

Home Connection 12 ★ Activity



NOTE TO FAMILIES

We have just started a new unit on geometry. Over the next 5 weeks, we will use geoblocks, pattern blocks, geoboards, and paper shapes to investigate many different 2- and 3-dimensional shapes. Besides learning to recognize and name these shapes, we'll explore how they're alike and different, what happens when we cut them up, put them together, and move them around by sliding, turning, and flipping them. We'll learn how to measure the area of some of them, and how to use others to create symmetrical designs. We'll also consider the shapes that are all around us, both human-made and those occurring in nature. This assignment reinforces what we are learning about geometry.

3-D Shape Hunt

Have you ever thought about why things are the shape they are? Ever wondered why a cup is round and the rooms in most houses are square or rectangular instead of round? Why dice and ice are cube-shaped and why we eat ice cream out of cones instead of pyramids? Shapes are fun to find and fun to think about! This week, you're going to go on a 3-dimensional shape hunt. All you have to do is search around your house for things that are shaped like cubes, spheres, cylinders, and rectangular prisms (boxes), and list them below. Happy hunting!

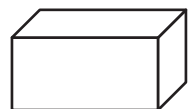
Here are some of things we found that are cylindrical:



Here are some of things we found that are spherical:



Here are some of things we found that are shaped like rectangular prisms:



Here are some of things we found that are shaped like cubes:



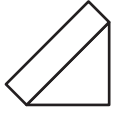
NAME _____

RETURN BY _____

Home Connection 12 ★ Worksheet



NOTE TO FAMILIES

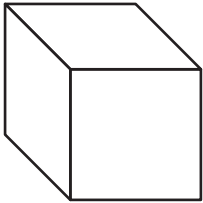


This exercise asks your child to count and sketch the faces of 2 different 3-dimensional shapes. "Face" is the term mathematicians use for a flat surface on a 3-dimensional shape. The triangular prism pictured to the left has 5 faces: 2 triangles and 3 rectangles. Your child will need a cube and a rectangular prism to do this exercise. One of a pair of dice and a cereal box would be great.

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Thinking About 3-D Shapes

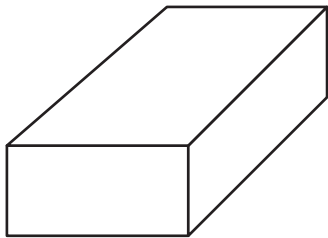
Take a good look at some of the shapes you found to answer the following questions.



How many faces does your cube have? _____

Are they all the same shape? _____

Make a little sketch of each of the cube's faces right here:



How many faces does your rectangular prism have? _____

What shape(s) are they? _____

Please sketch each of the rectangular prism's faces here.

Home Connection 13 ★ Activity



NOTE TO FAMILIES

Last Shape in Wins is an easy and fun strategy game that gives children a chance to see the results of combining some familiar shapes. We play it at school with pattern blocks, but you'll be coloring in the shapes instead. Have fun!

Last Shape In Wins

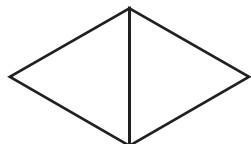
To play this game, you'll need crayons, markers, or colored pencils in the following colors: yellow, green, blue, and red.

Game Rules

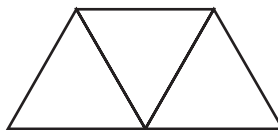
- 1** With your partner, decide who will go first and who will go second.
- 2** Take turns coloring in shapes on the gameboard. You could just go back and forth coloring in little green triangles, but it would probably be kind of boring. Or, you can combine triangles to form one of the other shapes shown below:



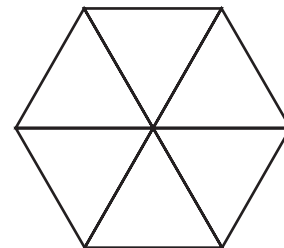
a triangle
(color it green)



a rhombus
(color it blue)



a trapezoid
(color it red)

