

Vmath[®] Summer Adventure Overview



Vmath[®] Summer Adventure

Grades K-8

Vmath[®] Summer Adventure

What Is *Vmath Summer Adventure*?

Vmath[®] Summer Adventure's modular structure is designed for students in kindergarten through grade 8 who struggle in math. It is based on research principles of effective intervention and provides targeted instruction and practice on essential concepts and skills that students have missed during the regular school year and must master before moving to the next grade level in math.

Vmath Summer Adventure provides:

- **Explicit instruction** proven to be effective with struggling students
- **Purposeful practice** that helps students achieve mastery
- **Built-in assessments and data management** to monitor student progress
- **Targeted, corrective feedback** to guide student learning
- **Student-centered technology** to engage and motivate students to learn more
- Integrated **online data-management system**—VPORT[®] (see page 13)
- **Blended solution** with an optional purchase of *VmathLive[®]* (see page 34)





The goal of *Vmath Summer Adventure* is to help stop summer learning loss across grade levels and prepare students for the upcoming school year. The National Mathematics Advisory Panel and the National Council of Teachers of Mathematics (NCTM) have identified the need for students to have access to highly qualified teachers in math. The *Vmath Summer Adventure* program provides strong daily lesson support so that teachers of every experience level can provide effective, research-based instructional practices.



“Real World” Math

- An engaging introduction to how math is used in real life
- Encourages students to think about math in different ways and helps them make important connections
- Covers topics across all disciplines, including science, geography, health, and the arts

Math That Is Meaningful

- Includes opportunities for students to apply what they learn
- Students can answer the questions “Why do I need to know this?” and “When will I ever use this?”

Focus on Vocabulary Development

- Emphasis on learning the language of math enables ELLs and struggling students to become more successful

Scaffolded Instruction

- Scaffolded support through sample dialogue
- Careful questioning strategies ensure mastery of concepts and skills

Students Communicate Mathematically

- Students are encouraged to communicate both verbally and in writing

Vmath[®] Summer Adventure

At-A-Glance

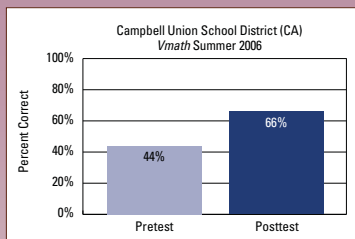
Who Is Vmath Summer Adventure for?

Vmath Summer Adventure is for struggling students who need additional support in the key foundational math skills and essential concepts they must master before moving to the next grade level in math.



Research and Effectiveness

Vmath Summer Adventure delivers results that prevent the summer math slide and prepare students for the upcoming school year. It is based on the research principles of effective instruction for struggling students.



How It Works

Vmath Summer Adventure's modular structure adapts to the needs of students and allows for flexible implementation options depending on the hours of instruction.

Level A

- Sorting and Naming Shapes and Objects
- Knowing Numbers and Patterns
- Measurement and Time
- Getting Ready for Addition and Subtraction

Level D

- Bundle 1**
- Whole Numbers
 - Adding and Subtracting Whole Numbers
 - Multiplying and Dividing Whole Numbers

- Bundle 2**
- Decimals and Fractions
 - Data Analysis and Measurement
 - Geometry

Level G

- Bundle 1**
- Decimals
 - Adding and Subtracting Fractions
 - Multiplying and Dividing Fractions, and Proportions

- Bundle 2**
- Geometry and Measurement
 - Data, Probability, and Statistics
 - Pre-Algebra



Cambium Learning Group is the leading educational company focused primarily on at-risk and special student populations.

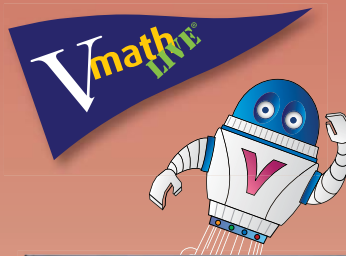
Sample Pages

Review sample pages from both teacher and student books.



VmathLive

VmathLive is the optional online student component that aligns with and reinforces the instruction in *Vmath Summer Adventure*.



Who Is *Vmath Summer Adventure* for?

Vmath Summer Adventure is for struggling students who need additional support in the key foundational math skills and essential concepts they must master before moving to the next grade level in math.

Unlike traditional summer school programs that merely teach students what they should have already learned, *Vmath Summer Adventure* divides instruction into smaller, more manageable objectives, allowing students the time they need to build a solid math foundation, gain greater confidence in their abilities, and make strides toward grade-level proficiency.

Support your *Vmath Summer Adventure* program with an additional purchase of *VmathLive* (see page 34).



Our initial data from *Vmath* was very promising. We saw growth in our students at all grade levels. We are anxious to continue our use of *Vmath* in the years to come.

—Michael O’Laughlin, Director of Curriculum
Campbell Union School District, California

Research and Effectiveness

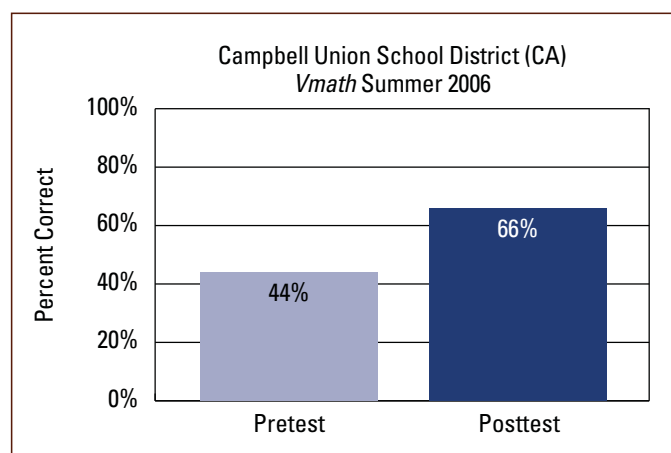
Vmath Summer Adventure Works!

Vmath Summer Adventure delivers results that prevent the summer math slide and prepare students for the upcoming school year.

Strong Research Base

Vmath Summer Adventure is based on the research principles of effective instruction for struggling students. Guided by the work and research of noted mathematics educators, *Vmath Summer Adventure* provides:

- Explicit, systematic instruction
- Targeted, meaningful practice
- Built-in assessments to monitor progress
- Data-management tools designed to direct instructional decisions
- Targeted corrective feedback to guide student learning



Vmath Advisory Team

Michael Hynes, Ph.D., University of Central Florida—*Vmath* Senior Advisor

David Rock, Ed.D., University of Mississippi

Linda Gojak, M.Ed., John Carroll University

Terri Belcher, Ph.D., Lawrence Hall of Science, University of California-Berkeley

Marcy Stein, Ph.D., University of Washington, Tacoma

Russell Gersten, Ph.D., University of Oregon

Mark Shinn, Ph.D., National Louis University

Mary Ellen Hynes, Ph.D., University of Central Florida

How It Works

The balanced, systematic approach of *Vmath Summer Adventure* ensures that students learn the essential skills and strategies to build a strong foundation in mathematics.

Teacher-Led Instruction

Research shows that explicit instruction positively affects math achievement for students who have difficulty learning math. Based on scientific research, *Vmath* uses an explicit instructional approach that includes:

- Systematic, scaffolded instruction with teacher modeling
- Lessons that target essential concepts, skills, and problem-solving strategies
- Time to think and talk through problems
- Purposeful practice



Explicit Instruction

Each *Vmath Summer Adventure* lesson follows an explicit four-step structure:

Levels A–C



Levels D–I



Monitor Student Progress in Developing Mastery

The pretests and posttests embedded in *Vmath Summer Adventure* have been carefully designed to evaluate all aspects of student learning and inform instruction.

