

# Geometry

## Review What You Know

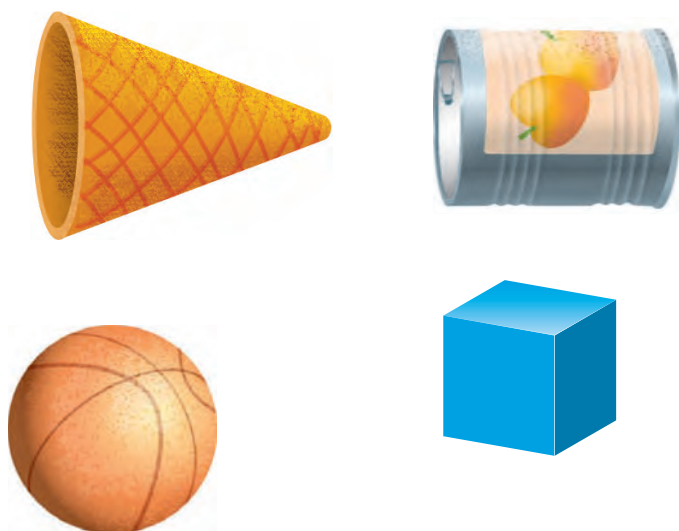
1. Circle all of the squares.



2. Circle the object that has the same shape as the cube.



3. Circle the object that does not roll.



## Home-School Connection

Dear Family,

Today my class started Topic 8, **Geometry**. I will learn about plane shapes like a triangle and a square, and also about solid figures like a cube and a cone. Here are some of the new math words I will be learning and some things we can do to help me with my math.

Love, \_\_\_\_\_

### Book to Read

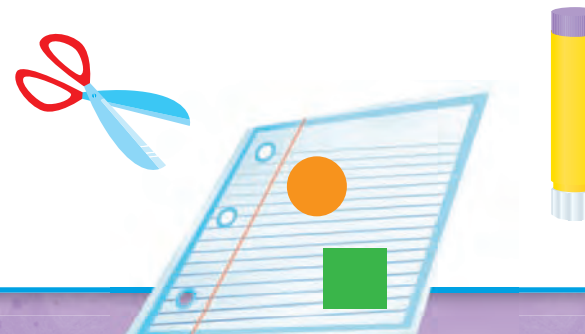
Reading math stories reinforces concepts. Look for this title in your local library:

**Shape Space**  
by Cathryn Falwell  
(Houghton, 1992)



### Home Activity

Help your child find pictures of shapes in magazines. Cut out several pictures of triangles, rectangles, circles, and squares. Have your child glue the shapes on a sheet of paper to form a design or picture.



## My New Math Words

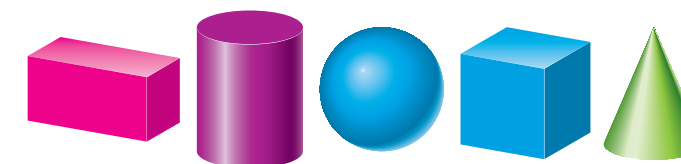
**plane shape**  
a flat shape

These are plane shapes.



**solid figure**

a figure that has length, width, and height



These are solid figures.

**corner**

Corners are formed when 2 sides of a plane shape meet or when three flat surfaces of solid figures meet.






A rectangle has 4 corners.

**Number of players: 2**

**How to Play**

1. Take turns. Toss the number cube.
2. Move your marker that many spaces.
3. If you land on a stone with a shape or solid, cover your matching shape or solid with a counter. If you land on a stone with words, follow the directions.
4. Keep playing until all of your shapes and solids are covered. Then move your marker to FINISH.

**What You Need**

- 1 number cube 1 – 3   
2 snap cubes   
2 sets of 9 counters 

# Shape Hunt

**Player 1**



**Finish!**

**Move ahead 2.**

**Toss again.**

**Start!**

**Miss 1 turn.**

**Take 1 tile away.**

**Move back 3.**

**Player 2**



Name \_\_\_\_\_



# Identifying Plane Shapes



1.



2.



3.

4.

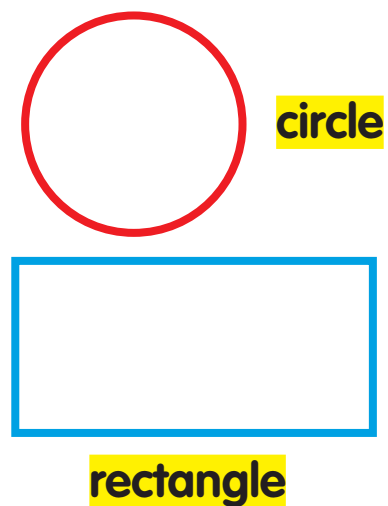
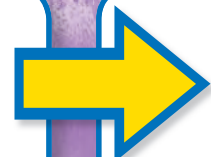
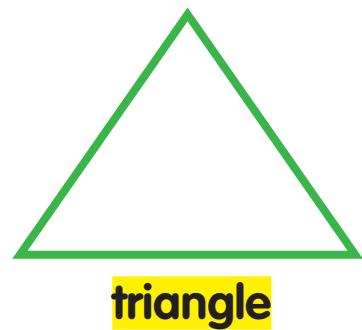


**Home Connection** Your child learned to recognize and draw plane shapes, such as circles, triangles, rectangles, and squares.

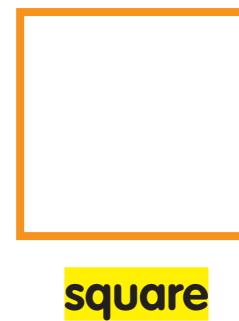
**Home Activity** Take your child on a shape hunt to look for plane shapes in your home or neighborhood.

**MG 2.1** Identify, describe, and compare triangles, rectangles, squares, and circles, including the faces of three dimensional objects. Also **MG 2.0.**

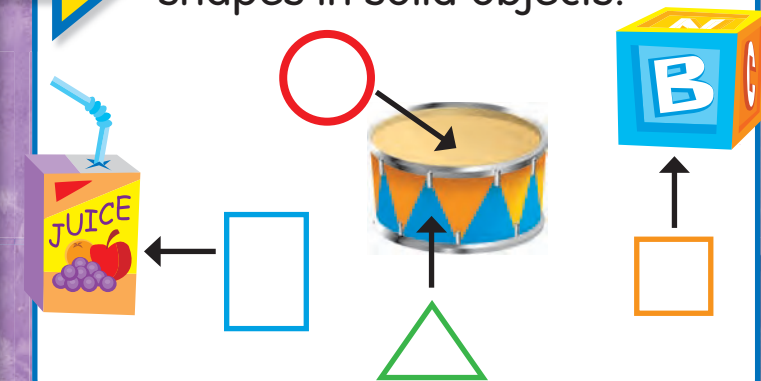
Flat shapes are called **plane shapes**.



A square is a special rectangle.

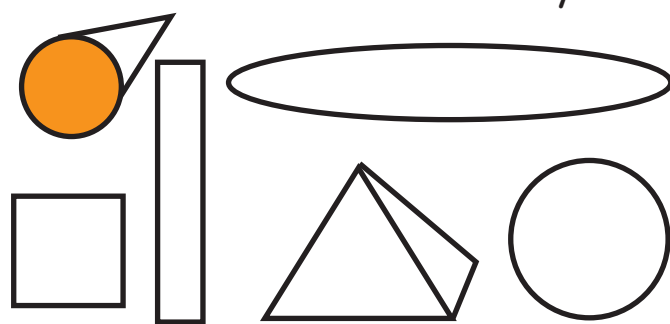


You can see plane shapes in solid objects.