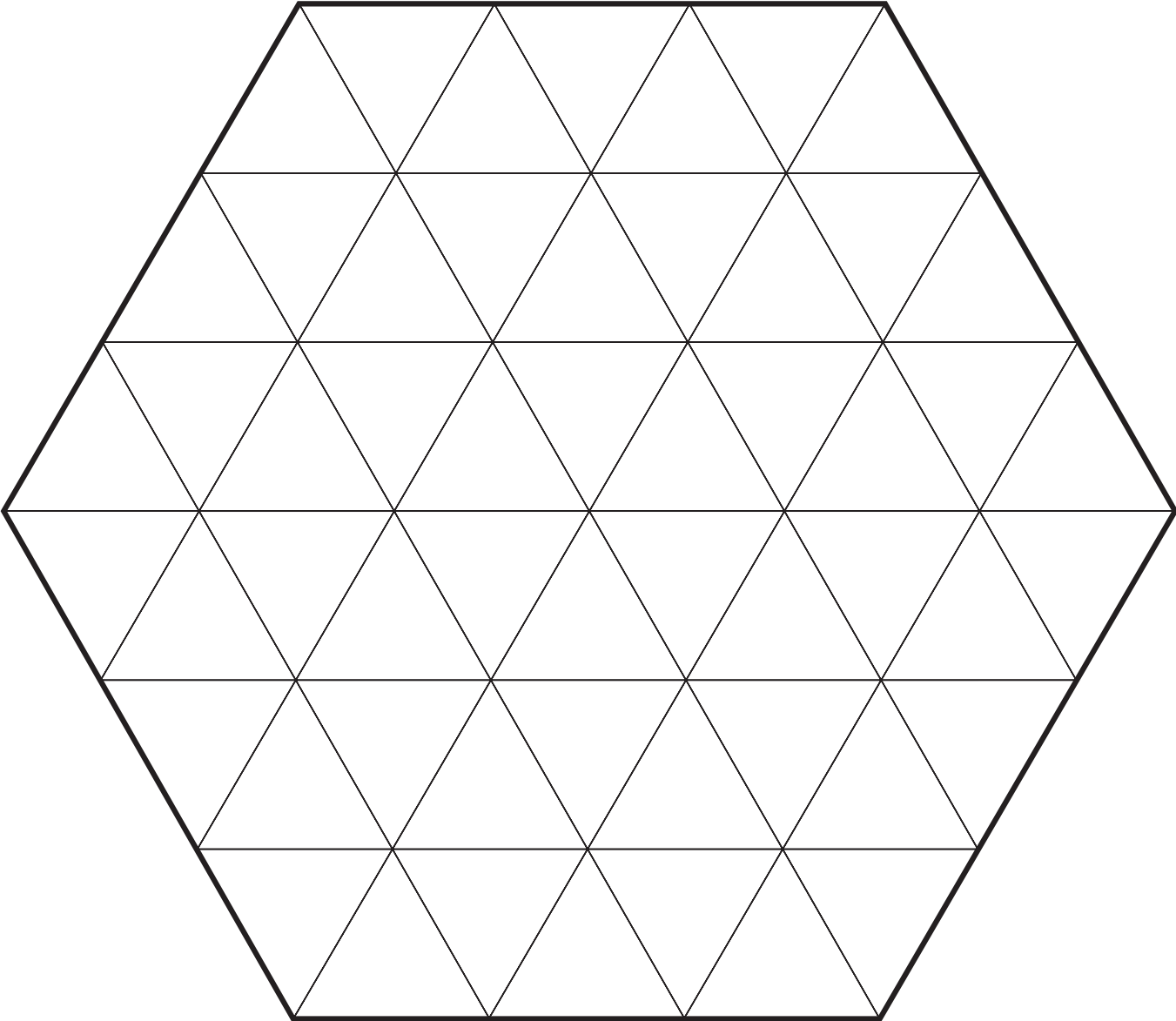


a hexagon
(color it yellow)

- 3** You can color in any one of the 4 shapes (triangle, rhombus, trapezoid, or hexagon) anywhere on the gameboard each time it's your turn. You must take your turn every time, down to the very end. The object of the game is to be the person who gets to complete the giant hexagon by coloring in the last shape.

(Continued on back.)

Home Connection 13 Activity (cont.)



Home Connection 13 ★ Worksheet



NOTE TO FAMILIES

This sheet is designed to give your child more practice at combining shapes. There are at least 7 different solutions, but it takes some real perseverance and spatial problem solving to find them all!

What Can You Do With a Square and 2 Triangles?