The pretest is given before instruction begins to measure student understanding of math content and establish a baseline score for each student. The posttest is given after the complete course has been taught. This assessment measures student mastery of concepts and skills.



Effective Data-Management System

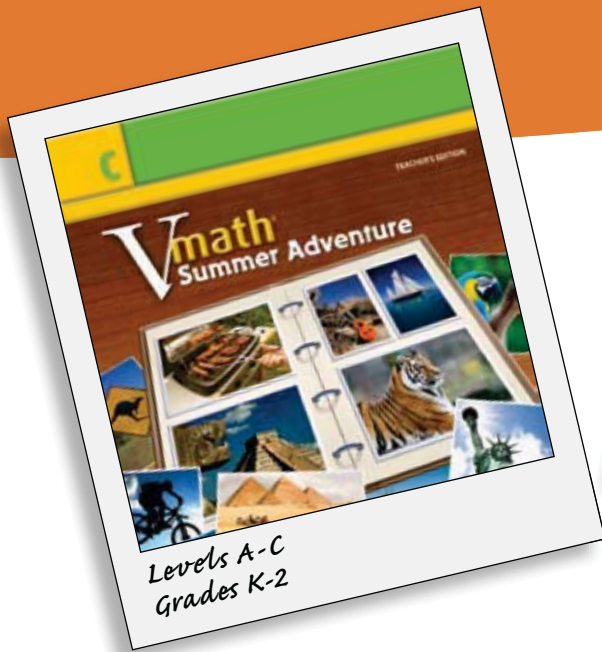
Teachers and administrators use VPORT to inform ongoing decision making so that every child is successful.

The VPORT data-management system incorporates assessments with real-time data management to:

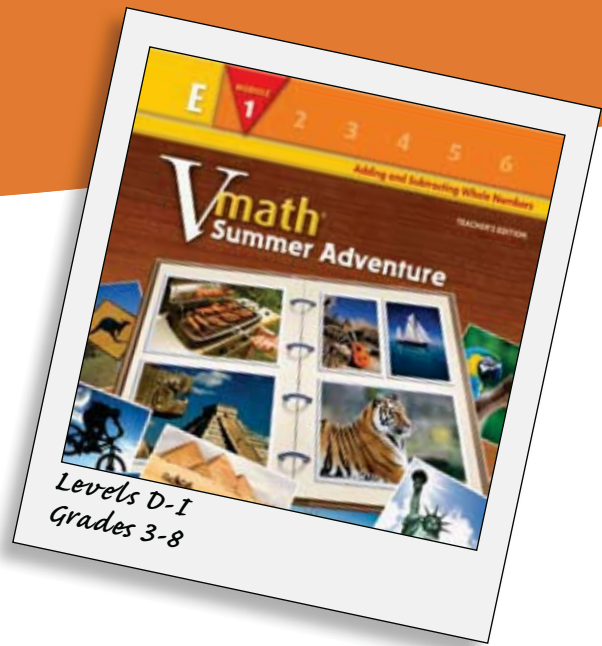
- Identify individual instructional needs and goals
- Adjust instruction based on student needs
- Monitor progress against goals
- Communicate progress to the instructional team
- Generate parent reports in English and Spanish



How It Works



Levels A-C
Grades K-2



Levels D-I
Grades 3-8

Vmath Summer Adventure's modular structure adapts to the needs of students and allows for flexible implementation options of either 30 or 60 hours of instruction.

Each *Vmath Summer Adventure* unit begins with an **Adventure** page. The Adventures show a colorful, high-interest photograph and description of how the skills and concepts for the lessons are used in real life. This feature helps motivate students as they connect what they are learning to interesting topics.

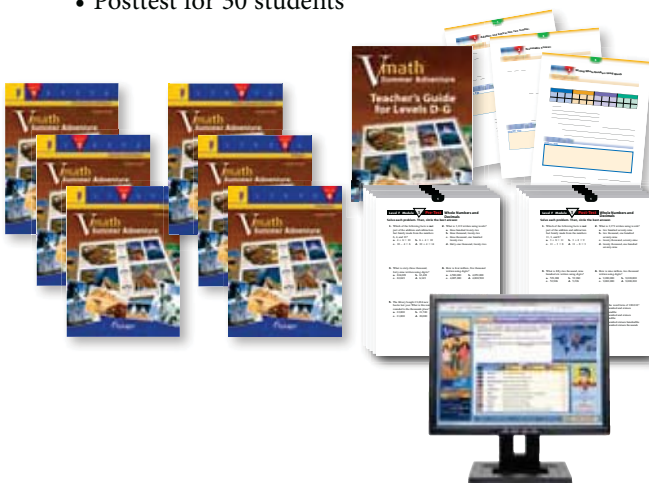
The easy-to-use *Vmath Summer Adventure* components and detailed lesson support allow teachers to minimize the time spent preparing for the daily lessons and maximize the time spent working with students.

Teacher Material

- Teacher Edition with Pretest and Posttest Answer Keys
- *Vmath Summer Adventure* Teacher Guide
- Transparency Set
- Pretest for 30 students
- Posttest for 30 students

Student Material

- Student books and lesson pages for each module



Levels A–C are for students who have completed grade K, 1, or 2.

- Each level provides as many as 40 hours of instruction
- Each grade level has four units of instruction
- There are five lessons in each unit
- Over the course of the four units, 20 lessons are taught

Level A	Level B	Level C
<ul style="list-style-type: none"> • Sorting and Naming Shapes and Objects • Knowing Numbers and Patterns • Measurement and Time • Getting Ready for Addition and Subtraction 	<ul style="list-style-type: none"> • Addition and Subtraction • Geometry and Measurement • Addition, Subtraction, and Time • Numbers to 100, Money, and Fractions 	<ul style="list-style-type: none"> • Modeling Numbers • Addition and Subtraction • Measurement and Money • Geometry, Fractions, Modeling Multiplication and Division

Levels D–I are for students who have completed grades 3–8, respectively.

- There are up to six modules available per grade level
- Each module is made up of 10 lessons
- If a teacher were to teach three modules, that would equate to 30 lessons
- If a teacher were to teach six modules, that would equate to 60 lessons

Level D	Level E	Level F
<p>Bundle 1</p> <ul style="list-style-type: none"> • Whole Numbers • Adding and Subtracting Whole Numbers • Multiplying and Dividing Whole Numbers <p>Bundle 2</p> <ul style="list-style-type: none"> • Decimals and Fractions • Data Analysis and Measurement • Geometry 	<p>Bundle 1</p> <ul style="list-style-type: none"> • Adding and Subtracting Whole Numbers • Multiplying and Dividing Whole Numbers • Data Analysis and Measurement <p>Bundle 2</p> <ul style="list-style-type: none"> • Decimals • Fractions • Geometry 	<p>Bundle 1</p> <ul style="list-style-type: none"> • Whole Numbers and Decimals • Operations with Decimals • Fractions <p>Bundle 2</p> <ul style="list-style-type: none"> • Fractions, Decimals, and Percent • Geometry • Measurement
Level G	Level H	Level I
<p>Bundle 1</p> <ul style="list-style-type: none"> • Decimals • Adding and Subtracting Fractions • Multiplying and Dividing Fractions, and Proportions <p>Bundle 2</p> <ul style="list-style-type: none"> • Geometry and Measurement • Data, Probability, and Statistics • Pre-Algebra 	<p>Bundle 1</p> <ul style="list-style-type: none"> • Operations with Decimals and Integers • Fractions • Pre-Algebra <p>Bundle 2</p> <ul style="list-style-type: none"> • Measurement • Ratio, Proportion, and Percent • Data, Probability, and Statistics 	<p>Bundle 1</p> <ul style="list-style-type: none"> • Integers, Exponents, and Square Roots • Rational Numbers • Ratio, Proportion, and Percent <p>Bundle 2</p> <ul style="list-style-type: none"> • Expressions and Equations • Measurement • Data, Probability, and Statistics

