Sampler

MOVING with MATH®

EXTENSIONS

Look inside to find ...

FREE DVD on using manipulatives

Math Teachers Press, Inc.

Curriculum at a Glance

Grades K-8 in English and Spanish

Description

Moving with Math® Extensions is a condensed grade-level program designed to teach the underlying concepts of essential standards. An easy-to-use, integrated system links all learning objectives to tests, teaching activities, and reteaching pages.

Pacing calendars and clear, lightly-scripted lesson plans ensure that teachers know exactly what to do and say each day. Every lesson uses manipulatives to guide students as they explore each math concept.

Classroom Kits

Classroom kits are available in English and Spanish for Grades K to 8. Each kit comes in a colorful carrying box with a Teacher Resource Manual, 20 student activity books, 20 Pre-and-Post Tests and record sheets, and 20 Parent Handbooks. Manipulative kits are purchased separately.

State and National Standards

The *Moving with Math®* curriculum embraces NCTM curriculum guidelines, and has been correlated to most state and national standards. Call for your state correlation.

Flexible Time Frame

The program may be used in summer schools from 4 to 6 weeks and extended day classes from 20 to 80 hours by varying the activities to fit the time available for each lesson. The Teacher Manual includes a 20-lesson pacing plan, and 30-lesson plans are also available.

Parent Handbooks

Based on the recommendations of the No Child Left Behind Act, Parent Handbooks provide everything a teacher needs to connect to home. Handbooks share Pre-Test results with parents, give an overview of the program, and contain fun games and activities for parents and students to do together at home.

Professional Development

Educators may choose from a variety of options to fit their needs and budget. Professional Development Kits, training DVDs, and workshops with our educational consultants or your in-house trainers are available. All training is content-focused and is designed to help teachers reach students who have low test scores.

Boxed Classroom Kits

Each boxed classroom kit contains all the printed materials teachers need for a fun and successful extended day or summer school. Manipulative kits are purchased separately.
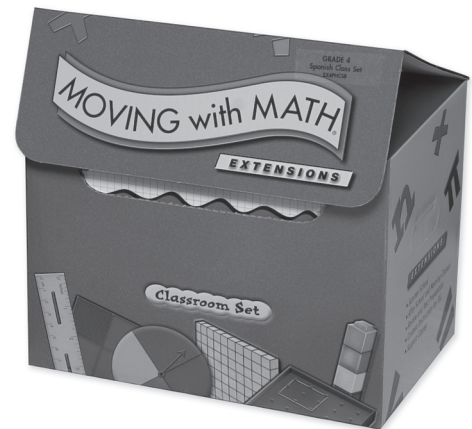
Each boxed kit contains:
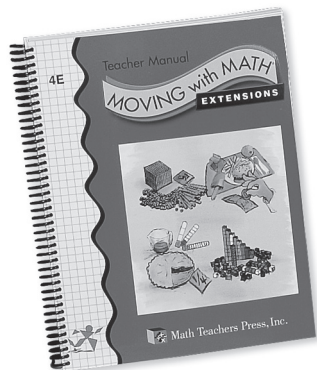
1 Teacher Manual

- **A Pacing Calendar** to help teachers stay on track.
- **Objectives** matched to test items and teaching pages.
- **Reproducible Pre- and Post-Tests.**
- **Writing Prompts** with a reproducible journal for each student.
- **Activity-Based Lessons** for an interactive learning environment.
- **Games** to make learning fun and keep students engaged.
- **Reproducible Reteaching Pages** for all grade-level objectives.

20 Student Activity Books

- **Activity Pages** that match the lessons in the Teacher Manual.
- 32 **Daily Reviews** to reinforce all grade-level objectives.
- **Review Record Sheet** for continuous tracking of individual progress.

1 Test Assessment Pack

- 20 **Pre- and Post-Tests** matched to grade-level objectives.
- 20 **Student Progress Reports** to gauge progress or use as a report card.
- **Class Record Sheet** for easy tracking of class progress.
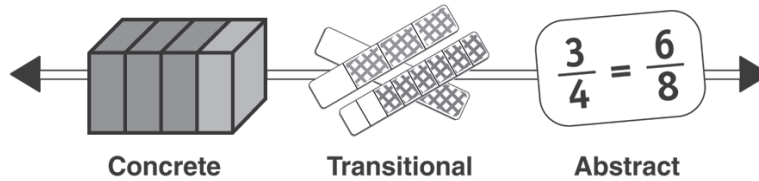- **Final Test Journal Prompt.**
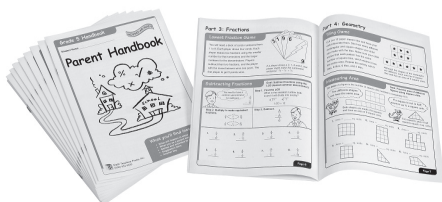
20 Parent Handbooks

- 20 **Parent Handbooks** with a parent letter, a record of the student's strengths and weaknesses, plus games and activities to do at home.
- 20 **Certificates of Achievement**

Hands-on Math

Every fun and engaging lesson guides students through the three stages of learning:

Concrete   Transitional $\frac{3}{4} = \frac{6}{8}$ Abstract

Students use manipulatives to understand math concepts.

Multi-Digit Numeration

To develop understanding of multi-digit numeration, students practice these activities:

1. **Writing numerals from blocks.** Display a set of ones, tens, and hundreds blocks. Ask students to describe and record what they see.
2. **Building blocks from numerals.** Write a 3-digit numeral. Ask students to read the number. Then ask them to build the number with base ten blocks.
3. **Building blocks and writing numerals from oral presentation.** Say a 3-digit number out loud. Students build the number and write the numeral.

4. **Drawing pictures of numerals.** Students draw pictures using a small square for each hundred (■), a stick for each ten (I), and a dot for each one (.).

Introducing Fractions

These activities help students gain an understanding of fractions. Students translate between concrete models, pictures, and spoken words.

1. Display a fraction bar. Ask 3 questions: **How many parts has the whole been divided into? How many parts are shaded? What fractional part is shaded?**
2. Write a fraction on the board, e.g., $^3/_4$. Have students draw a picture of this fraction.
3. Say a fraction name, e.g., $^7/_{12}$. Have students find a bar to match the fraction and then draw a picture of that fraction.

What's My Secret?
Partners take turns selecting a set of fraction bars alike in one way. The partner guesses the secret similarity.

Problem Solving Every Day

FOR Problem Solving: The Hands-on Difference

Students discover the conceptual underpinnings of math using manipulatives. Research proves that students who use manipulatives have higher scores on achievement tests and are better problem solvers.

GEOMETRY

ALGEBRA
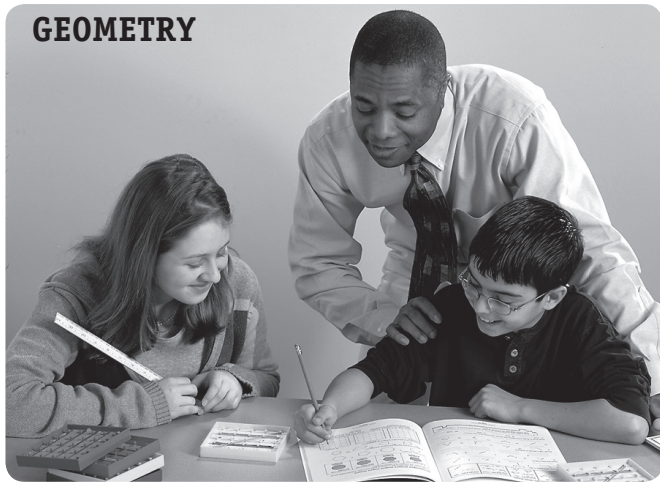
ABOUT Problem Solving: Explicit Steps and Strategies

Students develop and apply a five-step problem solving model. They discover that a variety of strategies may be used to solve the same problem.

Problem Solving Steps

1. Read and understand.
2. Find question and needed facts.
3. Decide on process.
4. Estimate.
5. Solve and check back.

Sally was at the beach for the weekend. On Saturday she found 38 shells and on Sunday she found 17 shells. How many more shells did she find on Saturday than on Sunday?

1. Read and understand.

Okay, I've read the problem and I know Sally went to the beach and I need to find out something about the shells she found.

2. Find question and needed facts.

Question: How many more shells did she find on Saturday than on Sunday?
Facts: 38 shells found on Saturday
17 shells found on Sunday

3. Decide on process.

I think I should subtract because the problem asks "how many more?"

4. Estimate.

I would guess about 20 more shells on Saturday than on Sunday.

5. Solve and check back.

$$\begin{array}{r} 38 \\ -\ 17 \\ \hline 21 \end{array}$$

This answer makes sense when I read the problem again. Sally found 21 more shells on Saturday than on Sunday.

Problem Solving: Use Different Strategies to Decide on a Process

Strategies
1. Act it out.
2. Use a model.
3. Draw a picture.
4. Simplify.
5. Make a table.

List the numbers of the strategies you can use to solve each problem. Estimate. Solve and check back.

1. If a car travels 58 miles per hour, how far will it go in 16 hours?

Strategies _____
Estimate _____   Actual _____

2. Krista and Heather completed a jogging race in 1,080 seconds. How many minutes did they jog?

Strategies _____
Estimate _____   Actual _____

3. A skating rink sells an average of 706 tickets each day. How many tickets are sold in September and October?

Strategies _____
Estimate _____   Actual _____

4. A plane flew 3,300 miles in 6 hours. How many miles per hour did it travel?

Strategies _____
Estimate _____   Actual _____

5. A car driven 140 miles used 5 gallons of gas. How many miles per gallon did the car average?

Strategies _____
Estimate _____   Actual _____

6. Alyse had 134 stamps. She put 8 stamps on each page. How many pages did she fill? How many stamps were left?

Strategies _____
Estimate _____   Actual _____

7. Jesse swims 12 laps each day. How many days will it take him to swim 280 laps?

Strategies _____
Estimate _____   Actual _____

8. Carrin needs 4 ft. of material to make a table decoration. How many decorations can she make from 87 ft. of material?

Strategies _____
Estimate _____   Actual _____

9. Fifty Scouts went camping. If one car holds 4 Scouts and their camping gear, how many cars will be needed?

Strategies _____
Estimate _____   Actual _____

10. The distance to the Scout camp is 130 miles. If a car averages 20 miles per gallon, how many gallons will be needed for one round trip?
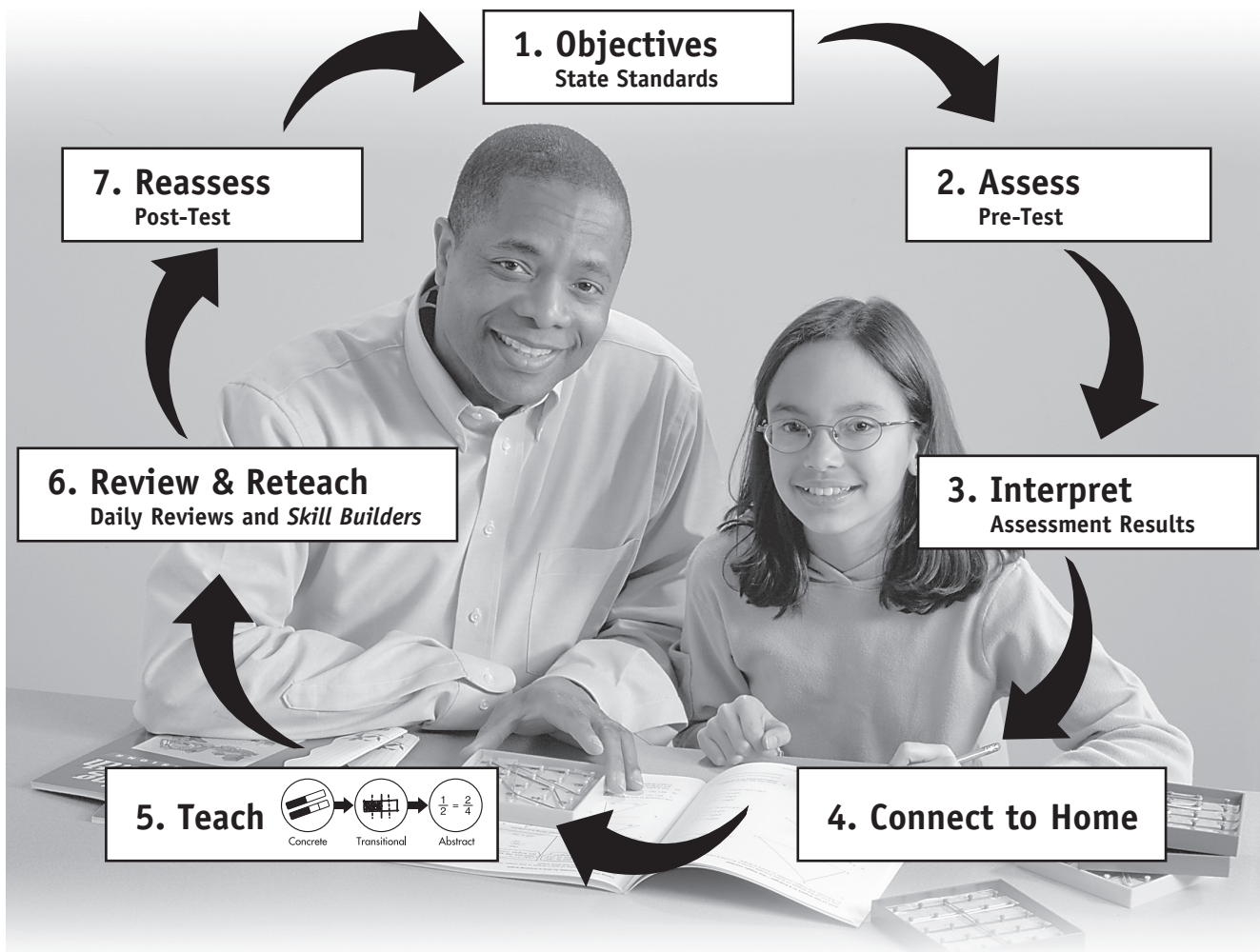
Strategies _____
Estimate _____   Actual _____

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VIA Problem Solving: Real-World Problems

Lessons begin with problems from the teacher guide, the student page, or those written by the teacher or student. As students write word problems, they understand the structure of a word problem and the need to focus on the question—the main point in the problem.

Assessment Linking...
Standards to Tests, Curriculum, and Home.

1. Objectives
State Standards

7. Reassess
Post-Test

2. Assess
Pre-Test

6. Review & Reteach
Daily Reviews and *Skill Builders*

3. Interpret
Assessment Results

5. Teach
Concrete → Transitional → Abstract $\frac{1}{2} = \frac{2}{4}$

4. Connect to Home

Using our teacher-friendly curriculum:

The *Moving with Math®* Extensions is a condensed, grade-level curriculum for grades K–8. The series follows a systematic organization that is modeled in the diagram above. The series begins with a set of objectives that are correlated to state and national standards. These objectives are assessed with a Pre-Test before the course begins and results are interpreted with helpful record sheets. Teachers can then connect with home and share findings and learning objectives with parents.

Next, teachers use manipulative-based lesson plans to teach key math concepts, skills, and problem solving. Throughout the course of instruction, teachers monitor progress and assign reteaching with Daily Reviews and *Skill Builders*.

Finally, a Post-Test measures progress and identifies further intervention needs.

As this sampler guides you through each step, you will be able to see how the curriculum integrates assessment with a coherent structure of skills that fit together to make a complete, hands-on system for teaching math.

Matching the Standards
Everything starts with learning objectives.

Correlation to Objectives

Use this table to match pre- or post-test problems to objectives and pages in the teachers manual and students book.

			Student Book	Skill Builders
	Numeration			
	B-1	Identify the place value in a 3-digit number.	1, 2	1–1
	B-2	Compare and order numbers up to 6 digits.	5, 6	2–1
	B-3	Complete patterns of multiples of the numbers 1–6 or 10.	8	3–1
	B-4	Write a 4-, 5- or 6-digit numeral from printed words or sets.	7	4–1
	B-5	Write the words for any numeral up to 6 digits in length.		5–1
	B-6	Identify the place value in a 4-, 5-, or 6-digit number.	3, 4	6–1
	B-7	Round a 2-, 3- or 4-digit number to the nearest ten.	9	7–1
	B-8	Round a 3- or 4-digit number to the nearest hundred.	10	8–1
	B-9	Find a missing number.	11, 12	9–1, 9–2
	Addition			
	B-10	Add 3-digit numbers with zero or two regroupings. Word problems.	13, 23	10–1, 49–2, 49–3
	B-11	Add three or four 2-digit numbers with regroupings.	14	11–1
	B-12	Add 4- or 5-digit numbers with regroupings.	15	12–1
	B-13	Add up to five numbers of differing lengths, 1- to 5-digits.	16	13–1
	B-14	Knows the meaning of "sum" and the "+" sign in addition.		14–1
	Subtraction			
	B-15	Subtract 3-digit numbers with up to two regroupings, word problems.	17, 18, 23	15-1,15-2,49-2,49-3
	B-16	Subtract 3-digit numbers with regroupings across zero.	19	16–1
	B-17	Subtract 4- or 5-digit numbers with regroupings, can be across zero.	20	17–1
	B-18	Subtract numbers of varying lengths, 1- to 5-digits.	21	18–1
	B-19	Knows the meaning of "difference" and the "-" sign in subtraction.		19–1
	Multiplication			
	B-20	Knows multiplication facts with factors 0-9.	25, 26, 27	20–1, 20–2, 20–3
	B-21	Multiply a 3-digit number by a 1-digit number, can be across zero.	29, 30, 31, 32, 33	21–1, 21–2
	B-22	Multiply a 1- or 2-digit number by 10 or a multiple of 10.	28, 34, 35	22–1
	B-23	Multiply a 2-digit number by a 2-digit number with regrouping.		23–1
	B-24	Knows the meaning of "product" and the "x" sign in multiplication.		24–1

Test Item/Objective Number (vertical label, left margin)

This table shows the learning objectives taught in the Grade 4 Extensions book.

Teachers can see where to find each objective in the Teacher Guide, Student Book, and reproducible *Skill Builders* pages.

Teacher Manual Foreword **v**

Learning Objectives and Accountability

Moving with Math® learning objectives provide accountability to districts, parents, and students. Learning objectives match both what students need to know for future success and for state and national standardized tests. Call your local representative or (800) 852-2435 for state correlations.

Tests Aligned to Objectives
Pre-Test Identifies Weak Skills,
Post-Test Demonstrates Progress

Name _____

Grade 4 Post-Test

1. Steve is thinking of a number that has a 4 in the hundreds place. Which number below could he be thinking of?
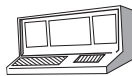
A   1347   C   1437

B   3714   D   4137

2. Which of these numbers is the greatest?

A   4349   C   5943

B   4439   D   5934

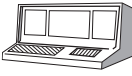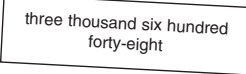3. A number machine follows a ru[le] to output numbers in a pattern. What number comes out next?

6, 10, 14, _____

Teacher Note: You may hel[p]
Do not expl[ain]

© Ma

> Problem 1 tests Objective 1 on both the Pre-Test and the Post-Test.

Name _____

Grade 4 Pre-Test

1. Mort is thinking of a number that has a 2 in the hundreds place. Which number below could he be thinking of?

A   1572   C   1275

B   1725   D   1527

2. Which of these numbers is the greatest?

A   4251   C   4521

B   5421   D   5412

3. A number machine follows a rule to output numbers in a pattern. What number comes out next?

3, 6, 9, _____

4. Write the numeral for the words in the box.

_____

three thousand six hundred forty-eight

5. Write 16,147 in words:

_____

_____

_____

6. The population of New Town is 157,462. What digit is in the ten thousands place?

Teacher Note: You may help students read words when requested.
Do not explain the meaning of the words.