Cut out the attached 9 squares and 18 triangles. Then see how many different shapes you can make using 2 triangles and 1 square, following these rules:

- 1** You have to use exactly **1 square** and **2 triangles** for each new shape.
- 2** Each of the 3 shapes has to touch at least 1 of the other 2 along one full side of equal length (see Figure 1). Figures 2, 3, and 4 don't work.

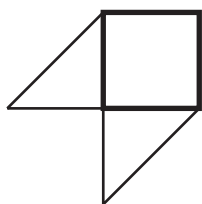


Figure 1
This one works!

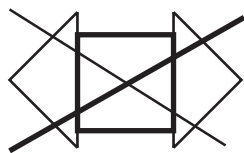


Figure 2
This arrangement doesn't work because the sides that are touching aren't equal.

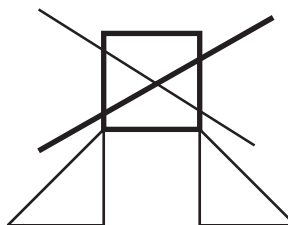


Figure 3
Only the corners are touching on this one!

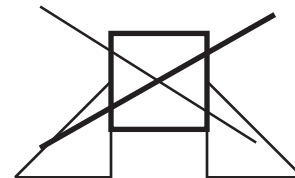
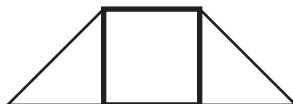


Figure 4
This one doesn't work because the sides aren't fully touching.

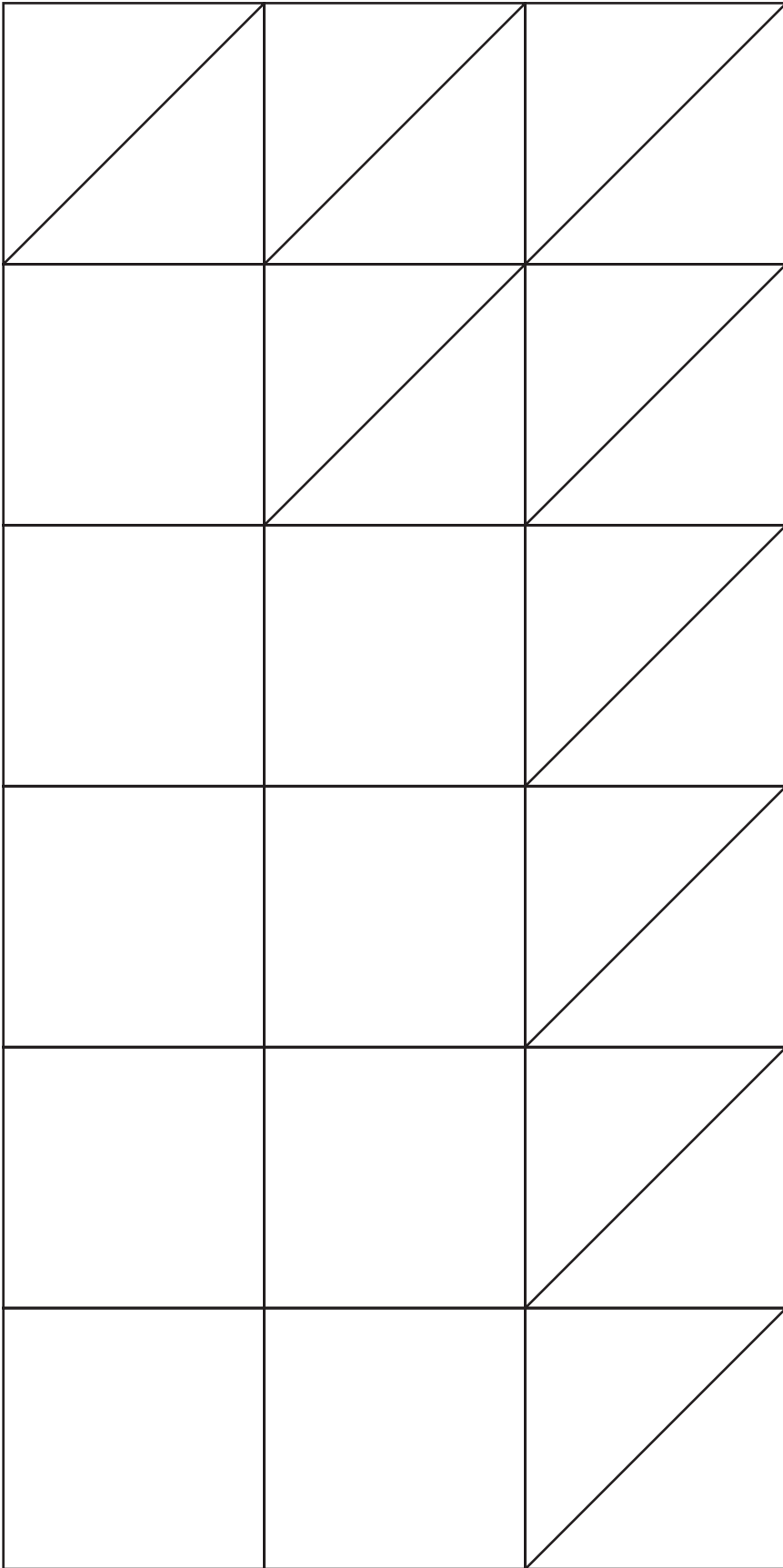
- 3** To be counted as new, a shape can't just be a turned version of another.



