

Comparing and Contrasting Three-Dimensional Figures

Slide, Stack, and Roll

You need

- Three-dimensional blocks

What are some ways you can describe a figure?






STEP 1 Exploring a Block

Describe your block.

STEP 2 Sliding, Stacking, and Rolling

Draw each block and put a ✓ if it can slide, stack, or roll.

Figure	Slide	Stack	Roll
			
			
			

STEP 3 Comparing Blocks

Compare blocks. Describe the blocks that could roll. How are they different from the other blocks?





School-Home Connection

Dear Family,

Today we started Chapter 14 of *Think Math!* In this chapter, I will explore three-dimensional figures and learn how they are alike and different. There are NOTES on the Lesson Activity Book pages to explain what I am learning every day.

Here are some activities for us to do together at home. These activities will help me as I learn about three-dimensional figures.

Love,

Family Fun

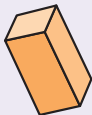
What's My Figure?

Work with your child to play this game.
Your child will play this game in Lesson 1.

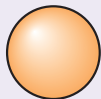
- Think of an object in the house that is shaped like one of the following figures.



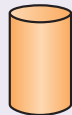
cube



rectangular
prism



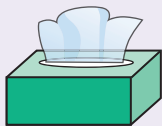
sphere



prism

For example, a tissue box shaped like a rectangular prism.

- Have your child ask yes/no questions to try and guess your secret object. Some possible questions might be:
Is there a triangle in the figure?
Does it roll?
- Have your child continue asking questions until he or she has correctly identified the object.
- Switch roles and play again.



Making Faces

Together, trace a figure to see the faces.

- You will need a three-dimensional object and a pencil and paper.
- Help your child trace around one of the sides of the object.



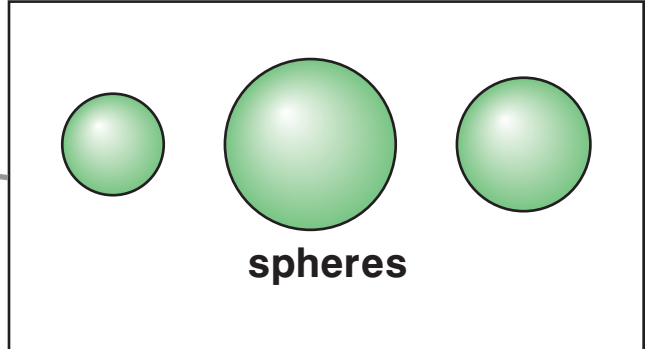
- Ask your child to name the figure you traced.
- Try other objects. Talk about what sides you can trace and what shapes you will make.

Two- and Three-Dimensional Figures

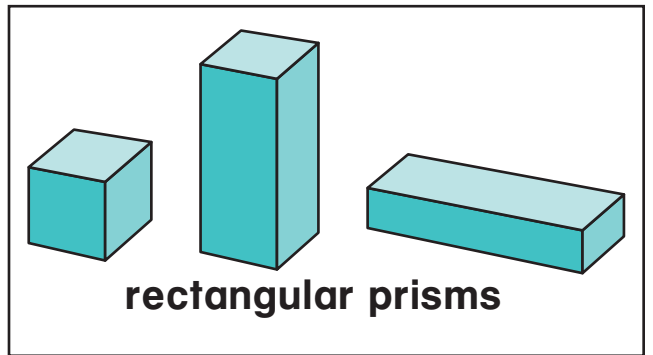
NCTM Standards 2, 3, 6, 8, 9, 10

Match each object to a set of three-dimensional figures.

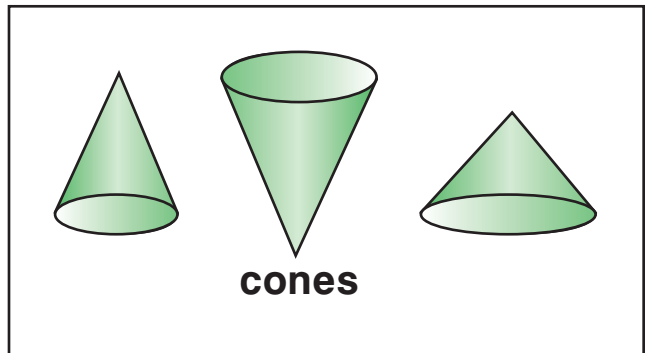
1.



