

# Fourths

## Math Focus Points

- ◆ Partitioning a whole into equal parts and naming them with fractions

## Vocabulary

fourth	in fourths
quarter	one fourth
fourth of	
quarter of	

## Today's Plan

### 1 DISCUSSION Introducing Fourths



- Transparency of Shapes 4 and 5 from C22 (from Session 3A.1)
- Transparency of Shape 4 from C30 (from Session 3A.2)
- **C34, Circles and Squares** Make a transparency; cut into individual images of circles and squares.

### 2 ACTIVITY Designing More Rugs



- *Student Activity Book*, p. 33 or **C35, Area Rugs: Circles** Make copies. (as needed)
- *Student Activity Book*, p. 34 or **C36, Area Rugs: Rectangles** Make copies. (as needed)
- *Student Activity Book*, p. 35 or **C37, Area Rugs: Squares** Make copies. (as needed)
- **C38, Fourths** Make copies on several different colors of paper and cut into individual squares, triangles, and rectangles.
- Coloring materials; glue; straightedges (as needed)

### 3 ACTIVITY Quick Images



- Transparency of Shapes 6–8 from C22 (from Session 3A.1)

### 4 SESSION FOLLOW-UP Daily Practice

- *Student Activity Book*, p. 36 or **C39, Fourths** Make copies. (as needed)

## Classroom Routines

**Quick Images with Shapes** Show a transparency of Shape 1 from *More Shapes for Quick Images* (C30; from Session 3A.2). Follow the basic *Quick Images* activity. Ask students to describe the shape after it has been drawn. Repeat with Shape 2 and with Shape 4. Throughout, note whether students are able to recognize and use the relationship between the shapes correctly. Listen for and emphasize the words *half*, *fourth*, and *quarter* as you discuss and compare the shapes.

## Teaching Note

## 1 Words with Multiple Meanings

*Quarter* may be a confusing term because students know it as the name of a coin. Explain that the coin is called a quarter because it is a quarter of (or one-fourth of) a dollar—it takes 4 quarters to equal one dollar.



## DISCUSSION

## Introducing Fourths



15 MIN

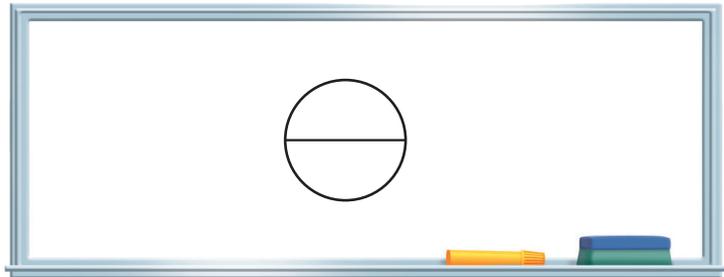


CLASS

## Math Focus Points for Discussion

- ◆ Partitioning a whole into equal parts and naming them with fractions

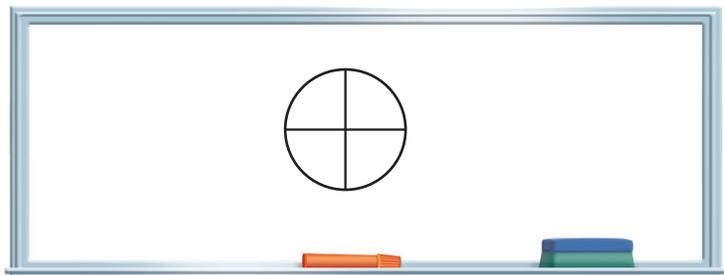
Review what students know about halves. Use Shape 4 from Shapes for Quick Images (C22; from Session 3A.1) as an example. The focus should be on the fact that halves must be two equal pieces.



If we cut a shape in half, there are two parts or pieces, and those parts have to be exactly the same or equal. It has to be fair.

We call each piece a half. Each half-circle is one of two equal parts of the circle. If you put two half-circles together, you have one whole circle.