Vmath Summer Adventure Levels A, B, and C

Written for students who have completed grades K, 1, or 2, levels A, B, and C include:

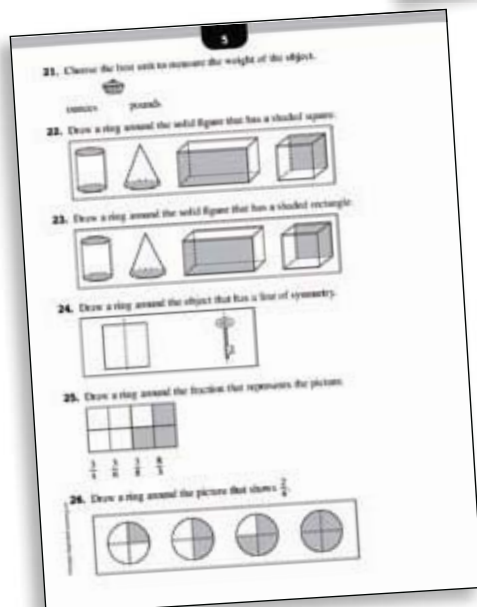
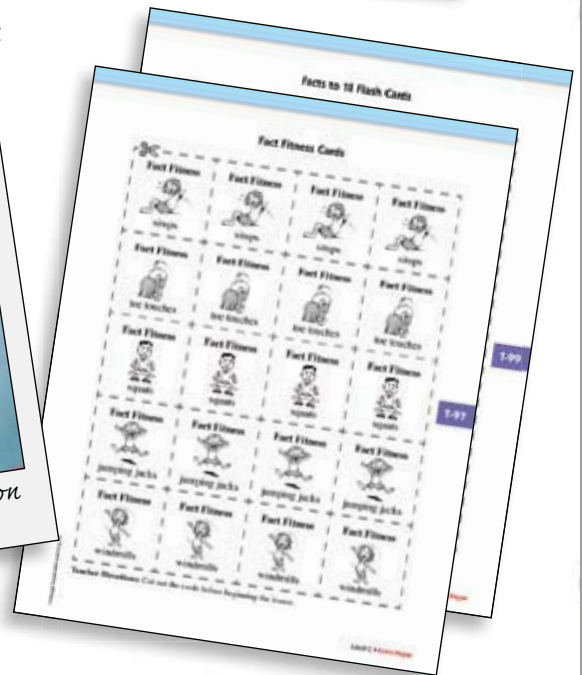
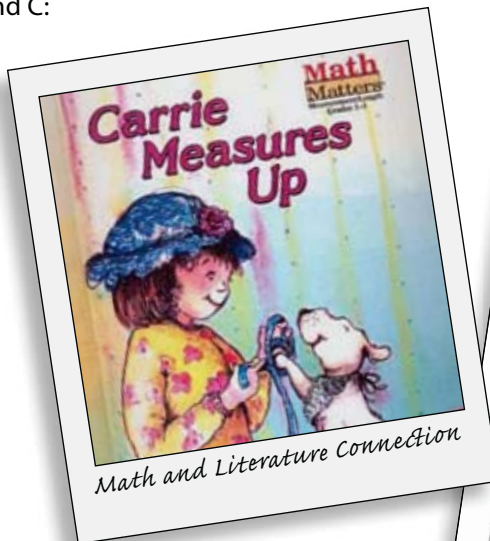
- Cross-curricular adventures in real life math
- Explicit instruction in essential concepts and skills
- Connections to literature
- Targeted, meaningful practice
- Fun activities and games that reinforce learning
- Assessment to monitor student growth



Reinforcement Activities

Three types of Reinforcement Activities are provided throughout the lessons in levels A, B, and C:

- Math and Literature
- Math Activity
- Math Game Cards



Pre-Tests and Post-Tests

Levels A, B, and C include Pre- and Post-Test Assessments. The Pre-Test is given before instruction begins to measure student understanding of math content and establish a baseline score for each student

The Post-Test is given after the complete course has been taught. This assessment measures student mastery of concepts and skills.

Lesson Planner: Levels A, B, and C Adventures

Pre-Test

Level C, Unit 1: Modeling Numbers

Discuss Unit Adventure: Fruit Snacks

Lesson 1, Part 1: Number Patterns: Getting Started and Guided Practice

Lesson 1, Part 2: Number Patterns: Reinforcement Activity and Independent Practice

Lesson 2, Part 1: Counting by Twos, Fives, and Tens: Getting Started and Guided Practice

Lesson 2, Part 2: Counting by Twos, Fives, and Tens: Reinforcement Activity and Independent Practice

Lesson 3, Part 1: Modeling and Writing 2-Digit Numbers: Getting Started and Guided Practice

Lesson 3, Part 2: Modeling and Writing 2-Digit Numbers: Reinforcement Activity and Independent Practice

Lesson 4, Part 1: Modeling and Writing 3-Digit Numbers: Getting Started and Guided Practice

Lesson 4, Part 2: Modeling and Writing 3-Digit Numbers: Reinforcement Activity and Independent Practice

Lesson 5, Part 1: Using Greater Than and Less Than Symbols: Getting Started and Guided Practice

Lesson 5, Part 2: Using Greater Than and Less Than Symbols: Reinforcement Activity and Independent Practice