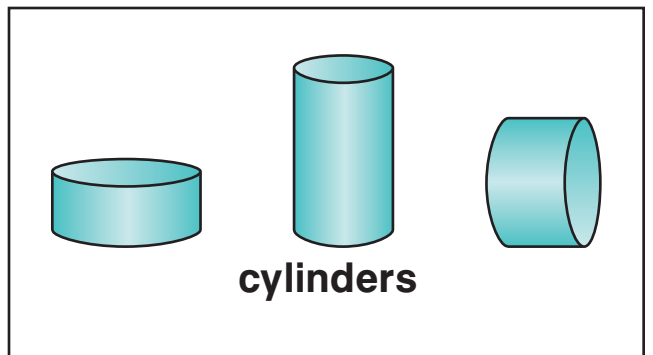
2.



3.



4.



5.



6.



7.



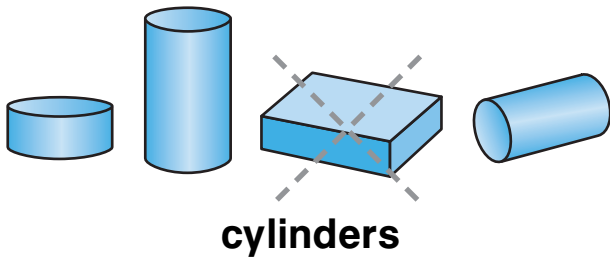
8.



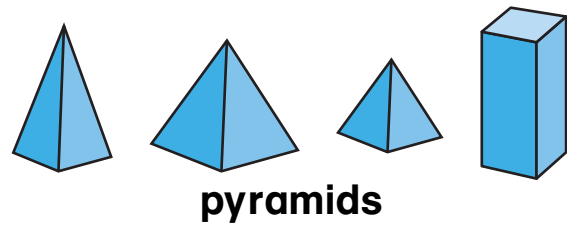
NOTE: Your child is learning about three-dimensional figures. Have your child look for objects around your home to match the three-dimensional figures on this page.

Which figure does not belong?

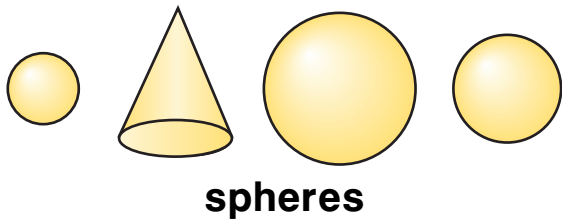
9.



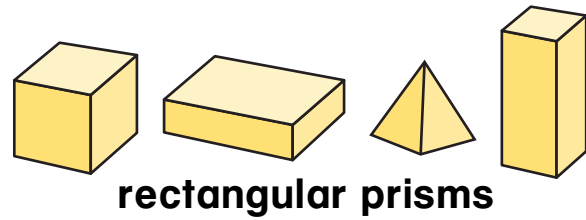
10.



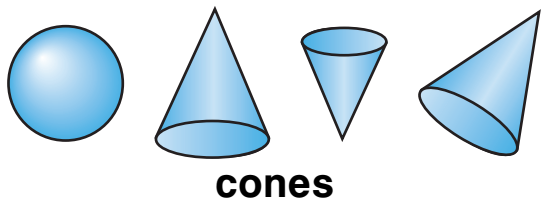
11.



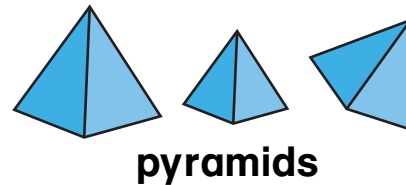
12.