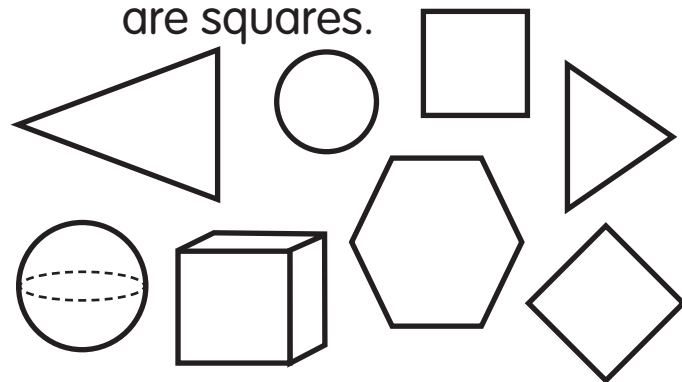


### Guided Practice

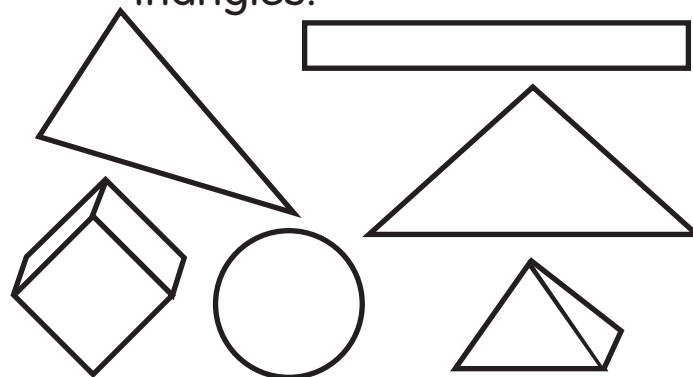
1. Color the shapes that are circles. I is colored for you.



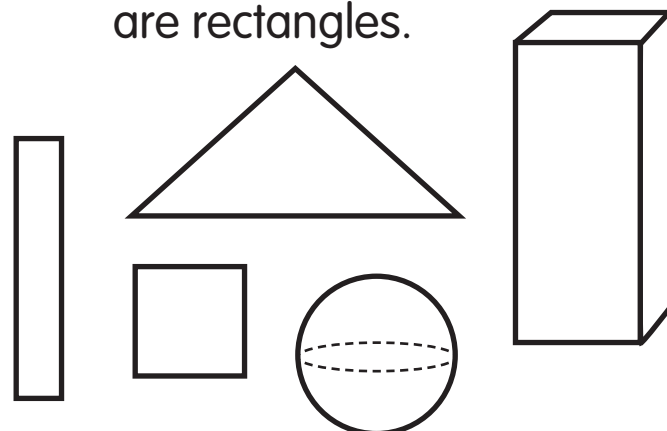
2. Color the shapes that are squares.



3. Color the shapes that are triangles.



4. Color the shapes that are rectangles.



**Do you understand?** Is this shape a triangle? Explain.



### Independent Practice

5. Draw a square.

7. Draw a rectangle.

**Spatial Thinking** Color 1 circle, 2 triangles, 3 squares, and 4 rectangles in the solid objects below. Use different colors.

9.



### Word Bank

plane shape circle square  
triangle rectangle

6. Draw a circle.

8. Draw a triangle.

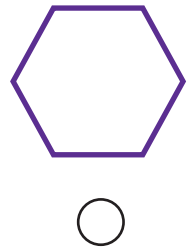
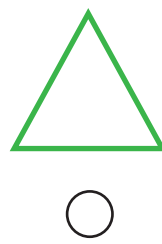
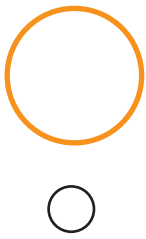
## Problem Solving


Draw a picture to show your answer.

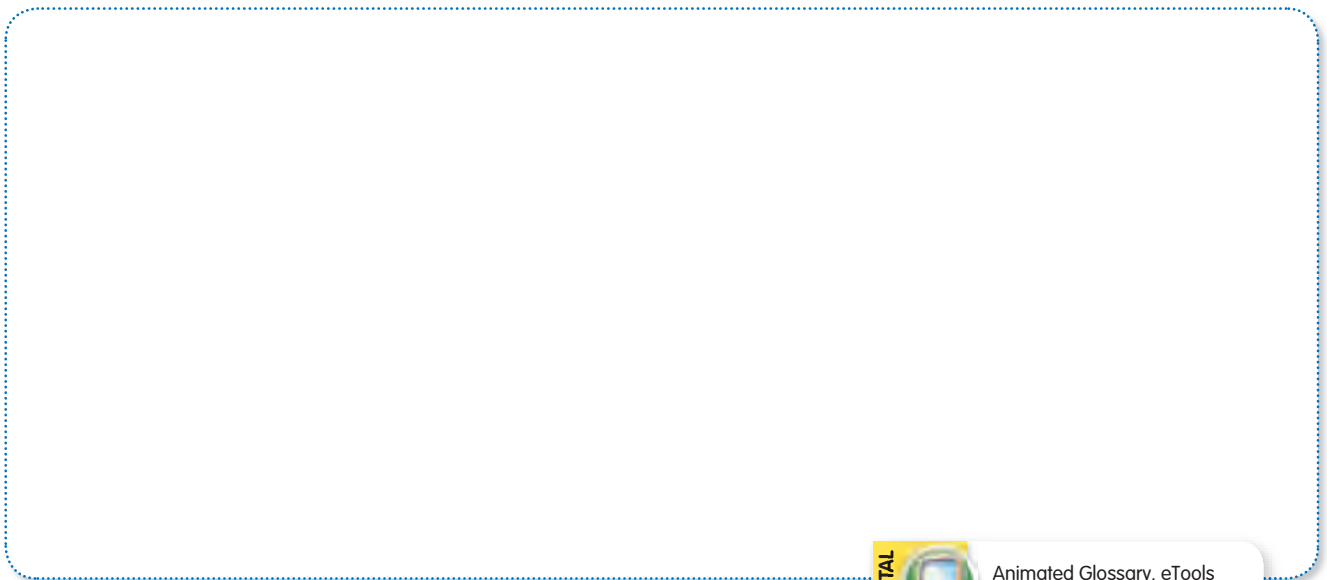
10. Nina sees a plane shape.  
It looks like a bike wheel.  
It looks like a penny.  
What shape does Nina see?



11. I am a plane shape.  
I look like a door.  
Which shape am I?



12.  **Journal** Draw a picture of a park. Label 2 shapes you have learned in the objects you see.

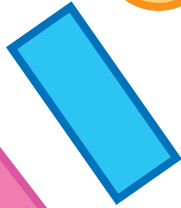
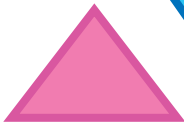


Name \_\_\_\_\_



# Properties of Plane Shapes

How can we  
sort these  
shapes?



1.

2.

3.

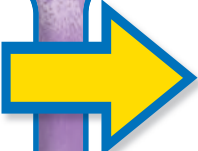
4.