Unit Adventure Questions: Fruit on a Stick

Level C, Unit 2: Addition and Subtraction

Level C, Unit 3: Measurement and Money

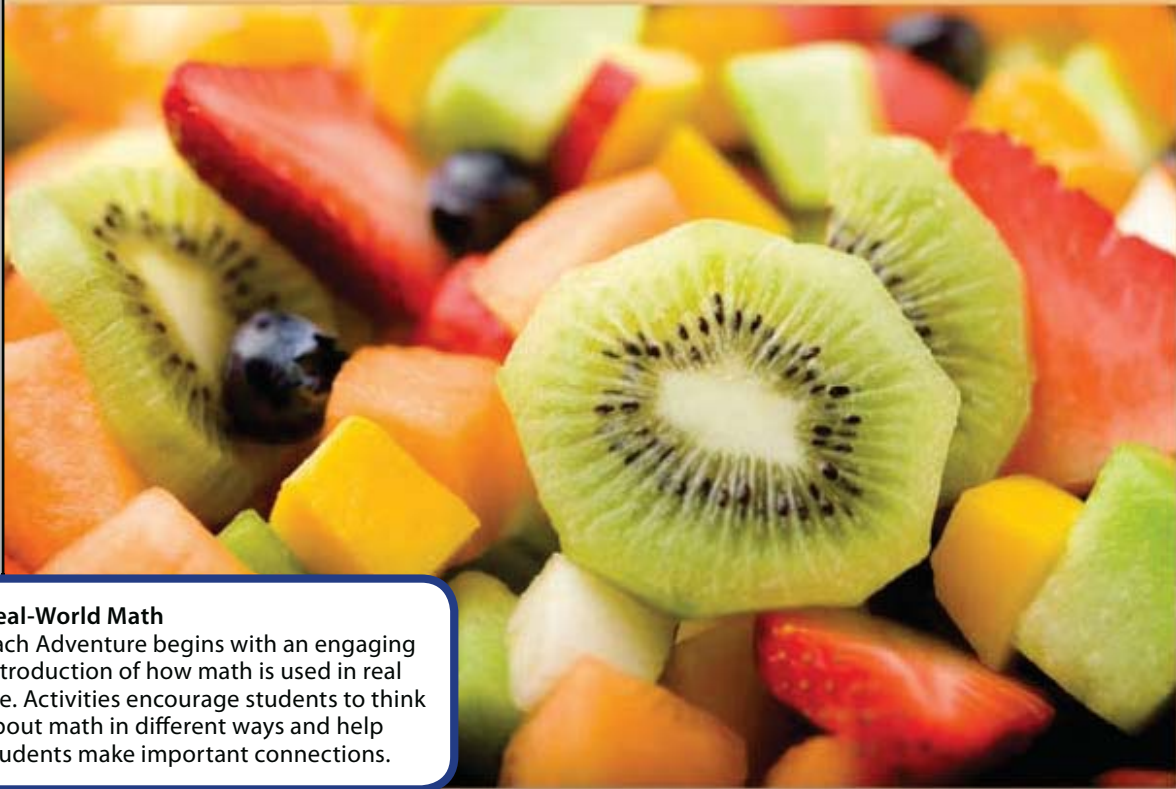
Level C, Unit 4: Geometry, Fractions, and Modeling Multiplication and Division

Post-Test

Adventure Pages – Level C

Adventure!

Fruit Snacks



Real-World Math

Each Adventure begins with an engaging introduction of how math is used in real life. Activities encourage students to think about math in different ways and help students make important connections.

Fruit makes a great snack! Fruits can be many colors. Grapes can be red, green, or purple. Apples are red, green, or yellow. Can you think of some orange fruits? Fruits are colorful. They are good for you too!

© Voyager Expanded Learning, L.P.

Cross-Curricular Opportunities

Adventures cover topics across all disciplines including science, geography, health, and the arts.

FRUIT ON A STICK

In this adventure, you will be a chef. Answer each question on your own paper.

1. You are a party chef. You will make fruit on a stick.
2. Look at the pattern of fruit on a stick. The fruits are green grapes, apples, and red grapes. How many pieces of fruit are there? **8**



3. Look at the pattern. What fruit comes next on the stick?
red grape
4. Choose three fruits on the Fun with Fruit page. Draw a pattern of fruits on the first stick. **Answers will vary.**
5. Choose three fruits on the Fun with Fruit page. Draw a different fruit pattern on the second stick. Show a partner. Tell how the patterns are different. **Answers will vary.**
6. Stack oranges for each table. The stacks are on the Fun with Fruit page. The first stack is on Table 1. The second stack is on Table 2. The third stack is on Table 3. Draw the next stack of oranges on Table 4. Use the pattern.

FURTHER ADVENTURE

7. Get three kinds of fruit and some sticks. Make your own fruit on a stick. Ask an adult to cut the fruit. Make a pattern with the fruit. Serve your fruit on a stick to your family as a healthy snack.

TEACHER NOTES

MATERIALS

crayons, colored pencils,
or markers

Making Math Meaningful

Each Adventure includes opportunities for students to apply what they learn. Students can answer the questions "Why do I need to know this?" and "When will I ever use this?"

Level C Unit 1 Modeling Numbers

Lesson 3

Modeling and Writing 2-Digit Numbers

Objective

To use base 10 pieces to model numbers to 99

Materials

Transparency C.1.3
crayons or markers
number cube
masking tape

New Vocabulary

base 10 pieces
blocks used to model base 10 numbers

ones block
single cube used to represent one

tens rod
rod made up of 10 ones blocks, used to represent 10

place value chart
a chart that shows the value of each digit in a number

Lesson Notes

Getting Started

REVIEW PRESKILLS

PROBLEM 1 Direct students' attention to the blocks in problem 1. **How many blocks are shown in problem 1? (8) How do you know?** (Possible responses: I counted the blocks; there are 8 blocks.) **Write 8 on the line under the blocks.**

MODEL NEW SKILLS

PROBLEM 2 Direct students' attention to the blocks in problem 2. **Count the blocks in problem 2. How many blocks are in the stack? (10) This a picture of a tens rod. It is one rod that has 10 blocks. When we see this rod, we know it represents one set of 10 ones, or 10. Write 10 on the line.**

PROBLEM 3 **What do you see in problem 3? (tens rods) How much does 1 tens rod represent? (10) We can count by 10 for each rod you see. Count together: 10, 20, 30, 40. How much in all is modeled by the rods in problem 3? (40) Write 40 on the line.**

Vocabulary Development

Emphasis on learning the language of math enables ELL and struggling students to become more successful in math.

Getting Started

An overhead transparency of the student lesson page helps teachers give strong instructional support as they review prerequisite skills and model new concepts, skills, and strategies.

Communication and Reasoning

Students learn to communicate their thinking as they answer questions, such as "How do you know?"


T-14


11 Level C Unit 1 • Modeling Numbers


Name _____ Class _____ Date _____


Lesson 3 Modeling and Writing 2-Digit Numbers


Getting Started

1.  8

2.  10

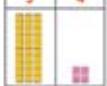
3.  40

4.  12

5.  24



6.

Tens	Ones
3	4



Guided Practice

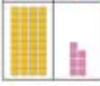
Color the correct number of base 10 pieces to model each number.

7. 32  8. 26 

Write the number modeled in the place value chart.

9.


Tens	Ones
4	7





12 Lesson 3 • Modeling and Writing 2-Digit Numbers


Independent Practice

Write the number modeled.



10.  42



11.  51

12.  37

13.  57

Color the correct number of base 10 pieces to model each number.


14. 45  15. 63 

16. 36  17. 54 

Write each number modeled in the place value chart.


18.

Tens	Ones
9	8



19.

Tens	Ones
1	6



Visual Connections
 Student pages include pictorial representations of manipulatives, helping students understand concepts as they connect concrete to pictorial to symbolic.

T-15

- PROBLEM 4** Look at problem 4. Base 10 pieces include ten rods called *tens* and small blocks called *ones*. On the transparency, circle the two small blocks and tell students that each piece is called a *one*. Circle the ones blocks. There is 1 tens rod and two ones blocks. Count 10 for the tens rod plus two more for the ones blocks. How much in all is modeled in problem 4? (12) Write 12 on the line.
- PROBLEM 5** How many tens are shown in problem 5? (2) How many ones are shown? (4) What number is modeled? (24) Write 24 on the line.
- PROBLEM 6** Look at the chart in problem 6. This is a place value chart. It shows the tens place and the ones place of a number. How many tens rods are shown in the model? (3) Notice 3 tens rods are shown under the tens place. Write 3 in the tens place. How many ones blocks are shown in the model? (4) Notice 4 ones blocks are shown in the model. Write 4 in the ones place. What number is modeled in problem 6? (34)

Guided Practice

Teachers use effective prompts and questions to guide students as they ensure proper student responses, monitor student performance, and correct as needed.



Guided Practice

Before starting the Guided Practice, read aloud and discuss the instruction lines with students.

PROBLEM 7 In problem 7, we are going to model the number 32 by coloring in the correct number of base 10 pieces. How can we model the number 32? How many tens rods are in the number 32? (3) Color 3 tens rods. How many ones blocks are in the number 32? (2) Color 2 ones blocks.