1

Testing Ensures Accountability

Each question number on the Pre-Test and the Post-Test assesses the same objective at the same difficulty level. For example, Problem 1 on both tests asks students about 3-digit place value. Each test is approximately 50 questions.
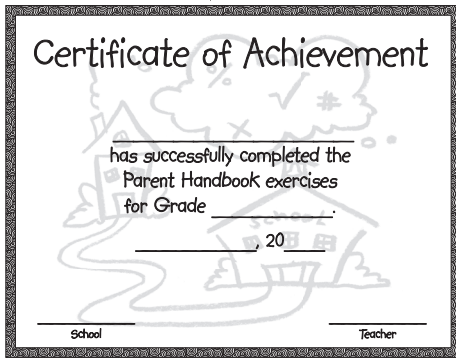
Using Test Results
Help teachers target and individualize instruction.

Name _____

Grade 4 Pre-Test

1. Mort is thinking of a number that has a 2 in the hundreds place. Which number below could he be thinking of?

A 1572   C 1275
B 1725   D 1527

2. Which of these numbers is the greatest?

A 4251   C 4521
B 5421   D 5412

3. A number machine follows a rule to output numbers in a pattern. What number comes out next?

3, 6, 9, ___

4. three thousand six hundred forty-eight

Write the numeral for the words in the box.

5. Write 16___

6. The population of New Town is 157,462. What digit is in the ten thousands place?

Teacher Note: You may help students read words when requested. Do not explain the meaning of the words.

1

continued

> Each question on the tests matches the same objective number.

Student Progress Report
Mark an X in the Pre- and/or Post-Test boxes to indicate missed objectives

Student _____

Grade 4

Pre-Test / Post-Test

Numeration
- B-1 Identify the place value in a 3-digit number.
- B-2 Compare and order numbers up to 6 digits.
- B-3 Complete patterns of multiples.
- B-4 Write a numeral from printed words.
- B-5 Write the words for a numeral up to 6 digits.
- B-6 Identify the place value in a 6-digit number.
- B-7 Round to the nearest ten.
- B-8 Round to the nearest hundred.
- B-9 Find the missing number in an addition sentence.

Addition
- B-10 Add 3-digit numbers with 2 regroupings.
- B-11 Add three or four 2-digit numbers.
- B-12 Add 4- or 5-digit numbers.
- B-13 Add up to 5 numbers of differing lengths.
- B-14 Define the word "sum" and the "+" sign.

Subtraction
- B-15 Subtract 3-digit numbers with 2 regroupings.
- B-16 Subtract 3-digit numbers with regroupings across 0.
- B-17 Subtract 5-digit numbers with regroupings across 0.
- B-18 Subtract numbers of varying lengths.
- B-19 Define the word "difference" and the "−" sign.

Multiplication
- B-20 Know multiplication facts up to 9's.
- B-21 Multiply a 3-digit number by a 1-digit number across zero.
- B-22 Multiply a 2-digit number by a multiple of 10.
- B-23 Multiply a 2-digit number by a 2-digit number with regrouping.
- B-24 Define the word "product" and the "x" sign.

Division
- B-25 Know division facts with divisors 0 to 9.
- B-26 Divide a 2-digit by a 1-digit number.
- B-27 Divide a 4-digit by a 1-digit number.

- B-28 Divide a 4-digit by a 1-digit number, 0's in the quotient.
- B-29 Define the word "quotient" and the "÷" sign.

Rational Numbers
- B-30 Write the fraction for the shaded part of a whole figure.
- B-31 Write the fraction for the shaded part of a set.
- B-32 Compare fractions less than ½ to fractions more than ½.
- B-33 Add or subtract 2 proper fractions with like denominators.
- B-34 Add or subtract 2 mixed numbers with like denominators.

Geometry
- B-35 Identify plane figures.
- B-36 Identify and draw line position.
- B-37 Identify types of lines.
- B-38 Identify a line of symmetry.
- B-39 Identify congruent figures, name polygons.
- B-40 Identify solid figures.

Measurement
- B-41 Tell time to 5 minutes.
- B-42 Read a thermometer, scale and calendar.
- B-43 Measure to the nearest ½ inch or .5 cm.
- B-44 Recall equivalence of customary units of length, weight and capacity.
- B-45 Recall equivalence of metric units of length, weight and capacity.
- B-46 Find the perimeter of a polygon. Find area.
- B-47 Make change for $10.00.

Problem Solving
- B-48 Solve a word problem with multiplication.
- B-49 Solve a word problem with division.
- B-50 Read and interpret a graph.

50   50   **Total Scores (out of 50 possible)**

> The Class Record Sheet keeps it all together. Results by topic and by objective allow teachers to *differentiate instruction* by focusing on specific content areas.

Class Record Sheet

Teacher: Amy Jones   Class Name: Period 5   Class Code: 4E   School Name: Brown Elementary

Student Name	Numeration	Addition	Subtraction	Multiplication	Division	Rational Numbers	Geometry	Measurement	Problem	Record Number
	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 31 32 33 34	35 36 37 38 39 40	41 42 43 44 45		

1. David A.
2. Rita B.
3. Jon B.
4. Jacob D. — 82% / 78%
5. Beth D.N. — 34/50 68%
6. Susan G. — 33/50 66%
7. Molly H. — 36/50 72%
8. Tom H. — 30/50 60%
9. Dave G. — 35/50 70%
10. May J. — 33/50 66%
11. Josh K. — 37/50 74%
12. Amy M. — 29/50 58%
13. Megan P. — 38/50 76%
14. Ryan P. — 42/50 84%
15. Tami S. — 37/50 74%
16. Mary S. — 33/50 66%
17. Jon T. — 39/50 78%
18. Jon. T.S. — 39/50
19. Pam W.
20. Carol W.

TOTAL%: Pre- 90 90 ... 65 80 80 35 75 85 60 55 45 85 80 70 65 80 70 60 70 60 65 75 65 60 65 90 45 85 70 75 80 70 60 ...

1. $\frac{31}{50}$ = 62%

2. 70% mean

3. 25% answered correctly

Class Record Sheet

The Class Record Sheet shows:

❶ Which objectives each student missed, and the number and percent correct for the Pre- and Post-Test.

❷ The mean percent for the class.

❸ The average percent correct for each objective.

Questions are grouped by content strand, so teachers can easily see areas of difficulty.

The Teacher Manual Includes Two Ways to View Results
The **Class Record Sheet** is grouped by objective and content strand, so a teacher can instantly recognize class weaknesses. Class Record Sheets also provide data for accountability.
The **Student Progress Report** is made for assessing individual progress and identifying at-risk students. It is an excellent tool for creating individualized education plans.

Parent Handbooks

Share results and provide activities for home.

Teachers record Pre-Test results and share the student's strengths and weaknesses with parents.

Parents return the completed handbook at the end of the program to receive this certificate of achievement.

Certificate of Achievement

_____

has successfully completed the Parent Handbook exercises for Grade _____:

_____, 20_____

School   Teacher

Student Strengths and Weaknesses

What this report shows:
The essential math skills listed here are necessary for your child's future math success. This report shows the skills your child already knows (marked with a ✔) as well as those your child still needs to learn during this course (marked with an ✗). At the end of this class, your child will be tested again on these same skills.

Numeration
- Identify the place value in a 3-digit number.
- Compare and order numbers up to 6 digits.
- Complete patterns of multiples.
- Write a numeral from printed words.
- Write the words for a numeral up to 6 digits.
- Identify the place value in a 6-digit number.
- Round to the nearest ten.
- Round to the nearest hundred.
- Find the missing number in an addition sentence.

Whole Number Operations
- Add 3-digit numbers with 2 regroupings.
- Add three or four 2-digit numbers.
- Add 4- or 5-digit numbers.
- Add up to 5 numbers of differing lengths.
- Define the word "sum" and the "+" sign.
- Subtract 3-digit numbers with 2 regroupings.
- Subtract 3-digit numbers with regroupings across 0.
- Subtract 5-digit numbers with regroupings across 0.
- Subtract numbers of varying lengths.
- Define the word "difference" and the "−" sign.
- Know multiplication facts up to 9's.
- Multiply a 3-digit number by a 1-digit number across zero.
- Multiply a 2-digit number by a multiple of 10.
- Multiply a 2-digit number by a 2-digit number with regrouping.
- Define the word "product" and the "×" sign.
- Know division facts with divisors 0 to 9.
- Divide a 2-digit number by a 1-digit number.
- Divide a 4-digit number by a 1-digit number.
- Divide a 4-digit number by a 1-digit number, 0's in the quotient.
- Define the word "quotient" and the "÷" sign.

Rational Numbers
- Write the fraction for the shaded part of a whole.
- Write the fraction for the shaded part of a set.
- Compare fractions less than ½ to fractions more than ½.
- Add or subtract 2 proper fractions with like denominators.
- Add or subtract 2 mixed numbers with like denominators.

Geometry & Measurement
- Identify plane figures such as lines and angles.
- Identify line position such as horizontal, diagonal and vertical.
- Identify types of lines such as intersecting, parallel, and perpendicular.
- Identify a line of symmetry.
- Identify congruent figures, name polygons.
- Identify solid figures such as cones, cylinders, spheres and cubes.
- Tell time to 5 minutes.
- Read a thermometer, scale and calendar.
- Measure to the nearest ½ inch or .5 cm.
- Recall equivalence of customary units of length, weight and capacity.
- Recall equivalence of metric units of length, weight and capacity.
- Find the perimeter of a polygon. Find area.
- Make change for $10.00.

Problem Solving
- Solve a word problem with multiplication.
- Solve a word problem with division.
- Read and interpret a graph.

Page 3

Part 1: Number Sense

Greatest Number Game

You will need a deck of cards numbered from 1 to 9. Players make a game board as shown at right. Each player draws one card and all players write the number in one of the place value spots. Play continues until 4 cards have been drawn and all 4 spots are filled. Players are not allowed to rearrange numbers after they have been written. The player with the greatest number wins.

8 4 7 2

2
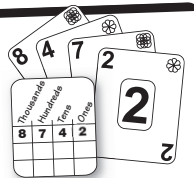
An 8, 4, 7, and 2 were drawn. This player made the number 8,742, which is the largest possible number.

Four-Digit Numbers

Goal: Understand place value up to 4 digits.

1,273
The place of each digit tells its value.

THOUSANDS HUNDREDS TENS ONES
1   2   7   3

1,273 means:
- 1 thousand
- 2 hundreds
- 7 tens
- 3 ones

Give the place name and value of the underlined digit.

	Place name	Value		Place name	Value
1. 1_4_7	tens	40	2. _5_7		
3. 2,_8_15			4. _6_,194		

Write the number for:

5. 4 hundreds, 5 tens, 3 ones _____   6. 3 hundreds, 6 tens, 5 ones _____

7. 2 ones, 3 tens, 1 hundred _____   8. 7 hundreds, 0 tens, 0 ones _____

Page 4

What your child will learn…

This class is designed to help your child understand math better. Your child will use models to learn and understand math. Students first see what numbers mean and then practice with paper and pencil. The class will also include a pre-test, a post-test, regular reviews, math games, and writing about math.

This curriculum is based on the latest educational research and has been proven successful by independent studies.

We are happy to have your child here and look forward to hearing from you.

Completing this Booklet…

The games and activities in this booklet should be spread throughout this program. Be sure to go over how to complete each answer on the practice pages.

At the end of this class, please fill out the comment form on the back, sign the form, and send the completed booklet to your child's teacher during the last week of class. Your child will receive a certificate of completion after the booklet is returned.

Stay Involved…

It is important for you to be involved in your child's education. Your child will do much better and be happier. Be sure to encourage regular attendance in class and show your child how math is important in the real world.

This booklet provides you ways to stay connected:
- A description of what is happening in our classroom
- A listing of your child's strengths and weaknesses
- Games and activities to go along with our classwork
- A comment form to give us your opinions
- The contact information for your child's teacher

Be sure to contact your child's teacher to discuss progress and ask any questions you might have.

"Research studies consistently reveal that high student achievement and self-esteem are closely related to positive parental participation in education."

* Educational Resources Information Center

Certificate of Achievement

Certificate
Return this completed booklet to your child's teacher in the last week of class. Your child will get a certificate of achievement.

Page 2

Games and Activities
Each activity page matches a major content area taught in class. Simple instructions show parents how math skills are taught.

Parent Direction and Involvement
The parent letter shown here explains how the program works and what parents can do at home to help.

Easy Lesson Planning
Teacher-friendly calendars show everything.
Vocabulary develops the language of math.

Grade 4	Day 1	Day 2	Day 3	Day 4	Day 5
Warm-up	Daily Review #1 (in back of student book)	Test Day	Daily Review #3 (in back of student book)	Daily Review#5 (in back of student book)	Daily Review #7 (in back of student book)
Lesson	**Objective:** Place value, expanded notation to 4-digits **Materials:** Base ten blocks, dice, place value mat, index cards, Master 3 **Teacher Guide pages:** 1-4	Administer the Pre-Test. Record results on the Class Record Sheet and student test packets.	**Objective:** Ordering and patterns, writing numerals from printed words **Materials:** Base ten blocks, interlocking cubes, egg cartons, Masters 5, 6, 7 **Teacher Guide pages:** 5-8	**Objective:** property, **Materials:** interlocki crayons, Masters **Teacher**	**Objective:** Addition to 5-digits
Math Practice	Student book pages 1-4	Test Day	Student book pages 5-8	Student book pages 9-13	Student book pages 14-16
Journal Prompt/ Performance Assessment	Teacher Guide page 2 (see Assessment section for instructions)	Test Day Optional prompt on Teacher Guide page 4	Teacher Guide page 7	Teache	
Test Preparation and Homework	Daily Review #2 (in back of student book) *Skill Builders 6-1* (in back of this manual)	Test Day	Daily Review #4 (in back of student book) *Skill Builders 7-1* (in back of this manual)	Daily R studen *Skill Bu* this manual)	
Games	Hammer to 100 Place Value Bingo (on Teacher Guide pages 1, 4)	Test Day	How Many Ways? (on Teacher Guide page 6)	Rounding Relay 3 Dice Total (on Teacher Guide pages	Playin g Relay

> A typical lesson includes a Daily Review, a hands-on lesson with practice, and follow-up activities like games, journal prompts, and homework.

> The time spent on a lesson may vary from 45 minutes to 4 hours, depending on time available, the amount of student practice, the number of activities to be completed, and the background of the students.

My Number

Write a d

- geometric pattern
- greatest common factor (GCF)
- inductive reasoning
- inverse operations
- integers
- is greater than (>)
- ordered p
- origin
- parentheses ( )
- pattern
- place value
- place value names
- positive inte
- positive number
- prime factorization
- prime number
- problem solving
- negative number
- negative integer
- multiplication (X)
- multiple
- mode

value names

positive integer _____

positive number _____

0 1 2 3 4 5 6

Any number to the right of 0.

> Students define vocabulary words in their Math Glossary.

Glossary of Math Terms

pattern…a series of numbers or figures that follows a general rule

place value…a system of nami which the value of a digit depen position in the numeral

place value names…ones, ten thousands, ten thousands, hund millions, ten millions, hundred billions, ten billions, hundred bi

positive integer…any integer zero; shown to the right of or above zero on a number line

positive number…any number greater than zero; shown to the right of zero on a number line

prime factorization…expressing a composite number as the product of prime numbers

quotient…the r

range…the diff

pattern

square of a of a number. "four square power"; see

standard fo digit for eac

> Distribute a copy of the reproducible Math Glossary Master to each student. Definitions of math terms (in the Teacher Manual) can be used to prepare word wall vocabulary cards.

Hands-On Lessons
Each lesson is organized in 3 easy parts.

1. **Introductory Activities** direct guided, hands-on exploration.
2. **About This Page** connects the student book activities to the lesson.
3. **Follow Up Activities** provide games and reteaching opportunities.

Each lesson begins with the day's objective, a list of materials needed, and new vocabulary.

Hands-on activities with manipulatives allow students to discover math concepts through experience.

Objective: To introduce the base ten blocks and 3-digit place value.

Materials: Base ten blocks, Place Value Mat (Masters 1 and 2 taped together), 6-sided dice

Vocabulary: place value, ones place, tens place, hundreds place

Introductory Activities

Introducing Base Ten Blocks

The main reason children make errors with whole number algorithms is that they do not understand multi-digit numeration. They do not know that 43 means 4 tens and 3 ones or 40 +3.

Base ten blocks are ideal for teaching numeration concepts because students can see the abstract concept of place value each time they pick up a block. One tens block is always seen both as 1 ten or 10 ones; 1 hundred block is always seen as 1 hundred or 10 tens or 100 ones; 1 thousand block is always seen as 10 hundreds or 100 tens or 1000 ones.

Carefully introduce the base ten blocks, allowing an appropriate exploratory time. Explain the benefits of manipulatives and ask for individual responsibility as the blocks are distributed.

After students have spent 10–15 minutes exploring with the base ten blocks, ask them to describe their observations about the blocks. Encourage them to find all the ways they are alike and all the ways they are different. (Alike: made of the same material, all the same color, the sides of each block are made up of 1 centimeter squares. Different: different sizes.)

Is there any pattern to the sizes of the blocks? (It takes 10 of 1 small block to equal 1 of the next larger block.) Name the smallest block as "ones" or "units," the next largest block as "longs" or "tens" and the largest block as "flats" or "hundreds." **Place each block where it belongs on the mat.**

About This Page

Direct attention to the top of the page. Have students match blocks to the pictures, place the blocks on the Place Value Mat and record the number of each block.

Three-digit place value

2 hundreds   4 tens   8 ones   =

Hundreds	Tens	Ones
2	4	8

Write each number.

1.

Hundreds	Tens	Ones
2	3	6

2.

Hundreds	Tens	Ones
3	2	3

3. 5 hundreds, 6 tens, 4 ones = 5 H 6 T 4 O

4. 7 hundreds, 3 tens, 8 ones = 7 H 3 T 8 O

5. 6 hundreds, 4 tens, 9 ones = 6 H 4 T 9 O

6. 2 hundreds, 9 tens, 5 ones = 2 H 9 T 5 O

7. 9 hundreds, 4 tens, 1 one = 9 H 4 T 1 O

8. 7 hundreds, 3 tens, 6 ones = 7 H 3 T 6 O

9. 5 hundreds, 8 tens, 5 ones = 5 H 8 T 5 O

10. 6 hundreds, 1 ten, 7 ones = 6 H 1 T 7 O

11. 7 hundreds, 2 tens, 2 ones = 7 H 2 T 2 O

12. 6 hundreds, 7 tens, 7 ones = 7 7

Follow Up Activities

Han...

...block...
20 t...
takes tur...
removing the nu...
time a player ge...
1 ten. The first...
toss exchanges...
winner.

...flat t...
die and remo...
hundred flat...
the first turn...
exchange th...
exchange 1...
ones could...
player to to...
blocks in he...

3-Digit Place Value

2 hundreds   4 tens   8 ones   =

Hundreds	Tens	Ones
2	4	8

Write each number.

1.

Hundreds	Tens	Ones

2.

Hundreds	Tens	Ones

3. 5 hundreds, 6 tens, 4 ones = ___ H ___ T ___ O

4. 7 hundreds, 3 tens, 8 ones = ___ H ___ T ___ O

5. 6 hundreds, 4 tens, 9 ones = ___ H ___ T ___ O

6. 2 hundreds, 9 tens, 5 ones = ___ H ___ T ___ O

7. 9 hundreds, 4 tens, 1 one = ___ H ___ T ___ O

8. 7 hundreds, 3 tens, 6 ones = ___ H ___ T ___ O

9. 5 hundreds, 8 tens, 5 ones = ___ H ___ T ___ O

10. 6 hundreds, 1 ten, 7 ones = ___ H ___ T ___ O

11. 7 hundreds, 2 tens, 2 ones = ___ H ___ T ___ O

12. 6 hundreds, 7 tens, 7 ones = ___ H ___ T ___ O

1
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Each student page matches the same lesson plan page.

Continuous Reassessment
Spiral Reviews for Long-Term Retention

Daily Reviews

Class starts with a quick, five-question review from the back of the student book. Teachers review and discuss answers.

Grade 4 – Daily Review 15

Daily Review

1. What time is it? _____

2. What is the temperature?
74
70
66
62

3. How long is the line to the nearest .5 cm? _____

centimeters

4. Tom typed 24 words per minute for 3 minutes. How many words did he type?

5. There is room for 4 students at each table in the library. How many tables will 36 students fill?

Daily Review 15
© Math Teachers Pr

Name _____

Daily Reviews

Date _____ Pre-test _____
Date _____ Post-test _____

4E

Record the results from your daily reviews here. The label "Obj." tells which objective that problem covered.