13.



14. Draw an object that does not belong in this set.

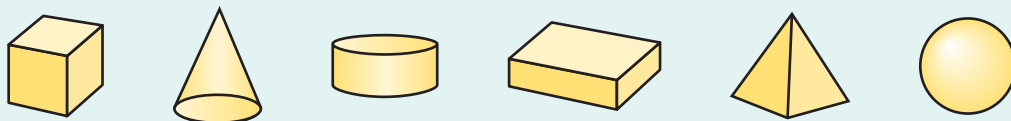


Challenge

15. A three-dimensional figure looks like this from the side.



It looks like this from the bottom.
Circle the figure.

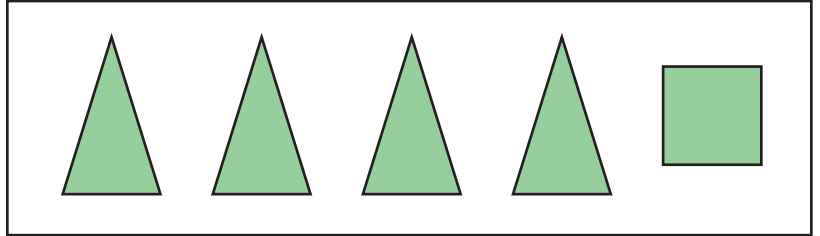
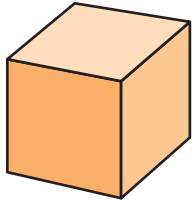


Faces

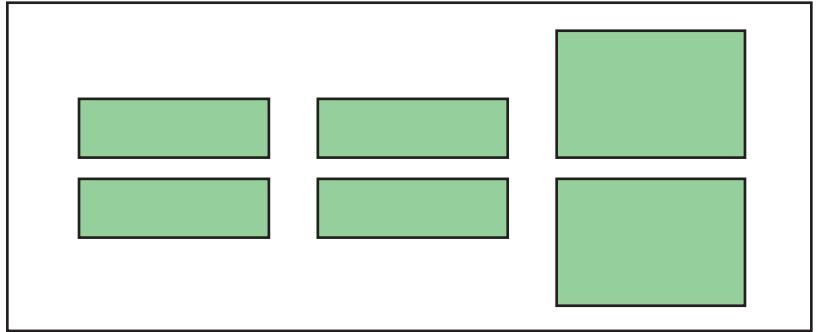
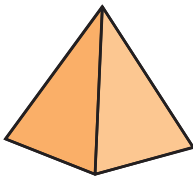
NCTM Standards 2, 3, 6, 7, 8, 9, 10

Match each three-dimensional figure to its faces.

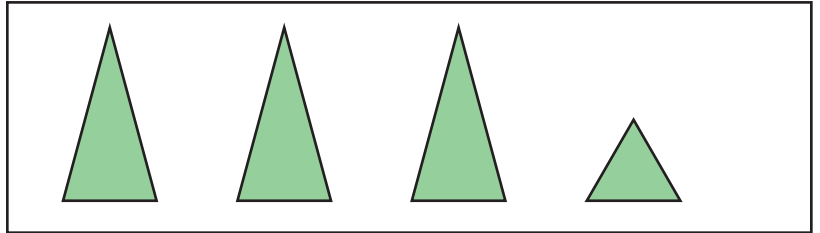
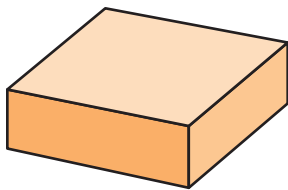
1.