**Home Connection** Your child identified and described plane shapes and sorted them by the number of corners and straight sides. **Home Activity** Cut out some shapes, such as squares and circles, for your child to sort into groups. Then talk about the sorting rule your child used.

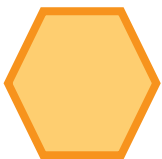
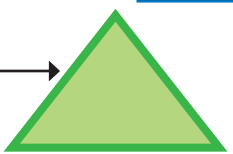
**MG 2.1** Identify, describe, and compare triangles, rectangles, squares, and circles, including the faces of three dimensional objects. Also **MG 2.0, MG 2.2.**

You can ask questions to help you **sort** shapes.

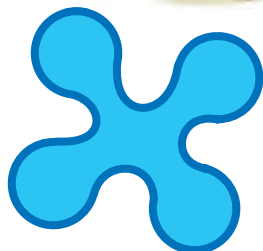
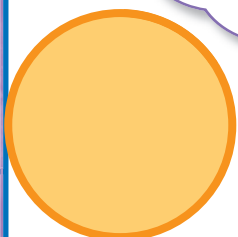


Do these shapes have straight **sides**?  
Yes!

side →



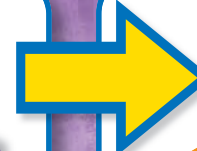
Do these shapes have straight sides?  
No!



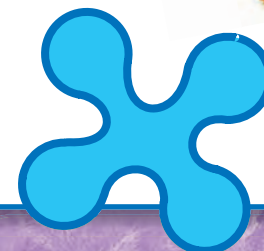
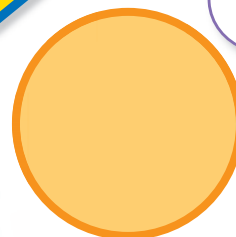
Do these shapes have **corners**?  
Yes!



corner





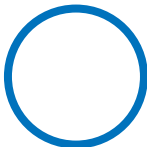



Do these shapes have corners?  
No!



### Guided Practice

Write the number to complete the table.

Plane Shape	How many straight sides?	How many corners?
1. 		
2. 		
3. 		
4. 		

**Do you understand?** How can you sort plane shapes?

### Independent Practice

5. Draw a shape with 3 corners.

6. Draw a shape with more than 3 straight sides.

7. Draw a shape with fewer than 5 straight sides.

### Geometry

8. Sort these shapes into 2 groups. Tell your sorting rule.



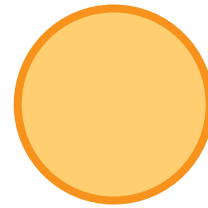
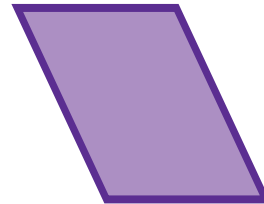
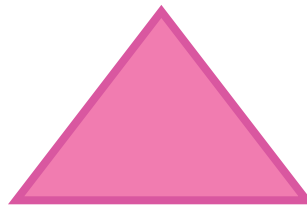
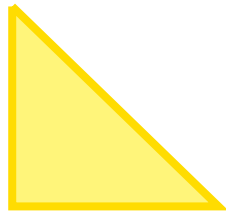
### Word Bank

sort  
side  
corner

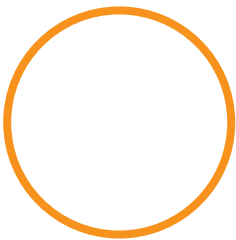
## Problem Solving

Solve the problems below.

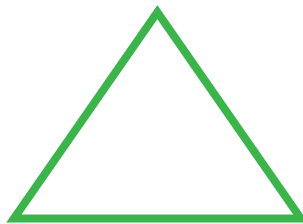
9. Circle 3 shapes that have the same number of corners and sides.



10. I have 3 sides and 3 corners. What am I?



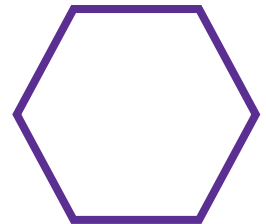
circle



triangle



square



hexagon



11.  **Journal** Write a riddle about a shape.

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Name \_\_\_\_\_

Problem Solving

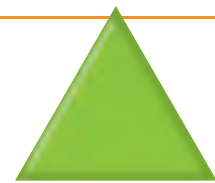
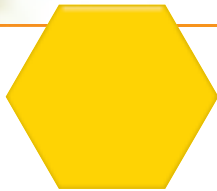


# Make an Organized List



## Ways to Make

Shapes  
I Used



Way 1

Way 2

Way 3

Way 4

Way 5

Way 6







**Home Connection** Your child found all of the ways to make larger shapes by combining smaller pattern blocks. Then he or she recorded the ways in an organized list.

**Home Activity** Ask your child to explain how he or she made the lists above.

**MR 1.2** Use tools, such as manipulatives or sketches, to model problems. Also **MR 2.2, MG 2.2** **, Grade 2.**

Read and Understand





How many ways can you make  using    ?







Plan





I can make a list of all the different ways.



Ways to Make 			
Shapes I Used			
Way 1	1	0	2

Solve

There are 4 ways to make  with   .

Ways to Make 			
Shapes I Used			
Way 1	1	0	2
Way 2	2	0	0
Way 3	0	1	1
Way 4	0	0	4

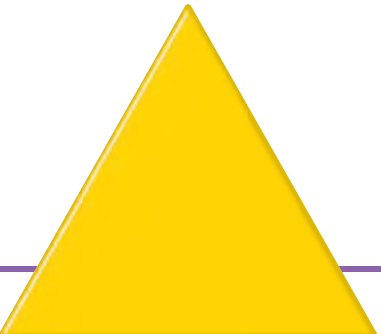
Look Back and Check

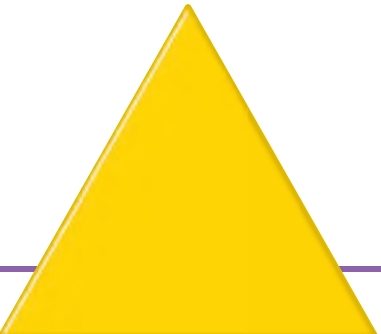



I can check by building the shape with the blocks again.



Guided Practice

1. How many ways can you make this shape using pattern blocks? Make a list.

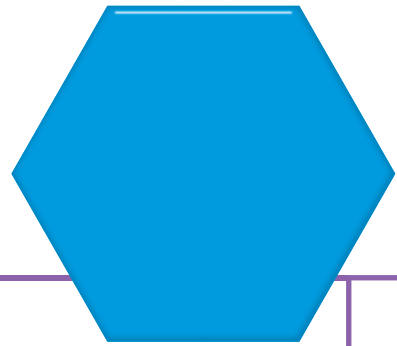


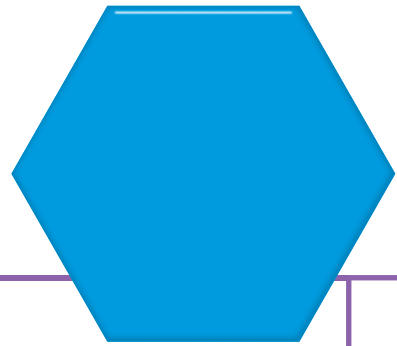




Ways to Make 			
Shapes I Used			
Way 1	0	0	4
Way 2			
Way 3			

**Do you understand?** How does making an organized list help you solve a problem?

Independent Practice





2. How many ways can you make this shape using pattern blocks? Make a list.






Ways to Make 				
Shapes I Used				
Way 1				
Way ____				
Way ____				
Way ____				
Way ____				
Way ____				
Way ____				

## Problem Solving

3. How many ways can you make this shape  using pattern blocks? Make a list.

Ways to Make 			
Shapes I Used			
Way 1			
Way 2			
Way 3			
Way 4			
Way 5			
Way 6			
Way 7			

4. What number completes the list?

Ways to Make 		
Shapes I Used		
Way 1	1	?
Way 2	0	2

0

☐

1


☐

2

☐

3

☐

5.  **Journal** How did you find the answers for Exercise 3? Explain.