PROBLEM 8 In problem 8, we are going to model the number 26 by coloring in the correct number of base 10 pieces. How many tens rods are in the number 26? (2) How many ones blocks are in the number 26? (6) Color 2 tens blocks and 6 ones blocks.

PROBLEM 9 Look at the place value chart in problem 9. Look in the tens column. How many tens rods are shown? (4) How many ones blocks are shown? (7) What number is modeled in the place value chart? (47) Write the number 47 in the chart.

Math Activity: Physical Place Value

Preparation

Use masking tape to mark off a large place value chart, showing the ones and tens places on the floor. (You could use butcher paper instead.)

Tell students they will do an activity using number cubes to represent 2-digit numbers in a place value chart.

T-16

Instructions

Use a number cube to roll a number and ask that number of students to stand in the ones column. **How many students are in the ones column?**

Roll the number cube a second time. Ask that number of students to stand in the tens column. **How many students are in the tens column?** Have students count by tens for the number of students in the tens column, then count on by ones for the number of students in the ones column.

What number is represented by the students standing in the place value chart?

Have a student write the correct number in a place value chart on the board. Draw lines on the place value chart to separate the numbers after students write each new number they have modeled.

Have students sit down and repeat the activity with different numbers until all students have had the chance to stand in the place value chart.

Scaffolded Instruction

Scaffolded support through sample dialogue helps students gain independence and ownership of their learning. Careful questioning strategies ensure mastery of concepts and skills.

Reinforcement Activities

Reinforcement Activities take one of three forms:

- Math and Literature sections include math-related questions that the class answers together after reading a trade book.
- Math Games review skills learned in the Getting Started and Guided Practice sections.
- Math Activities are hands-on tactile or physical ways to learn the math skills in the lesson.

Independent Practice

Students practice lesson content and previously learned skills on their own. Teachers monitor and check student work and provide immediate support as needed.



Independent Practice

Before starting the Independent Practice, read aloud and discuss the instruction lines with students.

Have students complete problems independently. Monitor students and assist those having difficulty.

PROBLEMS 10–19 **Reminder:** Review counting by tens with students before they begin the Independent Practice. Remind students they can count by tens to find the value of the tens rods, then count on by ones to find the number modeled.

Adaptation

Work with students who need additional help by allowing them to model numbers using the base 10 blocks and asking partners to name the numbers that have been modeled.

Allow students who have completed the Independent Practice to continue with the Extension.

Extension

On the front of a sheet of paper, have students write several Number Riddles, such as “I am a number between 50 and 60. I have 8 ones. What number am I?” Have students write the answers to the riddles on the back of the paper. Then have each student exchange riddles with another student and solve each other’s riddles.

Differentiated Instruction and Practice

Important Adaptation activities suggest alternate ways for teachers to differentiate instruction and student practice opportunities.

Making the Connection

Extension sections provide activities that students work on individually or with partners. These activities extend the time that students spend with new skills and concepts in a fun, creative, and open-ended way.

Vmath Summer Adventure Levels D - I

Levels D - I include concepts, skills, and problem solving strategies commonly taught in grades 3 - 8. Throughout each lesson, students are encouraged to communicate both verbally and in writing. Brief constructed response questions require students to justify their thinking and analyze answers for reasonableness. Modeled teacher dialogue is also embedded to surface important concepts and strengthen understanding.

Materials for each classroom include:

- Teacher's Edition with Pre-Test and Post-Test Answer Keys
- Transparency set
- Pre-Tests for 30 students
- Post-Tests for 30 students
- *Vmath* Summer Adventure Teacher's Guide
- Math and Literature Books (Levels A-C)
- Student Workbooks
- *VmathLive* (optional purchase)

Review Games

The *Vmath* Summer Adventure Teacher's Guide also provides Review Games to be used at the end of a module or as review throughout the summer program.

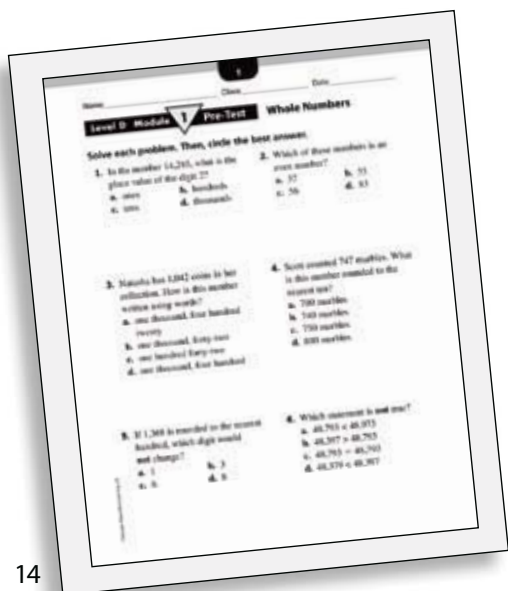
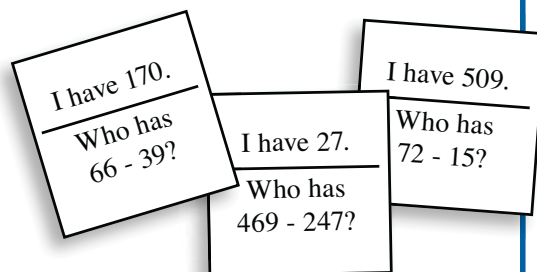
Vmath Level E Summer Adventure Review Game 2: "I Have... Who Has?" Game

Preparation

Copy and then cut out the "I Have . . . Who Has?" cards on the next page.

Instructions

1. Shuffle the cards. Distribute the cards, giving each player at least one card. Pass out all the cards, even if some players get more than one card.
2. Have one player begin by reading the statement "Who has $202 + 162$?" All players should use paper and pencil to solve the problem.
3. The player with the answer 364 on his or her card answers by reading the card: "I have 364. Who has . . .?"
4. Play continues until the player who began the game answers the "I have . . ." call.



Assessments

Levels D - I also include Pre- and Post-test Assessments for each module.

Each lesson includes a Test Prep section where students solve problems presented in multiple choice or short answer formats. Test Prep not only gives students valuable experience with standardized test formats, it also gives students the opportunity to practice several powerful strategies, which help them to analyze answers and determine the correct answers.

For schools using *VmathLive*, students can take pre- and post-tests online.

Module Lesson Planner for Levels D - I Adventures

Level E, Module 1: Adding and Subtracting Whole Numbers

Level E, Module 2: Multiplying and Dividing Whole Numbers

Level E, Module 3: Decimals

Pre-Test

Level E, Module 4 Fractions

Module Pre-Test

Discuss Module Adventure: Quilt Art

Lesson 1: Fractional Parts of a Whole

Begin Lesson 2: Fractional Parts of a Set

Complete Lesson 2: Fractional Parts of a Set

Lesson 3: Problem-Solving: Working Backward

Lesson 4: Finding Equivalent Fractions

Lesson 5: Simplest Form of a Fraction

Lesson 6: Comparing Fractions

Begin Lesson 7: Adding Fractions with Like Denominators

Complete Lesson 7: Adding Fractions with Like Denominators

Lesson 8: Adding Mixed Numbers with Like Denominators

Lesson 9: Subtracting Fractions with Like Denominators

Lesson 10: Subtracting Mixed Numbers with No Renaming

Review Game: "I Have . . . Who Has?" Game

Module Adventure Questions: A Design to Remember

Module Post-Test

Post-Test

Level E, Module 5: Data Analysis and Measurement

Level E, Module 6: Geometry

Sample lesson planner for *Vmath* Summer Adventure level E, module 4, when 2 hours of daily instruction is devoted to math.