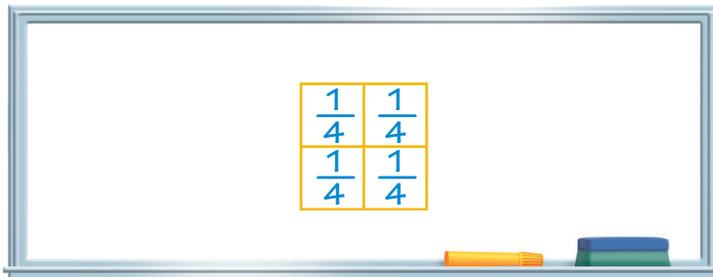
Show students Shape 5 from Shapes for Quick Images.



If we cut a shape into four equal pieces, those pieces are called **fourths** or **quarters**. 1 Each quarter-circle is a **fourth** of the circle or a **quarter** of the circle. If you put four quarter-circles together, you have one whole circle.

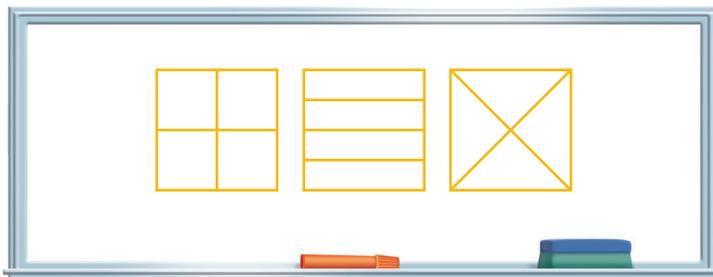
To help students grasp this definition, use the images on Circles and Squares (C34) to present circles that do and do *not* show quarters accurately. Ask students whether or not each figure shows fourths and why. End the discussion by looking at Shape 5 from Shapes for Quick Images again and reviewing why that image shows fourths. Also use this image to introduce the notation of  $\frac{1}{4}$ .

Next, have a similar discussion about squares. First show Shape 4 from More Shapes for Quick Images (C30; from Session 3A.2), which students saw during the Classroom Routine, and explain how it is an example of fourths.



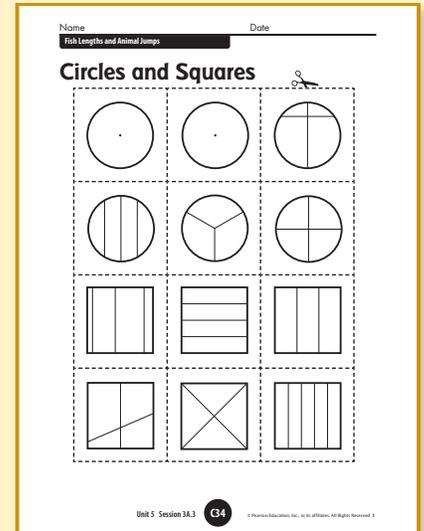
Use the squares on C34 to show examples of squares that do and do *not* represent accurate fourths. Ask students whether each figure shows fourths and why.

Finally, consider the three examples of fourths students have seen.

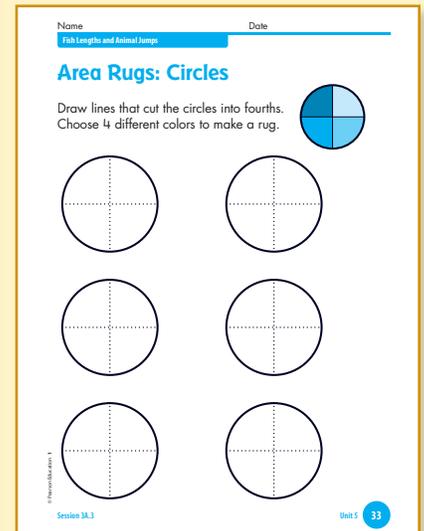


We said that each of these squares is cut **in fourths**, or quarters. What do you notice? [Talisa] noticed the squares are cut into different shapes. Do you think they are all fourths?

Students will likely comment on the number and shape of the pieces. They may be comfortable with each individual square representing **one fourth**, but may be unsure when they are shown the examples together. Keep the focus on the fact that fourths or quarters means four equal pieces.