	Review 1	Review 2	Review 3	Review 4	Review 5	Review 6	Review 7	Review 8
1.	Obj.2	Obj. 3	Obj. 13	Obj. 13	Obj. 16	Obj. 2	Obj. 21	Obj. 3
2.	Obj.4	Obj. 8	Obj. 14	Obj. 14	Obj. 17	Obj. 4	Obj. 22	Obj. 8
3.	Obj.5	Obj. 9	Obj. 16	Obj. 16	Obj. 18	Obj. 5	Obj. 24	Obj. 9
4.	Obj.6	Obj. 11	Obj. 17	Obj. 19	Obj. 19	Obj. 6	Obj. 25	Obj. 12
5.	Obj.7	Obj. 12	Obj. 18	Obj. 18	Obj. 20	Obj. 7	Obj. 26	Obj. 26
Correct								

	Review 9	Review 10	Review 11	Review 12	Review 13	Review	15	Review 16
1.	Obj. 16	Obj. 13	Obj. 2	Obj. 8	Obj. 20	Obj. 16		Obj. 23
2.	Obj. 17	Obj. 20	Obj. 9	Obj. 9	Obj. 21	Obj. 17		Obj. 44
3.	Obj. 18	Obj. 21	Obj. 3	Obj. 5	Obj. 22	Obj.	Obj 41	Obj. 45
4.	Obj. 19	Obj. 22	Obj. 7	Obj. 25	Obj. 26	Obj. 25	Obj. 48	Obj. 46
5.	Obj. 26	Obj. 24	Obj. 13	Obj. 29	Obj. 25	Obj. 26	Obj. 49	Obj. 47
Correct								

> Daily Review 15, problem 1 matches objective 41.

Identify Objectives Missed by Students

Daily review record sheets provide continuous tracking of each student's progress.

Easy Reteaching

At a glance, teachers can track each student's progress and pinpoint weak areas. Reproducible *Skill Builders* pages (shown here) for every objective are found in the Teacher Manual.

Name _____

Telling Time to 5 Minutes

Every space between the numbers around the clock stands for 5 minutes.

5 minutes
10 min.
(2 x 5)
15 min.
(3 x 5)

The clock shows that the time is 35 minutes after 2. (The big hand is 7 spaces from the 12, so 7 x 5 = 35).

2:35
two thirty-five

1. The hour (short) hand is between 2 and 3. Tell what time it is as the minute (long) hand moves around the clock and points to each number.

1 _____ 2 _____ 3 _____
5 _____ 6 _____ 7 _____
9 _____ 10 _____ 11 _____

What time is it?
2. _____

3. _____

4. _____

Draw the hands to show the time.
5.
9:10

6.
2:40

7.
10:25

> Explanations at the top of the page help students recall what they have learned.

> Every reteaching page is matched to an objective. This is the first reteaching page for objective 41.

Skill Builder 41-1
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Assessment Technology

Optional On-Line Assessment Technology Made Easy!

Standards-Aligned
Moving with Math® is aligned to state and national standards.

Easy to Use
User friendly—no software to install. All you need are computers and the internet.

Accountability
District, school, classroom, and individual reports can be generated automatically.

1

Student: Dan H.

Click the circle by the correct answer. | Question 1 (50 in all)

Mort is thinking of a number that has a 2 in the hundreds place. Which number could he be thinking of?

A ◯ 1572
B ◯ 1725
C ◯ 1275
D ◯ 1527

Next

2

3
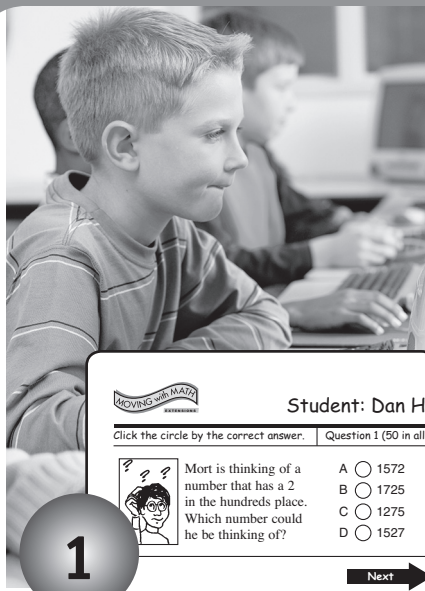
On-Line Tests
Students using *Moving with Math* may take their Pre-Test and Post-Test at any internet-connected computer.

Instant Reports
Teachers can print time-saving reports that show their class' and students' strengths and weaknesses.

Targeted Instruction
Reports give clear direction on using *Moving with Math®* to differentiate instruction and increase achievement.

Technology addressing the needs of Response to Intervention provides a blended curriculum experience.

Predictive screening Pre-Test Reports

- Identify students in each tier
- Form learning groups
- Provide Individual Educational Plans (IEPs)

Post-Test Reports

- Measure progress
- Provide accountability
- Indicate future instructional needs

RTI READY™

Helping Teachers Reach Under-Prepared Students

Moving with Math® Workshops

Teachers learn the proven *Moving with Math*® method to reach under-prepared students. Strategies include using models, vocabulary development, and problem solving.

Teachers learn how to differentiate instruction using *Moving with Math*® assessments to target instruction on weak areas.

Teachers learn by doing. In our hands-on training, teachers practice key manipulative-based lessons that they will use in the classroom.

Even More Training Options
Professional Development Kits

Boxed kits contain all the training materials your staff needs to conduct workshops on their own. Each kit includes a teacher resource manual and student book, presenter's guide, teacher handbooks, overhead transparencies, overhead manipulative, and a training video with sample manipulative-based lessons.

Training DVDs

In many cases, training DVDs are all teachers need to use the curriculum successfully. Each 30-minute grade-level DVD from K through 8 gives a curriculum overview and demonstrates key manipulative activities with students. Included with each Teacher Manual.

Getting the most out of *Moving with Math*®
Satisfied customers attribute success to Professional Development.

"The Moving with Math® Staff Development materials made a believer out of me. Both the regular math teachers and the non-math teachers went away ready and excited about implementing this new program."

Martha Askew
Math Supervisor
Newport News, Virginia

"The workshops helped teachers reach students who are struggling in math."

"Teacher evaluations were positive and indicated a great appreciation for the time spent to prepare them for the program."

"The teachers who taught summer school this year have reported student improvement."

Cathleen McStroul
Math Program Consultant 4-7
Regional Center for Teaching and Learning
Reno, Nevada

Easy Assessment

This page is found in the Teacher Manual. The 30 kindergarten objectives are identified by number and a unique symbol.

KE Objectives

Numeration, Classification, Patterns

K–1 Identify and sort by colors.

K–2 Identify sets that have the same number.

K–3 Identify which of two sets has more or fewer objects. Identify which of two sets has many objects or one object.

K–4 Identify and extend a pattern using color, people, objects and pictures.

K–5 Identify the number in a set of up to twelve objects through active participation. Match sets of 0 to 12 objects with the written numbers.

K–6 Write the number for a set of 0-12 objects or for a picture of 0-12 objects.

K–7 Order numbers from 0 to 10. Count forward and backward between 1 and 10. Count forward and backward from any number between 1 and 10.

K–8 Compare two sets of up to 10 objects.

K–9 Identify ordinal numbers first to fifth.

K–10 Identify and write numbers 13-31. Count aloud

K–17 Identify order of events: first, next, last. Refine time intervals as morning, afternoon, evening and night. Know names of seasons, months, and days of the week.

K–18 Identify which activity takes more time or less time. Estimate elapsed time related to one minute and one hour.

K–19 Tell time to the hour.

K–20 Estimate and measure length and height using arbitrary units.

K–21 Estimate and measure objects by weight, capacity, area, and temperature.

K–22 Identify an object divided into equal parts. Identify halves, one-half of a region.

K–23 Explore concepts of chance and probability, using objects.

K–24 Identify and give the value of a real penny, nickel and dime.

K–25 Give the value of a set of coins up to 10 cents. Match sets of coins to price tags.

Objective K-5 (the cat) is connected throughout the program for easy tracking and reteaching.

Name _____

KE Cumulative Test Page 1

Assessment **5**

7

Oral reviews allow individual or class review.

Oral Reviews

1 **MATERIALS:** Teddy bears of the same size, cubes, number cards 0-12
Display from 0 to 5 objects. **Tell me the number of bears.**
Display from 0 to 5 objects and the number cards 0-5 in random order. **How many bears? Show me the card that tells how many.**
Quickly show a number of fingers from 1 to 5 and then hide them. **How many fingers? Show me the card that tells how many.**
Display a numeral card from 0 to 5. **Show me as many bears.**

2 Display from 6 to 12 objects. **Tell me the number of bears.**
Display from 6 to 12 objects and the number cards 6 to 10 in random order. **How many bears? Show me the card that tells how many.**
Quickly show a number of fingers from 6 to 10 and then hide them. **How many fingers? Show me the card that tells how many.**
Display a numeral card from 6 to 12. **Show me as many bears.**

K-5 Match 0 to 12 objects

Friendly Lesson Plans

Objective: To introduce the plus sign. To introduce the equals sign.

Materials: Teddy bear counters, Teddy Bear Storyboard (Master 10), numeral cards (Master 6)

Introductory Activities

Acting Out a Story, Introducing the Plus Sign

Have children model and retell the following story using teddy bear counters on the Teddy Bear Storyboard.

There were 4 teddy bears playing in the sand box. One more teddy bear joined them. How many teddy bears are in the sand box?

Ask children to tell you the numbers they heard in this story as you write each number on the chalkboard: 4 1 5.

This is a story about 4 bears, 1 bear and 5 bears. What was the action in the story? (The bears came together in the sandbox.) **Very good. We call the operation or process of joining things together "addition". We use a special sign to show that the objects or numbers have been added. We use the plus sign.**

Write a big plus sign on the board. Have students make a plus sign by crossing the index finger of each hand. Have a volunteer come to the board and draw the plus sign between the two numbers which were joined together.

Repeat with other stories.

Acting Out a Story, Introducing the Equals Sign

Have children tell and act out a story on the top part of the storyboard as you record the number sentence on the chalkboard.

Two bears were playing on the slide. One more bear came to play with them. How many were playing on the slide? Record 2, 1 and 3 on the chalkboard.

What sign should go between the 2 and 1? Why? (the plus sign, because we are putting together 2 numbers)

What should the ___ represent? (the number in ___) (1 and 1 and 1 and 1 and 1)

sandbox story. This time have students select the numeral cards, "+" card, and "=" card to form a number sentence. For example: **There are 3 bears in the sand box. Two more bears come to play. How many bears are now in the sand box?**

$$\boxed{3}\ \boxed{+}\ \boxed{2}\ \boxed{=}\ \boxed{5}$$

About This Page

This page involves sums to 6. Have volunteers tell a story for each picture. Ask how many bears in all should be drawn in the sand box. Notice that these problems require the child to visualize the number of bears being added and then draw a picture of the number in all.

Follow Up Activities

Journal Prompt

Draw an addition story about the bears. Use the plus sign and the equals sign to write a number sentence about your story.

Skill Builders 26-1

On this page, students act out stories with teddy bears and record the story as a number sentence.

Students develop math language as they make up and model stories.

Skill Builders may be assigned for further practice.

Equals   Draw

2 □ + 2   □ =   4

5 □   1 □

3 □   1 □

4 □   2 □

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Page 44

Name _____

Dinosaur Count:
Count. Write. Add.

____ + ____ = ____

____ + ____ = ____

____ + ____ = ____

____ + ____ = ____

Skill Builders 26-1
© Math Teachers Press, Inc.
Reproduction only for one teacher for one class.

Two Greedy Bears, Ginsburg, Mirra

Summary: A clever fox teaches two bears a lesson about greed and what is equal.

Activity: Use this story to introduce the lesson. The last line of the story says, "But they were equal." Have the students explain what that means in their own words.

Program Objectives

Student Progress Report

Mark an X in the Pre- and/or Post-Test boxes to indicate <u>missed objectives</u>.

Teacher _____

School _____

Student _____

Pre- Post-

Numeration

- ☐☐ **A-1** Match objects ≤ 9 with numerals.
- ☐☐ **A-2** Order numerals 0-9.
- ☐☐ **A-3** Compare sets ≤ 10 objects.
- ☐☐ **A-4** Write the numeral from sets of tens and ones.
- ■■ **A-5** Not tested in this level.
- ☐☐ **A-6** Write 5 numbers before or after any number ≤ 100.
- ☐☐ **A-7** Write a numeral up to 3 digits from printed words.
- ☐☐ **A-8** Write words for up to a 3-digit numeral.
- ☐☐ **A-9** Compare and order numbers to 999.
- ☐☐ **A-10** Compare lengths – long or short.
- ☐☐ **A-11** Compare objects – large or small.
- ☐☐ **A-12** Order 5 lengths.
- ☐☐ **A-13** Identify ordinals first through tenth.
- ☐☐ **A-14** Extend patterns of objects.

Operations

- ☐☐ **A-15** Add with sums ≤ 10.
- ☐☐ **A-16** Subtract with differences ≤ 10.
- ☐☐ **A-17** Add up to 3 numbers, sums ≤ 10.
- ☐☐ **A-18** Add with sums ≤ 18. Define "+" and "sum."
- ☐☐ **A-19** Subtract a 1-digit from a 2-digit number ≤ 18. Define "−" and "difference."
- ☐☐ **A-20** Add 2 numbers, 2 digits and 1 digit, no regrouping.
- ☐☐ **A-21** Add 2 multiples of 10, sums ≤ 90.
- ☐☐ **A-22** Add two 2-digit numbers, no regrouping.
- ■■ **A-23** Not tested in this level.
- ■■ **A-24** Not tested in this level.
- ☐☐ **A-25** Subtract two 2-digit numbers, no regrouping.
- ■■ **A-26** Not tested in this level.

Pre- Post-

- ☐☐ **A-27** Estimate and solve addition word problems. Use strategies.
- ☐☐ **A-28** Estimate and solve subtraction word problems. Use strategies.
- ☐☐ **A-29** Solve a subtraction problem asking, "How many more of one than another?"
- ☐☐ **A-30** Skip count by 2's, 5's, 10's to 100.
- ■■ **A-31** Not tested in this level.

Geometry & Measurement

- ☐☐ **A-32** Identify "top" and "bottom."
- ☐☐ **A-33** Identify "inside" and "outside."
- ☐☐ **A-34** Identify "between."
- ☐☐ **A-35** Identify "next to."
- ☐☐ **A-36** Identify "above" and "below."
- ☐☐ **A-37** Identify a square.
- ☐☐ **A-38** Identify a circle.
- ☐☐ **A-39** Identify a triangle.
- ☐☐ **A-40** Identify a rectangle.
- ☐☐ **A-41** Identify portions of a region as halves.
- ☐☐ **A-42** Identify portions of a region divided into thirds or fourths.
- ☐☐ **A-43** Select 2 figures with the same shape.
- ☐☐ **A-44** Select 2 figures with the same size.
- ■■ **A-45** Not tested in this level.
- ☐☐ **A-46** State the value of coins ≤ 9¢. Identify the penny and nickel.
- ☐☐ **A-47** State value of 1-9 dimes and 1-9 pennies. Identify the dime.
- ☐☐ **A-48** State value of coins and bills ≤ $2.00. Identify the quarter and half-dollar.
- ☐☐ **A-49** Tell time to the half hour. Interpret a calendar.
- ☐☐ **A-50** Measure to the nearest centimeter or inch. Read a graph.

☐☐ **Total score (out of 44 possible)**
44 44

Student Progress Report (List of Objectives)

This page is in the Teacher Manual and in the Test Assessment Pack. It lists each skill alongside an objective number. This page provides the foundation for tracking a student's achievement and may be sent home as a report card.

Tracking Achievement

25. There were 47 apples at a road stand. 13 of them are sold. How many are left?

47

13

_____

26. (not tested in this level)

27. Two buttons in one set. Six buttons in another set. How many buttons in all?

_____

28. Here are 8 birds. Five of them fly away. How many are left?

_____

Testing

The Test Assessment Pack contains 20 Pre-Test and 20 Post-Test booklets. Each test has 44 questions, one for each objective.

The number of each problem on the test matches the corresponding objective number of the opposite page.

Testing

Teachers see a snapshot of each student and the class at the beginning and end of the session.

Class Record Sheet

Results show improvement for each student and the class.

Grade 1 Class Record Sheet

Teacher: _____

Grade: _____ School: _____

- If answer is correct, leave the space _empty._
- Put an X on _missed_ objectives.
- Record days absent in the last column labeled "Abs."

Student Name	Numeration	Operations, Problem Solving	Operations, Problem Solving (cont.)	Fractions, Geometry, Measurement	Record Number Correct out of 50

Teachers mark an X under the number of each problem the student misses. The total correct on the Pre- and Post-Test is recorded at the far right.

Grade

1

Teacher Guide

This lesson directs exploration with base ten blocks to discover a fundamental concept: ten of one place value equals one of the next higher place value.

Friendly Lesson Plans

Objective: To develop an understanding that 10 ones have the same value as 1 ten.

Materials: Base ten blocks (ones and tens), 6-sided dice, plastic bags, paper clips

Vocabulary: Ones, units, tens, long

Introductory Activities

Exploring and Discovering Patterns

Each pair should have 25 ones blocks and 10 tens blocks. Allow a short exploratory period. Children might make buildings, roads and parking ramps. Have students share their discoveries.

Encourage children to look for patterns. **These blocks are important because of the pattern used to make them. We can find important patterns if we ask ourselves how these blocks are all the same and how they are different.**

Write 2 columns on the board: How are the blocks the same? How are the blocks different?

Talk with your partner about ways the blocks are alike or the same. Think of a way to record what you find. You can draw a picture or write a word. What is a way the blocks are the same? (e.g. same material.)

Write the answer under the word "same" on the chalkboard. **Now find other ways they are alike**. (smooth, have 8 points, 6 sides, slide, stack, same color, solids, all made of little cubes)

Ask how the blocks are different. (different size, length, weight) **How many different sizes do you have?** (2) **Can you put 1 of each size in front of you? We call the smallest block the "ones" or "units" block. What is the relationship or pattern between the ones block and the other block?** (It takes 10 ones blocks to make the next block.) **We will name the next size of block the "tens" or "long" block.**

About This Page

Read the example together. Use base ten blocks to show that 10 ones are the same as 1 ten.

Look at Problem 1. Match 1 block to each picture of a block. Do you have 10 or more blocks? (yes) **Trade 10 ones for 1 ten. What blocks do you have now?** (1 ten and 4 ones) **Ring groups of 10 blocks. How many groups of 10?** (1) **Write a 1 in the blank above the**

word "tens." How many leftover ones blocks? (4) **Write 4 in the blank above the "ones." What is another name for 1 ten 4 ones?** (14)

Have children complete the page on their own.

Follow Up Activities

SPIN TO 10

Each pair should have a die, 10 ones blocks and 1 tens block. Each pair puts a pile of ones blocks in the center of the play area. The tens block is put by itself and shared between players.

Player 1 throws the die, removes the number of ones from the pile, and places them by the tens block. Placing the ones blocks next to the tens block helps children see relationships, e.g. a 9 looks like 10 – 1 rather than 1, 2, 3, … 9.

The winner is the first player who throws a number exactly to 10. (If a player has 9 ones and throws a 3, the player loses that turn. The player must spin "1" to get to 10 exactly.)

Journal Prompt

List the numbers from 11 to 20. Draw a picture showing how many tens and ones are in each number.

Students learn that each number from 11 to 20 can be shown as ones or a combination of 1 ten and additional ones.

Math games for partners and small groups reinforce the concept.

Name _____

10 ones is the same as…   … 1 ten.

Ring groups of tens. Write the numbers in the blanks.

1. |1| tens |4| ones |14|

2. |1| tens |7| ones |17|

3. |1| tens |2| ones |12|

4. |1| tens |9| ones |19|

5. |2| tens |0| ones |20|

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Page 29

Test Preparation

Daily Reviews

Class starts with a five-question review from the back of the student book. Teachers review and discuss answers.

