

Pattern Blocks

Summary

Students will use pattern blocks to identify and label shapes.

Main Core Tie

Mathematics Grade 1

[Strand: GEOMETRY \(1.G.\) Standard 1.G.1](#)

Additional Core Ties

Mathematics Grade 1

[Strand: GEOMETRY \(1.G.\) Standard 1.G.2](#)

Materials

Baggie of pattern blocks

- [What's My Shape?](#) (pdf)
- [Pattern Blocks Templates](#) (pdf)
- [Pattern Blocks Vocabulary Cards](#) (pdf)
- [Vocabulary Journal](#) (pdf)
- [Pattern Blocks Activity Cards](#) (pdf)

Bucket of Pattern Blocks

Pattern Block stamps or templates

Stamp pads

Additional Resources

Books

- *A Cloak For The Dreamer*
, by Aileen Friedman; ISBN 978-0590489874

Background for Teachers

The new Utah Math Curriculum follows the Focal Points from NCTM. Standard III indicates that children will compose and decompose plane and solid figures. This process builds an understanding of part-whole relationships as well as the properties of the original and composite shapes. As they combine figures, they recognize them from different perspectives, describe their attributes and properties and determine how they are alike and different. Pattern blocks can help achieve these objectives. When teaching the names of the pattern blocks point out that the smaller tan parallelogram is also called a rhombus and that the larger blue rhombus is also called a parallelogram. A short description of the pattern blocks is referenced in the Additional Resources section.

Intended Learning Outcomes

6. Communicate clearly in oral, artistic, written, and nonverbal form.

Instructional Procedures

Invitation to Learn

Distribute a baggie to each student filled with standard pattern blocks. Include one each of the following shapes: triangle, hexagon, small rhombus, large rhombus (parallelogram), square, and trapezoid. Invite the students to discuss the similarities and differences between the shapes. Invite

them to count how many sides each shape has and compare the shapes that have the same number of sides to determine how they are different. Next, hand out the worksheet *What's My Shape?* Ask the students to draw a line from the column of shape pictures to the column of shape names to correctly identify each shape. Students could also cut out pictures of shapes from magazines and glue next to the appropriate words. Proceed to display vocabulary cards and pictures of the six pattern blocks.

Instructional Procedures

Vocabulary Journal -- Pattern Blocks

Using the *Vocabulary Journal Template*, copy and compile journals for each of your students.

Distribute the *Vocabulary Journals* and ask the students to write the name of each shape on the line as the term is introduced.

Describe each term using an example, giving an explanation of the word, or a description of the word.

Invite students to explain each term using their own words and write it on the lines provided in the journal.

Next, students will draw a picture representing the term in their journals.

Pattern Blocks Activity Cards

The cards are designed with four levels ranging from simple to more difficult. Start with the Level I cards in your Math Center.

Level I -- The designs show the shapes and colors of the standard pattern blocks used to make them. The children need to find the blocks that match the colors and shapes on the card and place them on top of the illustration. (Cards 1-2)

Level II -- The colors of the pattern blocks are not shown. Students must find and match the blocks by shape alone. (Cards 3-4)

Level III -- Only the outline of the design is shown, so the students must figure out which blocks fit together within the outline to create the design. (These designs are open-ended, in that there is more than one way to complete each design. (Cards 5-6)

Level IV -- These cards address the concept of symmetry. One half of the design shows the individual shapes in color, and the other half shows a symmetrical outline only. The students must figure out how to create a design that is the mirror image of the one they see. (Cards 7-8)

Stampin' Shapes

Distribute pattern block stamps and stamp pads for use in a center.

Provide white paper for the students to stamp their patterns, designs, or pictures.

Encourage the students to combine shapes to create other shapes.

Extensions

Copy one of the Level II cards and invite children to color the design using the corresponding color for each of the standard pattern blocks.

Students can count and graph how many individual blocks they used for each activity card.

Help children understand patterns and designs by having them create or extend their own designs.

Make copies of the Level I to III cards and ask students to fold the design on the line of symmetry. Hold the paper up to a light to check for alignment.

Use an unframed mirror to check for symmetry. Hold the mirror on the assumed line of symmetry to determine if the reflected side is symmetrical.

Family Connections

Distribute paper copies of the standard pattern blocks (Pattern Blocks templates included in this activity) for students to use at home to create their own designs.

Provide the website URLs, listed for this activity, for parents to access the Internet.

Assessment Plan

The *Vocabulary Journal* is a good way to check for understanding of the new academic vocabulary that is introduced. (Note that the First Grade Math Core does not hold students accountable for all of the vocabulary introduced in this activity.) Copy one of the Level II cards and invite children to color the design using the corresponding color for each of the standard pattern blocks.

Observation of students completing the *Pattern Blocks Activity Cards* provides an opportunity to assess students' understanding of simple geometric figures.

Use *What's My Shape?* worksheet as a pre or post assessment.

Bibliography

Research Basis

Marzano, R. J., (2004). *Building background knowledge for academic achievement: Research on what works in schools*. Alexandria, VA: Association for Supervision and Curriculum Development. Retrieved March 9, 2007, from <http://www.ascd.org>.

This article stresses the importance of academic vocabulary to enhance students' abilities to read and understand subject matter content and help students increase background knowledge that raises their academic achievement.

Scheibelhut, C., (December 1994) I do and I understand, I reflect and I improve (Writing in mathematics education). *Teaching Children Mathematics*. Retrieved November 18, 2006 from <http://www.questia.com>.

This research describes the importance of writing in mathematics. The author states that by forcing a slowdown in the thought process, writing enables the mind to clarify ideas and integrate new knowledge. Each child is actively involved in reflecting on what they have been learning.

Authors

[Utah LessonPlans](#)