▲ Resource Masters, C34



▲ Student Activity Book, Unit 5, p. 33 ; Resource Masters, C35

## 2 ACTIVITY Designing More Rugs

Yesterday we designed half-and-half rugs for our store. Now that we've talked about fourths, let's design more rugs for our store.

Review what an area rug is, as needed, and then introduce Area Rugs: Circles (*Student Activity Book* page 33 or C35), Area Rugs: Rectangles (*Student Activity Book* page 34 or C36), and Area Rugs: Squares (*Student Activity Book* page 35 or C37).

Area Rugs: Circles provides six circular rugs. Students trace the dotted lines to divide each shape into quarters, and then they color each quarter a different color.

Area Rugs: Rectangles provides six rectangular rugs. Students trace the dotted lines to divide each shape into quarters, and then they color each quarter a different color.

Area Rugs: Squares provides six square rugs. Students draw lines that divide each square into fourths. Point out that they can use the templates at the top of the page for help and that straightedges will be available if needed. Students then choose a shape (rectangle, square, or triangle) and take 4, in different colors, from the shapes made from Fourths (C38). They glue these onto the shape to make their rug.

Students need to design at least one page of each kind of rug (circular, rectangular, and square), though they may do more than one page. Explain that this activity will be available today and in the next session.

### ONGOING ASSESSMENT: Observing Students at Work

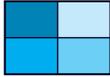
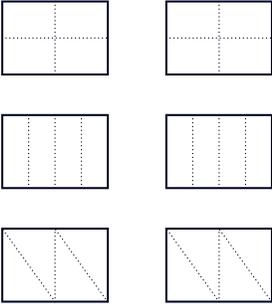
Students partition circles and rectangles into fourths.

- **Can students correctly color and describe circular and rectangular rugs that show fourths?** Do they understand that something divided into fourths has four equal pieces? Do students understand that one quarter of a [circle] is one fourth of the whole [circle]? Do they understand that four fourths make the whole [circle]?
- **Can students draw lines that [approximately] divide a square into fourths?** Do students know that the four parts must be equal? Do they divide squares in more than one way?

Name \_\_\_\_\_ Date \_\_\_\_\_  
Fish Lengths and Animal Jumps

### Area Rugs: Rectangles

Draw lines that cut the rectangles into fourths. Choose 4 different colors to make a rug.

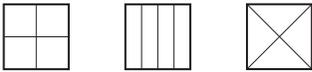
34 Unit 5 Session 3A.3

▲ **Student Activity Book, Unit 5, p. 34; Resource Masters, C36**

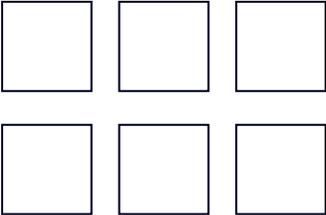
Name \_\_\_\_\_ Date \_\_\_\_\_  
Fish Lengths and Animal Jumps

### Area Rugs: Squares

Choose a rug to make.



Draw lines to make fourths. Choose 4 different colors for your shape. Glue the shapes to make a rug.



35 Unit 5 Session 3A.3

▲ **Student Activity Book, Unit 5, p. 35; Resource Masters, C37**



### DIFFERENTIATION: Supporting the Range of Learners

**Intervention** If students are having trouble drawing, work together to see if this is an issue with fine motor skills or with the idea that fourths require four equal pieces. Refer to the templates. Model how to draw a line that divides the shape in half. Then model drawing another line that divides the halves in half. You can also talk through how the student's square should appear and provide lightly dotted lines for the student to trace.

**Extension** Students can create more than one sheet of any of the types of rugs. Encourage them to design rugs that use different shapes. For example: *I see that all of your rugs use [rectangles]. Could you design a rug that uses [triangles]?*

**Extension** You can also broaden the activity by specifying a number of colors. For example, challenge students to make a shape with 3 colors. Then, ask them to describe the shapes they create and discuss different ways to name the different parts of their rug. For example: *What part of the rug is blue?* Do they see it as two fourths or one half? Do they see that both statements are true?