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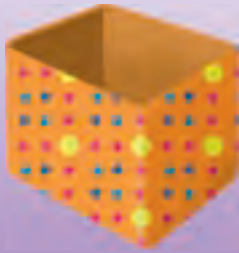
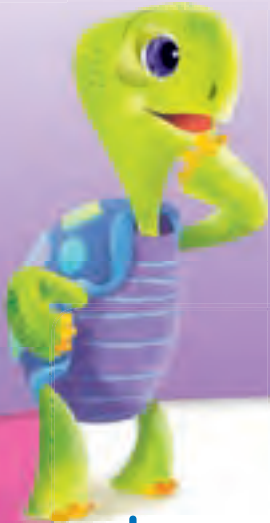


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Name \_\_\_\_\_



# Identifying Solid Figures



1.

2.

3.

4.

5.

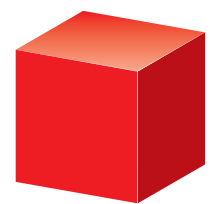


**Home Connection** Your child identified and described geometric solids and recognized them in the environment.

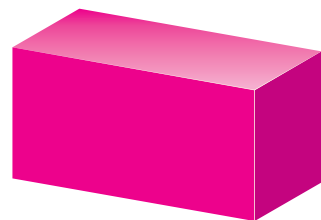
**Home Activity** Search for objects that have the same shape as these solid figures. Point them out to your child and ask for the name of the figure.

**MG 2.2** Classify familiar plane and solid objects by common attributes, such as color, position, shape, size, roundness, or number of corners, and explain which attributes are being used for classification. Also **MG 2.0.**

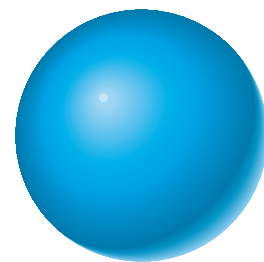
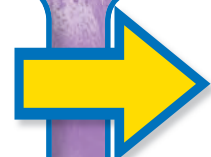
These are **solid figures**.



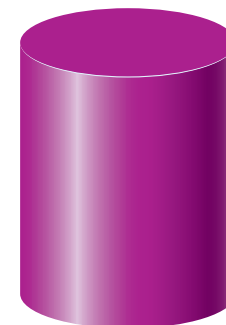
**cube**



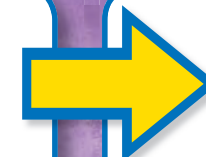
**rectangular prism**



**sphere**



**cylinder**



**cone**

### Guided Practice

Look at the solid figure.  
Then circle the objects that have the same shape.

1.



rectangular prism



2.



sphere



3.



cylinder



**Do you understand?** How are solid figures different from plane shapes?

### Independent Practice

Look at the solid figure.  
Then circle the objects that have the same shape.

4.



cube



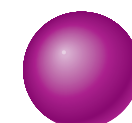
5.



cone



6.

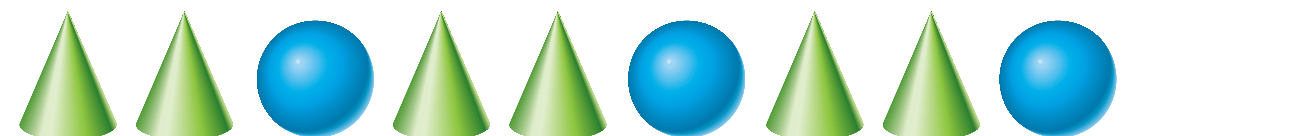


sphere



**Algebra** What comes next?  
Draw and name the shape that continues the pattern.

7.



### Word Bank

solid figure

cube

rectangular prism

sphere

cylinder

cone

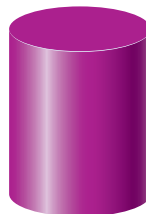
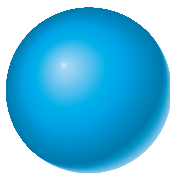
## Problem Solving


Solve the problems below.

8. Petra is looking for a solid. It looks like a box that is the same on all sides. What solid is it? Draw a picture to show your answer.

9. Juan said that his solid will roll, but it will not roll in a straight line. What solid does he have? Draw a picture to show your answer.

10. Amy is bouncing a ball. Which is the same shape as her ball?



11.  **Journal** Draw a tower you could make with some solid figures. Write the name of each solid.

Name \_\_\_\_\_



# Flat Surfaces and Corners



How can we describe solid figures?



Flat surfaces

Vertices (Corners)

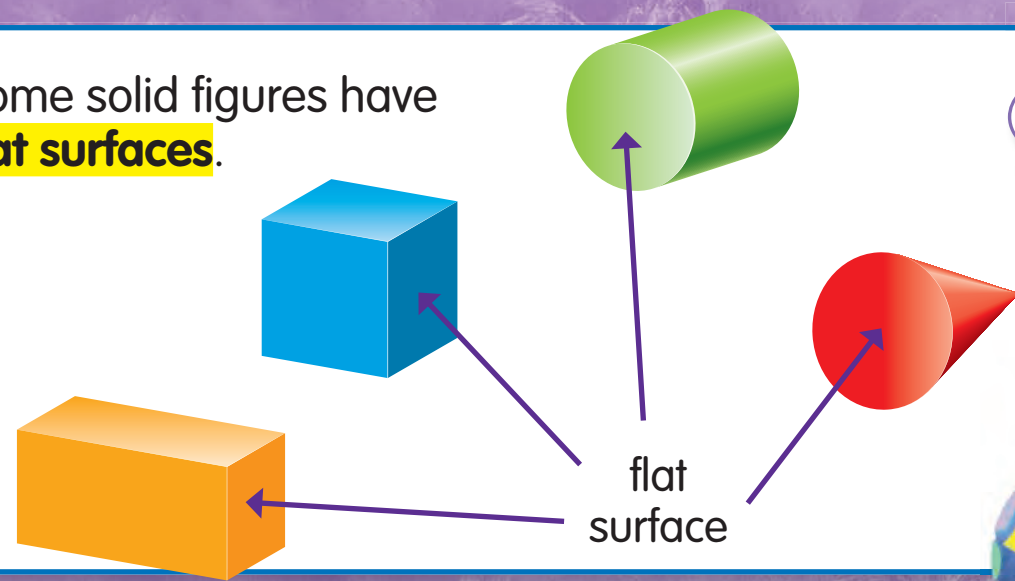


**Home Connection** Your child identified and counted corners and flat surfaces on solid figures.

**Home Activity** Find some solid objects and ask your child to count the corners and the flat surfaces.

**MG 2.2** Classify familiar plane and solid objects by common attributes, such as color, position, shape, size, roundness, or number of corners, and explain which attributes are being used for classification.  
Also **MG 2.0**.