Daily Review 15

1. How much are these coins worth altogether? _____ ¢

2. 5 cookies.
   3 crackers.
   How many altogether? _____

3. 7 birds. 3 flew away.
   How many are left? _____

4. 5 fish. 2 worms.
   How many more fish than worms? _____

5. 52   11
   + 7   + 6
   ____   ____

Daily Review 15
© Math Teachers Press, Inc.

Name _____

Daily Reviews   Date _____ Pre-test _____
                       Date _____ Post-test _____   **1E**

Record the results from your daily reviews here. The label "Obj." tells which objective that problem covered.

Problem 1 on Daily Review 15 matches objective 47.

	Review 1	Review 2	Review 3	Review 4	Review 5	Review 6	Review 7	Review 8
1.	Obj. 1	Obj. 1	Obj. 1	Obj. 13	Obj. 13	Obj. 13	Obj. 10	Obj. 13
2.	Obj. 2	Obj. 2	Obj. 2	Obj. 14	Obj. 14	Obj. 14	Obj. 11	Obj. 14
3.	Obj. 3	Obj. 3	Obj. 3	Obj. 15	Obj. 15	Obj. 16	Obj. 12	Obj. 15
4.	Obj. 7	Obj. 7	Obj. 7	Obj. 16	Obj. 16	Obj. 16	Obj. 46	Obj. 16
5.	Obj. 8	Obj. 8	Obj. 8	Obj. 15	Obj. 16	Obj. 15	Obj. 6	Obj. 16

Correct

	Review 9	Review 10	Review 11	Review 12	Review 13	Review 14	Review 15	Review 16
1.	Obj. 4	Obj. 4	Obj. 4	Obj. 32	Obj. 47	Obj. 47	Obj. 47	Obj. 10
2.	Obj. 9	Obj. 9	Obj. 9	Obj. 33	Obj. 27	Obj. 27	Obj. 27	Obj. 11
3.	Obj. 30	Obj. 30	Obj. 30	Obj. 34	Obj. 28	Obj. 28	Obj. 28	Obj. 12
4.	Obj. 17	Obj. 17	Obj. 17	Obj. 35	Obj. 29	Obj. 29	Obj. 29	Obj. 46
5.	Obj. 19	Obj. 18	Obj. 19	Obj. 36	Obj. 20	Obj. 20	Obj. 20	Obj. 6

Correct

Daily Review Record Sheets

Students record their results on the record sheet, which identifies missed objectives.

Easy Reteaching

Reteaching is a snap. Teachers can track each student's progress and pinpoint weak areas. Reproducible *Skill Builders* pages (shown here) for every objective are found in the Teacher Manual.

This page reteaches objective 47 and is the first page for reteaching that objective.

Name _____

A dime has a value of 10¢.

10   =   10

10¢   =   10¢

Give the value of these coins. _____ ¢

Give the value of these coins. _____ ¢

Give the value of these coins. _____ ¢

Give the value of these coins. _____ ¢

Skill Builders 47-1
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Program Objectives

Student Progress Report

Mark an X in the Pre- and/or Post-Test boxes to indicate <u>missed objectives</u>.

Teacher ———————

School ———————

Student ———————

Pre-Test   Post-Test

Numeration

☐ ☐	A-1	Match objects ≤ 9 with numerals.
☐ ☐	A-2	Order numerals 0-9.
☐ ☐	A-3	Use <, =, or > to compare sets with < 10 objects.
☐ ☐	A-4	Write the numeral from tens and ones blocks.
☐ ☐	A-5	Write the numeral from hundreds, tens and ones blocks.
☐ ☐	A-6	Write five numbers before or after any number < 100.
☐ ☐	A-7	Write any numeral up to three digits, given printed words.
☐ ☐	A-8	Read and write words for any 3-digit numeral.
☐ ☐	A-9	Order and compare numbers to 999. Complete number patterns.
☐ ☐	A-10	Compare lengths as longest or shortest.
☐ ☐	A-11	Compare objects as largest or smallest.
☐ ☐	A-12	Order five different lengths from shortest to longest.
☐ ☐	A-13	Identify ordinal positions first through tenth.
☐ ☐	A-14	Extend patterns of objects.

Operations

☐ ☐	A-15	Add sums < 10 in horizontal or vertical format.
☐ ☐	A-16	Subtract differences < 10 in horizontal or vertical format.
☐ ☐	A-17	Add two or three numbers, sums < 10.
☐ ☐	A-18	Add sums < 18.
☐ ☐	A-19	Subtract a 1-digit from a 2-digit number < 18.
☐ ☐	A-20	Add two numbers, 2 digits and 1 digit, no regrouping.
☐ ☐	A-21	Add two numbers, both multiples of 10, sums < 90.
☐ ☐	A-22	Add two numbers, 2 digits each, no regrouping.
☐ ☐	A-23	Add three numbers, 2 digits each, no regrouping.
☐ ☐	A-24	Add two numbers, 2 digits each, with regrouping.
☐ ☐	A-25	Subtract a 2-digit number from a 2-digit number, no regrouping.

Pre-Test   Post-Test

☐ ☐	A-26	Subtract a 2-digit number from a 2-digit number, with regrouping.
☐ ☐	A-27	Estimate and solve addition word problems.
☐ ☐	A-28	Estimate and solve subtraction word problems.
☐ ☐	A-29	Solve a subtraction word problem asking, "How many more?"
☐ ☐	A-30	Skip count by 2's, 5's, 10's to 100.
☐ ☐	A-31	Divide a group of objects into equal groups, none remaining.

Fractions, Geometry, Measurement

☐ ☐	A-32	Identify *top* and *bottom* in a location problem.
☐ ☐	A-33	Identify *inside, outside* in a location problem.
☐ ☐	A-34	Identify *between* in a location problem.
☐ ☐	A-35	Identify *next to* in a location problem.
☐ ☐	A-36	Identify *above* and *below* in a location problem.
☐ ☐	A-37	Identify a square from a set of figures.
☐ ☐	A-38	Identify a circle from a set of figures.
☐ ☐	A-39	Identify a triangle from a set of figures.
☐ ☐	A-40	Identify a rectangle from a set of figures.
☐ ☐	A-41	Identify portions of a region as halves.
☐ ☐	A-42	Identify portions of a region divided into thirds or fourths.
☐ ☐	A-43	Select two figures with the same shape.
☐ ☐	A-44	Select two figures with the same size.
☐ ☐	A-45	Select two figures with the same shape and size.
☐ ☐	A-46	State the value of coins < 9¢. Identify the penny and nickel.
☐ ☐	A-47	State value of 1-9 dimes and 1-9 pennies. Identify the dime.
☐ ☐	A-48	State value of coins and bills < $2.00. Identify the quarter and half-dollar.
☐ ☐	A-49	Tell time in hours and half hours. Interpret a calendar.
☐ ☐	A-50	Measure to the nearest unit. Interpret graphs.

☐ ☐	**Total Score (out of 50 possible)**
50 50	

Assessment **1**

Student Progress Report (List of Objectives)

This page is in the Teacher Manual and in the Test Assessment Pack. It lists each skill alongside an objective number. This page provides the foundation for tracking a student's achievement and may be sent home as a report card.

Tracking Achievement

29. How many more apples than bananas?

_____

30. Skip count by 5's.

20	25	30			45	50

31. Circle groups of 3. How many groups of 3?

_____

32. Write the number that is on the top.

8    $\frac{3}{4}$ 7

33. I am outside the triangle. I am inside the circle. I am an odd number. Which number am I?

4
5 6
7
8
9

Testing

The Test Assessment Pack contains 20 Pre-Test and 20 Post-Test booklets. Each test has 50 questions, one for each objective.

The number of each problem on the test matches the corresponding objective number of the opposite page.

Testing

Teachers see a snapshot of each student and the class at the beginning and end of the session.

Class Record Sheet

Results show improvement for each student and the class.

Grade 2 Class Record Sheet

Teacher: _____
Grade: _____ School: _____

• If answer is correct, leave the space _empty_.
• Put an X on _missed_ objectives.
• Record days absent in the last column labeled "Abs."

Teachers mark an X under the number of each problem the student misses. The total correct on the Pre- and Post-Test is recorded at the far right.

Friendly Lesson Plans

As students discover different ways to solve a subtraction problem, they gain self confidence in their own ability to solve problems.

A major reason for errors in computation is a lack of understanding of multi-digit numeration. Students use base ten blocks to understand place value concepts.

Objective: To use base ten blocks to subtract 2-digit numbers, no regrouping. To find a pattern for subtracting 2-digit numbers.

Materials: Place Value Mat (Master 10 and 11), base ten blocks (tens and ones), tape recorder (optional), 6-sided dice or playing cards.

Introductory Activities

Each pair or group should have a Place Value Mat and base ten blocks. **Today I will tell stories and record them on the tape recorder. Listen to the whole story the first time. Look for the question and needed facts. Discuss with your partner how to solve the problem.**

Next I will retell the story and pause after each sentence for you to decide what to do. We will use the Place Value Mat and base ten blocks to solve the problem.

After you have found the answer with blocks, think of a way to record the story with paper and pencil.

Story 1: You buy a box of 78 peanuts at the circus. You eat 34 peanuts. How many peanuts do you have left?

Tens	Ones
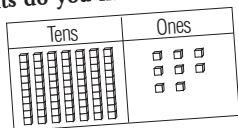
Start by building 7 tens and 8 ones.

Tens	Ones
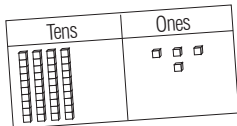
Then remove 3 tens and 4 ones.

4 tens   4 ones   44 are left

Students might record by drawing a picture using sticks or dots for tens and ones, or they might record:

$$\begin{array}{r} 78 \\ -\ 34 \\ \hline 44 \end{array}$$

...pattern for subtracting two 2-...s. Possible explanations or patterns:
...d 30 from 70 and 4 from 8
...and 48 - 4 is 44
...nd 8 - 4 is 4, so the answer is 44.
...umber in the ones place.
...mbers in the tens place.
...ve 79 hot dogs. You sell 28
...y hot dogs do you have?

Counting Sheep, Mendoza, George
Summary: An old shepherd who counts sheep to fall asleep has a troubled dream about one to twenty sheep.
Activity: Tell the students that tonight the old shepherd has 100 sheep to count.

47 bears are under the Big Top. 23 bears leave. How many bears are under the Big Top?

You can use base ten blocks on a Place Value Mat.

First, build the larger number.

TENS	ONES

47
−23

Then, remove the smaller number and read the number left.

TENS	ONES

24

Now work the problem this way with paper and pencil.

Subtract the ones

$$\begin{array}{r} 47 \\ -23 \end{array}$$

Subtract the tens

$$\begin{array}{r} 47 \\ -23 \\ \hline 24 \end{array}$$

Use base ten blocks to subtract. Cross out blocks.

1. $\begin{array}{r} 35 \\ -12 \\ \hline 23 \end{array}$
2. $\begin{array}{r} 49 \\ -35 \\ \hline 14 \end{array}$
3. $\begin{array}{r} 46 \\ -20 \\ \hline 26 \end{array}$
4. $\begin{array}{r} 70 \\ -30 \\ \hline 40 \end{array}$

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Page 49

Story 3: You have 75 peanuts. Your friend Bill has fewer peanuts than you do. How many fewer peanuts does Bill have? (not enough information)

About This Page

Work the example at the top of the page together. Have students use base ten blocks. **What is the pattern for subtracting 2-digit numbers?** (Subtract the ones, then subtract the tens.) Have students complete the page.

Follow Up Activities

BINGO
Skill Builders 25-3

Journal Prompt
Pat has 25 tickets. He uses 13 of them to go on a ride. How many tickets does he have left? Draw pictures of base ten blocks to solve and to explain your answer.

Skill Builders 25-1, 25-2

Students find there are often many ways to solve the same problem. They naturally begin looking for the most efficient way—subtract the ones then subtract the tens.

Test Preparation

Daily Reviews

Class starts with a five-question review from the back of the student book. Teachers review and discuss answers.

Daily Review 6

1. Write the 5 numbers that come after 47:

   ____ , ____ , ____ , ____ , ____ .

2. Write this number. _____

   | 7 tens   5 ones |

3. Which of these is true? _____

   (A) 15 < 13
   (B) 9 > 13
   (C) 15 > 13
   (D) 13 = 15

4. Fill in the missing numbers.

   5, 10, 15, ____ , ____ ,

   ____ , ____ , ____ , ____ , 50.

5. Which shape is this? _____

   (A) circle   (C) square

   (B) rectangle (D) triangle

Daily Review 6
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Problem 2 on Daily Review 6 matches objective 4.

Name _____

Daily Reviews

Date ____   Pre-test ____
Date ____   Post-test ____

Record the results from your daily reviews here. The label "Obj." tells which objective that problem covered.

	Review 1	Review 2	Review 3	Review 4	Review 5	Review 6	Review 7	Review 8
1.	Obj. 7	Obj. 6	Obj. 18	Obj. 7	Obj. 20	Obj. 6	Obj. 7	Obj. 24
2.	Obj. 8	Obj. 4	Obj. 19	Obj. 8	Obj. 21	Obj. 4	Obj. 8	Obj. 25
3.	Obj.13	Obj. 9	Obj. 27	Obj. 13	Obj. 22	Obj. 9	Obj. 13	Obj. 26
4.	Obj.14	Obj. 30	Obj. 28	Obj. 14	Obj. 23	Obj. 30	Obj. 14	Obj. 37
5.	Obj.47	Obj. 5	Obj. 29	Obj. 47	Obj. 24	Obj. 40	Obj. 47	Obj. 45
orrect								

	Review 9	Review 10	Review 11	Review 12	Review 13	Review 14	Review 15	Review 16
1.	Obj. 6	Obj. 23	Obj. 18	Obj. 26	Obj. 20	Obj. 29	Obj. 29	Obj. 29
2.	Obj. 4	Obj. 24	Obj. 19	Obj. 50	Obj. 21	Obj. 23	Obj. 23	Obj. 23
3.	Obj. 9	Obj. 26	Obj. 27	Obj. 45	Obj. 22	Obj. 24	Obj. 24	Obj. 24
4.	Obj. 30	Obj. 49	Obj. 28	Obj. 41	Obj. 23	Obj. 25	Obj. 25	Obj. 25
5.	Obj. 20	Obj. 48	Obj. 29	Obj. 42	Obj. 24	Obj. 26	Obj. 26	Obj. 26
orrect								

Daily Review Record Sheets

Students record their results on the record sheet, which identifies missed objectives.
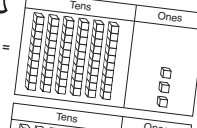
Easy Reteaching

Reteaching is a snap. Teachers can track each student's progress and pinpoint weak areas. Reproducible *Skill Builders* pages (shown here) for every objective are found in the Teacher Manual.

This page reteaches objective 4 and is the first page for reteaching that objective.

Name _____

Ring the number that has 6 in the ones place.

63 = [Tens] [Ones]

36 = [Tens] [Ones]

| 63 | | 36 |

1. Ring the number with 4 in the ones place.

   | 42 | | 24 |

2. Ring the number with 7 in the ones place.

   | 17 | | 71 |

3. Ring the number with 2 in the tens place.

   | 25 | | 52 |

4. Ring the number with 7 in the tens place.

   | 75 | | 57 |

5. Ring the number with 6 in the ones place.

   | 86 | | 68 |

6. Ring the number with 4 in the tens place.

   | 24 | | 42 |

7. The 4 is in what place?

   | 45 |

   ones   tens

8. The 7 is in what place?

   | 27 |

   ones   tens

Skill Builders 4-1
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Program Objectives

Student Progress Report
Mark an X in the Pre- and/or Post-Test boxes to indicate <u>missed objectives</u>.

Teacher

School

Student

Pre-Test
Post-Test

Numeration
- ☐ ☐ **B-1** Identify the place value in a 3-digit number.
- ☐ ☐ **B-2** Compare and order numbers up to 6 digits.
- ■ ■ **B-3** Complete patterns of multiples.
- ☐ ☐ **B-4** Write a numeral from printed words.
- ☐ ☐ **B-5** Write the words for a numeral up to 6 digits.
- ☐ ☐ **B-6** Identify the place value in a 6-digit number.
- ☐ ☐ **B-7** Round to the nearest ten.
- ☐ ☐ **B-8** Round to the nearest hundred.
- ☐ ☐ **B-9** Find the missing number in an addition sentence.

Addition
- ☐ ☐ **B-10** Add 3-digit numbers with 2 regroupings.
- ☐ ☐ **B-11** Add three or four 2-digit numbers.
- ☐ ☐ **B-12** Add 4- or 5-digit numbers.
- ■ ■ **B-13** Not tested in this level.
- ☐ ☐ **B-14** Define the word "sum" and the "+" sign.

Subtraction
- ☐ ☐ **B-15** Subtract 3-digit numbers with 2 regroupings.
- ■ ■ **B-16** Not tested in this level.
- ☐ ☐ **B-17** Subtract 5-digit numbers with regroupings across 0.
- ■ ■ **B-18** Not tested in this level.
- ☐ ☐ **B-19** Define the word "difference" and the "–" sign.

Multiplication
- ☐ ☐ **B-20** Know multiplication facts up to 9's.
- ☐ ☐ **B-21** Multiply a 3-digit number by a 1-digit number across zero.
- ■ ■ **B-22** Not tested in this level.
- ■ ■ **B-23** Not tested in this level.
- ☐ ☐ **B-24** Define the word "product" and the "x" sign.

Division
- ☐ ☐ **B-25** Know division facts with divisors 0 to 9.
- ☐ ☐ **B-26** Divide a 2-digit by a 1-digit number.
- ■ ■ **B-27** Not tested in this level.

Pre-Test
Post-Test

- ■ ■ **B-28** Not tested in this level.
- ☐ ☐ **B-29** Define the word "quotient" and the "÷" sign.

Rational Numbers
- ☐ ☐ **B-30** Write the fraction for the shaded part of a whole figure.
- ☐ ☐ **B-31** Write the fraction for the shaded part of a set.
- ☐ ☐ **B-32** Compare fractions less than ½ to fractions more than ½.
- ■ ■ **B-33** Not tested in this level.
- ■ ■ **B-34** Not tested in this level.

Geometry
- ■ ■ **B-35** Not tested in this level.
- ■ ■ **B-36** Not tested in this level.
- ☐ ☐ **B-37** Identify types of lines.
- ☐ ☐ **B-38** Identify a line of symmetry.
- ☐ ☐ **B-39** Identify congruent figures, name polygons.
- ☐ ☐ **B-40** Identify solid figures.

Measurement
- ☐ ☐ **B-41** Tell time to 5 minutes.
- ☐ ☐ **B-42** Read a thermometer, scale and calendar.
- ☐ ☐ **B-43** Measure to the nearest ½ inch or .5 cm.
- ☐ ☐ **B-44** Recall equivalence of customary units of length, weight and capacity.
- ☐ ☐ **B-45** Recall equivalence of metric units of length, weight and capacity.
- ☐ ☐ **B-46** Find the perimeter of a polygon. Find area.
- ☐ ☐ **B-47** Make change for $10.00.

Problem Solving
- ☐ ☐ **B-48** Solve a word problem with multiplication.
- ☐ ☐ **B-49** Solve a word problem with division.
- ☐ ☐ **B-50** Read and interpret a graph.

☐ ☐ **Total Scores (out of 38 possible)**

38   38

Student Progress Report (List of Objectives)

This page is in the Teacher Manual and in the Test Assessment Pack. It lists each skill alongside an objective number. This page provides the foundation for tracking a student's achievement and may be sent home as a report card.

Tracking Achievement

43. What is the measure of the line to the nearest .5 cm?

0 1 2 3 4 5 6
centimeters

44. 1 foot = _____ inches

45. 1 meter = _____ centimeters

46. Find the perimeter: _____

4   7

10
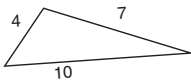
47. Alex has saved $10.00 to spend during a family trip. If he buys a sundae for $3.25, how much will Alex have left? _____

48. There are 7 desks in a row. There are 5 rows. How many desks are there in all? _____
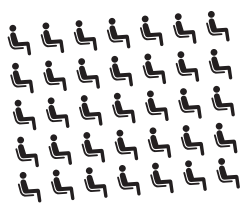
49. There are 18 baseball player cards in a set. 3 friends wish to share a set equally. How many cards will each person receive?

