



Introduction to Fourth Grade Everyday Mathematics®

Welcome to *Fourth Grade Everyday Mathematics*. It is part of an elementary school mathematics curriculum developed by the University of Chicago School Mathematics Project (UCSMP).

Everyday Mathematics offers students a broad background in mathematics. Some approaches in this program may differ from those you used as a student. However, the approaches the authors use are based on research results, field-test experiences, and the mathematics that students will need in the twenty-first century. Following are some program highlights:

- ▷ A problem-solving approach that uses mathematics in everyday situations
- ▷ A balance of independent activities that develop confidence and self-reliance, and partner and small-group activities that promote cooperative learning
- ▷ Concepts and skills introduced and reviewed throughout the school year, promoting retention through a variety of exposures
- ▷ Concepts and skills developed through hands-on activities
- ▷ Opportunities to discuss and communicate mathematically
- ▷ Frequent practice using games as an alternative to tedious drills
- ▷ Opportunities for home and school communication

Fourth Grade Everyday Mathematics *emphasizes the following content:*

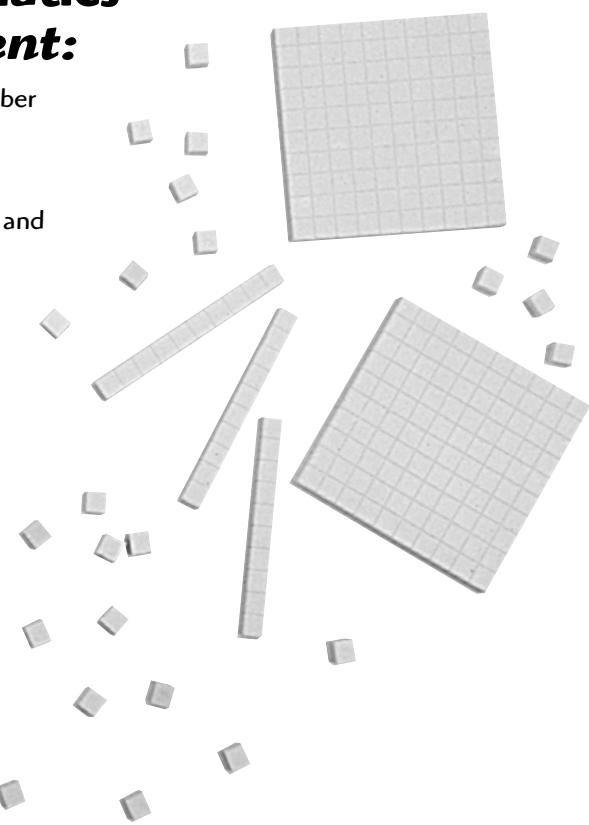
Algebra and Uses of Variables Reading, writing, and solving number sentences

Algorithms and Procedures Exploring addition, subtraction, multiplication, and division methods; inventing individual procedures and algorithms; and experimenting with calculator procedures

Coordinate Systems and Other Reference Frames Using numbers in reference frames: number lines, coordinates, times, dates, latitude and longitude, and elevation above and below sea level

Exploring Data Collecting, organizing, displaying, and interpreting numerical data

Functions, Patterns, and Sequences Designing, exploring, and using geometric and number patterns



Geometry and Spatial Sense Developing an intuitive sense about 2- and 3-dimensional objects, their properties, uses, and relationships

Measures and Measurement Exploring and using metric and U.S. customary measures: linear, area, volume, weight; and exploring geographical measures

Numbers, Numeration, and Order Relations Reading, writing, and using whole numbers, fractions, decimals, percents, and negative numbers; and exploring scientific notation

Operations, Number Facts, and Number Systems Practicing addition and subtraction to proficiency; and developing multiplication and division skills

Problem Solving and Mathematical Modeling Investigating methods for solving problems using mathematics in everyday situations, such as travel, shopping, health, and sports

Math Experiences Your Child Will Have This Year

The mathematics program we are using this year—*Everyday Mathematics*—will help your child appreciate how mathematics affects our daily lives and will prepare your child for making sound decisions in areas that involve mathematics. Experiences your child will have include the following:

