

RAFT IDEAS

Topics: patterns, data analysis, geometric shapes

Materials List

- ✓ Magnetic sheets or File Folders
- ✓ Different colored adhesive backed material or equivalent
- ✓ Pattern Block die-cuts – available at RAFT

This Activity can be used to teach:

- Sorting, shapes, and patterning for Pre-K Common Core Math Standards:
- Classify objects (Grade K, Measurement/ Data, 3)
- Identify and describe shapes (Grade K, Geometry, 1-3)
- Analyze, compare create, compose shapes (Grade K, Geometry, 4-6)
- Shapes and attributes (Geometry, Grade 1, 1-3; Grade 2, 1; Grade 3, 1)
- Geometric measurement (Grade 3, Measurement/ Data, 8)
- Problem Solving and Reasoning (Math Practices Grades K-3)

Pattern Blocks



Pattern blocks are an excellent introduction to geometry and allow for exploring a wide range of patterning.

Assembly

Begin by attaching different colors of the adhesive backed material to each of the magnetic sheets or file folders. Use the six different die-cuts available in RAFT's Green Room to create the pattern blocks. The standard colors for patterns blocks are listed below, but feel free to use whatever colors you have available.

Triangle = Green

Square = Orange

Hexagon = Yellow

Trapezoid = Red

Wide Rhombus = Blue

Narrow Rhombus = Tan

To Do and Notice

Pattern blocks have the property that each object has the same length sides as all the others, with the exception of the trapezoid for which the base is 2 units long. Children can experiment with creating different patterns using the different shapes. Pattern blocks are excellent for exploring tessellations.

Math behind the activity

The geometric shapes used in pattern blocks have the following properties:

Triangle: This equilateral triangle has three equal sides and three interior angles = 60° , such that the sum of the interior angles = 180° .

Square: The square has four equal sides and four equal interior angles = 90° .

Trapezoid: The base of the trapezoid is 2 units long, while the other three sides are 1 unit long. The two acute angles are = 60° , the two obtuse angles are = 120° .

Hexagon: The hexagon has six equal length sides and six interior angles = 120° .

Wide Rhombus: The wide rhombus has four equal length sides, with the two acute angles = 60° and the two obtuse angles = 120° .

Narrow Rhombus: The narrow rhombus has four equal sides, with the two acute angles = 30° and the two obtuse angles = 150° .

Web Resources (Visit www.raft.net/raft-idea?isid=314 for more resources!)

- Online pattern block activities - <http://www.mathplayground.com/patternblocks.html> and <http://mathtoybox.com/patblocks3/patblocks3.html#.VU1HEZOeSVo>