### Teaching Note

**2 More Than One Fourth** The discussion of Shapes 7 and 8 raise the question of how to name and describe shapes with more than one fourth shaded. "1, 2, 3 fourths," "3 of the fourths," and "three-fourths" are all possible descriptions. When a shape has 2 contiguous quarters shaded the same color, some students will see it as half, other students will see it as two fourths, and a few students may see that both of those names accurately describe the part of the figure. Students will explore such equivalencies in more depth in later grades.

## 3 ACTIVITY Quick Images



Use Shape 6 from Shapes for Quick Images (C22; from Session 3A.1) and follow the basic *Quick Images* activity. As you discuss the shape, note how students name and describe the shaded and unshaded parts. Do they see half-circles within the shape? Do they see two halves? Do they see that one half is shaded and that one half is not shaded?

Repeat the activity with Shape 7. Note how students name and describe the shaded and unshaded parts. Do they see quarter-circles? Do they see fourths/quarters? Repeat the activity with Shape 8. 2

## 4 SESSION FOLLOW-UP Daily Practice



**Daily Practice:** For reinforcement of this unit's content, have students complete *Student Activity Book* page 36 or C39.

Name \_\_\_\_\_ Date \_\_\_\_\_  
Fish Lengths and Animal Jumps

### Fourths

Duplicate these shapes on colored paper and cut them apart.

Unit 5 Session 3A.3 C38 © Pearson Education, Inc., or its affiliates. All Rights Reserved.

▲ Resource Masters, C38

Name \_\_\_\_\_ Date \_\_\_\_\_  
Fish Lengths and Animal Jumps

Daily Practice

### Fourths

NOTE: Students solve problems about fourths.

- Draw lines to cut the circle into fourths.
- Color one fourth of the square.
- Color one fourth of the rectangle.
- Circle the rugs that show fourths.

36 Unit 5 Session 3A.3

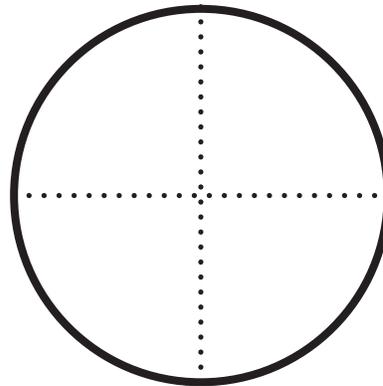
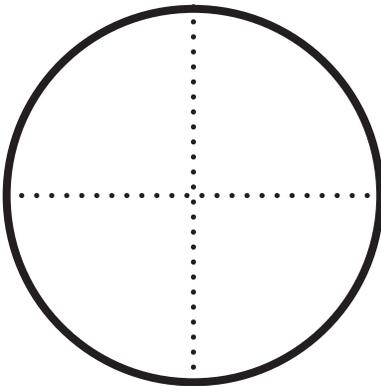
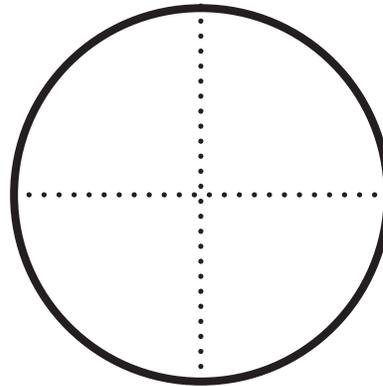
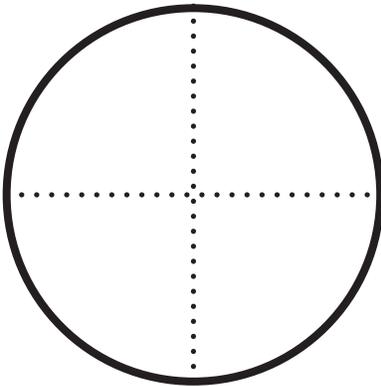
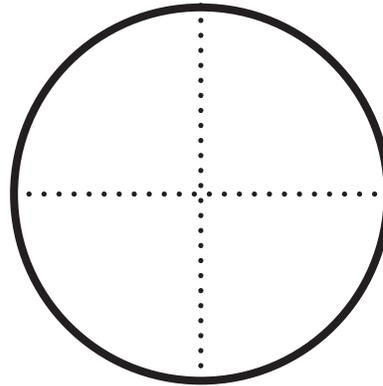
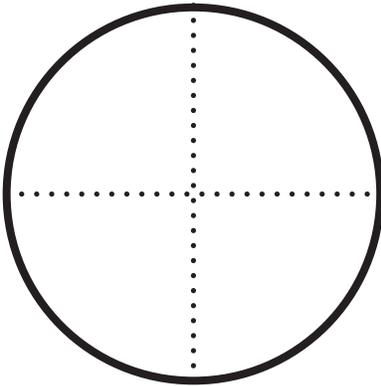
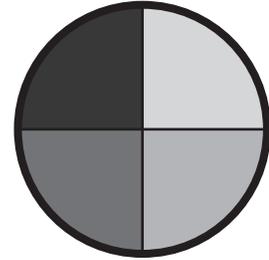
▲ Student Activity Book, Unit 5, p. 36; Resource Masters, C39