Adventure Pages – Level E, Module 4

Adventure!

Quilt Art



Real-World Math

Each Adventure begins with an engaging introduction of how math is used in real life. Activities encourage students to think about math in different ways and help students make important connections.

People in the U.S. have made quilts for many years for different reasons. In pioneer days, people made quilts to sleep under. These quilts were made before the pioneers traveled west. During the Civil War, quilts were made to raise money to buy supplies for soldiers.

People now think quilts are works of art. They are shown in quilt art shows.

Cross-Curricular Opportunities

Adventures cover topics across all disciplines including science, geography, health, and the arts.

A DESIGN TO REMEMBER

In this adventure, you will be a quilt artist.
Answer each question on your own paper.

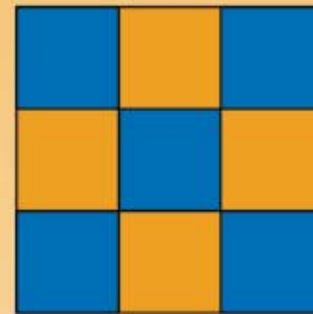
1. Quilts are made of small squares sewn together. A part of a quilt called a block is shown. A quilt artist makes many blocks. The blocks are put together to make the quilt. What fraction of the Nine Patch Block is brown? $\frac{4}{9}$
2. Use the graph paper on the next page. Use three different crayons or colored pencils. Carefully color each square of the graph paper to create your own quilt design. Use a single color in a square.
3. Make a table like the one below. Use your quilt for the table. **Answers will vary.**

Color	Name of Color	Fraction of Quilt	Fraction of Quilt (in simplest form)
1			
2			
3			

4. Which color did you use the most? Use the fractions from question 3 to find the answer. **Answers will vary.**
5. Which color did you use the least? Use the fractions from question 3 to find the answer. **Answers will vary.**
6. Suppose your quilt design is in a quilt art show. Write a short paragraph with at least three sentences about your quilt. Compare the fractions of the quilt made with each color. **Answers will vary.**

FURTHER ADVENTURE

7. Use the Internet or your library to find the names of quilt blocks used in pioneer days. Write the name of a block. Then draw the block design on graph paper. Share your pioneer quilt block. Have a class quilt art show.



Nine Patch Block

TEACHER NOTES

MATERIALS

crayons or colored pencils

- In question 2, your students can use a random design, a single pattern, or a repeating block as described in question 1.

Further Adventure Materials

graph paper

crayons or colored pencils

Graph paper for question 2 is found on TE page 26.

Applying and Writing About Math

Students begin to understand the importance of math in the real world as they answer questions that challenge their thinking and that encourage them to apply math in everyday life.

Vmath Summer Adventure Level E, Module 4

Lesson 1

Objective

To write and understand fractional parts of a whole

Materials

- transparency E.4.1

New Vocabulary

fraction

a number that names part of a whole or part of a set

numerator

the number above the bar in a fraction that tells how many equal parts of the whole or parts of a set are being considered
Example: $\frac{3}{4}$ ← numerator

denominator

the number below the bar in a fraction that tells how many equal parts are in the whole
Example: $\frac{3}{4}$ ← denominator

Getting Started (15 minutes)

REVIEW PRESKILLS

Problem 1 Look at the students standing in line. Count from the first student in line until the girl is reached: 1, 2, 3, 4. The girl is fourth in line. Numbers that tell the position or order are called ordinal numbers. The girl's position in line is fourth. Fourth is an ordinal number.

MODEL NEW SKILLS

Problem 2 Fractions can be used to show relationships between equal parts of a whole. The

Getting Started

An overhead transparency of the student lesson page helps teachers give strong instructional support as they review prerequisite skills and model new concepts, skills, and strategies.

Which number is the numerator? (3) The number below the bar is called the denominator. It tells the total number of equal parts. Which number is the denominator? (4) To write a fraction using words, first write the numerator in words followed by a hyphen. To write the denominator in word form, use the same words used with ordinal numbers. The denominator will be in plural form if the numerator is greater than 1. What is the numerator in words? (three) Notice that the hyphen already is written. What is the ordinal number word used for the denominator 4? (fourth) Is the numerator greater than 1? (yes) What is the word form of this fraction? (three-fourths)

2


Level E Module 4 • Fractions

Name _____ Class _____ Date _____

Lesson 1 Fractional Parts of a Whole


Getting Started

1.  The fourth student in line is a girl.

2.  Number of shaded regions: 3
Total number of equal regions: 4


$$\frac{\text{shaded}}{\text{total}} = \frac{3}{4}$$

three - fourths

3.  Number of shaded regions: 1
Total number of equal regions: 2

$$\frac{\text{shaded}}{\text{total}} = \frac{1}{2}$$

one-half

4.  Number of shaded regions: 3
Total number of equal regions: 3

Vocabulary Development
Emphasis on learning the language of math enables ELL and struggling students to become more successful in math.

Guided Practice

HOW TO

Write a Fraction to Represent Part of a Whole

- Count the total number of equal parts. This is the denominator.
- Count the number of equal shaded parts. This is the numerator.
- Write the fraction in numeric form by writing the numerator on top of the fraction bar and the denominator below the fraction bar.
- Write the fraction in word form by writing the numerator in words followed by a hyphen and then the denominator written as an ordinal number. When the numerator of the fraction is more than 1, write the plural form of the ordinal number for the denominator.

Write the fraction that names each shaded part.

5.  $\frac{7}{10}$; seven-tenths

6.  $\frac{5}{6}$; five-sixths

7.  $\frac{5}{12}$; five-twelfths

Problem 3 Look at the circle in problem 3. It is divided into equal parts. How many parts are shaded? (1) What is the total number of equal parts? (2) Which number is the numerator? (1) What is the denominator? (2) Fractions can be written using numbers or words. To write this fraction in word form, first write the numerator in word form. What is the numerator? (one) What should follow the word one? (hyphen) Denominators of 2 do not follow the ordinal naming pattern. The denominator of 2 is written as half, or halves if the numerator is greater than 1. Is the numerator greater than 1? (no) What will follow the hyphen? (half) What is the fraction in word form? (one-half)

Problem 4 This circle has 3 equal parts. How many parts of this circle are shaded? (3) The whole circle is shaded. The number of shaded parts is the same as the total number of equal parts. The numerator will be the same number as the denominator in this fraction. What is the word form of this fraction? (three-thirds) Any fraction whose numerator is the same as the denominator is the same as 1 whole. Three-thirds is equivalent to 1 whole.

Detailed Lesson Support

Teachers use effective prompts and questions to guide students as they ensure proper student responses, monitor student performance, and correct as needed using Correction Procedures.







Independent Practice

Students practice lesson content and previously learned skills on their own. Teachers monitor and check student work and provide immediate support as needed.

Independent Practice

MIXED PRACTICE

Write the fraction that names each shaded part.

8.  $\frac{1}{2}$
9.  $\frac{1}{2}$
10.  $\frac{3}{4} = 1$
11.  $\frac{5}{10}$
12.  $\frac{3}{8}$
13.  $\frac{2}{4}$

Write each fraction in numeric form.

14. eight-tenths $\frac{8}{10}$
15. two-fifths $\frac{2}{5}$
16. one-eighth $\frac{1}{8}$

Write each fraction in word form.