50. How many students drink juice with their school lunch? _____

SCHOOL LUNCH
BEVERAGES

MILK

JUICE

SHAKE

0   50   100   150   200

Testing

The Test Assessment Pack contains 20 Pre-Test and 20 Post-Test booklets. Each test has 38 questions, one for each objective.

The number of each problem on the test matches the corresponding objective number of the opposite page.

Testing

Teachers see a snapshot of each student and the class at the beginning and end of the session.

Class Record Sheet

Results show improvement for each student and the class.

Grade 3 Class Record Sheet

Teacher: _____

Grade: _____ School: _____

• If answer is correct, leave the space *empty*.
• Put an X on *missed* objectives.
• Record days absent in the last column labeled "Abs."

Student Name	Numeration	Addition	Subtraction	Multiplication	Division	Rational Numbers	Geometry	Measurement	Problem Solving	Record Number Correct out of 50

Teachers mark an X under the number of each problem the student misses. The total correct on the Pre- and Post-Test is recorded at the far right.

Friendly Lesson Plans

Objective: To round to the nearest ten, using a model.

Materials: Base ten blocks, interlocking cubes, real or play coins (Master 9)

Vocabulary: round

Introductory Activities

Rounding Pattern

Write on the board: There are 28 students in Room 114, 21 students in Room 115 and 25 students in Room 116. About how many students are in each room?

Have students use base ten blocks to discover a pattern for rounding each number.

We round numbers to find out "about how much" a number is. Build the number 28. (2 tens blocks and 8 ones blocks) **About how many tens would you say 28 is?** Have students skip count by tens from 10 to 100. Place the number 28 between 20 and 30. **Twenty-eight is between 2 tens and 3 tens. Build 2 tens and build 3 tens. Is 28 closer to 20 or 30? Work with your partner to decide if 28 is closer to 20 or 30 and how you know.** (It is closer to 30 because it would only take 2 more ones blocks to get to 30, but it would take 8 fewer blocks to get to 20. 28 is more than halfway between 20 and 30.)

Repeat with 21 and 25. Students should discover that numbers above the halfway number are "rounded up" and numbers below the halfway number are "rounded down."

Point out that the halfway number, 25, is "rounded up" by agreement. This pattern also makes the rounding rule fair because five of the numbers in the twenties will round to 20 (20, 21, 22, 23, 24) and the other five numbers will round to 30 (25, 26, 27, 28, 29).

About This Page

Read the top of the page together. **Look at the first example. What number are we going to round?** (17) **Build 17 with your base ten blocks. We will round to the nearest 10. What tens blocks would 17 be between?** (1 tens block and 2 tens blocks) **Which is it closer to?** (2 tens, or twenty) **How do you know?** (It is more than the halfway number.)

Go through the second example together, explaining again that 15 is the halfway number, so

it is rounded up. Work through problems 1, 3 and 5 in the same way. Then have student pairs use base ten blocks to solve the remaining problems at the bottom of the page. Remind them that they are rounding to the nearest tens block.

Follow Up Activities

Rounding Money

Write 43¢ on the chalkboard. Display 43¢ with dimes and pennies. **If we round 43¢ to the nearest dime, how many dimes is it closer to?** (4 dimes) Repeat with 41¢, 42¢, 44¢, 46¢…49¢.

Write 45¢ on the chalkboard. **What number of dimes is it closer to?** (neither; halfway) **We agree that the halfway number is to be rounded up.** Point out that there are 5 amounts with a 4 in the tens place which round down (40¢ to 44¢) and 5 which round up (45¢ to 49¢).

Journal Prompt

Round the number 76 to the nearest 10. Prove why it is nearest to that number. Use words, pictures and symbols to explain.

Skill Builders 7-1

Estimation is a difficult skill for many students. In this activity, students discover the pattern for rounding on their own.

Test Preparation

Daily Review 16

1.

What time is shown?

2. What weight is shown?

3. How much money?

4. There were 345 children and 128 adults skating. How many were there in all?

5. Kera sold 118 boxes of popcorn and 256 soft drinks at the skating party. How many more soft drinks than popcorn were sold?

Daily Review 16
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Daily Reviews
Class starts with a five-question review from the back of the student book. Teachers review and discuss answers.

Daily Reviews are the keys to long term retention.

Teachers report high satisfaction with use of Daily Reviews.

Problem 1 on Daily Review 16 matches objective 41.

Name _____

Date ___ Pre-test ___
Date ___ Post-test ___ **3E**

Daily Reviews Record the results from your daily reviews here. The label "Obj." tells which objective that problem covered.

	Review 1	Review 2	Review 3	Review 4	Review 5	Review 6	Review 7	Review 8
1.	Obj. 1	Obj. 7	Obj. 7	Obj. 7	Obj. 12	Obj. 1	Obj. 7	Obj. 20
2.	Obj. 2	Obj. 8	Obj. 8	Obj. 8	Obj. 14	Obj. 2	Obj. 8	Obj. 24
3.	Obj. 4	Obj. 9	Obj. 9	Obj. 9	Obj. 15	Obj. 4	Obj. 9	Obj. 50
4.	Obj. 5	Obj. 10	Obj. 10	Obj. 10	Obj. 17	Obj. 5	Obj. 10	Obj. 50
5.	Obj. 6	Obj. 11	Obj. 11	Obj. 11	Obj. 19	Obj. 6	Obj. 11	
Correct								

	Review 9	Review 10	Review 11	Review 12	Review 13	Review 14	Review 15	Review 16
1.	Obj. 20	Obj. 20	Obj. 41	Obj. 41	Obj. 41	Obj. 12	Obj. 20	Obj. 41
2.	Obj. 21	Obj. 21	Obj. 42	Obj. 42	Obj. 42	Obj. 14	Obj. 21	Obj. 42
3.	Obj. 24	Obj. 24	Obj. 47	Obj. 47	Obj. 47	Obj. 15	Obj. 24	Obj. 47
4.	Obj. 50	Obj. 50	Obj. 10	Obj. 15	Obj. 15	Obj. 17	Obj. 50	Obj. 10
5.	Obj. 50	Obj. 50	Obj. 15	Obj. 10	Obj. 10	Obj. 19	Obj. 50	Obj. 15
Correct								

Daily Review Record Sheets
Students record their results on the record sheet, which identifies missed objectives.

Easy Reteaching
Reteaching is a snap. Teachers can track each student's progress and pinpoint weak areas. Reproducible *Skill Builders* pages (shown here) for every objective are found in the Teacher Manual.

This page reteaches objective 41 and is the first page for reteaching that objective.

Name _____

Telling Time to 5 Minutes
Every space between the numbers around the clock stands for 5 minutes.

5 minutes
10 min. (2 x 5)
15 min. (3 x 5)

The clock shows that the time is 35 minutes after 2. (The big hand is 7 spaces from the 12, so 7 x 5 = 35).

2:35
two thirty-five

1. The hour (short) hand is between 2 and 3. Tell what time it is as the minute (long) hand moves around the clock and points to each number.

1 ___ 2 ___ 3 ___ 4 ___
5 ___ 6 ___ 7 ___ 8 ___
9 ___ 10 ___ 11 ___ 12 ___

What time is it?
2.   3.   4.

Draw the hands to show the time.
5.   6.   7.
9:10   2:40   10:25

Skill Builders 41-1
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Program Objectives

Student Progress Report

Grade 4

Mark an X in the Pre- and/or Post-Test boxes to indicate <u>missed objectives</u>.

Student _____

Pre-Test   Post-Test

Numeration

☐	☐	B-1	Identify the place value in a 3-digit number.
☐	☐	B-2	Compare and order numbers up to 6 digits.
☐	☐	B-3	Complete patterns of multiples.
☐	☐	B-4	Write a numeral from printed words.
☐	☐	B-5	Write the words for a numeral up to 6 digits.
☐	☐	B-6	Identify the place value in a 6-digit number.
☐	☐	B-7	Round to the nearest ten.
☐	☐	B-8	Round to the nearest hundred.
☐	☐	B-9	Find the missing number in an addition sentence.

Addition

☐	☐	B-10	Add 3-digit numbers with 2 regroupings.
☐	☐	B-11	Add three or four 2-digit numbers.
☐	☐	B-12	Add 4- or 5-digit numbers.
☐	☐	B-13	Add up to 5 numbers of differing lengths.
☐	☐	B-14	Define the word "sum" and the "+" sign.

Subtraction

☐	☐	B-15	Subtract 3-digit numbers with 2 regroupings.
☐	☐	B-16	Subtract 3-digit numbers with regroupings across 0.
☐	☐	B-17	Subtract 5-digit numbers with regroupings across 0.
☐	☐	B-18	Subtract numbers of varying lengths.
☐	☐	B-19	Define the word "difference" and the "–" sign.

Multiplication

☐	☐	B-20	Know multiplication facts up to 9's.
☐	☐	B-21	Multiply a 3-digit number by a 1-digit number across zero.
☐	☐	B-22	Multiply a 2-digit number by a multiple of 10.
☐	☐	B-23	Multiply a 2-digit number by a 2-digit number with regrouping.
☐	☐	B-24	Define the word "product" and the "x" sign.

Division

☐	☐	B-25	Know division facts with divisors 0 to 9.
☐	☐	B-26	Divide a 2-digit by a 1-digit number.
☐	☐	B-27	Divide a 4-digit by a 1-digit number.
☐	☐	B-28	Divide a 4-digit by a 1-digit number, 0's in the quotient.
☐	☐	B-29	Define the word "quotient" and the "÷" sign.

Rational Numbers

☐	☐	B-30	Write the fraction for the shaded part of a whole figure.
☐	☐	B-31	Write the fraction for the shaded part of a set.
☐	☐	B-32	Compare fractions less than ½ to fractions more than ½.
☐	☐	B-33	Add or subtract 2 proper fractions with like denominators.
☐	☐	B-34	Add or subtract 2 mixed numbers with like denominators.

Geometry

☐	☐	B-35	Identify plane figures.
☐	☐	B-36	Identify and draw line position.
☐	☐	B-37	Identify types of lines.
☐	☐	B-38	Identify a line of symmetry.
☐	☐	B-39	Identify congruent figures, name polygons.
☐	☐	B-40	Identify solid figures.

Measurement

☐	☐	B-41	Tell time to 5 minutes.
☐	☐	B-42	Read a thermometer, scale and calendar.
☐	☐	B-43	Measure to the nearest ½ inch or .5 cm.
☐	☐	B-44	Recall equivalence of customary units of length, weight and capacity.
☐	☐	B-45	Recall equivalence of metric units of length, weight and capacity.
☐	☐	B-46	Find the perimeter of a polygon. Find area.
☐	☐	B-47	Make change for $10.00.

Problem Solving

☐	☐	B-48	Solve a word problem with multiplication.
☐	☐	B-49	Solve a word problem with division.
☐	☐	B-50	Read and interpret a graph.

☐	☐	**Total Score (out of 50 possible)**
50	50	

Student Progress Report (List of Objectives)

This page is in the Teacher Manual and in the Test Assessment Pack. It lists each skill alongside an objective number. This page provides the foundation for tracking a student's achievement and may be sent home as a report card.

Tracking Achievement

31. What fraction of the set of birds has speckled wings?

_____

32. Which symbol (>, <, =) goes in the box to make this sentence true?

33. Jeff's mother exercises on Saturday mornings. She jogs $\frac{3}{5}$ mile and then walks $\frac{1}{5}$ mile. How far has she traveled?

_____ mile

34.
$$5\frac{4}{7}$$
$$-2\frac{1}{7}$$

35. Which is a line segment? _____

A   B   C   D

36. The map shows the street near Martha's school. Which street runs in a vertical direction on the map?

_____

School
41st Street
43rd Street
Elm Street
Oak Street

A 41st Street   **C** Elm Street

B 43rd Street   **D** Oak Street

Testing

The Test Assessment Pack contains 20 Pre-Test and 20 Post-Test booklets. Each test has 50 questions, one for each objective.

The number of each problem on the test matches the corresponding objective number of the opposite page.

Testing

Teachers see a snapshot of each student and the class at the beginning and end of the session.

Class Record Sheet

Results show improvement for each student and the class.

Grade 4 Class Record Sheet

Teacher: _____
Grade: _____ School: _____

- If answer is correct, leave the space _empty._
- Put an X on _missed_ objectives.
- Record days absent in the last column labeled "Abs."

Student Name	Numeration	Addition	Subtraction	Multiplication	Division	Rational Numbers	Geometry	Measurement	Problem Solving	Record Number Correct out of 50

Teachers mark an X under the number of each problem the student misses. The total correct on the Pre- and Post-Test is recorded at the far right.

Students develop an understanding of the meaning of multiplication and division as opposite operations.

Friendly Lesson Plans

Objective: To use models to relate multiplication and division as opposites.

Materials: Base ten units blocks, interlocking plastic cubes, number line (Master 12), soft ball

Introductory Activities

Relating Multiplication and Division

Review the meaning of multiplication as putting together groups of equal size by acting out a problem.

Jane, Jack and Kim, would you each bring 4 books and place them on a pile on my desk? How many books are on my desk? (12) **How did you get the answer?** (skip counting by 4's or multiplying 3 x 4) **The answer could be found by adding groups of equal size or multiplying.**

Write on the board: $4 + 4 + 4 = 12$ or $3 \times 4 = 12$.

Show that division is the opposite of multiplication by putting the 12 books together in one pile. Then ask one student at a time to each remove 4 books from your desk. **How many students removed groups of 4 books each?** (3) **How did you get your answer?** (I watched the

$$
\begin{array}{ccc}
12 & 8 & 4 \\
\underline{-4} & \underline{-4} & \underline{-4} \\
8 & 4 & 0
\end{array}
\quad \text{(3 groups of 4)}
$$

$$
12 \div 4 = 3 \quad \text{or} \quad 4\overline{\smash{\big)}12}^{\,3}
$$

problem being acted out and I saw that 4 could be subtracted three times.)

Write on the board:

Multiplication and division are opposites. Multiplication puts together groups of equal size. Division takes apart groups of equal size.

About This Page

Use base ten blocks to demonstrate the relationship between multiplication and division for several of the examples.

Point out that students could write two different division facts for each given multiplication fact.

Follow Up Activities

Division on the Number Line

Mount a number line (made on page 25) on the wall. **Pretend you have a board 12 feet long. You want to cut 4-foot shelves. How many shelves can you cut?** Place 12 cubes above the number line. Remove 4 cubes at a time, showing 3 groups of 4.

Relating Multiplication and Division Game

Divide students into small groups of 4 to 6 students. A player in the middle throws a soft ball to a player in the outer circle saying a multiplication fact at the same time, "6 times 8..." The other player catches the ball and says the answer, "48," and throws the ball back to the center, saying a related division fact at the same time, "48 divided by 6...".

Journal Prompt

Describe how multiplication and division are opposites. Use the problems $3 \times 7 = 21$ and $21 \div 3 = 7$ in your explanation.

Skill Builders 25-2

Student journal writing helps teachers understand students' thinking.

Test Preparation

Test Preparation

Daily Reviews are the keys to long term retention.

Teachers report high satisfaction with use of Daily Reviews.

Daily Reviews

Class starts with a five-question review from the back of the student book. Teachers review and discuss answers.

Daily Review 15

1. What time is it?

2. What is the temperature?

— 74
— 70
— 66
— 62

3. How long is the line to the nearest half inch?

1   2   3   4

inches

4. Tom typed 24 words per minute for 3 minutes. How many words did he type?

5. There is room for 4 students at each table in the library. How many tables will 36 students fill?

Daily Review 15
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Problem 3 on Daily Review 15 matches objective 43.

Name _____

Date ____ Pre-test ____
Date ____ Post-test ____   **4E**

Daily Reviews

Record results from your daily reviews here. The label "Obj." tells which objective that problem covered.

	Review 1	Review 2	Review 3	Review 4	Review 5	Review 6	Review 7	Review 8
1.	Obj.2	Obj. 3	Obj. 13	Obj. 13	Obj. 16	Obj. 2	Obj. 21	Obj. 3
2.	Obj.4	Obj. 8	Obj. 14	Obj. 14	Obj. 17	Obj. 4	Obj. 22	Obj. 8
3.	Obj.5	Obj. 9	Obj. 16	Obj. 16	Obj. 18	Obj. 5	Obj. 24	Obj. 9
4.	Obj.6	Obj. 11	Obj. 17	Obj. 17	Obj. 19	Obj. 6	Obj. 25	Obj. 12
5.	Obj.7	Obj. 12	Obj. 18	Obj. 18	Obj. 20	Obj. 7	Obj. 26	Obj. 26
Correct								

	Review 9	Review 10	Review 11	Review 12	Review 13	Review 14	Review 15	Review 16
1.	Obj. 16	Obj. 13	Obj. 2	Obj. 8	Obj. 20	Obj. 16	Obj. 41	Obj. 23
2.	Obj. 17	Obj. 20	Obj. 3	Obj. 9	Obj. 21	Obj. 17	Obj. 42	Obj. 44
3.	Obj. 18	Obj. 21	Obj. 5	Obj. 25	Obj. 22	Obj. 18	Obj. 43	Obj. 45
4.	Obj. 19	Obj. 22	Obj. 7	Obj. 26	Obj. 25	Obj. 25	Obj. 48	Obj. 46
5.	Obj. 26	Obj. 24	Obj. 13	Obj. 29	Obj. 26	Obj. 26	Obj. 49	Obj. 47
Correct								

Daily Review Record Sheets

Students record their results on the record sheet, which identifies missed objectives.

Easy Reteaching

Reteaching is a snap. Teachers can track each student's progress and pinpoint weak areas. Reproducible *Skill Builders* pages (shown here) for every objective are found in the Teacher Manual.

This page reteaches objective 43 and is the first page for reteaching that objective.

Name _____

Make your own ruler.

1. Cut out the 1 inch measure. Use it to mark off 1 inch lengths along the edge of the ruler. Label each mark 0, 1, 2, 3, and so on.

1 inch

inch ruler

2. Cut out your ruler. Measure the lines below to the nearest inch. Write the measure above each line.

C   D A   E   G   H   B   K   F   L

3. Cut out the $\frac{1}{2}$ inch measure. Use it to mark off $\frac{1}{2}$ inch lengths along the edge of the ruler. Label each mark 0, $\frac{1}{2}$, 1, and so on.

$\frac{1}{2}$ inch

$\frac{1}{2}$ inch ruler

4. Cut out your ruler. Measure the lines below to the nearest $\frac{1}{2}$ inch. Write the measure above each line.

M   N R
P   Q T U
X   V   S
Y   W

2 inches
2 in.
2" ... all mean the same measure

Skill Builders 43-1
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Program Objectives

Grade 5

Student Progress Report

Mark an X in the Pre- and/or Post-Test boxes to indicate <u>missed objectives</u>.

Teacher

School

Student

Pre-Test   Post-Test

Numeration

C-1   Identify the place value in a 7-digit number.
C-2   Read, write and compare 9- digit numbers.
C-3   Round to the nearest thousand.
C-4   Identify prime numbers and the factors.
C-5   Use the commutative, associative or the distributive property.

Whole Number Operations

C-6   Add numbers up to 6-digits.
C-7   Subtract numbers up to 6-digits.
C-8   Multiply a 3-digit number by a 2-digit number. Multiply by multiples of 10.
C-9   Divide a 6-digit by a 1-digit number.
C-10   Divide a 4-digit by a 2-digit number.

Fractions

C-11   Write fractions from shaded regions, number lines and printed words.
C-12   Find equivalent fractions.
C-13   Compare 2 like or unlike proper fractions and order 5 like or unlike proper fractions.
C-14   Interchange mixed numbers and improper fractions.
C-15   Add/subtract fractions with common denominators.
C-16   Add/subtract mixed numbers with common denominators.
C-17   Add/subtract unlike proper fractions.
C-18   Not tested in this level.
C-19   Multiply 2 proper non-reducible fractions or a proper fraction by a whole number.
C-20   Divide proper fractions by proper fractions or whole numbers.

