**HOME LINK**
4·10

Unit 5: Family Letter

3-D and 2-D Shapes

Geometry is an important component of *Everyday Mathematics.* Studying geometry helps develop spatial sense and the ability to represent and describe the world. Instead of waiting until ninth or tenth grade, *Everyday Mathematics* introduces geometric fundamentals in Kindergarten and develops them over time. Children are thus prepared to study more advanced geometric topics later.
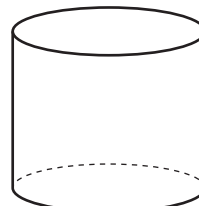
In Unit 5, children will consider five basic kinds of 3-dimensional shapes: prisms, pyramids, cylinders, cones, and spheres. To sort the shapes, children will explore similarities and differences among them. They will become familiar with both the names of shapes and the terms for parts of shapes.
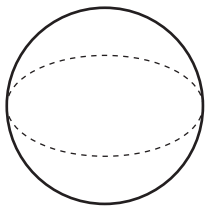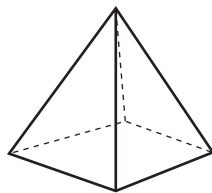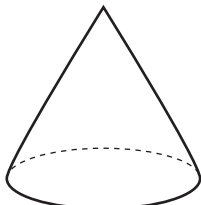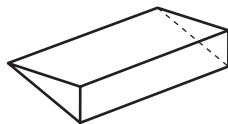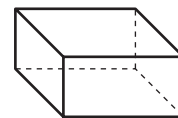
Sphere   Pyramid   Cylinder

Cone   Prisms

Children will also study **polygons,** or 2-dimensional shapes that form the flat surfaces of prisms and pyramids, as they look for examples in real life.

Later in the unit, children will explore **line symmetry** as they experiment with folding 2-dimensional shapes and matching the halves. Children will also cut out shapes and look for lines of symmetry in each shape. When children are given half of a shape, they will draw the missing half. Children will be asked to find symmetrical objects at home and in other places.
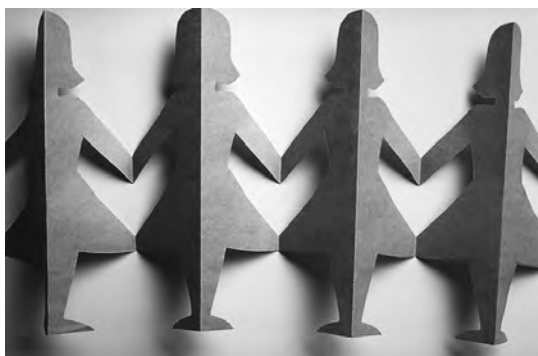
Please keep this Family Letter for reference as your child works through Unit 5.

Vocabulary

The purpose of introducing children to the various shapes is to explore the characteristics of the shapes, not to teach vocabulary. This list is presented simply to acquaint you with some of the terms your child will be hearing in context in the classroom.

**line segment** A straight line joining two points. The two points are called endpoints of the segment.

A •————————• B

Line segment *AB* or *BA*

angle A figure formed by two rays or two line segments with a common endpoint called a vertex. The rays or segments are called the sides of the angle. The sides of a polygon form angles at each vertex.
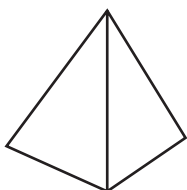
vertex →

angle →
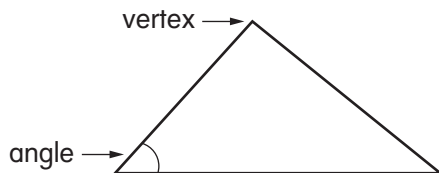
parallel lines Lines in plane that never meet. Two parallel lines are always the same distance apart.
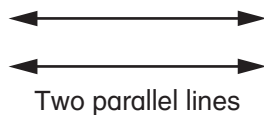
Two parallel lines

polygon A 2-dimensional figure formed by three or more line segments (*sides*) that meet only at their end points (*vertices*) to make a closed path. The sides may not cross one another.
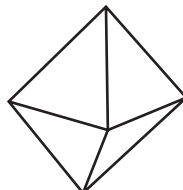
polyhedron A 3-dimensional shape formed by *polygons* with their interiors (*faces*) and having no holes. Plural is *polyhedrons* or *polyhedra.* The following shapes are regular polyhedrons:
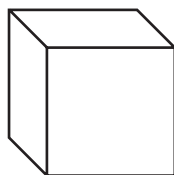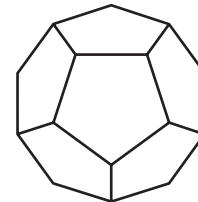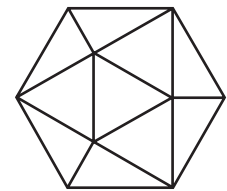
Tetrahedron   Cube   Octahedron
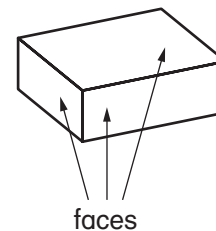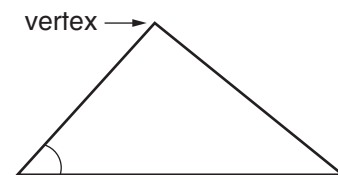
Dodecahedron   Icosahedron