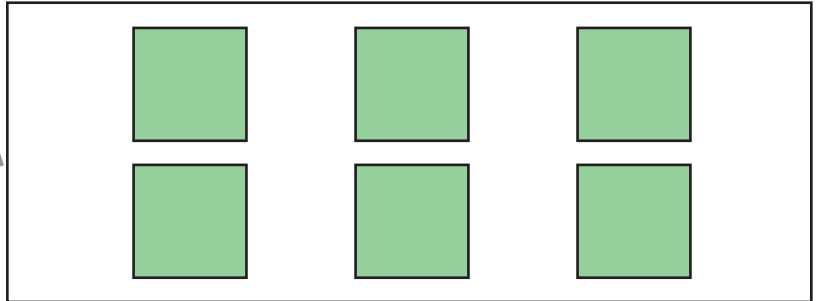
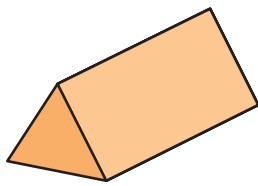
2.



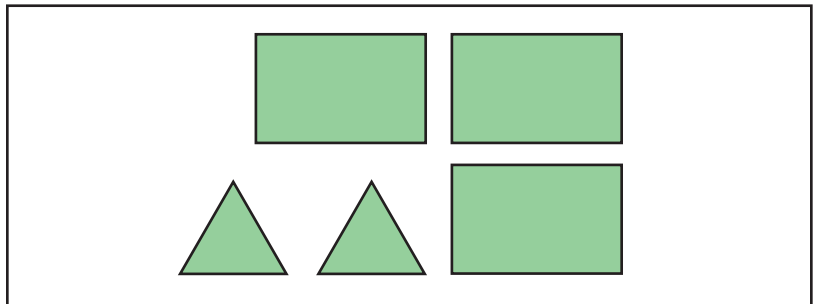
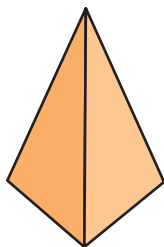
3.



4.



5.

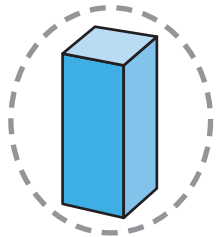


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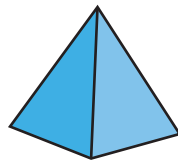


NOTE: Your child is learning about the faces of three-dimensional figures.

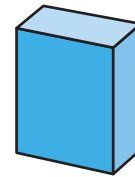
6. Circle each figure with 6 faces. Put an X on each figure with 5 faces. Put a on each figure with 0 faces.



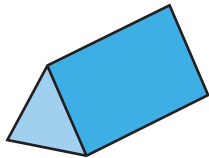
rectangular prism



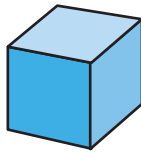
square pyramid



rectangular prism



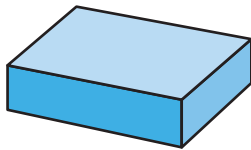
triangular prism



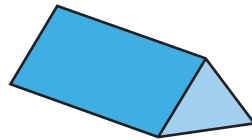
cube



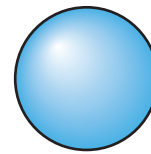
triangular pyramid



rectangular prism



triangular prism



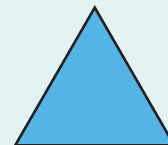
sphere



7. Look at a triangular prism and a triangular pyramid. What is the same about them? What is different?

Challenge

8. What three-dimensional figure has faces in both of these shapes?



Edges

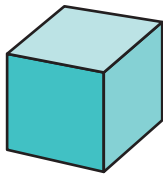
NCTM Standards 2, 3, 6, 7, 8, 9, 10

I built these models with toothpicks and marshmallows



Match each three-dimensional figure to its model. How many toothpicks do you need to make each model?

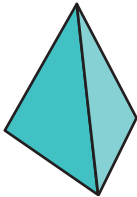
1.



cube

_____ toothpicks

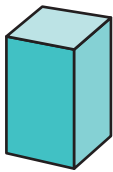
2.



triangular pyramid

_____ toothpicks

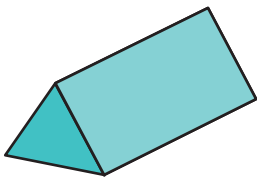
3.



rectangular prism

_____ toothpicks

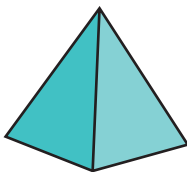
4.



triangular prism

_____ toothpicks

5.



square pyramid





_____ toothpicks

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NOTE: Your child is learning about the edges of three-dimensional figures.

