

Introduction to *Second Grade Everyday Mathematics*

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

Here we describe several features of the program to familiarize you with the structure of *Everyday Mathematics* and the expectations we have for children.

A Problem-Solving Approach Based on Everyday Situations By connecting what children learn to their experiences both in and out of school, *Everyday Mathematics* presents basic math skills and concepts in meaningful contexts so that the mathematics becomes “real.”

Frequent Practice of Basic Skills In *Everyday Mathematics*, children practice basic skills in a number of different ways—but *not* through tedious drilling. Second graders complete daily review exercises covering a host of topics. They learn to find patterns on the number line and the number grid, explore addition and subtraction fact families in a variety of formats, work with Quick Looks and ten frames, and play games specifically designed to help them develop basic skills.

An Instructional Approach That Revisits Concepts Regularly The best way for children to develop their mathematical understanding is to regularly revisit skills and concepts they encountered earlier. Rather than presenting mathematics as isolated bits of content, the *Everyday Mathematics* curriculum is designed to build on children’s learning throughout the year. Research shows that repeated exposure to math concepts and skills over time develops children’s abilities to recall knowledge from long-term memory.

A Curriculum That Explores Mathematical Content and Practices The rich problem-solving environment provided by *Everyday Mathematics* helps children develop critical-thinking skills. They learn to solve new kinds of problems, explain their thinking to others, and make sense of other children’s thinking.



Second Grade Everyday Mathematics emphasizes the following content:

Numbers and Operations in Base 10

Understanding place value through counting, making coin exchanges, reading and writing numbers, and comparing numbers; using place-value understanding to add and subtract whole numbers.

Operations and Algebraic Thinking Solving addition and subtraction problems; developing fluency with addition and subtraction facts; exploring fact families (related addition and subtraction facts, such as $2 + 5 = 7$, $5 + 2 = 7$, $7 - 5 = 2$, and $7 - 2 = 5$); gaining foundations for multiplication and division.

Measurement and Data Estimating lengths and using tools to measure length; telling time to the nearest 5 minutes; solving problems involving money; collecting, organizing, and representing data with tables and graphs.

Geometry Recognizing and drawing 2-dimensional shapes and identifying select 3-dimensional shapes.

Everyday Mathematics provides you with many opportunities to share in your child's mathematical experience and monitor the progress your child makes. Throughout the year you will receive Family Letters like this one to keep you informed of the mathematical content your child is studying in each unit. Each letter includes a vocabulary list, suggested Do-Anytime Activities for you and your child, and an answer guide to selected Home Link (homework) activities. You will enjoy seeing your child's confidence and comprehension soar as he or she connects mathematics to everyday life.

We look forward to an exciting year!



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Unit 1: Establishing Routines

This unit reviews and extends mathematical concepts that were developed in *First Grade Everyday Mathematics*. In Unit 1 children will do the following:

- Use number lines to count, compare numbers, add, and subtract.
- Count in several different intervals, such as up by 2s, up by 10s, back by 10s from 100.
- Review whole numbers by completing assigned tasks, such as writing the number that comes after 509, writing the number that comes before 1,001, and writing the number word for 50.
- Count coins and find the values of coin combinations.
- Work with a number grid to reinforce place-value skills and observe number patterns.

-9	-8	-7	-6	-5	-4	-3	-2	-1	0
1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30

- Review equivalent names for numbers, which are different ways numbers can be expressed. For example, some equivalent names for 10 are $5 + 5$, $20 - 10$, ten, and *### ###*.
- Play games, such as *Fishing for 10*, to strengthen number skills and develop fact fluency.
- Explore patterns involving odd and even numbers.
- Review and use the symbols $>$ (is greater than), $<$ (is less than), and $=$ (is equal to).

Do-Anytime Activities

Try these interesting and rewarding activities to practice concepts taught in this unit:

- Discuss examples of mathematics in everyday life: times in TV listings, distances or speeds on road signs, prices in ads or store displays, recipe measurements, and so on.
- Discuss the rules for working with a partner or in a group.
 - Be polite.
 - Listen to your partner.
 - Take turns.
 - Help each other.
 - Respond to your partner.
 - Speak quietly.
 - Share.
 - Talk about problems.
- Discuss household tools that can be used to help solve mathematical problems, such as tape measures, thermometers, and clocks.