This one is exactly like the other, just turned upside down.

- 4** Each time you make a new shape, glue it to your colored sheet. Have fun and good luck finding lots of new shapes!

What Can You Do With a Square and 2 Triangles? pieces



Home Connection 14 ★ Activity



NOTE TO FAMILIES

One of the things we've been investigating in our geometry unit is symmetry. From an adult perspective, a shape is said to have reflective symmetry about a line if it can be (or you can imagine it being) folded about that line to coincide with itself, as is true for the letters shown below:



In class, we talk about something being symmetrical if you can fold it in half and have everything land exactly on top of itself. This activity is designed to help you explore the idea of symmetry at home with your child.

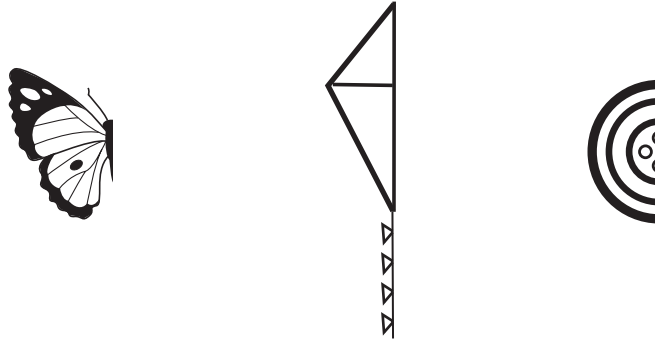
.....

Is It Symmetrical?

Can you find anything around your house that has reflective symmetry? Anything that would match perfectly on both sides if you were to fold it in half? Hunt around until you've found 4 things that are symmetrical and then draw them in the boxes below.

(Continued on back.)

Home Connection 14 Activity (cont.)



Now, here comes the fun part. Have someone in your family draw half a picture of something symmetrical, like a pair of glasses, or a teddy bear, or a butterfly, or.... Then take your pencil and crayons and draw in the other half. When you're finished, you draw a half picture and let a family member draw in the other half.

Home Connection 14 ★ Worksheet

Cutting Numbers in Half



Since we've been talking about halves, let's see what happens when we "cut" some numbers in half.

What's half of 2? _____

What's half of 6? _____

What's half of 10? _____

What's half of 20? _____

What's half of 60? _____

What's half of 100? _____

What's half of

What's half of

What's half of

200? _____

600? _____

1,000? _____

What makes it pretty easy to divide these numbers in half?

Try these subtract halves.

$$\begin{array}{r} 10 \\ - 5 \\ \hline \end{array}$$

$$\begin{array}{r} 100 \\ - 50 \\ \hline \end{array}$$

$$\begin{array}{r} 8 \\ - 4 \\ \hline \end{array}$$

$$\begin{array}{r} 80 \\ - 40 \\ \hline \end{array}$$

$$\begin{array}{r} 12 \\ - 6 \\ \hline \end{array}$$

$$\begin{array}{r} 120 \\ - 60 \\ \hline \end{array}$$

$$\begin{array}{r} 40 \\ - 20 \\ \hline \end{array}$$

$$\begin{array}{r} 14 \\ - 7 \\ \hline \end{array}$$

$$\begin{array}{r} 18 \\ - 9 \\ \hline \end{array}$$

$$\begin{array}{r} 16 \\ - 8 \\ \hline \end{array}$$

$$\begin{array}{r} 20 \\ - 10 \\ \hline \end{array}$$

$$\begin{array}{r} 6 \\ - 3 \\ \hline \end{array}$$

$$\begin{array}{r} 60 \\ - 30 \\ \hline \end{array}$$

$$\begin{array}{r} 200 \\ - 100 \\ \hline \end{array}$$

Now try these.