How many edges does each object have?

	Object	Number of Edges
6.		
7.		
8.		
9.		

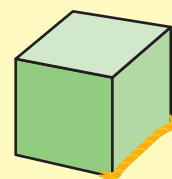
10. Draw your own object.

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 11. Explain your answer to Problem 9.

Problem Solving

12. The edge of a cube is 2 inches long. How much yarn would you need to cover every edge of the cube? Use words, numbers, or pictures to explain.



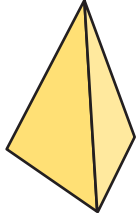
_____ of yarn

Vertices

NCTM Standards 2, 3, 6, 7, 8, 9, 10

Match each three-dimensional figure to its description.

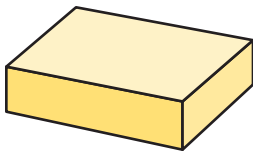
1.



triangular pyramid

6 faces, 12 edges, 8 vertices

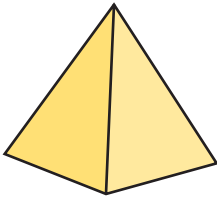
2.



rectangular prism

5 faces, 9 edges, 6 vertices

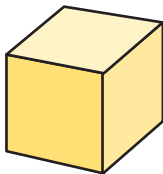
3.



square pyramid

4 faces, 6 edges, 4 vertices

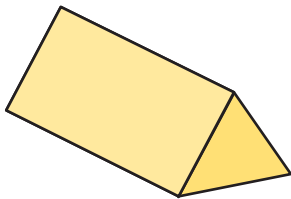
4.



cube

5 faces, 8 edges, 5 vertices

5.







triangular prism



NOTE: Your child is learning about the vertices of three-dimensional figures.

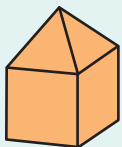
How many faces, edges, and vertices does each object have?

	Object	Number of Faces	Number of Edges	Number of Vertices
6.				
7.				
8.				
9.				
10.	Find your own object.			

Challenge

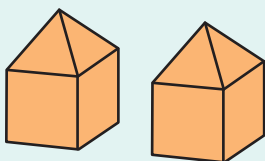
How many faces, edges, and vertices are in the blocks that make up each building?

11.



_____ faces _____ edges _____ vertices

12.

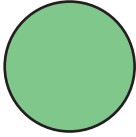
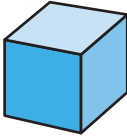
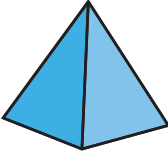
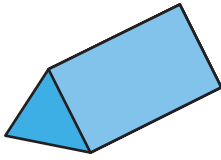
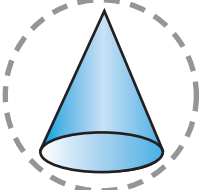
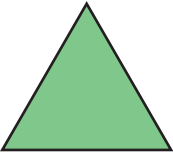
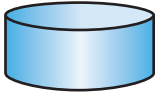
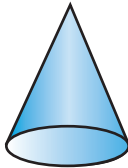
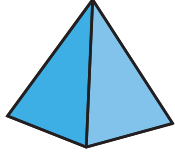
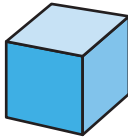

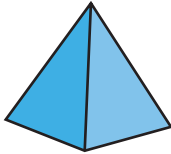
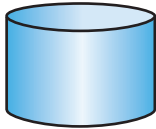
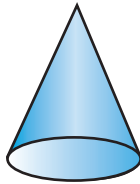
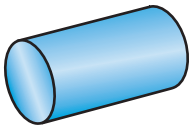
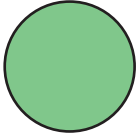
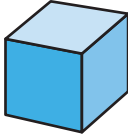
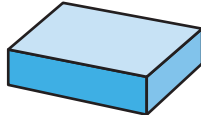
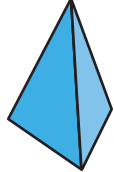