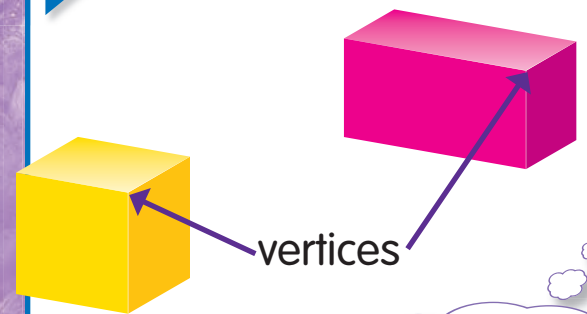
Some solid figures have **flat surfaces**.



A sphere doesn't have a flat surface.



Solid figures that don't roll have **vertices** (corners).



A cube has 8 vertices.



Some solid figures that roll do not have vertices.







A cone has 1 vertex.



**Guided Practice**

Use the solid figures to complete the table.





Solid figure	Number of flat surfaces	Number of vertices (corners)
1. 	6	8
2. 		
3. 		
4. 		

**Do you understand?** Can two different figures have the same number of flat surfaces and vertices? Explain.

**Independent Practice**

Use the objects to complete the table.

**Word Bank**  
flat surface  
vertex (vertices)

Object	Number of flat surfaces	Number of vertices (corners)
5. 		
6. 		
7. 		
8. 		

**Algebra** Write the name of the shape that continues the pattern.



## FOI D

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- 12.** I have 6 flat surfaces.  
I have 8 vertices.  
Which solid figure am I?

cylinder



- ---

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Name \_\_\_\_\_

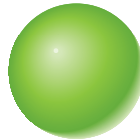
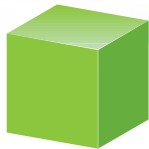


# Sorting Solid Figures

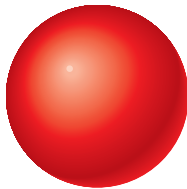


What are some ways that solid figures can be alike?

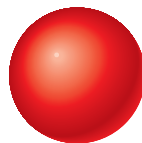
1.



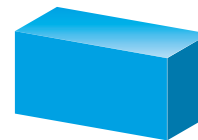
2.



3.



4.



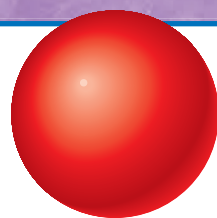
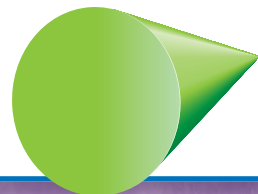
**Home Connection** Your child described how solid figures are alike and different and sorted them by a sorting rule, such as number of corners.

**Home Activity** Find two or three solid objects and ask your child to tell you how they are alike and different.

**MG 2.2** Classify familiar plane and solid objects by common attributes, such as color, position, shape, size, roundness, or number of corners, and explain which attributes are being used for classification.

Also **MG 2.0**.

Find the solid that rolls and has 2 flat surfaces.



A cone, a cylinder and a sphere can roll.



A cone and a cylinder roll and have flat surfaces.



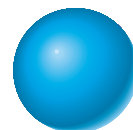
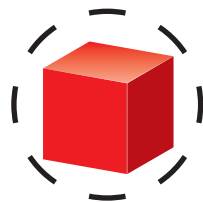
A cylinder rolls and has 2 flat surfaces.



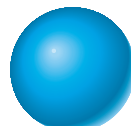
### Guided Practice

Read the sorting rule.  
Circle the solid that follows the rule.

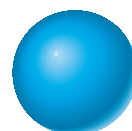
1. has flat surfaces, cannot roll



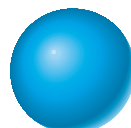
2. can roll, no flat surfaces



3. 1 vertex, 1 flat surface



4. no vertices, 2 flat surfaces

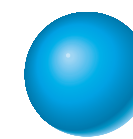


**Do you understand?** How are a cone and a cube alike and different?

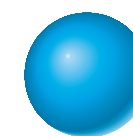
### Independent Practice

Read the sorting rule.  
Circle the solid that follows the rule.

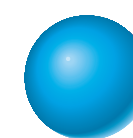
5. 2 flat surfaces



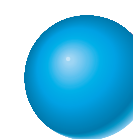
6. 8 vertices



7. 6 flat surfaces

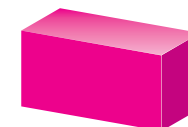


8. 1 flat surface



**Geometry** What rule tells how these solid figures are alike?

- 9.



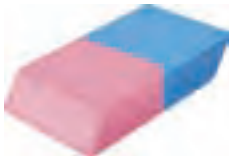
## Problem Solving


Solve each problem.

10. Joan collects things that have no vertices.  
She found a marble and a pencil box.  
Which will she put in her collection?
- \_\_\_\_\_

11. Fumi has a solid figure that has 2 flat surfaces.  
It has no vertices.  
What solid figure is it?
- \_\_\_\_\_

12. Which object can roll?



13.  **Journal** Tell how a cone and a cylinder are alike and different.  
Use pictures, numbers, or words.

\_\_\_\_\_

# Making New Shapes from Shapes

How can we use pattern blocks to make new shapes?



1.



2.

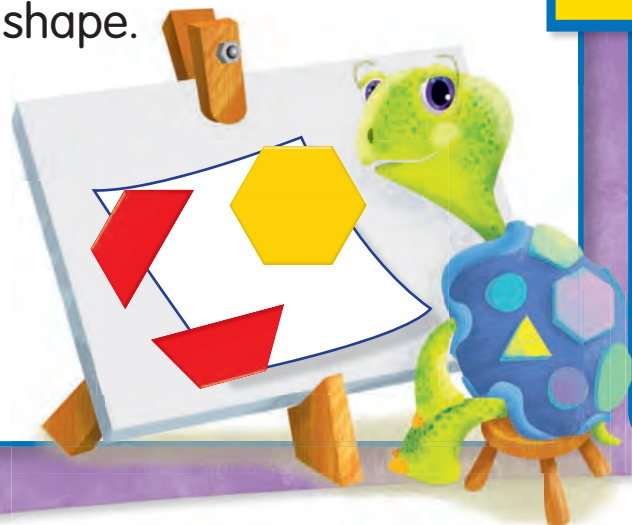


**Home Connection** Your child used pattern blocks to make new shapes.

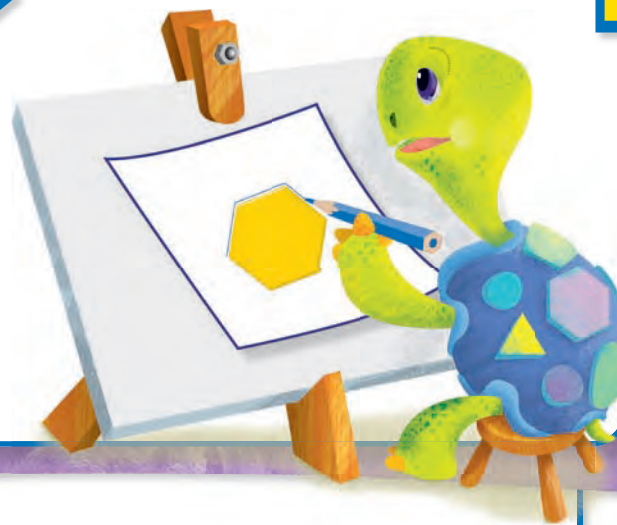
**Home Activity** Find objects that have designs made of different shapes. Have your child describe how the shapes make up the design.