$$\begin{array}{r} 12 \\ - 6 \\ \hline \end{array}$$

$$\begin{array}{r} 13 \\ - 6 \\ \hline \end{array}$$

$$\begin{array}{r} 12 \\ - 7 \\ \hline \end{array}$$

$$\begin{array}{r} 16 \\ - 8 \\ \hline \end{array}$$

$$\begin{array}{r} 15 \\ - 8 \\ \hline \end{array}$$

$$\begin{array}{r} 16 \\ - 9 \\ \hline \end{array}$$

$$\begin{array}{r} 16 \\ - 7 \\ \hline \end{array}$$

NAME _____

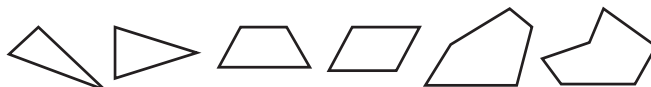
RETURN BY _____

Home Connection 15 ★ Activity



NOTE TO FAMILIES

It's easy for young children to get the idea that a square is altogether different from a rectangle (a square is actually a rectangle with equal sides), that the only "real" triangle is one which sits on its base and has 3 equal sides, and that squares and rectangles are the only 4-sided figures in existence. To counteract these misconceptions, we like to offer primary children plenty of opportunities to explore such "nonstandard" shapes as scalene and isosceles triangles, trapezoids and parallelograms, and nonequilateral pentagons and hexagons.



This week's Home Connection Activity involves sorting quadrilaterals. Although some of these shapes are pretty strange-looking, they're all related in that they each have 4 sides and 4 corners. Your child may have all sorts of ideas about how to sort the quadrilaterals on the next page, but if he or she runs out of steam, it's okay for you to mention things like right angles, parallel lines, and symmetry. Have fun!

Sorting Quadrilaterals

Cut out the shape cards on the next page. Some of the shapes may look a little strange to you, but they are all quadrilaterals. That is, they all have 4 sides. Look carefully and you'll find that it's true! Work with someone in your family to find as many ways to sort these shapes as possible, and list your ideas below.



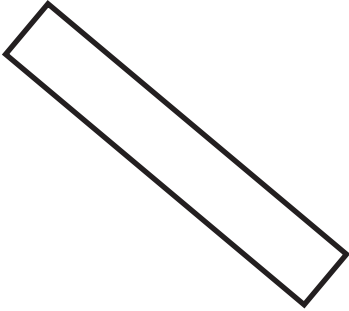

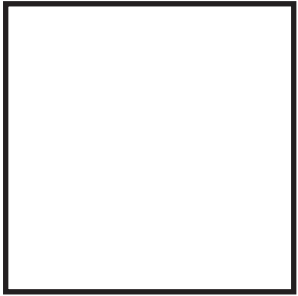
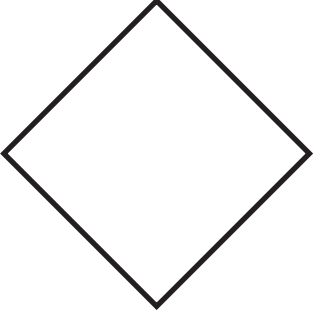

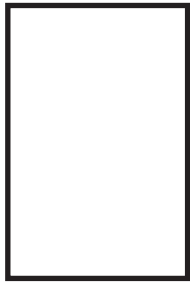
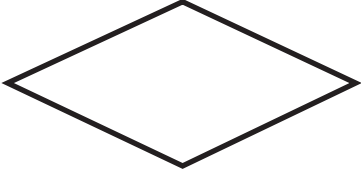