Decimals

C-21   Write decimals from a picture or from a number line.
C-22   Read and write decimals up to thousandths.
C-23   Identify place value up to ten-thousandths.
C-24   Compare/order decimals up to hundredths.
C-25   Interchange fractions having denominators of 10 or 100 with decimals.

Pre-Test   Post-Test

C-26   Add and subtract decimals or money.
C-27   Not tested in this level.
C-28   Not tested in this level.
C-29   Not tested in this level.
C-30   Not tested in this level.

Geometry & Measurement

C-31   Identify a point, line, line segment, ray and angle.
C-32   Identify lines.
C-33   Identify angles.
C-34   Identify basic shapes and solids.
C-35   Identify parts of a circle.
C-36   Measure to the nearest $\frac{1}{8}$ unit.
C-37   Use a protractor to measure and draw angles.
C-38   Find the perimeter or area.
C-39   Find the volume of a rectangular solid.
C-40   Tell time to the nearest minute.
C-41   Use the appropriate unit for weight.
C-42   Use the appropriate unit for liquid capacity.
C-43   Give the total value of a combination of coins and bills; make change for a $20 bill.

Problem Solving

C-44   Can find the missing number in patterns.
C-45   Can solve a 1-step word problem with whole numbers.
C-46   Find the average of whole numbers or decimals.
C-47   Read and interpret pictographs, bar graphs, tables and charts.
C-48   Read and interpret line graphs and circle graphs.
C-49   Estimate sums and differences of numbers up to and including 4 digits.
C-50   Estimate products of a 3-digit number.

Total Scores (out of 45 possible)

45   45

Student Progress Report (List of Objectives)

This page is in the Teacher Manual and in the Test Assessment Pack. It lists each skill alongside an objective number. This page provides the foundation for tracking a student's achievement and may be sent home as a report card.

Tracking Achievement

44. What number goes in the box? _____

18, 24, ☐, 36, 42

45. The regular price of a jacket is $39.60. It was marked $\frac{1}{3}$ off. What is the amount of discount (the amount of reduction)? _____

46. Find the average (mean) of these numbers: _____

| 8, 5, 7, 4 |

47.

Menu	
Hot Dog	$.65
Chili	.95
Soda	.70

What is the cost of 1 hot dog and 2 sodas? _____

Number of Plate Lunches Sold

```
400
300
200
100
    M  T  W  Th  F
```

48. How many more plate lunches were sold on Monday than on Friday? _____

49. Estimate by rounding each number to the nearest hundred and then subtracting.

$783 - 219 = $ _____

50. Estimate by rounding each number to the nearest ten and then multiplying.

$78 \times 31 = $ _____

Testing

Testing

The Test Assessment Pack contains 20 Pre-Test and 20 Post-Test booklets. Each test has 45 questions, one for each objective.

The number of each problem on the test matches the corresponding objective number of the opposite page.

Teachers see a snapshot of each student and the class at the beginning and end of the session.

Class Record Sheet

Results show improvement for each student and the class.

Grade 5 Class Record Sheet

Teacher: _____

Grade: _____ School: _____

• If answer is correct, leave the space *empty.*
• Put an X on *missed* objectives.
• Record days absent in the last column labeled "Abs."

Student Name	Numeration	Operations	Fractions	Decimals	Decimals (cont.)	Geometry	Measurement	Mixed	Record Number Correct out of 50

Teachers mark an X under the number of each problem the student misses. The total correct on the Pre- and Post-Test is recorded at the far right.

Manipulatives increase visualization— seeing math in the mind's eye. Retention increases 300% when students are able to visualize what they are learning.

Friendly Lesson Plans

Objective: To name fractions from fraction bars. To identify similarities and differences among fraction bars.

Materials: Fraction Bars®, overhead Fraction Bars® (optional)

Vocabulary: fraction, similarities, differences, pattern

Introductory Activities

Discover the Concept of a Fraction

Distribute a set of fraction bars to each group of 2 to 5 students.

Each fraction bar in this set represents one whole or one unit such as one whole cracker or one whole brownie. Look through your set of fraction bars with your group. Discuss in what ways your bars are all alike and in what ways they are different. Record your findings in a table with two columns headed "Similarities and Differences."

After 5–10 minutes, ask volunteers from each group to suggest the similarities and differences they have found.

SIMILARITIES	DIFFERENCES
same shape	colors
same size	divided into different
congruent	numbers of parts
same width/length	number of shaded parts is
same area/perimeter	different
same thickness	number of bars of any one
same weight	color
same material	
*all divided into	
parts of equal size	

*It is very important that the last similarity, i.e. each bar is divided into parts of equal size, be verbalized. This is the essential concept of a fraction. To guide this discovery, ask **What do the lines do to the fraction bar?** (divide the bar into parts of equal size)

What's My Secret?

With a partner or small group, students take turns selecting a subset of fraction bars which are alike in one way. Others in the group try to guess the secret. Demonstrate an example by showing all the bars of one color and have students guess the secret of

Problem solving: find the pattern

These fraction bars have been sorted into groups by some way they are alike or similar. Guess the similarity.

1. Similarity: *divided into 2 parts, all are green*

2. Similarity: *1 part shaded, fractions close to 0*

3. Similarity: *all parts shaded, equals 1 whole*

4. Similarity: *one-half shaded*

5. Similarity: *one-third shaded*

6. Similarity: *three-fourths shaded*

7. Similarity: *less than one-half shaded*

8. Similarity: *all but 1 part shaded, fractions close to 1*

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Page 28

the sorting. Other ways the students will sort by: everything shaded, nothing shaded, one part shaded, equivalent parts (such as $\frac{1}{2}$, $\frac{2}{4}$, $\frac{3}{6}$, $\frac{5}{10}$, $\frac{6}{12}$) shaded, more than $\frac{1}{2}$ shaded, and so on.

About This Page

This page provides examples of ways students may have sorted their fraction bars. Students generalize how three fractions are alike according to some attribute. Illustrate the first problem with overhead fraction bars or by drawing a picture.

Follow Up Activities

Journal Prompt

Draw a picture and use symbols to illustrate what Jon did each time.

1. Jon cut his whole pizza into 4 slices of equal size. What fraction is one slice?

2. Jon cut 1 slice into 2 smaller parts of equal size. What fraction names the smaller part?

Skill Builders 11-1, 11-2

Math games require students to apply their knowledge to "stump" their partner.

As students answer the question "How are these bars alike and how are they different?" they discover the essential concept of a fraction—a whole divided into parts of equal size.

Test Preparation

Daily Reviews are the keys to long term retention.

Teachers report high satisfaction with use of Daily Reviews.
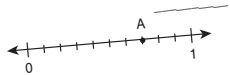
Daily Reviews

Class starts with a five-question review from the back of the student book. Teachers review and discuss answers.

Daily Review 13

Daily Review
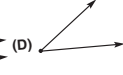
1. What decimal fraction is shown at Point A on the number line?
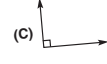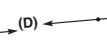
2. Lines _____ are perpendicular.

(A)   (C)

(B)   (D)

3. Which angle is 90°?

(A)   (C)

(B)   (D)

4. What digit is in the tenths' place in the numeral 0.123?

5. $\overline{CD}$ is what part of the circle?

(A) center
(B) diameter
(C) radius
(D) circumference

Daily Review 13
© Math Teachers Press, Inc.

Problem 3 on Daily Review 13 matches objective 33.

Name _____

Date _____ Pre-test _____
Date _____ Post-test _____

5E

Daily Reviews

Record the results from your daily reviews here. The label "Obj." tells which objective that problem covered.

	Review 1	Review 2	Review 3	Review 4	Review 5	Review 6	Review 7	Review 8
1.	Obj. 1	Obj. 6	Obj. 1	Obj. 6	Obj. 1	Obj. 6	Obj. 11	Obj. 15
2.	Obj. 2	Obj. 7	Obj. 2	Obj. 7	Obj. 2	Obj. 7	Obj. 12	Obj. 17
3.	Obj. 3	Obj. 8	Obj. 3	Obj. 8	Obj. 3	Obj. 8	Obj. 13	Obj. 17
4.	Obj. 4	Obj. 9	Obj. 4	Obj. 9	Obj. 4	Obj. 9	Obj. 14	Obj. 19
5.	Obj. 5	Obj. 10	Obj. 5	Obj. 10	Obj. 5	Obj. 10	Obj. 15	Obj. 20
correct								

	Review 9	Review 10	Review 11	Review 12	Review 13	Review 14	Review 15	Review 16
1.	Obj. 11	Obj. 15	Obj. 11	Obj. 15	Obj. 21	Obj. 31	Obj. 21	Obj. 36
2.	Obj. 12	Obj. 17	Obj. 13	Obj. 17	Obj. 33	Obj. 22	Obj. 37	Obj. 22
3.	Obj. 13	Obj. 17	Obj. 12	Obj. 17	Obj. 3	Obj. 23	Obj. 24	Obj. 38
4.	Obj. 14	Obj. 19	Obj. 19	Obj. 19	Obj. 23	Obj. 34	Obj. 39	Obj. 25
5.	Obj. 15	Obj. 20	Obj. 14	Obj. 20	Obj. 35	Obj. 16	Obj. 26	Obj. 40
correct								

Daily Review Record Sheets

Students record their results on the record sheet, which identifies missed objectives.
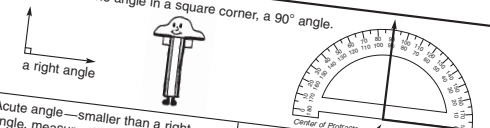
Easy Reteaching

Reteaching is a snap. Teachers can track each student's progress and pinpoint weak areas. Reproducible *Skill Builders* pages (shown here) for every objective are found in the Teacher Manual.

This page reteaches objective 33 and is the first page for reteaching that objective.

Name _____
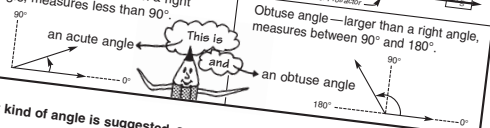
Right Angle, Acute Angle, Obtuse Angle

Right Angle—the angle in a square corner, a 90° angle.

a right angle

Center of Protractor

Acute angle—smaller than a right angle, measures less than 90°.

90°

an acute angle   *This is*   Obtuse angle—larger than a right angle, measures between 90° and 180°.

0°   *and*   an obtuse angle

90°

180°   0°
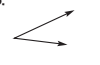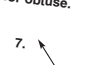
What kind of angle is suggested, acute, right or obtuse?

1. the open blades of scissors _____

2. corners of the American flag _____

3. corners of a stop sign _____

4. hands of clock at 3:00 _____

What kind of angle? Put A for acute, R for right and O for obtuse.

5. _____

6. _____

7. _____

8. _____

9. _____

10. _____

11. The clock hands at 5:00 _____

12. The clock hands at 3:20 _____

13. The clock hands at 6:15 _____

Skill Builders 33-1
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Program Objectives

Student Progress Report

Mark an X in the Pre- and/or Post-Test boxes to indicate <u>missed objectives</u>.

Teacher

School

Student

Pre-Test Post-Test

Numeration

C-1   Identify the place value in a 7-digit number.
C-2   Read, write and compare 9- digit numbers.
C-3   Round to the nearest thousand.
C-4   Identify prime numbers and the factors.
C-5   Use the commutative, associative or the distributive property.

Whole Number Operations

C-6   Add numbers up to 6-digits.
C-7   Subtract numbers up to 6-digits.
C-8   Multiply a 3-digit number by a 2-digit number. Multiply by multiples of 10.
C-9   Divide a 6-digit by a 1-digit number.
C-10 Divide a 4-digit by a 2-digit number.

Fractions

C-11 Write fractions from shaded regions, number lines and printed words.
C-12 Find equivalent fractions.
C-13 Compare 2 like or unlike proper fractions and order 5 like or unlike proper fractions.
C-14 Interchange mixed numbers and improper fractions.
C-15 Add/subtract fractions with common denominators.
C-16 Add/subtract mixed numbers with common denominators.
C-17 Add/subtract unlike proper fractions.
C-18 Can find the common denominator.
C-19 Multiply 2 proper non-reducible fractions or a proper fraction by a whole number.
C-20 Divide proper fractions by proper fractions or whole numbers.

Decimals

C-21 Write decimals from a picture or from a number line.
C-22 Read and write decimals up to thousandths.
C-23 Identify place value up to ten-thousandths.
C-24 Compare/order decimals up to hundredths.
C-25 Interchange fractions having denominators of 10 or 100 with decimals.

Pre-Test Post-Test

C-26 Add and subtract decimals or money.
C-27 Multiply money and 2–place decimals.
C-28 Divide money and 2–place decimals.
C-29 Identify the percent of shaded regions.
C-30 Interchange 2–place decimals with fractions.

Geometry & Measurement

C-31 Identify a point, line, line segment, ray and angle.
C-32 Identify lines.
C-33 Identify angles.
C-34 Identify basic shapes and solids.
C-35 Identify parts of a circle.
C-36 Measure to the nearest ⅛ unit.
C-37 Use a protractor to measure and draw angles.
C-38 Find the perimeter or area.
C-39 Find the volume of a rectangular solid.
C-40 Tell time to the nearest minute.
C-41 Use the appropriate unit for weight.
C-42 Use the appropriate unit for liquid capacity.
C-43 Give the total value of a combination of coins and bills; make change for a $20 bill.

Problem Solving

C-44 Can find the missing number in patterns.
C-45 Can solve a 1-step word problem with whole numbers.
C-46 Find the average of whole numbers or decimals.
C-47 Read and interpret pictographs, bar graphs, tables and charts.
C-48 Read and interpret line graphs and circle graphs.
C-49 Estimate sums and differences of numbers up to and including 4 digits.
C-50 Estimate products of a 3-digit number.

Total Scores (out of 50 possible)
50   50

Student Progress Report (List of Objectives)

This page is in the Teacher Manual and in the Test Assessment Pack. It lists each skill alongside an objective number. This page provides the foundation for tracking a student's achievement and may be sent home as a report card.
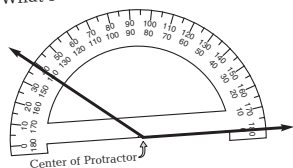
Tracking Achievement
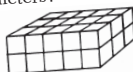
37. What is the measure?

(A) 40°
(B) 135°
(C) 140°
(D) 145°

38. If ☐ = 1 square unit, what is the area in square units?

39. ▢ = 1 cubic centimeter

What is the volume in cubic centimeters?

40. What time will it be 2 hours and 20 minutes after 6:15?

41.

The weight of a paper clip is approximately _____.

(A) 1 pound
(B) 1 gram
(C) 1 kilogram
(D) 1 ton

42.

1 pint	= 2 cups
1 quart	= 2 pints
1 gallon	= 4 quarts

3 quarts = _____ cups

43. How much money? _____

Testing

The Test Assessment Pack contains 20 Pre-Test and 20 Post-Test booklets. Each test has 50 questions, one for each objective.

The number of each problem on the test matches the corresponding objective number of the opposite page.

Testing

Teachers see a snapshot of each student and the class at the beginning and end of the session.

Class Record Sheet

Results show improvement for each student and the class.

Grade 6 Class Record Sheet

Teacher: _____
Grade: _____ School: _____

• If answer is correct, leave the space empty.
• Put an X on missed objectives.
• Record days absent in the last column labeled "Abs."

Teachers mark an **X** under the number of each problem the student misses. The total correct on the Pre- and Post-Test is recorded at the far right.

Friendly Lesson Plans

Objective: To identify angles as right, acute, obtuse or straight.

Materials: Geoboards (or Master 12), masking tape, overhead geoboards (optional)

Vocabulary: right, obtuse, acute, straight, congruent

Introductory Activities

Geoboard Activities

Using a 25 peg geoboard, put a strip of masking tape below each row of pegs. Starting at the top left peg, write the letters A–E below each peg in the first row, F–J below each peg in the second row, K–O in the third row, P–T in the fourth row and U–Y in the bottom row. Use an overhead geoboard to demonstrate and to parallel the activities with the students.

```
A   B   C   D   E
F   G   H   I   J
K   L   M   N   O
P   Q   R   S   T
U   V   W   X   Y
```
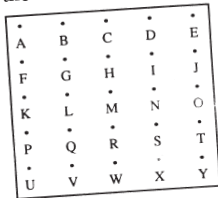
Have students find and label a pair of line segments that are the same length. **These line segments are congruent.** Show an angle on a geoboard. Name another angle that is congruent. Prove they are congruent by using Master 12 and cutting out the first angle and placing the cutout on the other angle.

Geoboard Activities

Draw a right angle HRT on the chalkboard or overhead geoboard. Have students form the angle on their geoboards. Describe ∠HRT. (A right angle, an angle with square corners, sides HR and RT are perpendicular.)

Draw an acute ∠JRT on the chalkboard. Have students form the same angle on their geoboards, using a contrasting color to ∠HRT.
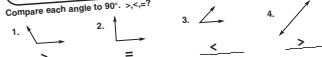
How does ∠JRT compare to ∠HRT? (has a smaller measure) **Is ∠JRT more than, less than or equal to 90°?** (less than) **Estimate the measure of ∠JRT.** (45°) **Angles measuring less than 90° are called acute angles.**

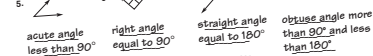Draw ∠GRT on the chalkboard and repeat the activity to identify obtuse angles as measuring more than 90°.
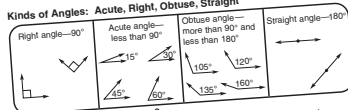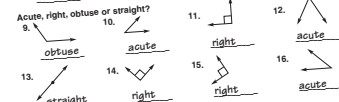
Draw ∠PRT on the chalkboard and repeat the activity to define a straight angle as two right angles of 90°, each or 180°.

Using the circular side of the geoboard, have students form ∠BOD and describe the angle as acute, right or obtuse. Repeat with ∠BOH (straight) and ∠BOF (obtuse).

Have students use toothpicks or straws to demonstrate angles equal to 90°, less than 90°, more than 90°, and equal to 180°.

About This Page

Ask students to study the two right angles drawn in the first illustration. **How does the size of the second angle compare to the size of the first?** (same) **How do you know?** (The small box always means 90°; the size of the angle does not change as the whole angle is rotated.)

Follow Up Activities

Journal Prompt

Think of the three types of angles: right, obtuse and acute. Explain how these angles are different.

Skill Builders 33-1

Students use geoboards to show models of geometric concepts.

Test Preparation

Daily Reviews are the keys to long term retention.

Teachers report high satisfaction with use of Daily Reviews.

Daily Reviews
Class starts with a five-question review from the back of the student book. Teachers review and discuss answers.
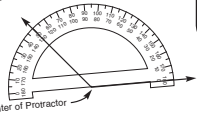
Daily Review 12

1. 3 gallons = _____ pints

1 pint = 2 cups
1 quart = 2 pints
1 gallon = 4 quarts

2. The measure of this angle is.

Center of Protractor

   A 60°   B 110°

   C 120°   D 130°

3. What is the area in square inches?

5 in.
8 in.

4. What is the volume in cubic cm?

2 cm
3 cm
4 cm

5. A recipe for cookies calls for $2\frac{1}{2}$ cups sugar. If the recipe is to be doubled, how many cups of sugar will be needed?

Daily Review 12
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Problem 4 on Daily Review 12 matches objective 39.

Name _____

Date ___ Pre-test ___
Date ___ Post-test ___

6E

Daily Reviews
Record the results from your daily reviews here. The label "Obj." tells which objective that problem covered.