17. $\frac{3}{6}$ three-sixths
18. $\frac{2}{4}$ two-fourths
19. $\frac{9}{10}$ nine-tenths

MIXED APPLICATION

Solve each problem.

20. Mrs. Mulroney cut her apple pie into 8 pieces. She put 5 equal slices of the pie on plates for her family's dessert. What fractional part of the pie did she serve to her family?
 $\frac{5}{8}$ of the pie
21. Lucy cut the wrapping paper into 4 equal sections. She used 3 sections to wrap presents. What fractional part of the wrapping paper did Lucy use?
 $\frac{3}{4}$ of the wrapping paper
22. What ordinal number describes the position of the dog from the left?
seventh

Illustration: Englewood Learning, LP

Test Prep

Answer each question.

1. Jeffrey sliced an orange into 12 equal sections. He ate 5 sections of the orange. What fractional part of the orange did he eat?
a. $\frac{17}{12}$ b. $\frac{12}{5}$
c. 5 d. $\frac{5}{12}$
2. Which of the following is the fraction two-thirds?
a. $\frac{3}{2}$ b. $\frac{5}{3}$
c. $\frac{2}{3}$ d. 3
3. Which answer choice in problem 1 is the least reasonable? Explain.
c; 5 is not a fraction, and the question asks for a fractional part.

Lesson 1

3 Independent Practice

MIXED PRACTICE AND MIXED APPLICATION

Problems 8–22 Have the students work independently. Check work and have students total the number correct and record results. Instruct students to record a 6 if they got 14 or 15 correct, a 5 for 12 or 13 correct, a 4 for 11 correct, a 3 for 9 or 10 correct, a 2 for 8 correct, and a 1 for 1–7 correct. Use Correction Procedures as needed.

4 Test Prep and Error Analysis

Check work and record results. Use the error analysis to determine reteaching or the skills needed for review and extra practice.

If student answered 1a or 2b: The student added the numerator and denominator.

Test Prep and Error Analysis Grades 3–8

Questions in multiple-choice and short-answer formats prepare students for standardized tests and allow for daily progress checks. Error analysis tips and specific correction procedures help teachers to review and reteach as needed.

If student answered 1c or 2d: The student selected a whole number for the answer rather than a fractional part. Use transparency E.4.1 to reteach how to write fractional parts of wholes.

Brief Constructed Response

Students analyze the reasonableness of an answer and explain their thinking in the Test Prep section of the lesson.

2 Guided Practice (10 minutes)

SCAFFOLD INSTRUCTION

Problem 5 Remember, the numerator of a fraction tells how many parts of the whole are shaded. How many parts of this rectangle are shaded? (7) What number is the numerator? (7) What does the denominator show? (total number of equal parts) How many equal parts are in this rectangle? (10) Which number is the denominator? (10) What is the numerator in word form? (seven) What will be written next? (hyphen) Will the denominator be written in plural form? (yes) Why? (The numerator is more than 1.) What is the denominator in word form? (tenths) The fraction in word form is seven-tenths.

Problem 6 How many parts of this hexagon are shaded? (5) Is this the numerator or denominator of the fraction? (numerator) How many equal parts are in this hexagon? (6) This is the denominator of the fraction. What is the fraction in numeric form? ($\frac{5}{6}$) What is this fraction in word form? (five-sixths)

Problem 7 How many parts of this circle are shaded? (5) How many equal parts are in this circle? (12) Is this the numerator or denominator of the fraction? (denominator) What is this fraction in numeric form? ($\frac{5}{12}$) What is this fraction in word form? (five-twelfths)

CORRECTION PROCEDURES

Preskills

Correct errors by reviewing or reteaching ordinal numbers.

New Skills

Use the **HOW TO** process to ask step-by-step questions and systematically take students through the process again.

Scaffolded Instruction

Scaffolded support through sample dialogue helps students gain independence and ownership of their learning. Careful questioning strategies ensure mastery of concepts and skills.

Adventure Pages – Level I

Adventure!

Flying in a Balloon



Real-World Math

Each Adventure begins with an engaging introduction of how math is used in real life. Activities encourage students to think about math in different ways and help students make important connections.

The first flight of a hot air balloon took place in France more than 200 years ago. Believe it or not, the first passengers were a sheep, a duck, and a chicken! A balloon pilot makes the balloon rise and fall using hot and cold air. Hot air is lighter than cold air, so the balloon rises when the air inside is heated. The balloon drops when some of the hot air is released. The pilot uses the wind to move in different directions.

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Cross-Curricular Opportunities

Adventures cover topics across all disciplines including science, geography, health, and the arts.

FULL OF HOT AIR

In this adventure, you will be a balloon pilot who has entered a balloon competition. Answer each question on your own paper. Use 3.14 for π .

1. You have entered the Hare and Hound competition. In this competition, a balloon, called the hare balloon, takes off. After flying away from the starting point, the hare balloon lands and lays out a target. The target is a circular piece of fabric with an X on it. The hound balloons take off and chase the hare balloon. While in the air, the hounds try to win the competition by dropping a heavy sandbag as a marker. They try to land the marker as close to the center of the X on the target as they can.
2. The target from question 1 has a radius of about 25 feet. What is the area of this piece of fabric? Show your work. [Hint: $A = \pi r^2$] **1,962.5 square feet**
3. Your goal as a pilot is to try land the marker somewhere within a smaller goal circle that has the same center as the target. See the figure shown. Choose a radius for your goal circle that is less than the radius of the target. What is the area of this circle? Show your work. **Answers will vary.**
4. Assume that your marker will land somewhere on the target fabric circle. You can find the probability that you will land the marker inside your goal circle.

$$\text{Probability} = \frac{\text{Area of the Goal}}{\text{Area of the Target Fabric Circle}}$$

Write the fraction. Then write the fraction as a decimal. Show your work. **Answers will vary.**

FURTHER ADVENTURE

5. Experiment with several goal circles that each have a different radius. See if you can find the radius of a goal circle so that you have about a 50% probability of landing a marker inside.

Making Math Meaningful

Each Adventure includes opportunities for students to apply what they learn. Students can answer the questions, "Why do I need to know this?" and "When will I ever use this?"



Vmath Summer Adventure Level I, Lesson 9

Lesson 9

Objective

To list the sample space and find the probability of an event

Preskills	Transparency
Fractions, Decimals, and Percents	L.3.6

Materials

- transparency I.6.9

New Vocabulary

- probability**
measure of the likelihood of an event
- favorable outcomes**
outcomes for which the probability is being found
- sample space**
the set of all possible outcomes of an event

1 Getting Started (15 minutes)

REVIEW PRESKILLS

Problem 1 What is $\frac{1}{4}$ written in simplest form? ($\frac{1}{4}$) To change a fraction to a decimal, divide the numerator by the denominator. What is 1 divided by 4? (0.25) What is $\frac{1}{4}$ written as a decimal? (0.25) To change a decimal to a percent, move the decimal point two places to the right and write the percent symbol. What is 0.25 written as a percent? (25%) What is $\frac{9}{12}$ written in simplest form? ($\frac{3}{4}$) What is done to change $\frac{9}{12}$ to a decimal? (Divide 9 by 12.) What is 9 divided by 12? (0.75) What is $\frac{9}{12}$ written as a decimal? (0.75) What is 0.75 written as a percent? (75%)

MODEL NEW SKILLS

Problem 2 Look at the bag of marbles. Picking one of these marbles is an event. The set of all the possible outcomes of an event is called the sample space. How many red marbles are there? (5) How many blue marbles are there? (4) How many yellow marbles are there? (3) The sample space for this event is 5 red marbles, 4 blue marbles, and 3 yellow marbles.