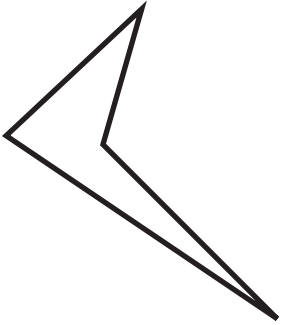
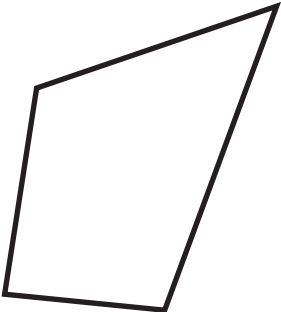

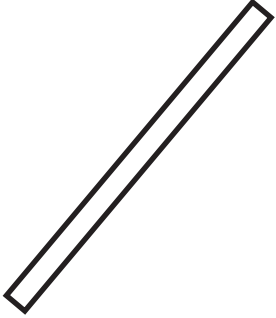
"These all have at least 1 line of symmetry."



"None of these are symmetrical."

symmetrical and not symmetrical

Sorting Quadrilaterals cards

 <p>rectangle</p>	 <p>trapezoid</p>	 <p>square</p>
 <p>square</p>	 <p>quadrilateral</p>	 <p>rectangle</p>
 <p>rhombus</p>	 <p>parallelogram</p>	 <p>quadrilateral</p>
 <p>quadrilateral</p>	 <p>rhombus</p>	 <p>rectangle</p>

NAME _____

RETURN BY _____

Home Connection 15 ★ Worksheet



NOTE TO FAMILIES

Here's a worksheet designed to give your child more practice thinking and working in 4's.

Quad Means 4

Did you know that the Latin word “quad” means four? It does! That’s why 4-sided figures are called quadrilaterals and 4 babies born at the same time (to the same mom) are called quadruplets. In order to practice up a little with 4’s, write your numbers from 1 to 40 in the boxes below. Then color in all the count-by-4 numbers on the grid, starting with 4 (4, 8, 12, 16, 20, and so on, all the way to 40).

Now try these number combinations and problems. Use the grid to help if you want.

$1 \times 4 = \underline{\quad}$

$2 \times 4 = \underline{\quad}$

$3 \times 4 = \underline{\quad}$

$4 \times 4 = \underline{\quad}$

$5 \times 4 = \underline{\quad}$

$6 \times 4 = \underline{\quad}$

$8 - 4 = \underline{\quad}$

$12 - 4 = \underline{\quad}$

$24 - 4 = \underline{\quad}$

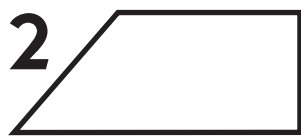
$16 - 4 = \underline{\quad}$

$28 - 4 = \underline{\quad}$

$4 - 4 = \underline{\quad}$

(Continued on back.)

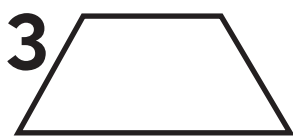
Home Connection 15 Worksheet (cont.)



quadrilaterals

How many vertices in all?

8



trapezoids

How many vertices in all?



squares

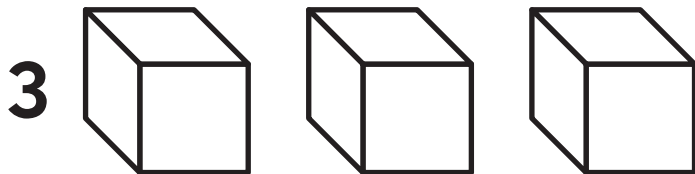
How many vertices in all?



rectangles

How many vertices in all?

The challenge!



cubes

How many vertices ? _____

Home Connection 16 ★ Activity



NOTE TO FAMILIES

This week’s Home Connection Activity is a variation on the old Go Fish game using geometric shapes. The playing directions are below. You and your child will need to cut the cards apart. The difference between this game and Go Fish is that you must ask for the shape you want each time by *describing* it rather than naming it. If you need a square, for example, you might ask for a shape that has 4 equal sides and 4 corners. But your child might respond by giving you a rhombus instead of a square, in which case you might need to modify your request by saying that you want the shape with 4 equal sides and 4 right angles.