	Review 1	Review 2	Review 3	Review 4	Review 5	Review 6	Review 7	Review 8
1.	Obj. 1	Obj. 6	Obj. 11	Obj. 16	Obj. 21	Obj. 27	Obj. 23	Obj. 31
2.	Obj. 2	Obj. 7	Obj. 12	Obj. 18	Obj. 22	Obj. 28	Obj. 27	Obj. 32
3.	Obj. 3	Obj. 8	Obj. 13	Obj. 18	Obj. 23	Obj. 29	Obj. 28	Obj. 33
4.	Obj. 4	Obj. 9	Obj. 14	Obj. 19	Obj. 25	Obj. 30	Obj. 29	Obj. 34
5.	Obj. 5	Obj. 10	Obj. 16	Obj. 20	Obj. 17	Obj. 26	Obj. 35	Obj. 30
Correct								

	Review 9	Review 10	Review 11	Review 12	Review 13	Review 14	Review 15	Review 16
1.	Obj. 23	Obj. 24	Obj. 36	Obj. 42	Obj. 36	Obj. 41	Obj. 37	Obj. 41
2.	Obj. 27	Obj. 33	Obj. 41	Obj. 37	Obj. 37	Obj. 42	Obj. 38	Obj. 42
3.	Obj. 28	Obj. 34	Obj. 43	Obj. 38	Obj. 46	Obj. 43	Obj. 43	Obj. 34
4.	Obj. 29	Obj. 36	Obj. 46	Obj. 45	Obj. 45	Obj. 39	Obj. 45	Obj. 40
5.	Obj. 18	Obj. 30	Obj. 40	Obj. 45	Obj. 40	Obj. 38	Obj. 50	Obj. 46
Correct								

Daily Review Record Sheets
Students record their results on the record sheet, which identifies missed objectives.
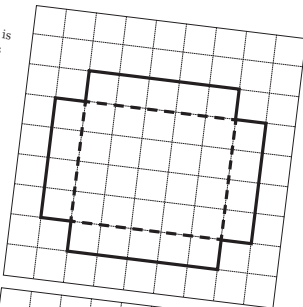
Easy Reteaching
Reteaching is a snap. Teachers can track each student's progress and pinpoint weak areas. Reproducible *Skill Builders* pages (shown here) for every objective are found in the Teacher Manual.

This page reteaches objective 39 and is the first page for reteaching that objective.

Name _____
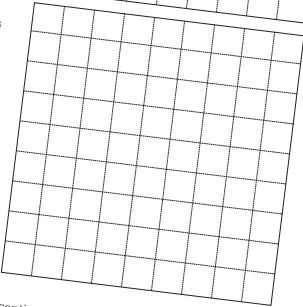
Filling Boxes

1. Here is a pattern for a box that is 5 centimeters by 4 centimeters by 1 centimeter. Cut out the pattern and tape the sides.

How many centimeter cubes would it take to fill the box?

_____ cu. cm.

2. Make a pattern for a box that is 4 centimeters by 3 centimeters by 2 centimeters. Cut and tape the sides.

How many centimeter cubes would it take to fill the box?

_____ cu. cm.

Use centimeter graph paper.

3. Make a pattern for a box that is 10 centimeters by 10 centimeters by 1 centimeter. How many centimeters cubes would it take to fill the box?

4. Use two sheets of centimeter graph paper to make a pattern for a box that is 10 centimeters by 10 centimeters by 10 centimeters. How many centimeters cubes would it take to fill the box?

Skill Builders 39-1
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Program Objectives

Grade 7

Student Progress Report

Mark an X in the Pre- and/or Post-Test boxes to indicate <u>missed objectives</u>.

Teacher _____

School _____

Student _____

Pre-Test / Post-Test

Numeration
- **D-1** Knows the four basic operations.
- **D-2** Make a true statement using number properties.
- **D-3** Write the prime factors for numbers ≤ 20.
- **D-4** Identify the place value of, read, write, compare and order numbers ≤ 12 digits.
- **D-5** Round numbers ≤ 7 digits to any place value.
- **D-6** Give the value of and write an exponential expression in factored form and vice versa.

Whole Numbers
- **D-7** Add numbers of the same or varying lengths.
- **D-8** Subtract numbers of any length.
- **D-9** Multiply a 4-digit number by powers of 10.
- **D-10** Divide a 5-digit number by powers of 10.

Fraction Concepts and Computations
- **D-11** Change a fraction to higher or lower terms.
- **D-12** Add and subtract unlike proper fractions.
- **D-13** Add or subtract mixed numbers.
- **D-14** Multiply proper fractions.
- **D-15** Multiply mixed numbers.
- **D-16** Divide proper fractions.
- **D-17** Divide mixed numbers.

Decimal Concepts and Computations
- **D-18** Identify the place value of, read, write, compare and order decimals up to ten thousandths.
- **D-19** Round a decimal to the nearest unit, tenth, hundredth or thousandth.
- **D-20** Interchange decimals and fractions.
- **D-21** Add and subtract decimals and money.
- **D-22** Multiply decimals or money.
- **D-23** Divide decimals or money.
- **D-24** Multiply and divide whole numbers and decimals by powers of 10.

Percent Concepts and Computations
- **D-25** Interchange fractions, decimals and percents.
- **D-26** Find the missing number in a proportion.
- **D-27** Find the whole number percent of a whole number, decimal or money amount.
- **D-28** Find the amount of discount, sales tax or interest in a percent problem.

Geometry
- **D-29** Know geometric symbols and names.
- **D-30** Identify types of angles.
- **D-31** Name types of polygons.
- **D-32** Identify congruent figures.
- **D-33** Find the measure of a missing angle.

Measurement
- **D-34** Measure time intervals and temperature changes.
- **D-35** Add, subtract, multiply and divide measurements.
- **D-36** Know the appropriate unit of measurement and can estimate length, weight and capacity.
- **D-37** Use a table to convert measurements.
- **D-38** Find perimeter.
- **D-39** Find the circumference of a circle.
- **D-41** Find the volume of a rectangular solid.

Problem Solving
- **D-42** Fill in a missing number in patterns.
- **D-43** Can solve a 1- or 2-step word problem using whole numbers, fractions or decimals.
- **D-44** Estimate the answer by rounding.
- **D-45** Find the average of whole numbers, decimals, fractions or percent.
- **D-46** Solve a word problem using a proportion with a rate, scale drawing or similar shapes.
- **D-47** Determine the probability of a simple event.

Algebra and Computer
- **D-48** Identify, compare, order and solve word problems with integers.
- **D-49** Use the Cartesian system to place a point or name its coordinates.
- **D-50** Solve a 1- or 2-step linear equation with one variable and whole number coefficients.

Total Correct (Out of 50)

50   50

Student Progress Report (List of Objectives)

This page is in the Teacher Manual and in the Test Assessment Pack. It lists each skill alongside an objective number. This page provides the foundation for tracking a student's achievement and may be sent home as a report card.

Tracking Achievement

40. 7 in.

7 in.

What is the area of
the figure above
in square inches? _____

41. = 1 cubic centimeter

What is the volume of
the rectangle solid
in cubic centimeters? _____

42. What number goes
in the box? _____

7, 13, 19, ☐ , 31

43. A large sack of dog food
weighs 20 lb. and costs
$2.80. What is the
cost per pound? _____

44. Which of the following is not a
reasonable estimate? _____

A $521 \times 495 = 250,000$

B $892 \div 29 = 300$

C $9,742 \times 212 = 2,000,000$

D $28,200 \div 400 = 70$

45. In three games, Leif had the
following batting averages: .312,
.301, .362. What was his average
for the three games? _____

46. A car travels 11 miles in
20 minutes. At that rate,
how far would the car
go in 60 minutes? _____

47. If you toss a die, what
is the probability that
you will land on an
even number? _____

48. The temperature readings
were −15° at midnight
and 20° at noon. What
amount of change
had taken place? _____

49.

Q

The coordinates of point Q
are (____, ____).

50. What is the value of x in
the equation in the box? _____

$$2x + 3 = 13$$

Testing

The Test Assessment
Pack contains 20
Pre-Test and 20
Post-Test booklets.
Each test has 50
questions, one for
each objective.

The number of
each problem on
the test matches
the corresponding
objective number of
the opposite page.

Testing

Teachers see
a snapshot of
each student
and the class at
the beginning
and end of the
session.

Class Record Sheet

Results show
improvement for
each student and
the class.

Grade 7 Class Record Sheet

Teacher: _____
Grade: _____ School: _____

- If answer is correct, leave the space *empty.*
- Put an X on *missed* objectives.
- Record days absent in the last column labeled "Abs."

Student Name	Numeration	Whole Number	Fractions	Decimals	Percent	Geometry	Measurement	Problem Solving	Algebra	Record Number Correct out of 50

Teachers mark an X under the number
of each problem the student misses. The
total correct on the Pre- and Post-Test is
recorded at the far right.

Students
develop an
understanding
of volume by
building a box
from centimeter
graph paper
and filling the
box with
1 centimeter
cubes.

Friendly Lesson Plans

Objective: To find the volume of a rectangular solid.

Materials: Centimeter graph paper, centimeter cubes, scissors, tape, base ten blocks, one inch graph paper (Master 1)

Introductory Activities

A Cubic Centimeter

Each small group should have graph paper, scissors and tape.

Use your centimeter graph paper, scissors and tape to build a model of a cube measuring 1 cm on each edge. The space inside your cube is called its capacity or volume. The 1 cm cube has a volume of 1 cubic centimeter.

Write on the board: The volume of a 1 cm cube = 1 cubic centimeter (or 1 cu cm or 1 cm^3)

Display 1 unit block from a set of base ten blocks. **This block or cube is 1 centimeter on each edge. It is a 1 centimeter cube and has a volume of 1 cubic centimeter. Show a solid with a volume of 2 cubic centimeters.** (2 cubes placed together)

Have students build different models of solids having a capacity or volume of 4 cubic inches. Discuss how the models are alike and different. (They all have the same volume but have different shapes.)

Next build a box that is 6 centimeters by 4 centimeters wide and 2 centimeters high. Find the number of cubic centimeters inside the box. Students should build the model with their graph paper to find the answer.

About This Page

Read the illustration together. Give each student a sheet of centimeter graph paper to build the box described. **Fill the box with 1 cm cubes to find its volume.**

Have students work with a partner to complete problems 1-8. Have one person build a model to match each picture and the other partner count the number of cubes needed to fill the model.

Follow Up Activities

A Cubic Inch

Use your one-inch graph paper, scissors and tape to build a model of a cube measuring 1 inch on each side. The space inside your cube is called its capacity or volume. A one-inch cube has a capacity or volume of 1 cubic inch.

Journal Prompt

Would you use perimeter, area or volume to measure:
1. the length of wood needed to frame a picture
2. the water needed to fill a bathtub
3. carpet needed to cover the living room floor
4. fencing to enclose a small garden
Explain each of your answers by drawing and labeling diagrams.

Test Preparation

Daily Reviews

Class starts with a five-question review from the back of the student book. Teachers review and discuss answers.
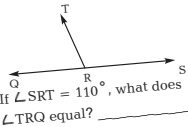
Daily Review 15

1. Which of the following is not a proportion? _____
   (A) $\frac{1}{2} = \frac{2}{4}$
   (B) $\frac{2}{3} = \frac{4}{5}$
   (C) $\frac{3}{4} = \frac{6}{8}$
   (D) $\frac{1}{5} = \frac{2}{10}$

2.
   If $\angle SRT = 110°$, what does $\angle TRQ$ equal? _____

3.
   centimeters
   What is the measure of the line to the nearest centimeter?
   _____

4. $1000 \text{ m} = 1 \text{ km}$
   $429 \text{ m} = $ _____ km
   $43 \text{ km} = $ _____ m

5. 4 ft / 2 ft
   What is the perimeter of the rectangle in feet?
   _____

Daily Review 15
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Problem 5 on Daily Review 15 matches objective 38.

Name _____

Daily Reviews   Record the results from your daily reviews here. The label "Obj." tells which objective that problem covered.

Date ___ Pre-test ___
Date ___ Post-test ___   **7E**

	Review 1	Review 2	Review 3	Review 4	Review 5	Review 6	Review 7	Review 8
1.	Obj. 1	Obj. 6	Obj. 21	Obj. 11	Obj. 1	Obj. 21	Obj. 16	Obj. 26
2.	Obj. 2	Obj. 7	Obj. 22	Obj. 12	Obj. 2	Obj. 22	Obj. 17	Obj. 43
3.	Obj. 3	Obj. 8	Obj. 23	Obj. 13	Obj. 3	Obj. 23	Obj. 18	Obj. 29
4.	Obj. 4	Obj. 9	Obj. 24	Obj. 14	Obj. 4	Obj. 24	Obj. 19	Obj. 31
5.	Obj. 5	Obj. 10	Obj. 13	Obj. 15	Obj. 5	Obj. 25	Obj. 20	Obj. 32
Correct								

	Review 9	Review 10	Review 11	Review 12	Review 13	Review 14	Review 15	Review 16
1.	Obj. 11	Obj. 1	Obj. 26	Obj. 21	Obj. 27	Obj. 11	Obj. 11	Obj. 21
2.	Obj. 12	Obj. 3	Obj. 29	Obj. 22	Obj. 31	Obj. 12	Obj. 33	Obj. 22
3.	Obj. 13	Obj. 4	Obj. 30	Obj. 23	Obj. 32	Obj. 13	Obj. 34	Obj. 23
4.	Obj. 14	Obj. 26	Obj. 31	Obj. 24	Obj. 33	Obj. 15	Obj. 37	Obj. 24
5.	Obj. 15	Obj. 30	Obj. 32	Obj. 29	Obj. 2	Obj. 27	Obj. 38	Obj. 37
Correct								

Daily Review Record Sheets

Students record their results on the record sheet, which identifies missed objectives.
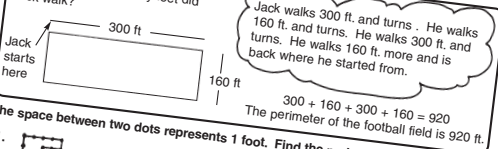
Easy Reteaching

Reteaching is a snap. Teachers can track each student's progress and pinpoint weak areas. Reproducible *Skill Builders* pages (shown here) for every objective are found in the Teacher Manual.

This page reteaches objective 38 and is the first page for reteaching that objective.

Name _____

Finding the Perimeter of a Polygon
Perimeter means the total distance around the outside.

Jack walked all the way around a football field. How many feet did Jack walk?

Jack starts here — 300 ft — 160 ft

Jack walks 300 ft. and turns . He walks 160 ft. and turns. He walks 300 ft. and turns. He walks 160 ft. more and is back where he started from.

$300 + 160 + 300 + 160 = 920$
The perimeter of the football field is 920 ft.

The space between two dots represents 1 foot. Find the perimeter of each polygon.

1. perimeter = ___ ft
2. perimeter = ___ ft
3. perimeter = ___ ft
4. perimeter = ___ ft
5. perimeter = ___ ft
6. perimeter = ___ ft
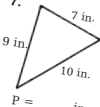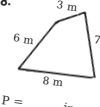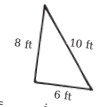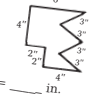
The measurement of each side of the polygon are given. Find the perimeter.

7. 7 in. / 9 in. / 10 in.
   P = ___ in.

8. 3 m / 6 m / 7 m / 8 m
   P = ___ in.

9. 8 ft / 10 ft / 6 ft
   P = ___ in.

10. 8 cm / **8 cm**
    P = ___ in.

11. 6" / 4" / 3" / 2" / 2" / 3" / 4"
    P = ___ in.
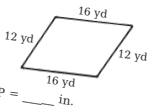
12. 16 yd / 12 yd / 12 yd / 16 yd
    P = ___ in.

Skill Builders 38-1
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Program Objectives

Student Progress Report

Mark an X in the Pre- and/or Post-Test boxes to indicate <u>missed objectives</u>.

Teacher _____

School _____

Student _____

Pre- Post-

Numeration

D-1 Know and use the four basic operations.
D-2 Make a true statement using number properties.
D-3 Write the prime factors for numbers ≤ 20.
D-4 Identify the place value of, read, write, compare and order numbers ≤ 12 digits.
D-5 Round numbers ≤ 7 digits to any place value.
D-6 Give the value of and write an exponential expression in factored form and vice versa.
D-57 Use scientific notation.

Whole Numbers

D-7 Add numbers of the same or varying lengths.
D-8 Subtract numbers of any length.
D-9 Multiply a 4-digit number by powers of 10.
D-10 Divide a 5-digit number by powers of 10.

Fraction Concepts and Computations

D-11 Change a fraction to higher or lower terms.
D-12 Add and subtract unlike proper fractions.
D-13 Add or subtract mixed numbers.
D-14 Multiply proper fractions.
D-15 Multiply mixed numbers.
D-16 Divide proper fractions.
D-17 Divide mixed numbers.

Decimal Concepts and Computations

D-18 Identify the place value of, read, write, compare and order decimals up to ten thousandths.
D-19 Round a decimal to the nearest unit, tenth, hundredth or thousandth.
D-20 Interchange decimals and fractions.
D-21 Add and subtract decimals and money.
D-22 Multiply decimals or money.
D-23 Divide decimals or money.
D-24 Multiply/divide whole numbers and decimals by powers of 10.

Percent Concepts and Computations

D-25 Interchange fractions, decimals and percents.
D-26 Find the missing number in a proportion.
D-27 Find the whole number percent of a whole number, decimal or money amount.
D-28 Find the amount of discount, sales tax or interest in a percent problem.
D-51 Find what percent one number is of another.

Pre- Post-

Geometry

D-29 Know geometric symbols and names.
D-30 Identify types of angles.
D-31 Name types of polygons.
D-32 Identify congruent figures.
D-33 Find the measure of a missing angle.
D-52 Knows the sum of angles in triangles.
D-53 Identify corresponding sides of figures.
D-54 Knows the Pythagorean theorem relationship.

Measurement

D-34 Measure time intervals and temperature changes.
D-35 Add, subtract, multiply and divide measurements.
D-36 Estimate length, weight and capacity.
D-37 Use a table to convert measurements.
D-38 Find perimeter.
D-39 Find the circumference of a circle.
D-41 Find the volume of a rectangular solid.
D-55 Find the area of a triangle or parallelogram.
D-56 Find the area of a circle.

Problem Solving

D-42 Fill in a missing number in patterns.
D-43 Can solve a 1- or 2-step word problem using whole numbers, fractions or decimals.
D-44 Estimate the answer by rounding.
D-45 Find the average of whole numbers, decimals, fractions or percent.
D-46 Solve a word problem using a proportion with a rate, scale drawing or similar shapes.
D-47 Determine the probability of a simple event.

Algebra and Computer

D-48 Identify, compare, order and solve word problems with integers.
D-49 Use the Cartesian coordinate system.
D-50 Solve a 1- or 2-step linear equation.
D-58 Solve operations with rational numbers.
D-59 Graph a linear equation. Use order of operations.
D-60 Identify output of a BASIC program.

Total Correct (Out of 60)

60   60

Student Progress Report (List of Objectives)

This page is in the Teacher Manual and in the Test Assessment Pack. It lists each skill alongside an objective number. This page provides the foundation for tracking a student's achievement and may be sent home as a report card.

Tracking Achievement

55. Flags shaped like triangles are cut from canvas. What is the area of the flag in square inches?

$(A = \frac{1}{2}bh)$

_____ sq. in.

6 in.

12 in.

56. Arnie made a circular flower bed. What is the approximate area of the flower bed?
$(A = \pi r^2$ and $\pi = 3.14)$ _____ sq. ft.

4 ft.

57. If the distance from the sun to the earth is 95,000,000 miles, this distance may be expressed in scientific notation as _____ miles

A 9.5×10^8 **C** 9.5×10^{-8}

B 9.5×10^7 **D** 9.5

58. What number goes in the box?

_____

$(4) \ (-2) = \square$

59. The correct evaluation for the expression in the box is _____.

$5 + 2 \times 3 - 4 \div 2$

A $8\frac{1}{2}$ **C** 11

B 9   **D** 28

60. If $A = 8$ and $B = 6$, find the value of $A + B$.

$A + B = $ _____.

Testing

The Test Assessment Pack contains 20 Pre-Test and 20 Post-Test booklets. Each test has 60 questions, one for each objective.

The number of each problem on the test matches the corresponding objective number of the opposite page.

Testing

Teachers see a snapshot of each student and the class at the beginning and end of the session.

Class Record Sheet

Results show improvement for each student and the class.

Grade 8 Class Record Sheet

Teacher: _____
Grade: _____ School: _____

- If answer is correct, leave the space empty.
- Put an X on missed objectives.
- Record days absent in the last column labeled "Abs."