# Circles and Squares



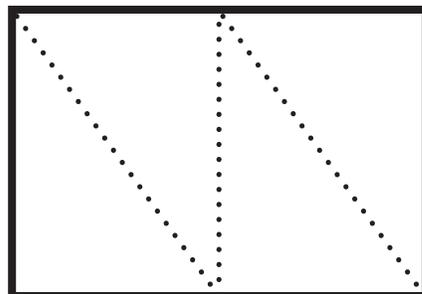
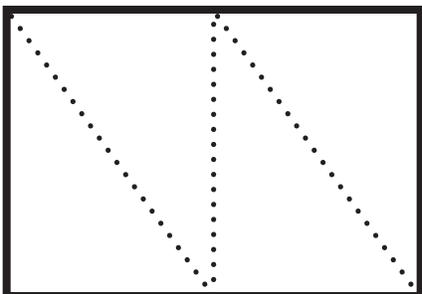
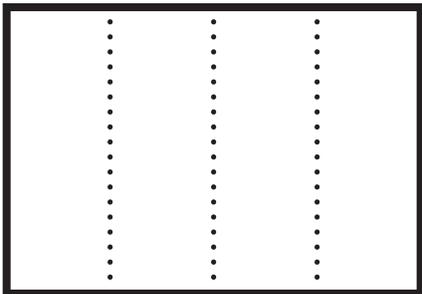
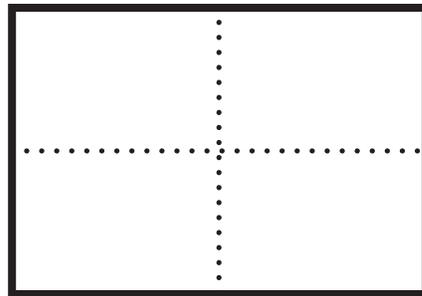
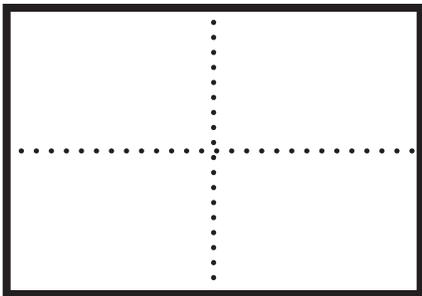

# Area Rugs: Circles

Draw lines that cut the circles into fourths.  
Choose 4 different colors to make a rug.



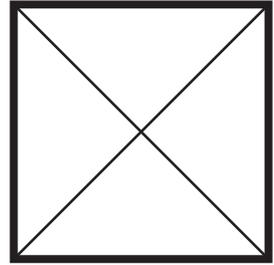
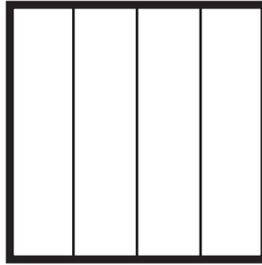
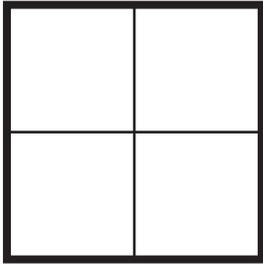
# Area Rugs: Rectangles

Draw lines that cut the rectangles into fourths. Choose 4 different colors to make a rug.