The purpose of this game is to help children learn to describe shapes by their attributes. Your child may ask for the shape he or she wants by comparing it to something it looks like. The shape that looks like a mountain or the shape that looks like a door might be the way he or she asks for a triangle or a rectangle. To help your youngster become more proficient with geometric terms, use them as you request shapes. Your descriptions might include:

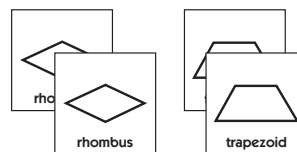
- the number of sides
- the number of corners or angles
- the lines of symmetry in the shape (“It’s a symmetrical shape but it only has 1 line of symmetry.”)
- whether or not the sides are equal
- references to parallel lines (“This shape has 1 pair of lines that are parallel and 1 pair that are not.”)
- some talk about what would happen if you cut 1 in half or put 2 of them together (“If I cut this shape in half along the diagonal, I’d get 2 triangles. If I put 2 of these shapes together, I’d get a rectangle.”)

Naturally, you won’t use all this language for every shape you request, but if you use a couple of the ideas each time you ask for a new shape, you’ll find that your child begins to imitate your language before too long.

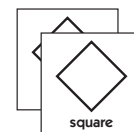
Fishing for Shapes

Cut out the shape cards on the next 2 pages. You are going to play a Go Fish game with these cards, so after you’ve cut them apart, mix them up and deal them all out. Then go through your stack to see if either of you have any pairs. If you do, put them face up in front of you. After you’ve both made all the pairs you can, take turns asking each other for cards. You can ask for 1 card on each turn, but you have to describe it rather than asking for it by

name. The person who gets rid of all their cards first is the winner.

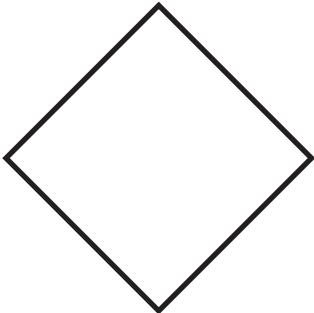

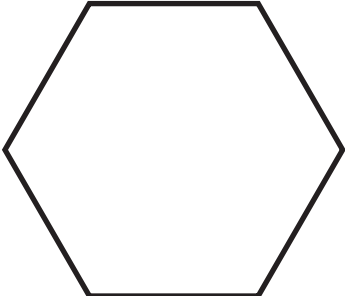
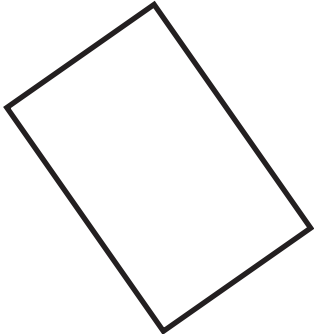
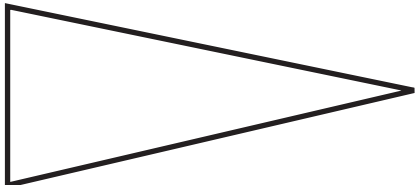
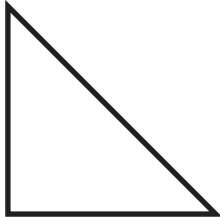
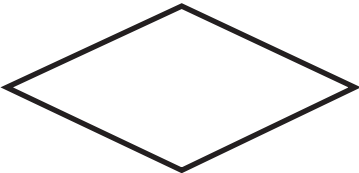

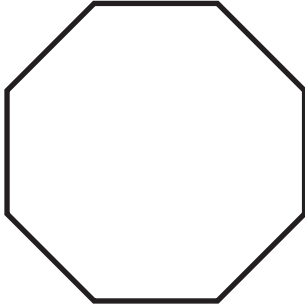
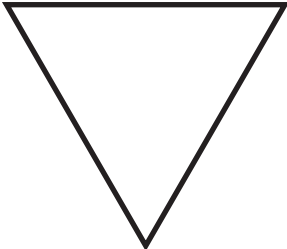
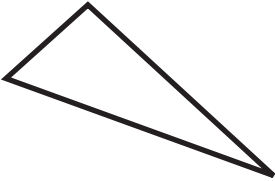
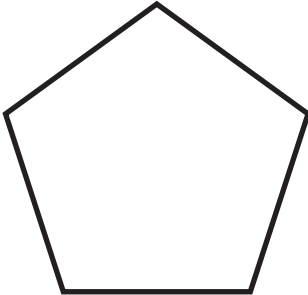


Oh look, I have 2 rhombuses and 2 trapezoids!



I have 2 squares.

