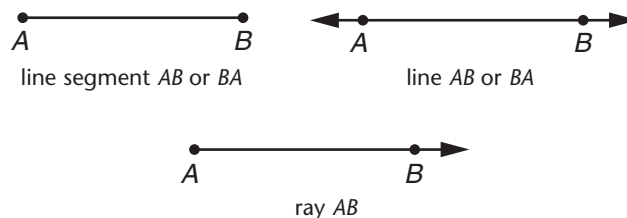




## Geometry

*Everyday Mathematics* uses children's experiences with the everyday world to help them envision 3-dimensional (3-D) shapes. In previous grades, children were asked to identify 2-dimensional (2-D) shapes and their parts, such as sides and corners (vertices). They had several hands-on experiences with pattern blocks, geoboards, and templates. They also classified and named polygons, or closed figures consisting of line segments (sides) connected endpoint to endpoint.

In Unit 6, children will explore points, line segments, rays, lines, and the relationships among them, along with the geometric shapes that can be built from them. Children will construct angles, polygons, prisms, and pyramids.



Children will also explore similarities and differences among 3-D shapes and regular polyhedrons within the context of a Shapes Museum. They will discover real-life examples of lines that are parallel, or lines that never meet, such as railroad tracks.



There is a great deal of vocabulary involved when working with geometry. However, the emphasis in this unit is not on memorizing the vocabulary, but rather on using it to examine relationships among classifications of geometric figures.

**Please keep this Family Letter for reference as your child works through Unit 6.**

# Vocabulary

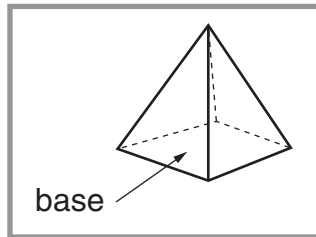
Important terms in Unit 6:

**2-dimensional (2-D) shape** A shape whose points are all in one plane, or flat surface, but not all on one line. A shape with length and width, but no thickness.

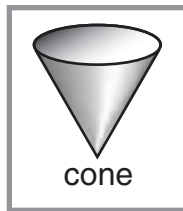
**3-dimensional (3-D) shape** A shape that does not lie completely within a plane, or flat surface; a shape with length, width, and thickness.

**base of a 3-D shape**

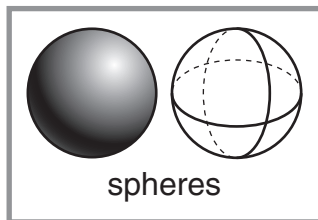
A flat surface or face whose shape is the basis for naming some 3-dimensional objects.



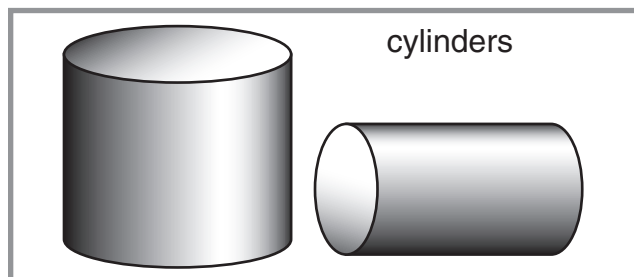
**cone** A 3-dimensional shape with a circular base, a curved surface, and one vertex, called the apex. An ice-cream cone is shaped like a cone.



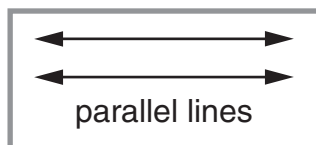
**sphere** A 3-dimensional shape whose curved surface is, at all points, a given distance from its center point. A ball is shaped like a sphere.



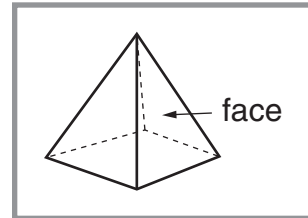
**cylinder** A 3-dimensional shape with two circular bases that are parallel and congruent and are connected by a curved surface. A soup can is shaped like a cylinder.



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








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



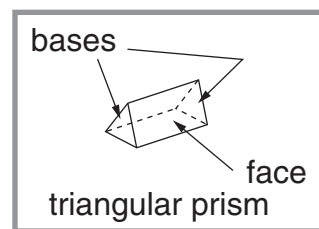
**polyhedron**

A 3-dimensional shape with polygons and their interiors for faces. Polyhedrons don't have any holes. Below are five regular polyhedrons, so called because all faces in each shape are identical.