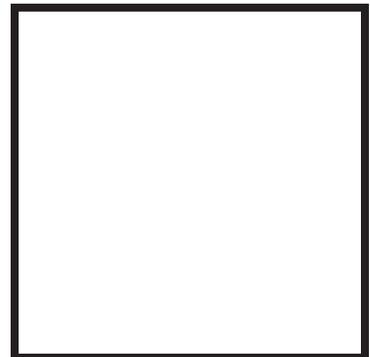
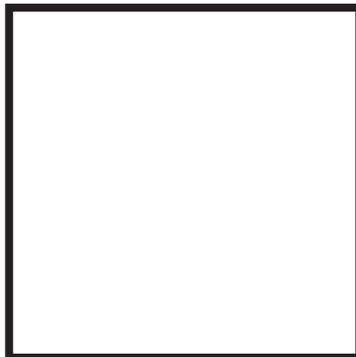
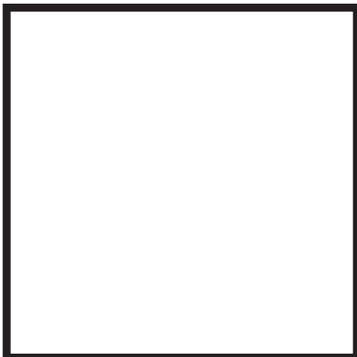
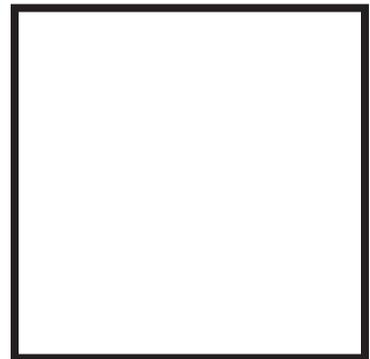
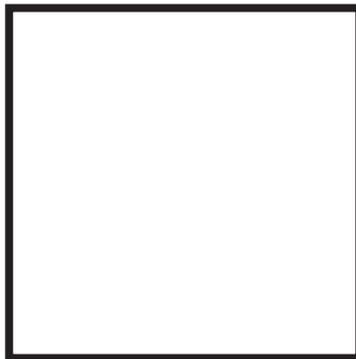
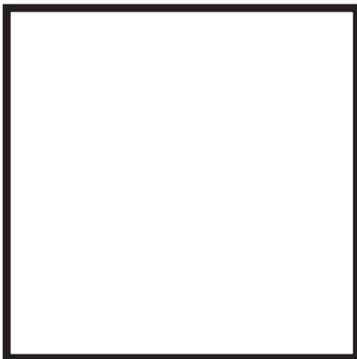


# Area Rugs: Squares

Choose a rug to make.