- ▷ Collecting, displaying, and interpreting numerical information—for example, about the climate in the United States and other parts of the world; about the way people in other countries live; about mammals; and about the students in the class themselves
- ▷ Exploring the role of mathematics in geography—for example, using latitude and longitude to locate places in the world; using a map scale to find distances; and using a time-zone map to compare the time of day in various locations
- ▷ Developing methods for estimating the lengths, heights, and weights of objects; and practicing making accurate measurements
- ▷ Examining several methods for adding, subtracting, multiplying, and dividing numbers; and becoming proficient at using one of these methods for each operation
- ▷ Beginning the study of algebra and continuing the study of geometry
- ▷ Predicting the outcomes of events that occur by chance and checking the predictions by performing experiments

Throughout the year, you will receive Family Letters informing you of the mathematical content to be studied in each unit. Letters may include definitions of new terms as well as suggestions for at-home activities designed to reinforce skills. We are looking forward to an exciting year filled with discovery. You will enjoy seeing your child's mathematical understanding grow.

Unit 1: Naming and Constructing Geometric Figures

During the next two to three weeks, the class will study the geometry of 2-dimensional shapes. Students will examine definitions and properties of various shapes and the relationships between and among these shapes. Students will use compasses to construct shapes and to create their own geometric designs. In the process, they will develop an appreciation for geometric patterns and their many uses.

Please keep this Family Letter for reference as your child works through Unit 1.

Vocabulary

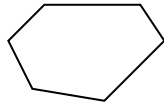
Important terms in Unit 1:

concave (nonconvex) polygon A polygon in which at least one vertex is “pushed in.”



concave polygon

convex polygon A polygon in which all vertices are “pushed outward.”



convex polygon

endpoint A point at the end of a line segment or a ray. A line segment is normally named using the letter labels of its end points.

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

parallelogram A quadrilateral that has two pairs of parallel sides. Opposite sides of a parallelogram are congruent.

polygon A closed, 2-dimensional figure that is made up of line segments joined end to end. The line segments of a polygon may not cross.

quadrangle or quadrilateral A polygon that has four sides and four angles.

ray A straight path that extends infinitely from a point called its endpoint.

rhombus A quadrilateral whose sides are all the same length.

trapezoid A quadrilateral that has exactly one pair of parallel sides.

vertex The point where the rays of an angle, the sides of a polygon, or the edges of a polyhedron meet.

Do-Anytime Activities

- 1 Help your child discover everyday uses of geometry as found in art, architecture, jewelry, toys, and so on.
- 2 See how many words your child can think of that have Greek/Latin prefixes such as *tri-*, *quad-*, *penta-*, *hexa-*, *octa-*, and so on.
- 3 Help your child think of different ways to draw or make figures without the use of a compass, protractor, or straightedge. For example, you can trace the bottom of a can to make a circle, bend a straw to form a triangle, or make different shapes with toothpicks.
- 4 Challenge your child to draw or build something, such as a toothpick bridge, using triangle and square shapes. Or show pictures of bridges and point out the triangle shapes used in bridges to provide support.

As You Help Your Child with Homework

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

Study Link 1.2

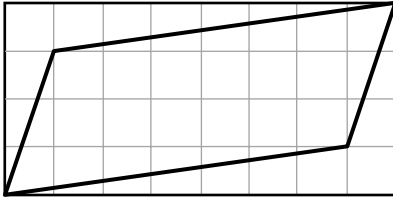
- Answers vary.
- Answers vary.

Study Link 1.3

- a. 12 b. 8
- a. 6 b. 12 c. 4

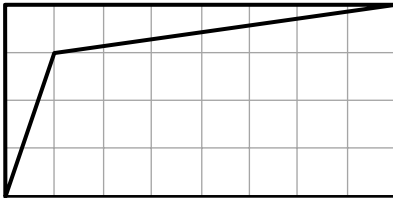
Study Link 1.4

- Sample answer:

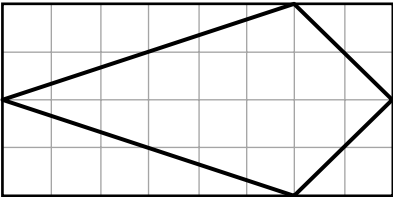


- a. yes b. yes c. yes d. no

- Sample answer:



- Sample answer:



Study Link 1.5

- D and O
- All capital letters except D and O
- Answers vary.
- Answers vary.

Study Link 1.6

- f octagon
- e rhombus
- h right angle
- c trapezoid
- a square
- i equilateral triangle
- d parallel lines
- g pentagon
- b quadrangle

Study Link 1.7

- Answers vary.
- Answers vary.

Study Link 1.8

- rhombus
- rectangle
- equilateral triangle
- Answers vary.