

# Covering Spaces

## Summary

Students will become more familiar with various geometric shapes by completing the games and activities in this lesson.

## Main Core Tie

Mathematics Grade 2

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

## Materials

*For each pair of students:*

- [Let's Try It! handout](#) (pdf)
- [Beat Dino Hex handout](#) (pdf)
- [Making Figures with Squares handout](#) (pdf)

Pattern blocks

Crayons

Centimeter grid paper

## Additional Resources

### *Books*

- *The Fly on the Ceiling, a Math Myth*  
, by Dr. Julie Glass; ISBN 0-679-88607-9
- *Not Enough Room*  
, by Joanne Rocklin; ISBN 0-590-39962-4
- *The Greedy Triangle*  
, by Marilyn Burns; ISBN 0-590-48992-5
- *Grandfather Tang's Story*  
, by Ann Tompert; ISBN 0-517-88558-1
- *Changes, Changes*  
, by Pat Hutchins; ISBN 0-689-71137-9
- *Pigs on the Ball*  
, by Amy Axelrod; ISBN 0-689-83537-X
- *Shape Up! Fun with Triangles and Other Polygons*  
, by Nancy Tobin; ISBN 0-8234-1638-0

## Background for Teachers

### *Hexagon*

—a six-sided plane figure

*Trapezoid*—a quadrilateral with exactly one pair of parallel sides

*Parallelogram*—a quadrilateral with two pairs of same-length sides and two pairs of parallel sides

*Square*—a quadrilateral with two pairs of parallel sides, four right angles (90 degrees, four sides of equal length)

## Intended Learning Outcomes

1. Demonstrate a positive learning attitude toward mathematics
2. Become mathematical problem solvers
3. Reason mathematically

## Instructional Procedures

### Invitation to Learn

Can you make shapes with a rope? Use a 12 ft. rope with knots tied at one foot intervals and have students create a square, triangle, right triangle, and hexagon.

How many of you like to play games? Today you will create designs with pattern blocks and then play a game with your partner.

### Instructional Procedures

Pass out pattern blocks and the [Let's Try It! handout](#). Have students work with a partner.

Have students keep track of the number of each shape they use in each of the three ways. Challenge the students to use the correct name of each shape before placing it on the paper.

## Extensions

### Beat Dino Hex - [Handout](#)

Use only yellow, green, and blue pattern blocks.

Take turns adding one block at a time to the game board.

Blocks must fit inside the lines.

The player who places the last block loses the game.

Reverse play by having players take turns removing the blocks.

The player who takes away the last block wins!

### Making Figures with Squares - [Handout](#)

Color red rectangles made of three squares.

Color blue shapes as indicated on the sheet.

Follow the directions and fill the shapes using red, blue, or red and blue shapes.

## Assessment Plan

Allow students to share their strategies for each activity. Use an overhead copy of each activity and have students share their way to solve that activity.

Have student pairs share, with another pair, their way of covering the areas.

Use the coloring activity to assess the *Making Figures with Squares* handout.

## Authors

[Utah LessonPlans](#)