Student Name	Numeration	Whole Numbers	Fractions	Decimals	Percent	Geometry	Measurement	Problem Solving	Mixed	Record Number Correct out of 60

Teachers mark an X under the number of each problem the student misses. The total correct on the Pre- and Post-Test is recorded at the far right.

"What you have been obliged to discover by yourself leaves a path in your mind which you can use again when the need arises."
—G.C. Lichtenberg

Friendly Lesson Plans

Objectives: To square a number. To find the square root of a number. To find the Pythagorean relationship in right triangles.

Materials: Centimeter Graph Paper (Master 5), crayons, scissors, glue

Vocabulary: Square, squared, exponent, factor, square root, Pythagorean theorem, legs, hypotenuse, radical sign

Introductory Activities

Squaring a Number

Display a 1 centimeter square and describe the number of units on each side. **This is the smallest square shape we can make with these squares. Each side of the square has a unit of 1. How many units on the horizontal side?** (1) **on the vertical side?** (1) **How many small squares in the whole figure?** (1)

Write on the board: The square of $1 = 1 \times 1 = 1$

Build the next smallest square shape. How many units on the vertical side? (2) **How many units on the horizontal side?** (2) **How many small squares in the whole figure?** (4)

Write on the board: The square of $2 = 2 \times 2 = 4$

Introduce the exponent as a shortcut way of expressing each relationship, e.g. $2^2 = 2 \times 2$ or 4. Have students continue the following table:

Units	Vertical by Horizontal	Squares	Relationship
1	1 by 1	1	$1^2 = 1 \times 1 = 1$
2	2 by 2	4	$2^2 = 2 \times 2 = 4$
⋮	⋮	⋮	⋮
10	10 by 10	100	$10^2 = 10 \times 10 = 100$

Square Roots

Now we will undo squaring a number. We will build the squared number with small squares and then find how many units on each side to find the original number.

Build a square using exactly 9 of your small squares. How many small squares in the large square? (9) **How many units on each side of the large square?** (3)

The number of units on each side is called the square root. We say the square root of 9 is 3 and we write this relationship with a special symbol called the radical sign.

Write on the board: $\sqrt{9} = 3$

The Pythagorean theorem

Pythagoras, a Greek mathematician, discovered a special property about right triangles. This property relates to the square which can be drawn on each side.

The right triangle has sides of 3, 4 and 5.
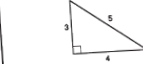
The shorter sides, 3 and 4, are called the legs of the right triangle. The longest side, 5, is called the hypotenuse. The hypotenuse is the side opposite the right angle.
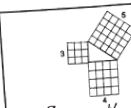
$3^2 = 9$ $4^2 = 16$ $5^2 = 25$
$3^2 + 4^2 = 25$ $5^2 = 25$

Describe this relationship (known as the Pythagorean theorem):
In a right triangle, the sum of squares on the legs equals the square on the hypotenuse

Three sides of a triangle are given. Is the triangle a right triangle?
1. 5, 12, 13 *yes*   2. 4, 5, 6 *no*   3. 6, 8, 10 *yes*
4. 5, 7, 9 *no*   5. 9, 12, 15 *yes*   6. 7, 24, 25 *yes*

Find the legs and hypotenuse of the right triangle formed by these squares.
7. legs = *6, 8*   hypotenuse = *10*   8. legs = *5, 12* hypotenuse = *13 between 14 and 15*
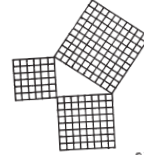
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Page 54

Discovering the Right Triangle Pattern

Each student will need a sheet of centimeter graph paper and base ten blocks. Have students outline and cut a square with 1 cm on each side, 2 cm … 10 cm on each side.

Write on the board: How many right triangles can be formed by joining 3 different sides of your 10 squares?

Ask students to describe each right triangle they find. (Students will find the 3-4-5 right triangles and the 6-8-10.) **There is a pattern for the sides of every right triangle. The sum of the squares on the 2 small ends of a right triangle equals the square on the large side.**

About This Page

Work the top of the page together, then have students complete the page on their own.

Follow Up Activities

Journal Prompt

Evon said a triangle with units of 6 cm, 3 cm and 12 cm is a right triangle. Draw a picture of the triangle. Explain why you agree or disagree with Evon.

In this lesson, students use squares of different sizes to discover the Pythagorean Theorem.

Test Preparation

Daily Reviews
Class starts with a five-question review from the back of the student book. Teachers review and discuss answers.

Daily Reviews are the keys to long term retention.

Teachers report high satisfaction with use of Daily Reviews.

Daily Reviews 13 and 14
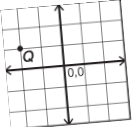
1. To find how much capacity a solid holds, you would find its _____.

   (A) length   (C) perimeter
   (B) area   (D) volume

2. What is the average of .78, .83, .91, .82 and .86?

3. In a scale drawing, 1 cm stands for 5 meters. How long a line would be drawn to represent 100 meters?

4.
   What is the probability that the spinner will land on a 6? _____

5.
   What are the coordinates of point Q?

Daily Review 13
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> Problem 3 on Daily Review 13 matches objective 47.

Name _____

Date _____   Pre-test _____
Date _____   Post-test _____   **8E**

Daily Reviews   Record the answers from your daily reviews here. The label "Obj." tells which objective that problem covered.

Review 1	Review 2	Review 3	Review 4	Review 5	Review 6	Review 7	Review 8
Obj. 6	Obj. 16	Obj. 16	Obj. 26	Obj. 11	Obj. 27	Obj. 20	Obj. 18
Obj. 7	Obj. 17	Obj. 17	Obj. 43	Obj. 12	Obj. 36	Obj. 25	Obj. 20
Obj. 8	Obj. 18	Obj. 18	Obj. 29	Obj. 13	Obj. 37	Obj. 28	Obj. 30
Obj. 9	Obj. 19	Obj. 19	Obj. 31	Obj. 15	Obj. 38	Obj. 30	Obj. 30
Obj. 10	Obj. 20	Obj. 20	Obj. 32	Obj. 36	Obj. 29	Obj. 31	Obj. 38

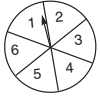| Review 9	Review 10	Review 11	Review 12	Review 13	Review 14	Review 15	Review 16
Obj. 11	Obj. 8	Obj. 25	Obj. 55	Obj. 36	Obj. 11	Obj. 30	Obj. 35
Obj. 13	Obj. 11	Obj. 40	Obj. 42	Obj. 45	Obj. 39	Obj. 38	Obj. 48
Obj. 27	Obj. 22	Obj. 42	Obj. 43	Obj. 46	Obj. 41	Obj. 42	Obj. 49
Obj. 36	Obj. 25	Obj. 43	Obj. 44	Obj. 47	Obj. 46	Obj. 43	Obj. 50
Obj. 5	Obj. 29	Obj. 44		Obj. 49	Obj. 47	Obj. 48	Obj. 43

Daily Review Record Sheets
Students record their results on the record sheet, which identifies missed objectives.
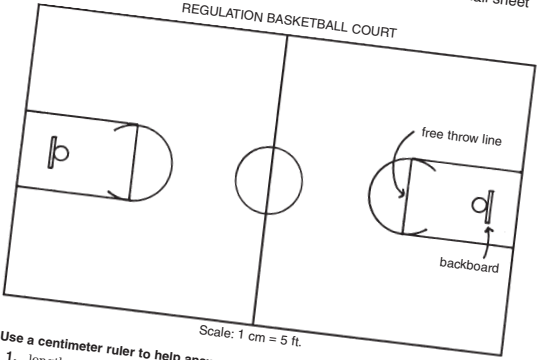
Easy Reteaching
Reteaching is a snap. Teachers can track each student's progress and pinpoint weak areas. Reproducible *Skill Builders* pages (shown here) for every objective are found in the Teacher Manual.

> This page reteaches objective 46 and is the second page for reteaching that objective.

Name _____

Scale Drawings
A scale drawing allows you to represent large distances on a small sheet of paper.

REGULATION BASKETBALL COURT

free throw line

backboard

Scale: 1 cm = 5 ft.

Use a centimeter ruler to help answer the questions.

1. length of drawing = _____ cm
   actual length of court = _____ ft.

2. width of drawing = _____ cm
   actual width of court = _____ ft.

3. width of free throw line = _____ cm
   actual width of free throw line = _____ ft.

4. distance from center court to free throw line = _____ ft.

Use a scale of $\frac{1}{4}$ in. = 1 ft. and make a scale drawing of a room of your choice (bedroom, classroom, etc.)

Skill Builders 46-2
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Reproduction only for one teacher for one class

S

Teacher Guide and Spanish Resource Pack

Teachers use both the English Teacher Guide and the Spanish Resource Pack.

The English Teacher Guide provides step-by-step directions for each student book page. The Spanish Resource Pack includes matching tests and Skill Builder pages in Spanish.

Student Books

Both English and Spanish speakers can work together in the same classroom. *Moviéndose con Matemáticas*® is an exact match to the English student book.

Boxed Class Kits in Spanish

A boxed class kit in Spanish includes:

1 English Teacher Manual
1 Spanish Resource Pack
20 Spanish student workbooks
20 Spanish Parent Handbooks

Getting Started in Spanish...
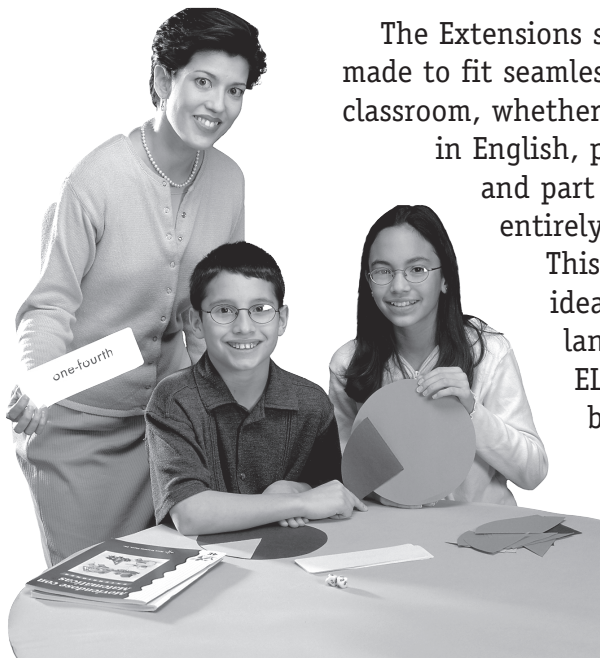
The Extensions series is made to fit seamlessly into any classroom, whether it's taught in English, part English and part Spanish, or entirely in Spanish. This program is ideal for second language and ELL students because manipulatives convey the abstract concept even when students have difficulty understanding the spoken language.

Content-based instruction is combined with language development activities to increase ELL students' understanding of math concepts and skills.

The Grade 4 Pre-Test in Spanish tests the same objectives as the English Pre-Test shown on page 8.

The Spanish Resource Pack contains matching Pre- and Post-Tests plus Skill Builders reteaching pages and vocabulary words in Spanish. All are reproducible.

4E Examen Preliminar – Página 1

Nombre _____

Grado 4 Examen Preliminar

1. Mort está pensando en un número que tiene un 2 en el lugar de las centenas. ¿En cuál de estos números puede estar pensando?

A 1572   C 1275
B 1725   D 1527

2. ¿Cuál de estos números es el mayor?

A 4251   C 4521
B 5421   D 5412

3. Una máquina de números sigue una regla para sacar números en una secuencia. ¿Cuál número sigue?

3, 6, 9, ___

4. Escribe con números:

tres mil seiscientos cuarenta y ocho

5. Escribe con letra 16,147:

_____

6. La población de Pueblo Nuevo es de 157,462 habitantes. ¿Cuál dígito está en el lugar de las decenas de millar?

Nota para el maestro: Usted puede ayudar a los estudiantes a que lean las palabras si lo piden, pero no les explique el significado.

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Assessment   3

Matching Books

English and Spanish pages match exactly!

Manipulatives Benefit ELL Students

Manipulatives are especially beneficial to second language learners. Manipulatives convey the concept even when language is not developed.

Illustrations connect the hands-on activities to practice pages.

Students work in small groups in an active language learning environment.

Valor posicional en números de 3 dígitos

2 centenas   4 decenas   8 unidades   =

Centenas	Decenas	Unidades
2	4	8

Escribe cada número.

1.

Centenas	Decenas	Unidades

2.

Centenas	Decenas	Unidades

3. 5 centenas, 6 decenas, 4 unidades = ___ c ___ d ___ u

4. 7 centenas, 3 decenas, 8 unidades = ___ c ___ d ___ u

5. 6 centenas, 4 decenas, 9 unidades = ___ c ___ d ___ u

6. 2 centenas, 9 decenas, 5 unidades = ___ c ___ d ___ u

7. 9 centenas, 4 decenas, 1 unidades = ___ c ___ d ___ u

8. 7 centenas, 3 decenas, 6 unidades = ___ c ___ d ___ u

_ centenas, 5 unidades = ___ c ___ d ___ u

_as, 7 unidades = ___ c ___ d ___ u

_as, 2 unidades = ___ c ___ d ___ u

_as, 2 unidades = ___ c ___ d ___ u

1
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3-Digit Place Value

2 hundreds   4 tens   8 ones   =

Hundreds	Tens	Ones
2	4	8

Write each number.

1.

Hundreds	Tens	Ones

2.

Hundreds	Tens	Ones

3. 5 hundreds, 6 tens, 4 ones =

4. 7 hundreds, 3 tens, 8 ones = ___ H ___ T ___ O

5. 6 hundreds, 4 tens, 9 ones = ___ H ___ T ___ O

6. 2 hundreds, 9 tens, 5 ones = ___ H ___ T ___ O

7. 9 hundreds, 4 tens, 1 one = ___ H ___ T ___ O

8. 7 hundreds, 3 tens, 6 ones = ___ H ___ T ___ O

9. 5 hundreds, 8 tens, 5 ones = ___ H ___ T ___ O

10. 6 hundreds, 1 ten, 7 ones = ___ H ___ T ___ O

11. 7 hundreds, 2 tens, 2 ones = ___ H ___ T ___ O

12. 6 hundreds, 7 tens, 7 ones = ___ H ___ T ___ O

1
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> After exploring with base ten blocks, students understand that ten of any one block equals one of the next larger block.

Easy Review and Reteaching in Spanish

Repasos Diarios 1 y 2

Repaso Diario

1. Ordena estos números de menor a mayor:

   1345 1450 1350 1400 1453

   1345 1350 1400 1450 1453

2. Escribe lo siguiente con números: 24,476

   | veinticuatro mil cuatro cientos setenta y seis |

3. Escribe 502,400 con letras:

   quinientos dos mil cuatro cientos

4. ¿Qué digito está en el lugar de los cientos de miles en el número 523,467?   5

5. Redondea 5648 a la decena más próxima: 6000 X

Daily Review 1

Repasos Diarios

Nombre _____

Fecha
Fecha

Marca aquí las res
La palabra "Obj" in

	Repaso 1	Repaso 2	Repaso 3	Repaso 4	Re
1.	Obj. 2	Obj. 13	Obj. 13	Obj. 13	Obj.
2.	Obj. 4	Obj. 8	Obj. 14	Obj. 14	Obj.
3.	Obj. 5	Obj. 9	Obj. 16	Obj. 16	Obj.
4.	Obj. 6 X	Obj. 11	Obj. 17	Obj. 17	Obj.
5.	Obj. 7	Obj. 12	Obj. 18	Obj. 18	Obj.

Correctas

	Repaso 9	Repaso 10	Repaso 11	Repaso12	Re
1.	Obj. 16	Obj. 19	Obj. 2	Obj. 25	Obj.
	Obj. 17	Obj. 20	Obj. 3	Obj. 25	Obj.
	Obj. 18	Obj. 21	Obj. 5	Obj. 25	Obj.
	Obj. 19	Obj. 22	Obj. 7	Obj. 26	Obj.

> Problem 5 on Daily Review 1 covers objective 7. *Skill Builders* 7–1 (in the Spanish Resource Pack) provides extra practice.

Redondeando a la decena más próxima

Nombre _____

Algunas veces no necesitas una respuesta exacta. Necesitas una respuesta que esté *cerca de* la respuesta exacta. Se pueden redondear los números para encontrar una respuesta aproximada.

Ej. Redondea el 27 a la decena más próxima
1. Construye el número:

2. Construye los dos grupos de decenas *entre los* cuales está el 27.

   20   30

3. Compara 27 con 20 y con 30. ¿De cuál está más cerca?

   El 27 "se redondea" al 30.

Ej. Redondea el 45 a la decena más próxima.
1. Construye el número:

2. Construye los dos grupos de 10 entre los cuales está el 45.

   40   50

3. ¿Está el 45 más cerca del 40 ó del 50?

   El 45 es un número "intermedio". Los números "intermedios" se redondean hacia arriba.
   El 45 "se redondea" al 50.

Encierra en un círculo el grupo de 10 del cual está más cerca el número dado. Llena los espacios.

1. ¿Está ▨▨ más cerca de ▨▨ ó de ▨▨? El 32 se redondea a _____

2. ¿Está ⋮⋮ más cerca de ⋮ ó de ‖? El 14 se redondea a _____

3. ¿Está ‖⋮ más cerca de ‖ ó de ‖‖? El 25 se redondea a _____

4. ¿Está ⋮⋮ más cerca de ‖‖ ó de ‖‖‖? El 25 se redondea a _____

Redondea cada número a la decena más próxima.

5. 81 _____   6. 18 _____   7. 54 _____

8. 68 _____   9. 86 _____   10. 96 _____

Skill Builders 7-1
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Call 1-800-852-2435 to receive a copy of results achieved with second language students.

Response to Intervention

Moving with Math® materials integrate all eight of the Best Practices published by What Works Clearinghouse.

Moving with Math® **Extensions** addresses all the essential math content standards for grades K through 8. *Moving with Math®* **Extensions** is **RTI Ready**™ and includes all of the recommendations listed below.

"RTI intentionally cuts across the borders of special education and general education and involves school-wide collaboration."

Assisting Students Struggling with Mathematics: Response to Intervention (RTI) for Elementary and Middle Schools, National Center for Education Evaluation and Regional Assistance, 2009
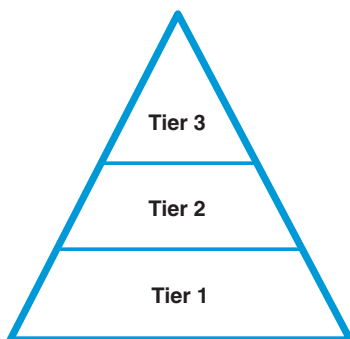
Moving with Math® Extensions RTI Check List ✔

✔ **Predictive Screening:**
  ◗ **Pre-Tests**, **Post-Tests**, **Daily Reviews**, and weekly **Check Points** identify at-risk students and monitor progress

✔ **In-Depth Instruction:**
  ◗ Focus on whole numbers in grades 1 through 4
  ◗ Focus on rational numbers in grades 4 through 8 (decimals and fractions)

✔ **Systematic and Explicit Instruction:**
  ◗ Lightly-scripted lesson plans guide instruction
  ◗ Classroom activities use explicit models and strategies
  ◗ Students given opportunities to verbalize, write, discuss, and practice skills learned

✔ **Solving Word Problems:**
  ◗ Explicit steps and strategies for solving word problems
  ◗ Practice solving word problems using alternative strategies
  ◗ Use of word frames [underlying structures] in solving word problems

✔ **Visual Representations of Math Concepts:**
  ◗ Manipulative-based activities introduce each math concept
  ◗ Pictorial representations on every student page

✔ **Fluency-Building Activities:**
  ◗ **Skill Builder** worksheets include flash cards, timed exercises, speed games
  ◗ Include research-based strategies such as fact families

✔ **Monitoring:**
  ◗ **Pre-Tests**, **Post-Tests**, **Daily Reviews**, weekly **Check Points**, and embedded assessments monitor the progress of at-risk students

✔ **Motivation:**
  ◗ Activity-based instruction offers rich opportunities for student success and natural occasions for praise and encouragement

Tier 3

Tier 2

Tier 1

Moving with Math® **Foundations** and **Math by Topic (IM/MH)** are also **RTI Ready**™. Visit our website to learn more.