**MG 2.2** **, Grade 2** Put shapes together and take them apart to form other shapes (e.g., two congruent right triangles can be arranged to form a rectangle). Also **MR 1.2**.

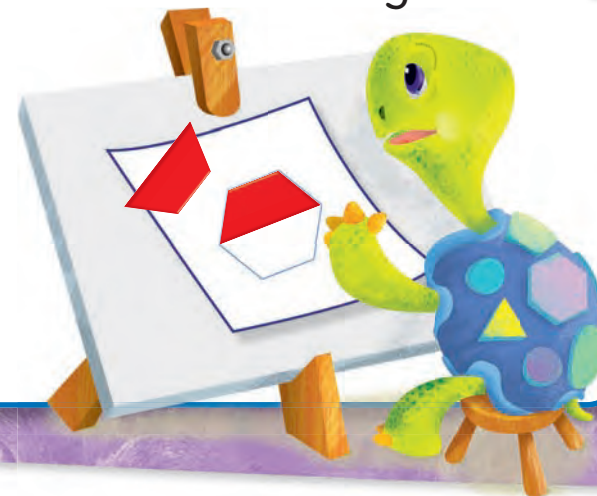
Use smaller shapes to make a large shape.



Trace the large shape.



Then use smaller shapes to cover the tracing.



Is there a different way to make this shape?



### Guided Practice

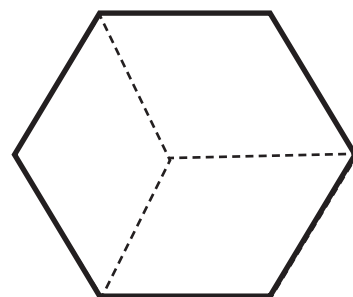
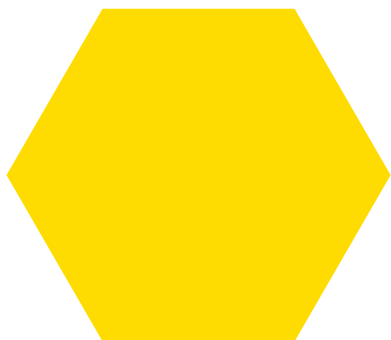
Use pattern blocks to make each shape.  
Draw the blocks you used.

**Make This Shape**

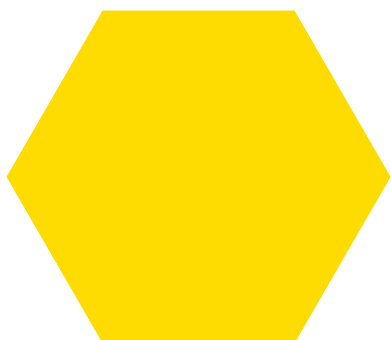
**Use This Shape**

**Trace the Smaller Shapes**

1.



2.



**Do you understand?** How do you use shapes to make new shapes?

### Independent Practice

Use pattern blocks to make each shape.  
Draw the blocks you used.

**Make This Shape**

**Use This Shape**

**Trace the Smaller Shapes**

3.



4.



**Algebra** Use pattern blocks. Draw the next 3 shapes.

5.



## Problem Solving

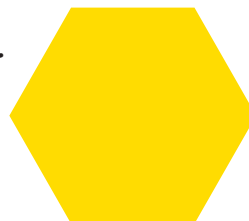
Use pattern blocks. Draw the blocks you used.

6. Which 2 shapes can cover



?

7. 2 of which shape can be used to cover



?

8. 3 of which shape will cover



?



9.  **Journal** Use 3 or more pattern blocks to make a new shape. Draw the shape.



Name \_\_\_\_\_



# Location of Shapes

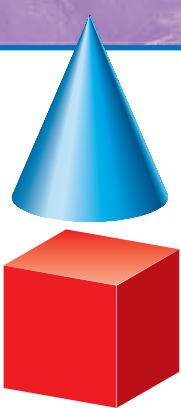


**Home Connection** Your child described the position of objects and shapes using words such as above, below, behind, and so on.

**Home Activity** Position objects in various ways and ask your child to describe how they relate to each other.

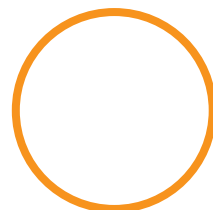
**MG 2.4** Arrange and describe objects in space by proximity, position, and direction (e.g., near, far, below, above, up, down, behind, in front of, next to, left or right of). Also **MG 2.0, MG 2.3.**

Some words tell about position or location.



The cone is **above** the cube.  
The cube is **below** the cone.

The triangle is to the **right** of the circle.  
The circle is to the **left** of the triangle.



The cone is **in front of** the cube.  
The cube is **behind** the cone.



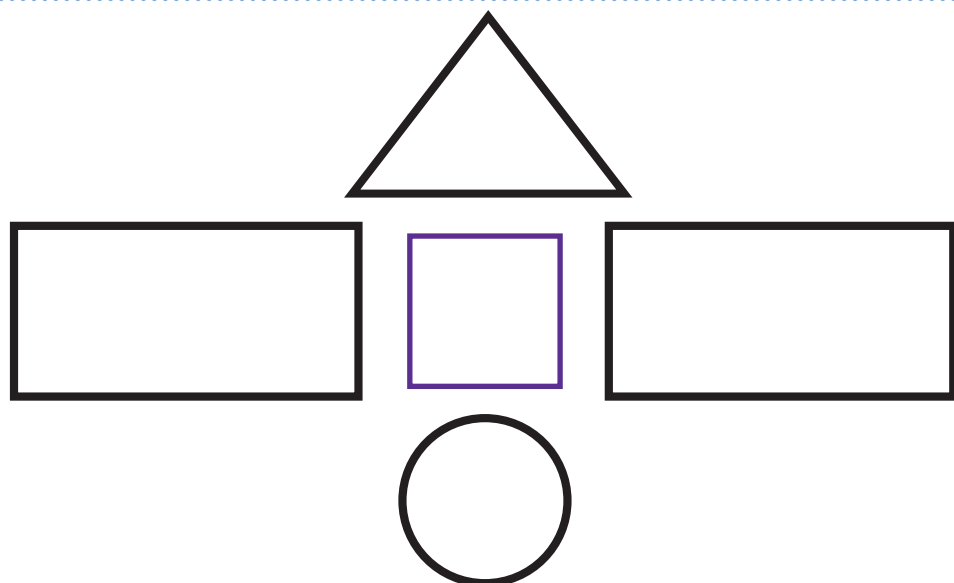
The red circle is **near** the blue circle.  
The square is **far** from the circles.



### Guided Practice

Color each shape.

1. The shape above the square is red.
2. The shape below the square is blue.
3. The shape to the left of the square is green.
4. The shape to the right of the square is orange.