- Count combinations of pennies, nickels, dimes, and quarters.
- Look for number lines on everyday objects, such as rulers, speedometers, and thermometers.

Vocabulary

Important terms in Unit 1:

Math Message A daily activity that children complete independently, usually as a lead-in to the day's lesson. Example: *Make tally marks to show how many children are here today.*

Math Journal A book used by each child. It contains examples, instructions, and problems, as well as space to record answers and observations.

toolkits Individual zippered bags or boxes used in the classroom. Each toolkit contains various items—such as a ruler, play money, and number cards—that are used to help children understand mathematical ideas.

Mental Math and Fluency A daily whole-class oral or written activity, often emphasizing computation children learn to do in their heads.

number grid A table in which numbers are arranged consecutively, usually in rows of 10. A move from one number to the next left or right in a row is a change of 1; a move from one number to the next up or down in a column is a change of 10.

Exploration A small-group, hands-on activity designed to introduce or extend a mathematical topic.

Math Boxes Math problems in the *Math Journal* that provide opportunities for children to review and practice previously introduced skills.

Home Links *Everyday Mathematics* daily homework. Each Home Link includes problems and activities intended for follow-up and enrichment at home.

As You Help Your Child with Homework

When your child brings home an assignment, you may want to go over the instructions together, clarifying them as necessary. Each Family Letter will contain answers, such as the following, to guide you through the unit's Home Links.

Lesson 1-11

1. Answers vary.
2. Answers vary.
3. Answers vary.
4. <
5. >
6. >

7. =

8. Answers vary.
9. Answers vary.

Lesson 1-12

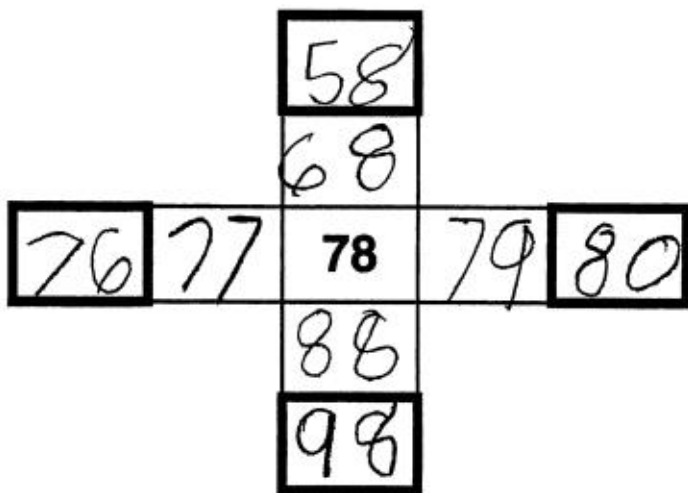
158; Answers vary.

Open Response and Reengagement Lessons

A two-day lesson in each unit of *Second Grade Everyday Mathematics* is an Open Response and Reengagement lesson. In these lessons children solve interesting problems using their own strategies and reasoning. On Day 1 children solve an open response problem—a problem with more than one possible strategy or solution. On Day 2 the class discusses children’s work from Day 1 to “reengage” with the problem and learn more about the mathematics involved. Children then revise their work based on what they learn from the discussion.

These lessons are not assessments, but opportunities for children to solve approachable problems that require persistence. Children’s work on Day 1 reveals both strengths and weaknesses, allowing the discussion on Day 2 to focus on areas that need improvement. From these discussions, children find that learning from mistakes is a natural part of mathematical problem solving. Explaining their thinking and listening to the explanations of others builds children’s confidence. At the same time, children see that there is more than one way to solve a problem, which promotes creative solutions to new problems. Having an opportunity to revise their work helps children realize that they can be successful tackling hard tasks if they think about them and keep trying.

The open response problem in this unit asks children to look for patterns in a number grid and use the patterns to identify missing numbers in a “number-grid puzzle.” They also write explanations about how they figured out two of the missing numbers.



Number-Grid Puzzle

These lessons continue work on problem solving that is central to *Everyday Mathematics* across all the grades. We hope you enjoy seeing your child become a confident problem solver. Ask your child to talk to you about the problems and his or her mathematical thinking throughout the year.