

Unit 5: 2-D and 3-D Geometry

About this Unit

Students explore geometry using a variety of materials, including Geoblocks, pattern blocks, interlocking cubes, and Geoboards. They describe, sort, and compose, and decompose two- and three-dimensional shapes. They think about shapes in their environment and match two-dimensional shapes to three-dimensional objects. The *Shapes* software is introduced as a tool for extending and deepening this work. This tool is designed for K-2 students to explore how different shapes go together, experiment with

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The PreK-12 Mathematics curriculum focuses on problem solving, communication, and critical thinking in order to provide a foundation where every student reaches their potential to become a globally competitive, mathematically literate citizen.



Students are engaged in activities that help to discover the characteristics of shapes.

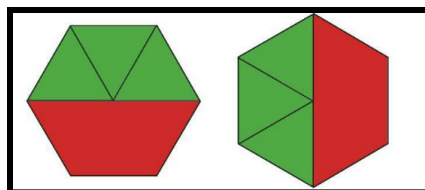
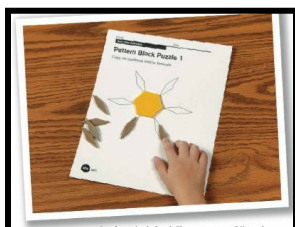
Observing and describing: Students look for real-world examples of shapes in the classroom and at home. This allows for students to realize all the different shapes in their environment. They should begin to describe shapes using size (big), overall shape (round), function (could be a ramp), and attributes (4 sides). Students are asked to compare shapes and think about rules for shapes.

Constructing shapes: This requires students to make shapes using clay, Geoboards, pattern blocks, and Geoblocks. Through the activities, student think about all the different attributes of shapes. Students must consider; are the lines straight or curved, how many sides does it have, what do the corners look like, etc.?

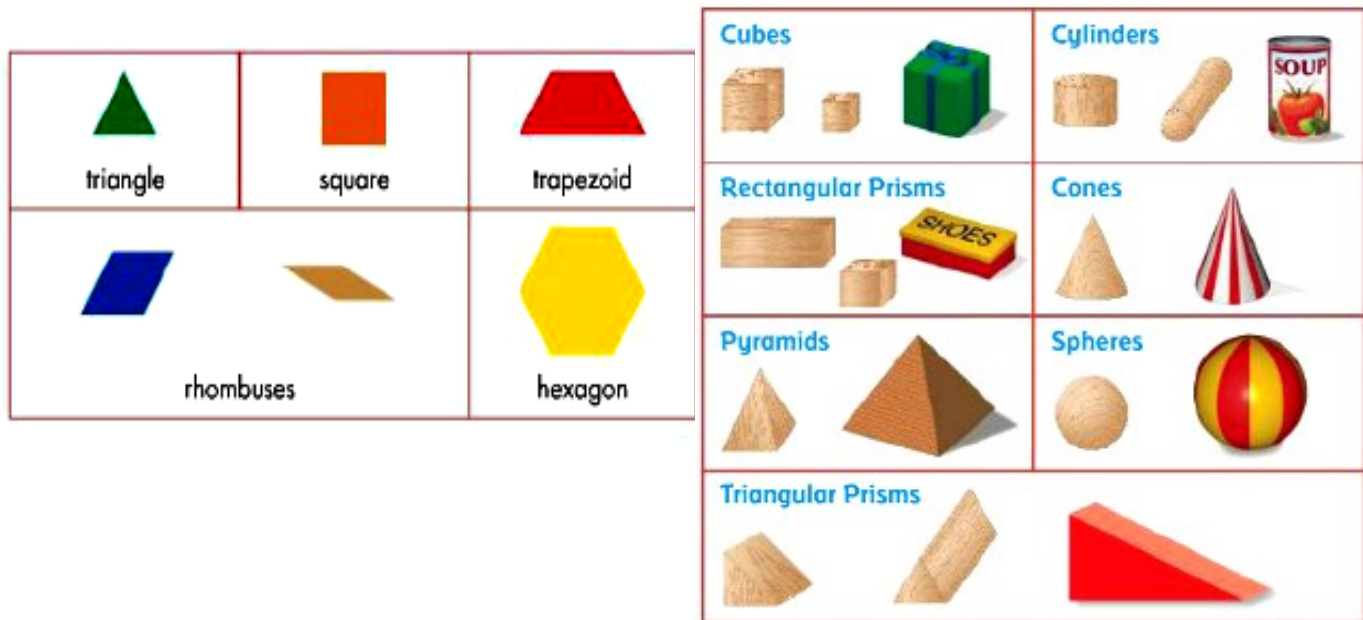
Combining shapes: Students will put shapes together to make new shapes. They use pattern blocks or the *Shapes* software to make pictures and designs, to fill puzzle outlines, and to find different ways to make a hexagon. Students will use various pattern blocks to fill in outlines which allows them to think about size, sides, and angles.

Describing Triangles

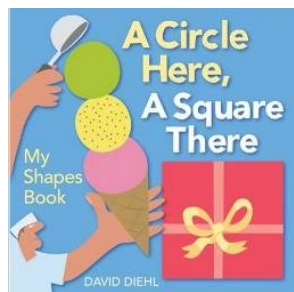
These students are describing the triangles they made.



Important vocabulary terms in this unit:



Helping your Child at Home



- Read **shape books**.
- Make a **shape book**. Students can draw shapes or take pictures of shapes in their environment.
- Discuss shapes you see while walking, driving, etc. Encourage your child to discuss the characteristics of the shapes they see (how many sides, corners, etc.).
- Make shapes at home with clay ,pipe cleaners, string, toothpicks, etc. Ask questions such as: "Can you make a shape with three sides? Do you know the name of that shape?" or "Can you make a square? How many sides does it have?"
- Encourage you child to look for patterns that are made up of shapes. For example, "Can you find the squares on the floor?" or "How many circles are on the sweater."

Visit these websites for geometry activities.

- [Investigations](http://investigations.terc.edu/library/Games_K1.cfm#a_geometry) (http://investigations.terc.edu/library/Games_K1.cfm#a_geometry)
Students can explore a variety of games leveled for K-1 students focusing on geometry.
- [PBS](http://pbskids.org/games/123/) (<http://pbskids.org/games/123/>)
Students can explore a variety of games that focus on geometry and shapes.
- [Sesame Street](http://www.sesamestreet.org/games) (<http://www.sesamestreet.org/games>)
Students can explore a variety of games that focus on shapes.
- [Cool Math](http://www.coolmath.com/) (<http://www.coolmath.com/>)
Students can explore a variety of games leveled for all ages focusing on a variety of math skills including; number sense, computation, and geometry.
- [ABC Ya](http://www.abcya.com/shape_match.htm) (http://www.abcya.com/shape_match.htm)
Students match 2D and 3D objects.

