# Family Letter

Unit 3: Linear Measures and Area

In Unit 3, children will develop their measurement sense by measuring lengths with standard units—in both the **U.S. customary system** and the **metric system.**

Children will practice reading a ruler to the nearest inch, nearest $\frac{1}{2}$ inch, nearest $\frac{1}{4}$ inch, and nearest centimeter as they measure a variety of objects, including parts of their own bodies, such as their hand spans, wrists, necks, and heights. In addition to the inch and centimeter, children will also measure with other standard units, such as the foot, yard, and meter. Children will begin to use certain body measures or the lengths of some everyday objects as **personal references** to estimate the lengths of other objects or distances. For example, a sheet of notebook paper that is about 1 foot long can help children estimate the length of a room in feet.
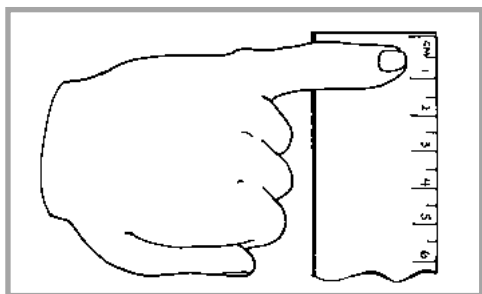
The width of my little finger is about one centimeter.

The concept of **perimeter** is also investigated in this unit. Children will use straws and twist-ties to build **polygons,** or 2-dimensional figures having connected sides. Then children will measure the distance around each polygon to find the perimeter.
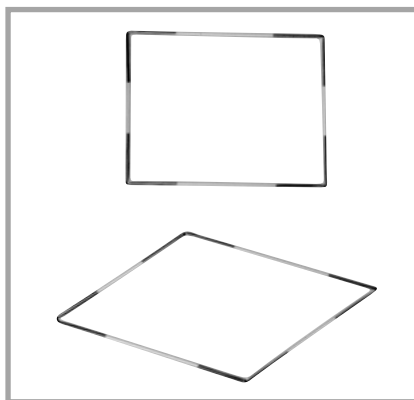
Children will also discover the meaning of **area** by "tiling" small rectangles with blocks and counting how many blocks cover the rectangles. Children see how to calculate area by tiling larger surfaces, such as tabletops and floors, with square feet and square yards.

In the last part of this unit, children will explore the **circumference** and **diameter** of circles. They will learn the "about 3 times" rule—that the circumference of a circle is a little more than 3 times the length of its diameter.

Please keep this Family Letter for reference as your child works through Unit 3.

Vocabulary

Important terms in Unit 3:

standard unit An agreed–upon unit of measure. *Examples:* foot, pound, gallon, meter, kilogram, liter.

**length** The measure of the distance between two points.

U.S. customary system The system of measurement that uses inches, feet, yards, and miles for measuring length.

metric system The system of measurement that uses millimeters, centimeters, meters, and kilometers for measuring length.

personal references Objects or distances that measure about 1 unit (inch, foot, yard, or mile; millimeter, centimeter, meter, or kilometer).

perimeter The distance around a surface that has a boundary.

circumference The distance around a circle; often thought of as the perimeter of a circle.
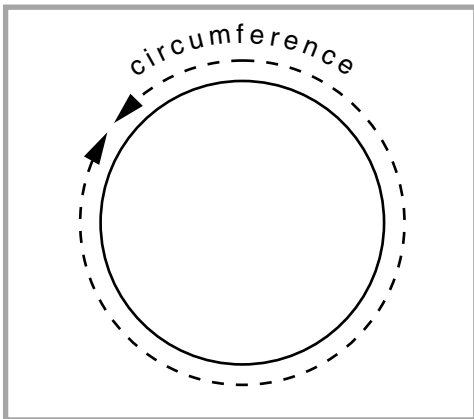
circumference

diameter The distance across the center of a circle.

center
diameter
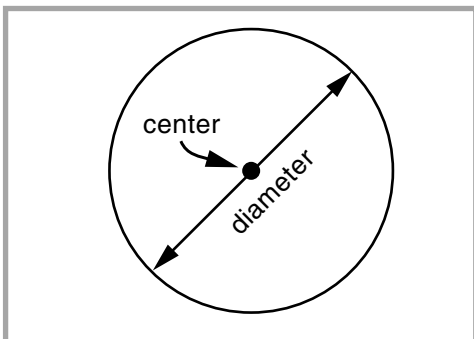
"about 3 times" circle rule The circumference of a circle is a little more than 3 times the length of its diameter.

polygon A 2-dimensional figure whose sides are line segments connected end to end. *Examples:* triangles, squares, rectangles, trapezoids.
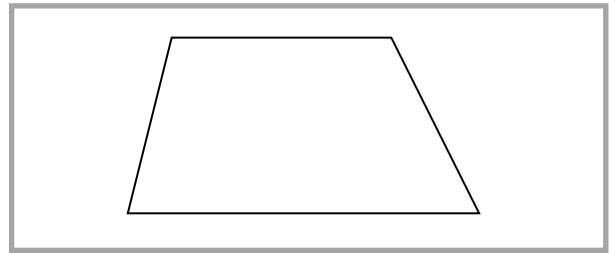
tiling The covering of a surface with shapes so that there are no gaps or overlaps, except for possible space around the edges.

area The number of units, usually squares, that can fit into a bounded surface.

standard square unit A unit used to measure area; a square that measures 1 inch, 1 centimeter, 1 yard, or 1 other standard measure of length on each side.

1 square centimeter   1 square inch

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 Encourage your child to find some personal references for making several measurements of length at home.

2 Practice using the personal references by *estimating* some lengths, and then practice using a ruler by *measuring* the actual lengths.

3 Practice finding perimeters of objects and circumferences of circular objects around your home.

Use with Lesson 2.10.

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 3.4

2. perimeter of polygon A = 20 cm

perimeter of polygon B = 20 cm

3. a. 12 ft   **3. b.** 60 in.

Home Link 3.6

1. Area = 24 square units   **2.** Area = 27 square units

Sample answer:

Sample answer:

3. This is a 2-by-6 rectangle. Area = 12 square units

4. This is a 5-by-4 rectangle. Area = 20 square units

5. This is a 4-by-9 rectangle. Area = 36 square units

Home Link 3.7

1. 80 tiles   **2.** $160

3.

4. 30 plants

Building Skills through Games

In Unit 3, your child will practice addition and money skills by playing the following games. For detailed instructions, see the *Student Reference Book*.

Addition Top-It

Each player turns over two cards and calls out their sum. The player with the higher sum then takes all the cards from that round.

Beat the Calculator

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

Name That Number

Players turn over a card to find a number they must rename using any combination of five faceup cards.

4	10	8	12	2		6
4	10	8	12	2		6

The number 6 may be renamed as 4 + 2, 8 − 2, or 10 − 4.