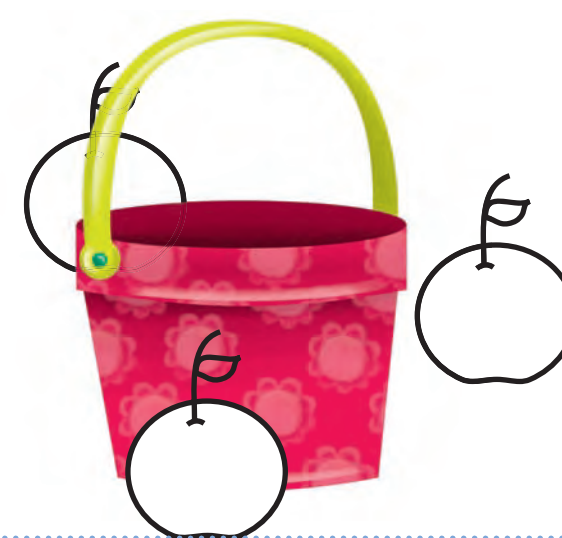


**Do you understand?** How can you describe where something is located?

### Independent Practice

Color each apple.

5. The apple behind the basket is green.
6. The apple in front of the basket is red.
7. The apple next to the basket is orange.
8. The apple far from the basket is purple.



### Word Bank

right	left
above	below
in front of	behind
near	far

**Algebra** Draw the arrow that comes next.

9. ↑ ↑ ↑ ↓ ↑ ↑ ↑ ↓ ↑ ↑ ↑ ↓ ↑ ↑

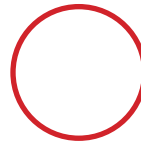
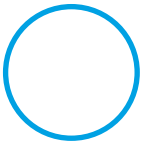
## Problem Solving


Solve the problems below.

10. Draw a circle to the right of a rectangle. Draw 2 triangles over the rectangle. Draw a square under the rectangle.

11. A cone is in front of a cylinder. A cube is in front of the cone. Explain why the cylinder is behind the cube.

12. Which shape is next to the square?



13.  **Journal** Draw 3 shapes. Use words to describe their locations.

A large rectangular area with a dotted blue border for drawing and writing.

Name \_\_\_\_\_



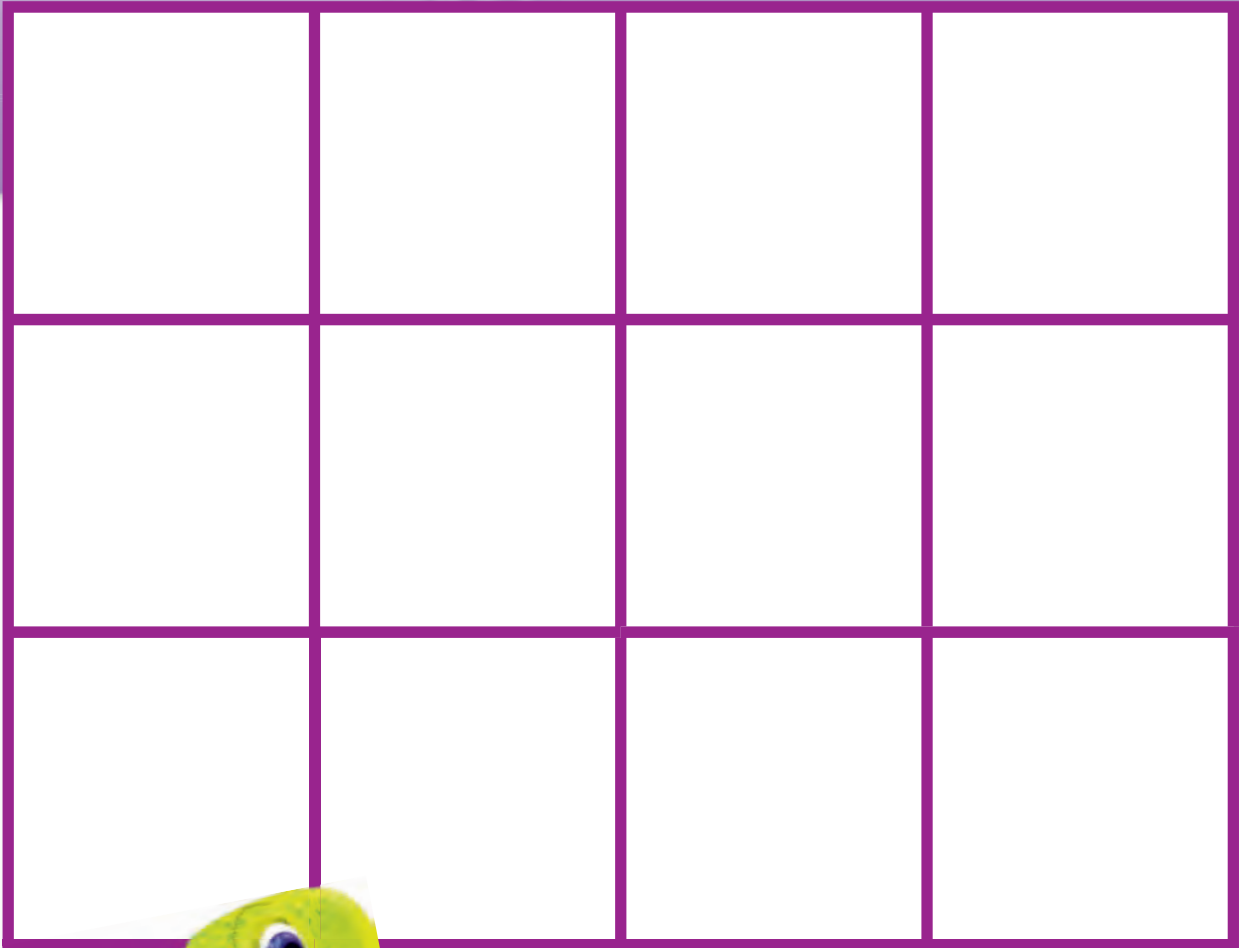
# Location on a Grid

up

left

right

down

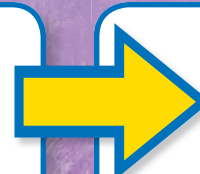
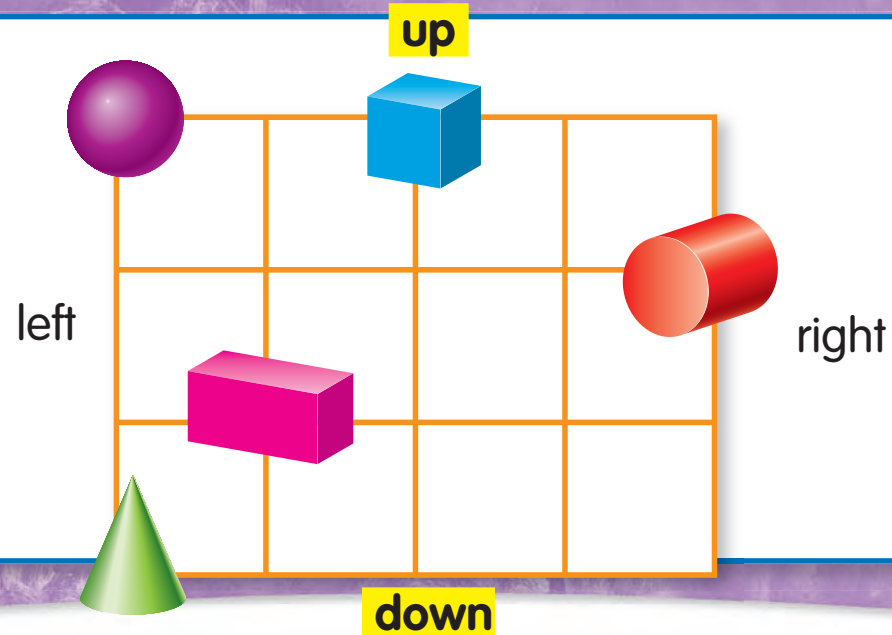




**Home Connection** Your child described how to move a geometric solid from one location to another on a grid. Your child also identified a location on a grid when given directions to it.

