Objective

Partition rectangles into equal shares.

Common Core State Standards

■ **1.G.3** Partition circles and rectangles into two and four equal shares, describe the shares using the words *halves, fourths,* and *quarters*, and use the phrases *half of, fourth of,* and *quarter of*. Describe the whole as two of, or four of the shares. Understand for these examples that decomposing into more equal shares creates smaller shares.

Geometry

Equal Shares of Rectangles

A child's early understanding of fractions is usually based on the area model for partitioning a whole. Children start experimenting with this model by partitioning rectangles into two and four equal areas. As they experiment, they learn to use the words *halves*, *fourths*, and *quarters*. Building and partitioning rectangles helps children develop additional mathematical skills, as well. These include spatial reasoning and visualization and a sense of geometric properties.

Try It! *Perform the Try It! activity on the next page.*

Talk About It

Discuss the Try It! activity.

■ Have children look at the top rectangle on the completed BLM. **Ask:** *How many equal shares are shown? What are two equal shares called?* Have children look at the bottom rectangle. **Ask:** *How many equal shares are shown? What are four equal shares called?*

■ Have children compare the size of a half to the size of a fourth. **Ask:** *When we make more equal shares of a rectangle, what happens to the size of the shares?*

Solve It

With children, reread the problem. Have children draw a picture showing the whole graham cracker and then add a line to show where Marco could break the cracker to make two equal shares.
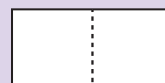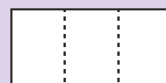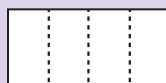
More Ideas

For other ways to teach partitioning rectangles into equal shares—

■ Have children use the Color Tiles to build different sized rectangles showing halves and fourths. Ask children to describe each rectangle using the terms *equal shares, halves, fourths,* and *quarters*.

■ Have children use Deluxe Rainbow Fraction® Squares to show halves and fourths and describe the equal shares. Encourage children to make up stories to go with the models they build.

■ Have children use Geoboards to show halves and fourths and describe the equal shares.

Formative Assessment

Have children try the following problem.
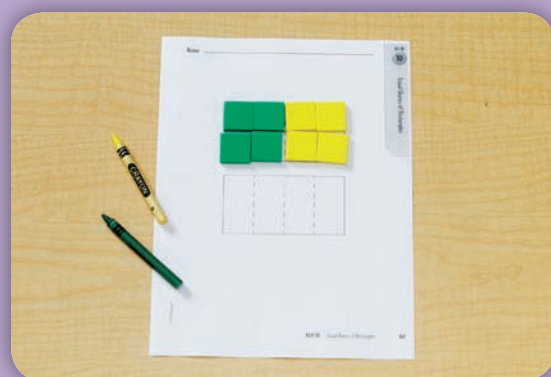
Which shows fourths?

Try It! 20 minutes | Pairs

Here is a problem about partitioning rectangles into equal shares.

Marco has a graham cracker that is shaped like a rectangle. He wants to share it equally with his sister. How can Marco break the cracker into two equal shares?

Introduce the problem. Then have children do the activity to solve the problem. Distribute Color Tiles and the Equal Shares of Rectangles (BLM 10) to children.

Materials
- Color Tiles
- Equal Shares of Rectangles (BLM 10; 1 per pair)
- crayons (1 green, yellow, blue, and red per pair)

1. Have children place four green Color Tiles on the BLM in the top rectangle. Then have children fill in the remaining space in the rectangle with yellow Color Tiles. Tell students that if they did not already do so, you want them to arrange the tiles to form two squares inside the rectangle—one green, one yellow.

2. Ask: *Are the green and yellow parts equal in size?* If necessary, elicit that they are equal in size and are therefore equal shares. Discuss the words *half* and *halves*. Point out that two halves make a *whole*. Have children take away the green tiles and color that half of the rectangle green; have them take away the yellow tiles and color that half yellow.

⚠ Look Out!

Some children might be confused by using two or four Color Tiles to make each part of a rectangle. Have them focus on the colors as the parts and not on the individual Color Tiles.
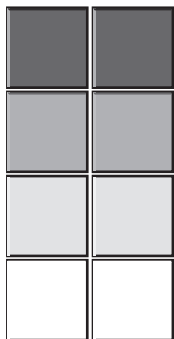

3. Have children place two blue Color Tiles, two red Color Tiles, two green Color Tiles, and two yellow Color Tiles on the BLM in the bottom rectangle to form 4 equal parts. **Ask:** *Are the four parts equal shares?* **Say:** *Four equal shares are called* fourths*, or* quarters*. Four fourths make a whole. Four quarters make a whole.* Have children color in the fourths.
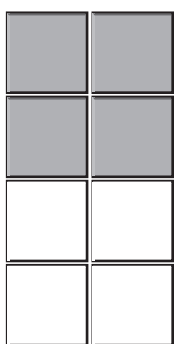
Use Color Tiles. Build the rectangle. Tell the number of equal shares. (Check students' work.)

1. __4__ equal shares

2. __2__ equal shares

Draw the rectangle. Tell if it shows halves or fourths. Circle the answer.

3. four red tiles and four blue tiles

   halves   fourths   halves

4. two green tiles, two yellow tiles, two red tiles, and two blue tiles
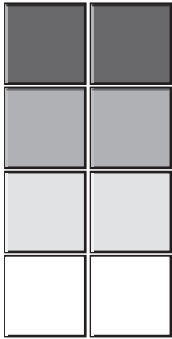
   halves   fourths   fourths

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Challenge! Why are fourths smaller shares than halves?

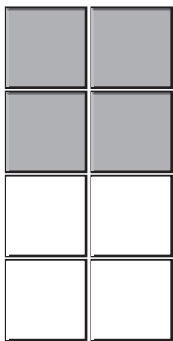_____

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Name _____

Use Color Tiles. Build the rectangle. Tell the number of equal shares.

1. _____ equal shares

2. _____ equal shares

Draw the rectangle. Tell if it shows halves or fourths. Circle the answer.

3. four red tiles and four blue tiles

halves   fourths

4. two green tiles, two yellow tiles, two red tiles, and two blue tiles

halves   fourths

Challenge! Why are fourths smaller shares than halves?

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Name _____