shape, discuss the various attributes of each shape. “Do you notice that the triangle has 3 sides? And 3 corners? Every triangle has 3 sides and 3 corners.” Once children can name the shapes you can play the “Mirror Game.” Build a simple design. You can explain your design as you build it. “I am putting the hexagon in the middle. Next I am putting the triangle on top of the hexagon. Now I am putting the square under the hexagon.” Then ask the child to build the same design. Practice this way until the child is comfortable.



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Deeper Dive

Put a divider between your design so that the child cannot see it (a book or file folder works well.) Build a simple design and then give the child verbal directions to build the same design without seeing it. Then reveal to see how close he came! Switch roles and let the child give you directions for building his design. Designs may get more and more intricate using many different shapes. Use more advanced directional words such as "beneath, to the left, to the right".

Other Activities:

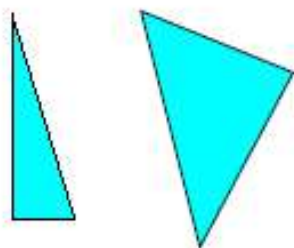
Hide shapes in a bag. Let children reach in and try to name the shape without looking, or name the attributes of the shape. "It has 3 sides!" Look for these shapes throughout the environment. Can you find 3 dimensional versions?

Hide a shape and have the child guess which shape by asking questions; "How many sides, does it have corners, what color is it?"

Sort shapes and make patterns with shapes. Sort the shapes by attributes. Build patterns with shapes. Build pictures with the shapes.

SHAPE DESCRIPTIONS

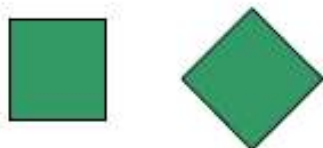
Triangle



- 3 straight sides - all connected
- 3 angles
- can be different sizes, shapes, orientations (directions)
- If all sides are the same length and all angles are the same length, is "regular" or "equilateral". If two sides are the same length, is "isosceles." If one angles is right, it's a "right triangle".

Do *not* say: 2 points at bottom, one at top
flat bottoms
"pointy"
like piece of pizza

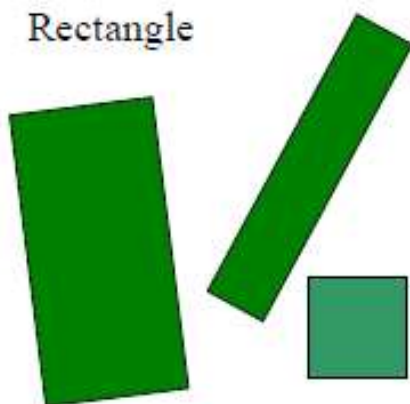
Square



- all 4 straight sides same length – all connected
- all 4 right angles (squares are "regular" polygons)
- two pairs parallel sides
- can be different sizes, orientations (directions)

Do *not* say: "turned/slanted" one is a "diamond"

Rectangle



- 4 straight sides – all connected
- 4 right angles
- opposite sides are same length
- if *all* sides are the same length, it's *also* a square
- 2 pairs parallel lines
- can be different sizes, shapes, orientations (directions)

Do *not* say: two long sides and two short sides
rectangles are "long"

SHAPE DESCRIPTIONS

Rhombus



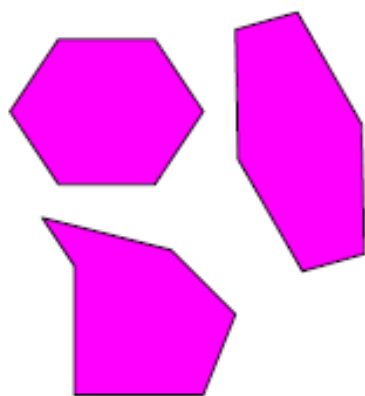
- 4 straight sides - all same length – all connected
- 2 pairs parallel lines
- 4 angles, opposite angles equal
- if the angles are right angles, it's *also* a square

Trapezoid



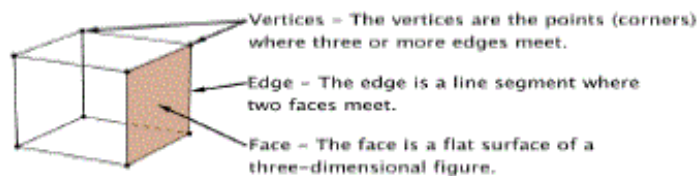
- 4 straight sides – all connected
- 4 angles
- 1 pair of parallel lines
- if the non-parallel sides are the same length, it's an "isosceles trapezoid." If one right angles, a "right trapezoid"




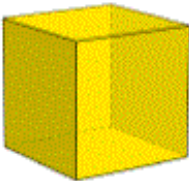



Hexagon



- 6 straight sides – all connected
- 6 angles
- for *regular* polygons: all sides equal and all angles equal

3 - D shapes



Name	Picture	Description
Sphere		0 Faces, 0 Edge 0 Vertices
Cylinder		2 faces 0 Edge 0 Vertices
Cone		1 Face 0 Edge 0 Vertices
Cube		6 square faces 12 edges 8 vertices
Rectangular Prism		6 faces 12 edges 8 vertices
Pyramid		5 faces 8 edges 5 vertices
Triangular Prism		5 faces 9 edges 6 vertices