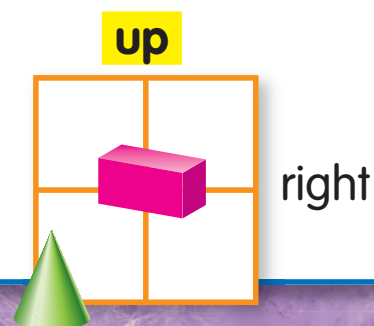
**Home Activity** Ask your child to explain how you give directions for moving from one place to another on a grid.

**MG 2.3** Give and follow directions about location. Also **MG 2.0, MG 2.4.**

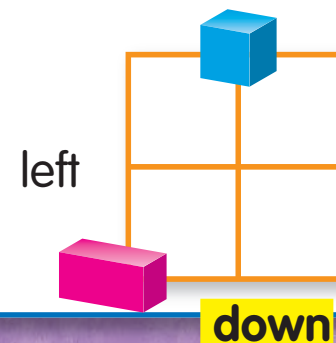
Look at the **grid** below.



To go from the  to the , go 1 space to the right and 1 space **up**.



To go from the  to the , go 1 space to the left and 2 spaces **down**.



Can you find another way?

### Guided Practice

Use the grid above to complete each sentence.

1. To go from the  to the , go 1 space right and 2 spaces down.

2. To go from the  to the , go 2 spaces right and 1 space up.

3. To go from the  to the , go 2 spaces left and 2 spaces down.

**Do you understand?** Why is there more than one way to go from

the  to the ?

### Independent Practice

Use the grid above to complete each sentence.

4. To go from the  to the , go 2 spaces left and 2 spaces down.

5. To go from the  to the , go 2 spaces left and 2 spaces up.

6. To go from the  to the , go 2 spaces right and 2 space down.

### Spatial Thinking

7. Tell 2 ways to go from the  to the .

### Word Bank

grid up down

## Problem Solving

Solve the problems below.

8. Start at the .  
Go 2 spaces to the right and 1 space up.

Draw a .

9. Start at the .  
Go 3 spaces to the left and 1 space down.

Draw a .

10. To go from  to ,  
you can go 1 space to the right and  
1 space in which direction?

left



right



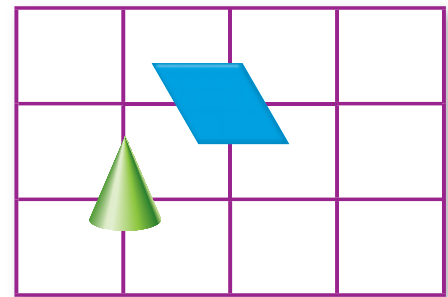
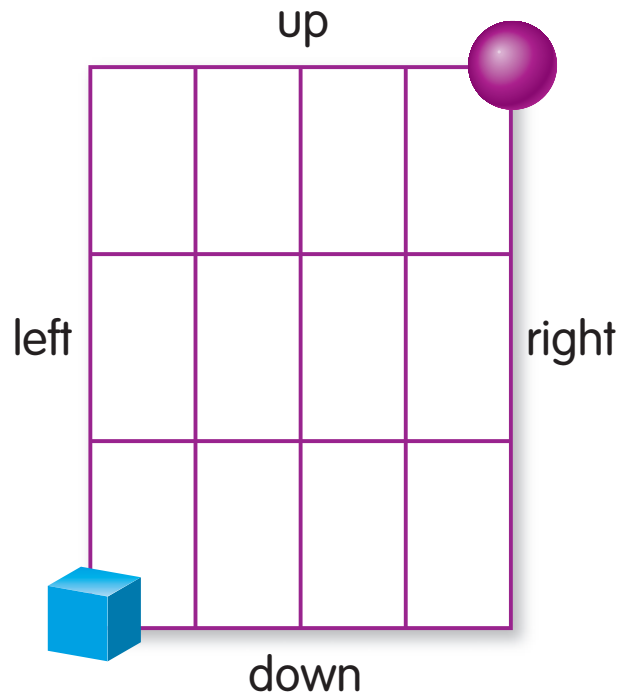
down



up



11.  **Journal** Draw a cylinder anywhere on the grid for problem 10.  
Tell how to go from the cylinder to the cone.






1



2

Ways to Make



Shapes I Used			
Way 1	1	0	0
Way 2	0	1	1
Way 3	0	0	

0



1



2



3



3



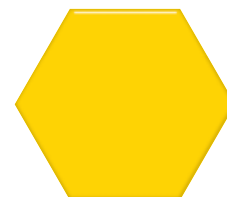
4



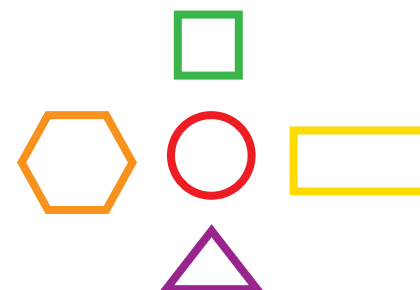
**Oral Directions** Say: Mark the correct answer. **1.** Which shape is a square? **2.** Which number completes the list? **3.** Which object has the same shape as a cylinder? **4.** Which solid has 2 flat surfaces and can roll?

Name \_\_\_\_\_

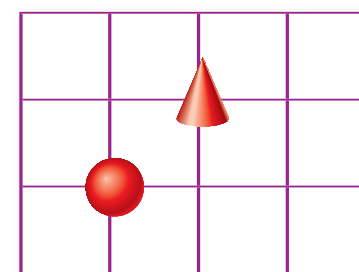
5



6



7



up



down



left



right

**Oral Directions** Say: Mark the correct answer. **5.** Two of which pattern block can make this shape? **6.** Which shape is below the circle? **7.** To go from the cone to the sphere, you can first go 1 space down. Then go 1 space which way?

## Set A

Flat shapes are called plane shapes.



rectangle



triangle



circle



square

1 Draw a rectangle.

2 Draw a triangle.

## Set B

You can sort plane shapes by sides and corners.



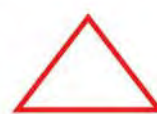
These have sides and corners.



These have no sides and no corners.

Circle the correct shapes.

3 Which shape has 4 straight sides and 4 corners?



4 Which shape has 0 corners?



## Set C

Solid figures can be sorted by the number of vertices (corners) and flat surfaces.



These have flat surfaces and corners.



These have no corners.

Circle the correct shapes.

5 Which solid figure has 0 flat surfaces and 0 vertices?

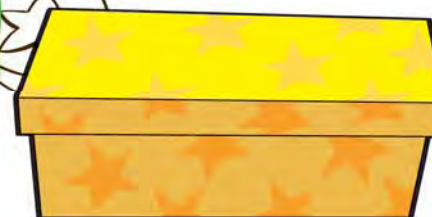


6 Which solid figure has 2 flat surfaces?



## Set D

You can use position words to tell where objects are placed. Finish coloring each ball.



The ball behind the box is green. The ball to the right of the box is blue.

Color the birds.

7 The bird behind the nest is blue.



8 The bird to the left of the nest is red.