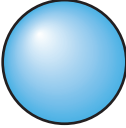
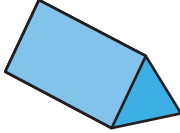
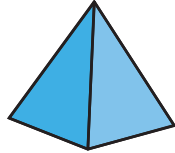
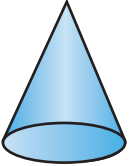
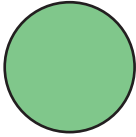

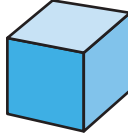
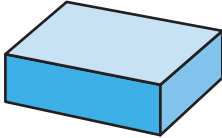
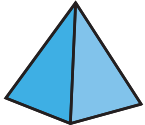


_____ faces _____ edges _____ vertices

Cylinders and Cones

NCTM Standards 2, 3, 6, 7, 8, 9, 10

Which figure in each row could have made the footprint?

	Footprint	Figures			
1.					
2.					
3.					
4.					
5.					
6.					

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NOTE: Your child is learning about cylinders and cones. Together find items in the house that look like a cylinder or a cone.

Match each figure to its attribute.

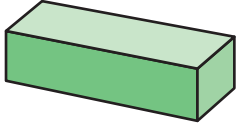
7.



triangular pyramid

a. 1 vertex

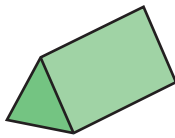
8.



rectangular prism

b. 6 faces

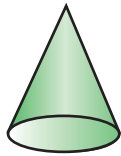
9.



triangular prism

c. 6 edges

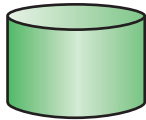
10.



cone

d. 5 faces

11.



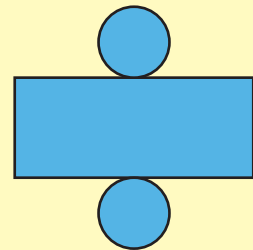
cylinder

e. 2 faces



Problem Solving

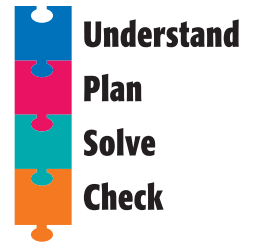
13. What three-dimensional figure can you make from this picture? Tell how you know.



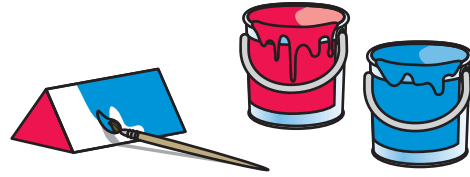
Problem Solving Strategy

Make a Table

NCTM Standards 1, 2, 3, 6, 7, 8, 9, 10



1. Bob has 5 triangular prisms. He paints the rectangle faces blue and the triangle faces red. How many blue and red faces does he paint?



Number of Prisms	1	2	3	4	5
Rectangle Faces	3				
Triangle Faces	2				10

_____ blue faces

_____ red faces

2. Jana saves \$2 this week. Each week she saves double the amount from the week before. How much money will she save after 4 weeks?

Week	Amount Saved
1	\$2
2	\$4

3. An octopus has 8 arms. How many arms are on 7 octopuses?

_____ arms

Number of Octopuses	1						
Number of Arms	8						



NOTE: Your child is exploring different ways to solve problems. Sometimes making a table is an efficient way to solve a problem.

Problem Solving Test Prep

1. Hope reads every night for 20 minutes. Tonight she finishes at 8:10. What time did she start reading?

(A) 7:40

(B) 7:50

(C) 8:20

(D) 8:30

2. Piedad starts a number pattern with 3, 7, 11, and 15. If she continues this pattern, what will be the eighth number?

(A) 17

(B) 19

(C) 27

(D) 31



Show What You Know

3. Jim multiplies a number by itself. The number he gets is between 20 and 30. What is the number?

Explain how you found the answer.