Fishing for Shapes cards

 <p>square</p>	 <p>trapezoid</p>	 <p>hexagon</p>
 <p>rectangle</p>	 <p>isosceles triangle</p>	 <p>right triangle</p>
 <p>rhombus</p>	 <p>parallelogram</p>	 <p>octagon</p>
 <p>equilateral triangle</p>	 <p>scalene triangle</p>	 <p>pentagon</p>

NAME _____

RETURN BY _____

Home Connection 16 ★ Worksheet

Double It!

You've been looking for pairs of shapes. Now let's do some work with pairs of numbers.

Sarah has 4 cookies. Matt has twice that many. How many cookies does Matt have?

How many cookies do Matt and Sarah have in all?

Add these doubles.

$\begin{array}{r} 2 \\ + 2 \\ \hline \end{array}$	$\begin{array}{r} 20 \\ + 20 \\ \hline \end{array}$	$\begin{array}{r} 200 \\ + 200 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ + 3 \\ \hline \end{array}$	$\begin{array}{r} 30 \\ + 30 \\ \hline \end{array}$	$\begin{array}{r} 300 \\ + 300 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ + 4 \\ \hline \end{array}$
---------------------------------------------------	-----------------------------------------------------	-------------------------------------------------------	---------------------------------------------------	-----------------------------------------------------	-------------------------------------------------------	---------------------------------------------------

$\begin{array}{r} 40 \\ + 40 \\ \hline \end{array}$	$\begin{array}{r} 400 \\ + 400 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ + 5 \\ \hline \end{array}$	$\begin{array}{r} 50 \\ + 50 \\ \hline \end{array}$	$\begin{array}{r} 500 \\ + 500 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ + 6 \\ \hline \end{array}$	$\begin{array}{r} 60 \\ + 60 \\ \hline \end{array}$
-----------------------------------------------------	-------------------------------------------------------	---------------------------------------------------	-----------------------------------------------------	-------------------------------------------------------	---------------------------------------------------	-----------------------------------------------------

$\begin{array}{r} 7 \\ + 7 \\ \hline \end{array}$	$\begin{array}{r} 70 \\ + 70 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ + 8 \\ \hline \end{array}$	$\begin{array}{r} 80 \\ + 80 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ + 9 \\ \hline \end{array}$	$\begin{array}{r} 90 \\ + 90 \\ \hline \end{array}$	$\begin{array}{r} 100 \\ + 100 \\ \hline \end{array}$
---------------------------------------------------	-----------------------------------------------------	---------------------------------------------------	-----------------------------------------------------	---------------------------------------------------	-----------------------------------------------------	-------------------------------------------------------

Now try doubles plus 1 more (we call them “neighbors”).

$\begin{array}{r} 2 \\ + 3 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ + 2 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ + 3 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ + 4 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ + 6 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ + 7 \\ \hline \end{array}$	$\begin{array}{r} 1 \\ + 2 \\ \hline \end{array}$
---------------------------------------------------	---------------------------------------------------	---------------------------------------------------	---------------------------------------------------	---------------------------------------------------	---------------------------------------------------	---------------------------------------------------

(Continued on back.)

Home Connection 16 Worksheet (cont.)

$$\begin{array}{r} 7 \\ + 8 \\ \hline \end{array}$$

$$\begin{array}{r} 8 \\ + 7 \\ \hline \end{array}$$

$$\begin{array}{r} 8 \\ + 9 \\ \hline \end{array}$$

$$\begin{array}{r} 9 \\ + 8 \\ \hline \end{array}$$

$$\begin{array}{r} 5 \\ + 6 \\ \hline \end{array}$$

$$\begin{array}{r} 6 \\ + 5 \\ \hline \end{array}$$

$$\begin{array}{r} 10 \\ + 9 \\ \hline \end{array}$$

Here's a little bit of multiplication.

$2 \times 3 = \underline{\quad}$

$2 \times 5 = \underline{\quad}$

$2 \times 7 = \underline{\quad}$

$2 \times 9 = \underline{\quad}$

$2 \times 0 = \underline{\quad}$

$2 \times 2 = \underline{\quad}$

$2 \times 4 = \underline{\quad}$

$2 \times 6 = \underline{\quad}$

$2 \times 8 = \underline{\quad}$

$2 \times 10 = \underline{\quad}$