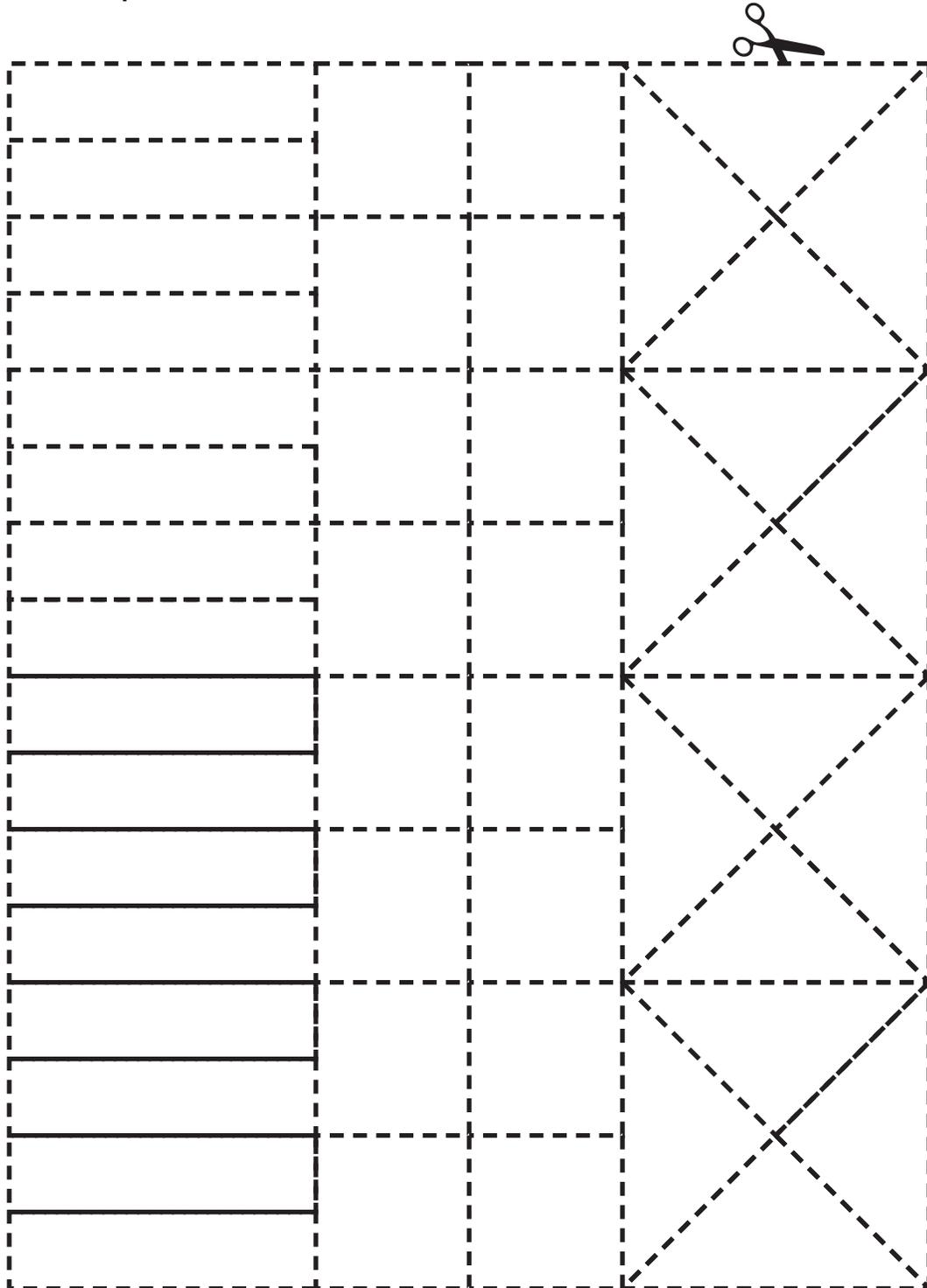


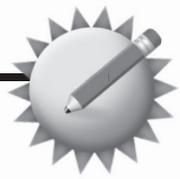
Draw lines to make fourths. Choose 4 different colors for your shape. Glue the shapes to make a rug.



# Fourths

Duplicate these shapes on colored paper and cut them apart.

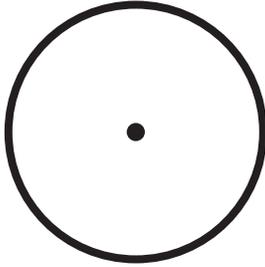




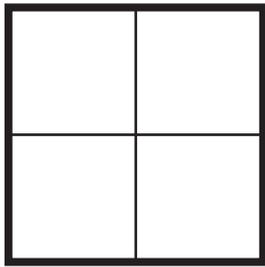
# Fourths

**NOTE** Students solve problems about fourths.

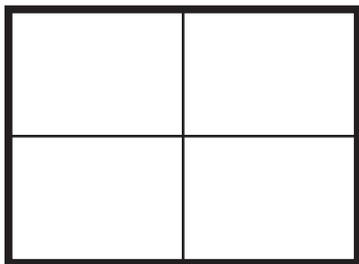
1. Draw lines to cut the circle into fourths.



2. Color one fourth of the square.



3. Color one fourth of the rectangle.



4. Circle the rugs that show fourths.