4. Craig has 12 stickers, Jean has 17 stickers, and Cliff has 13 stickers. They want to share the stickers equally. How many stickers will each person get?

_____ stickers

Explain how you found the answer.

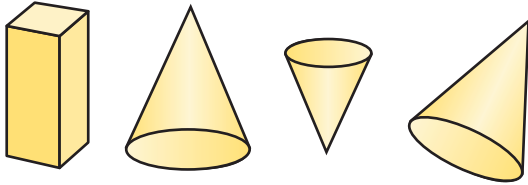
Chapter 14

Review/Assessment

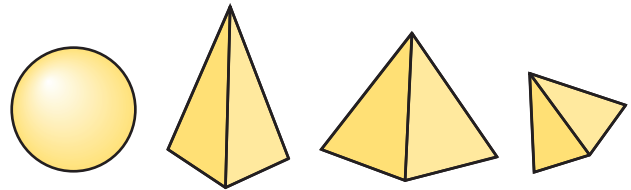
NCTM Standards 1, 2, 3, 4, 6, 7, 8, 9, 10

Put an X on the figure that does not belong. *Lesson 1*

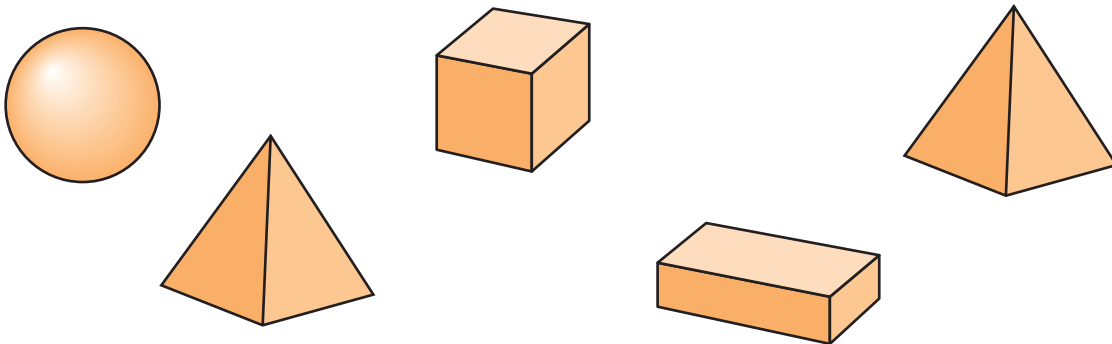
1.



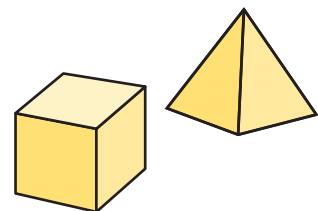
2.



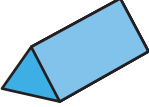
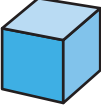

3. Circle each figure with 5 faces.
Put an X on each figure with 6 faces. *Lesson 2*



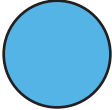
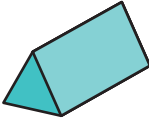







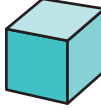
4. Look at a cube and a square pyramid.
What is the same about them?
What is different? *Lessons 2, 3*



How many faces, edges, and vertices does each figure have? Lessons 2–4

	Figure	Number of Faces	Number of Edges	Number of Vertices
5.				
6.				
7.				

Which figure in each row could have made the footprint? Lesson 5

	Footprint	Figures			
8.					
9.					

Problem Solving

10. Eric wants to build a square pyramid and a rectangular pyramid from cut-out shapes. How many square faces and triangle faces does he need? Lesson 6

Figure	Square Faces	Triangle Faces
Square Pyramid		
Triangular Pyramid		
Total		