**face** In *Everyday Mathematics* a flat surface on a 3-dimensional shape.

faces

vertex (corner) The point at which the ray of an angle, the sides of a polygon, or the edges of a polyhedron meet.

vertex →

line symmetry A figure has line symmetry if a line can be drawn through it so that it is divided into two parts that are mirror images of each other. The two parts look alike but face in opposite directions.
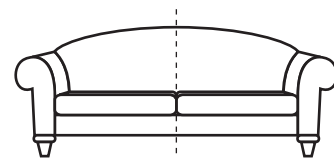
**ray** A part of a line starting at the ray's endpoint and continuing forever in one direction.

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Do-Anytime Activities

To work with your child on the concepts taught in this unit and in previous units, try these interesting and rewarding activities:

1. Together, look for 2-dimensional and 3-dimensional shapes in your home and neighborhood. Explore and name shapes and brainstorm about their characteristics. For example, compare a soup can and a tissue box. Talk about the differences between the shapes of the surfaces.

2. Use household items, such as toothpicks and marshmallows, straws and twist-ties, sticks, and paper to construct shapes like those shown below.
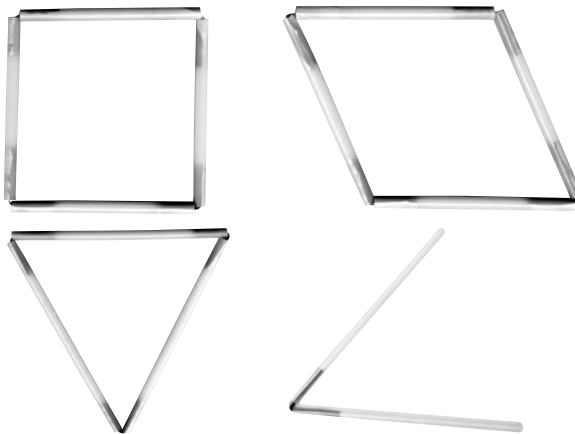
3. Look for geometric patterns in tile floors, quilts, buildings, and so on.
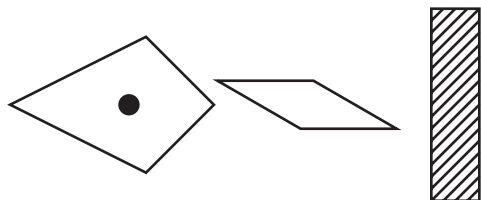
HOME LINK 4·10 | **Unit 5: Family Letter** *cont.*

As You Help Your Child with Homework

As your child brings home assignments, you may want to go over the instructions together, clarifying them as necessary. The answers listed below will guide you through this unit's Home Links.

Home Link 5·1

1.

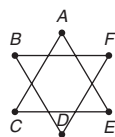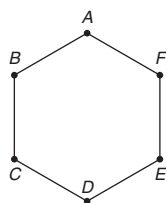**2.** The shapes all have 4 sides. **3.** Answers vary.

4. 66 **5.** 104 **6.** 58

Home Link 5·2

1. **2.** **3.**

6 triangles
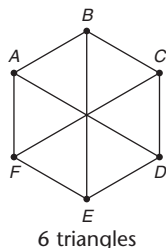
4. Answers vary. **5.** 43 **6.** 44 **7.** 75

Home Link 5·3

1. **2.** ; no
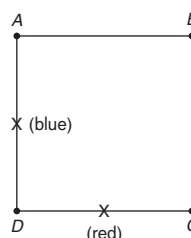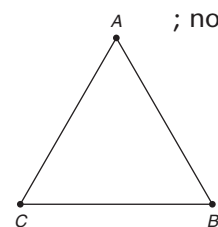
Home Link 5·5

1. the square **2.** the rectangle

3. 9 **4.** 14 **5.** 3 **6.** 3

7. 20 **8.** 6 **9.** 97 **10.** 91

Home Link 5·6

1. 18 **2.** 27 **3.** 62 **4.** 96

Home Link 5·8

1.–3. Answers vary. **4.** 12 **5.** 15

6. 16 **7.** 3 **8.** 5 **9.** 3

Building Skills through Games

In Unit 5, your child will practice addition and money skills by playing the following games:

Addition Spin

Players "spin the wheel" twice and add the two selected numbers. Players check their partners' addition with a calculator.

Dollar Rummy

Instead of three-of-a-kind, players look for two cards that will add up to $1.00.

Beat the Calculator

A "Calculator" (a player who uses a calculator to solve a problem) and a "Brain" (a player who solves the problem without the calculator) race to see who will be the first to solve addition problems.