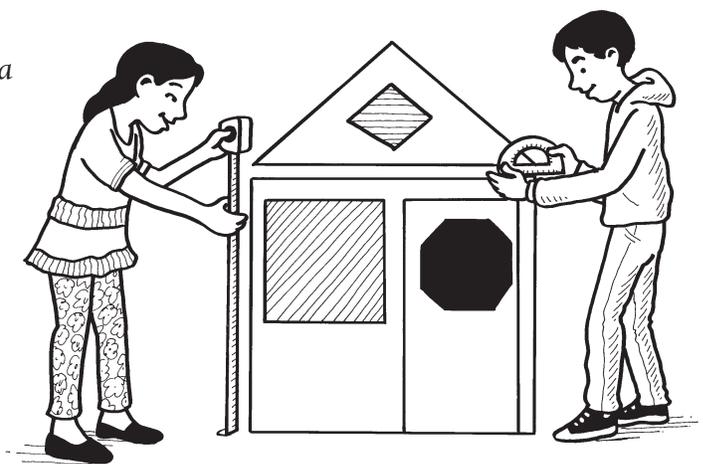# Geometry Around the House

Geometry is everywhere! Just ask your youngster to take a look around any part of your home. She's sure to spot cubes, obtuse angles, perpendicular lines, and more. The following activities will help her explore the geometry in everyday life.

House tour

Let your child pretend she's a real estate agent or a TV host. She'll practice measuring perimeter and area—then take your family on a "math tour" of your home. Ahead of time, she'll need to measure each room so she can announce how big it is.

First, help your youngster use a tape measure or a yardstick to measure each wall. She should write the measurements on a sheet of paper and add them together—that's the room's perimeter. So a room with 2 8-ft. walls and 2 10-ft. walls has

a perimeter of 36 feet (8 + 8 + 10 + 10 = 36). Then, she can multiply the room's length (8 feet) by its width (10 feet) to find the area (8 x 10 = 80 square feet).

Now go outside, ring the doorbell, and have your child invite you into the home. Her job is to lead you through each room, describing it and telling you its size. "This bedroom is 64 square feet with a window overlooking trees—just right for your little girl!"

Shape museum

Encourage your youngster to gather objects of different shapes from around the house. He'll use geometry vocabulary like *vertices* and *cone* as he displays the items in his very own "shape museum."

Together, list all the flat (2-D) and solid (3-D) shapes you can think of, such as circle, octagon, pyramid, and cone. Your child's goal is to find objects representing each shape on the list. He might locate a tennis ball (sphere), a Rubik's Cube (cube), an envelope (rectangle), and a soup can (cylinder). If he wants to include an object he can't pick up (say, a light fixture that's a hexagon), he could snap a photo.

To create his museum, he can arrange the shapes on a table and make an index card "plaque" for each one. Each plaque should identify the shape and tell how many corners (vertices) and sides a 2-D object has, or how many vertices, edges, and faces a 3-D object has. A plaque for a soup can would say, "This is a cylinder. It has 3 faces, 2 edges, and 0 vertices."

Parallel or perpendicular?

This activity will call your child's attention to parallel and perpendicular lines. Go outside together so he can draw the front of your house or apartment building, making sure to include the roof, windows, doors, shutters, bricks, siding, and any other features with lines.

Now encourage your youngster to highlight the two types of lines in different colors, perhaps the parallel (∥) lines in yellow and the perpendicular (⊥) lines in green.

Parallel lines, such as those at the top and bottom of your front door, would never intersect—even if they continued forever. But the lines at the corner of your home are perpendicular (they form a right angle at the point where they intersect).

Symmetry scavenger hunt

A piece of yarn serves as a *line of symmetry* as your child searches for household items that are *symmetrical*—each half is a mirror image of the other. The invisible line down the center is the line of symmetry.

Make a list of things to find (*examples:* 1 symmetrical object that makes music, 1 symmetrical object that is purple). Then, ask your youngster to stretch the yarn across the center of various household objects to see which ones are symmetrical. For example, perhaps her ukulele is symmetrical, but the pantry door is not because one half has a doorknob and the other half doesn't. Suggest that she check objects off the list and add more to find—soon she'll be seeing symmetry everywhere she goes!

Angles at every corner

With this idea, your family will discover acute, right, and obtuse angles in your home.

Have each person divide a sheet of paper into 3 columns—each labeled with a different type of angle: < (acute), ∟ (right), and ∠ (obtuse). Set a timer for 5 minutes. Walk around the house, and draw objects that contain angles in the correct column. For instance, your youngster might draw a dartboard in the acute column (20 acute angles touch the bullseye) and a square picture frame in the right-angle column (each corner is a right angle). And he could draw part of a slanted ceiling in the obtuse-angle column (the ceiling forms an obtuse angle with the wall).

When the timer goes off, share your papers, and compare your findings. Which type of angle is the most common in your home?

A rhombus sandwich

Can your youngster transform her usual square sandwich into a rhombus that *isn't* a square?

Together, make your favorite sandwiches, whether it's peanut butter and jelly or turkey and cheese. Then, let your child cut each sandwich so that all 4 sides are equal but none of the angles are 90 degrees. She can measure the sides with a ruler to make sure they're equal. Now enjoy eating your rhombuses!

Fun fact: Any shape with 4 equal sides is a rhombus. So every square is a rhombus—but not every rhombus is a square (since a square must have 4 right angles as well as 4 equal sides).

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