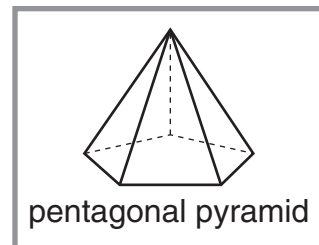
*The faces that make each shape are identical.*

		
tetrahedron (4 faces)	cube (6 faces)	
		
octahedron (8 faces)	dodecahedron (12 faces)	icosahedron (20 faces)

**prism** A polyhedron with two parallel bases that are the same size and shape. A prism is named for the shape of its base, and the other faces are all parallelograms.



**pyramid** A polyhedron with a polygon for a base and the other faces are all triangles with a common vertex called the apex. A pyramid is named for the shape of its base.



## 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, read the book *The Greedy Triangle*, by Marilyn Burns.
2. Begin a Shapes Museum at home. Label the shapes that your child collects.
3. Ask your child to identify 2-dimensional and 3-dimensional shapes inside and outside your home.
4. Measure objects to the nearest  $\frac{1}{2}$  inch.



## Building Skills through Games

In Unit 6, your child will practice numeration, multiplication, and geometry skills by playing the following games. For detailed instructions, see the *Student Reference Book*.

### **Number Top-It (Decimals)**

As players pick each card, they must decide in which place-value box (from ones to thousandths) to place the card so that they end up with the largest number.

### **Beat the Calculator**

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

### **Baseball Multiplication**

Players use multiplication facts to score runs. Team members take turns "pitching" by rolling two dice to get two factors. Then players on the "batting" team take turns multiplying the two factors and saying the product.



### **Angle Race**

Players build angles with rubber bands and "race" to see who will be first to complete the last angle exactly on the  $360^\circ$  mark.

# As You Help Your Child with Homework

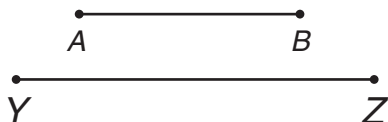
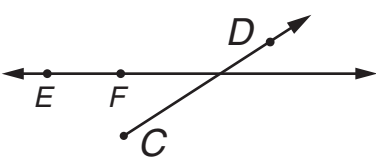
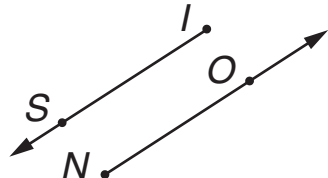
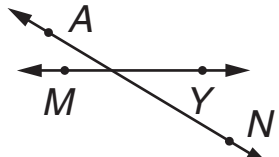
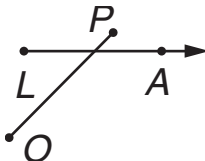
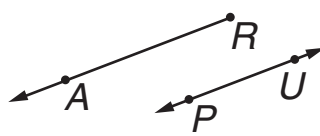
As your child brings home assignments, you may want to go over the instructions together, clarifying them as necessary. The answers listed below will guide you through this unit's Home Links.

## Home Link 6•1

1. b, e, d, a, e or c      2. 
3.       4. 568      5. 346

## Home Link 6•2

Sample answers:

1. 
2. 
3. 
4. 
5. 
6. 

## Home Link 6•4

5. 491      6. 289      7. 9

## Home Link 6•5

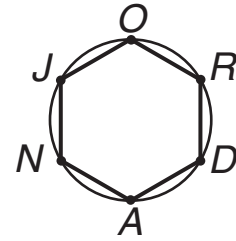
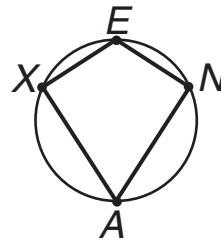
1. right angles; equal; parallel  
2. equal; parallel

3. equal; parallel  
4. equal  
5. 18      6. 12      7. 36

## Home Link 6•6

Sample answers:

1. 4; kite; XENA      2. 6; hexagon; JORDAN

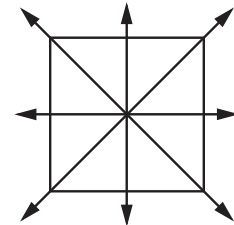


## Home Link 6•8

1. A      2. D      3. E  
4. C or D      5. A or B

## Home Link 6•9

1. a. triangle      b. 2 sides      c. 2 angles      d. no  
2. a. square      b. yes      c.



## Home Link 6•11

1. (from left to right) prism; sphere; cylinder; cone; pyramid  
4. 379      5. 25

## Home Link 6•12

1. pentagonal prism      2. pentagon  
3. rectangle      4. 15 edges  
5. 10 vertices