Problem 3 Probability is a measure of the likelihood of an event. Probability is a number between 0 and 1. A probability of 0 means that an event cannot happen, and a probability of 1 means an event is certain to happen every time. Probability can be written as a fraction, decimal, or percent. The way to write the probability of an event is to write a capital *P* followed by the event in parentheses. For instance, in problem 3, the probability of picking a yellow marble can be written as $P(\text{yellow})$. The probability of an event can be written as a fraction in which the numerator is the number of favorable outcomes and the denominator is the number of total outcomes. Look at the bag of marbles. How many yellow marbles are there? (3) The numerator of the probability is 3. How many marbles are there in all? (12) The denominator of the probability is 12. The probability of picking a yellow marble is $\frac{3}{12}$, which is

33 Level I Module 6 • Data, Probability, and Statistics

Name _____ Class _____ Date _____

Lesson 9 Probability and Sample Spaces

Getting Started

1. a. $\frac{1}{4} = \frac{1}{4} = 0.25 = 25\%$
 b. $\frac{9}{12} = \frac{3}{4} = 0.75 = 75\%$

2. a. Number of red marbles: _____
 b. Number of blue marbles: _____
 c. Number of yellow marbles: _____
 d. Sample space: 5 red marbles, 4 blue marbles, and 3 yellow marbles

3. a. $P(\text{yellow}) = \frac{\text{number of yellow marbles}}{\text{total number of marbles}} = \frac{3}{12} = 0.25 = 25\%$
 b. $P(\text{red or blue}) = \frac{9}{12} = 0.75 = 75\%$

4. a. $P(\text{green}) = \frac{0}{12} = 0 = 0\%$
 b. $P(\text{yellow, blue, or red}) = \frac{12}{12} = 1 = 100\%$
 c. $P(\text{not yellow}) = \frac{9}{12} = 0.75 = 75\%$

Vocabulary Development
Emphasis on learning the language of math enables ELL and struggling students to become more successful in math.

Getting Started
An overhead transparency of the student lesson page helps teachers give strong instructional support as they review prerequisite skills and model new concepts, skills, and strategies.

also equal to $\frac{1}{4}$. As seen in problem 1, $\frac{1}{4}$ is written as 0.25, or 25%. To find the probability of picking a red or blue marble, count the number of marbles that are red or blue. Then write a fraction. How many marbles are red or blue? (9) How many marbles are there in all? (12) The probability of picking a red or blue marble is $\frac{9}{12}$, or $\frac{3}{4}$. Using the result from problem 1b, what is $\frac{9}{12}$ written as a decimal? (0.75) What is $\frac{9}{12}$ written as a percent? (75%)

Problem 4 To find the probability of picking a green marble, first determine the number of favorable outcomes. How many green marbles are there? (0) If there are 0 favorable outcomes, the probability of the event is 0, or 0%. How many favorable outcomes are there when finding the probability of picking a yellow, blue, or red marble? (12) How many possible outcomes are there? (12) The probability of picking a yellow, blue, or red marble is $\frac{12}{12}$ or 1 or 100%. This is true because all the marbles are yellow, blue, or red. In problem 4c, $P(\text{not yellow})$ means the probability of picking a marble that is not yellow. How many marbles are not yellow? (9) Then the probability is $\frac{9}{12}$ or 0.75 or 75%.

Guided Practice

Teachers use effective prompts and questions to guide students as they ensure proper student responses, monitor student performance, and correct as needed using Correction Procedures.

Independent Practice

Students practice lesson content and previously learned skills on their own. Teachers monitor and check student work and provide immediate support as needed.

Scaffolded Instruction

Scaffolded support through sample dialogue helps students gain independence and ownership of their learning. Careful questioning strategies ensure mastery of concepts and skills.

Test Prep and Error Analysis

Questions in multiple-choice and short-answer formats prepare students for standardized tests and allow for daily progress checks. Error analysis tips and specific correction procedures help teachers to review and reteach as needed.

Brief Constructed Response

Students analyze the reasonableness of an answer and explain their thinking in the Test Prep section of the lesson.

2 Guided Practice (10 minutes)

SCAFFOLD INSTRUCTION

Problem 5 Look at the cards. To find the sample space for picking one card, list all the possible outcomes. How many green cards are there? (3) How many red cards are there? (2) How many blue cards are there? (2) How many yellow cards are there? (1) What is the sample space for picking one card? (3 green, 2 red, 2 blue, and 1 yellow)

Problem 6 What is the first step in finding the probability that Lee picks a green card? (Find the number of favorable outcomes.) What are the favorable outcomes? (picking a green card) How many favorable outcomes are there? (3) What is the next step? (Find the total number of possible outcomes.) What is the total number of possible outcomes? (8) How is the probability written? (as a fraction with the number of favorable outcomes in the numerator and the total number of possible outcomes in the denominator) What is the probability of picking a green card? ($\frac{3}{8}$) What is 3 divided by 8? (0.375) How is 0.375 written as a percent? (Move the decimal to the right two places and add the percent sign.) What is $\frac{3}{8}$ written as a percent? (37.5%)

Problem 7 What are the favorable outcomes? (picking a card that is not blue or yellow) What are the favorable outcomes? (a green or red card) How many favorable outcomes are there? (5) How many total possible outcomes are there? (8) What is the probability of not picking a blue or a yellow card? ($\frac{5}{8}$) Is $\frac{5}{8}$ in simplest form? (yes)

Problem 8 How many favorable outcomes are there? (7) How many total possible outcomes are there? (8) What is the probability of picking a blue, red, or green card? ($\frac{7}{8}$) What is $\frac{7}{8}$ written as a decimal? (0.875) What is $\frac{7}{8}$ written as a percent? (87.5%)

CORRECTION PROCEDURES

Prerequisites
Correct errors by reviewing or reteaching how to convert between fractions, decimals, and percents. Use

34 Level 1 Probability and Statistics

Guided Practice

HOW TO

Find a Probability

- Find the number of favorable outcomes.
- Find the total number of possible outcomes.
- Write the probability as a fraction in simplest form, as a decimal, or as a percent.
Example: $\frac{2}{8} = \frac{1}{4} = 0.25 = 25\%$
(one number of possible outcomes)

Use the ratio to answer each question.

- What is the sample space for picking one card?
3 green, 2 red, 2 blue, 1 yellow
- Can probability be zero? What is the probability that Lee picks a green card? What is the probability of a fraction in simplest form?
Favorable outcomes: 3
Total possible outcomes: 8
Probability: $\frac{3}{8} = 0.375 = 37.5\%$
- What is the probability that Lee does not pick a blue or a yellow card? What is the probability of a fraction in simplest form?
Favorable outcomes: 5
Total possible outcomes: 8
Probability: $\frac{5}{8} = 0.625 = 62.5\%$
- What is the probability that Lee picks a card that is not blue or yellow?
Favorable outcomes: 5
Total possible outcomes: 8
Probability: $\frac{5}{8} = 0.625 = 62.5\%$

3 Independent Practice

MIXED PRACTICE AND MIXED APPLICATION

Problems 9–21 Have the students work independently. Check work and have students total the number correct and record results. Instruct students to record a 6 if they get 12 or 13 correct, a 5 for 11 correct, a 4 for 10 correct, a 3 for 8 or 9 correct, a 2 for 7 correct, and a 1 for 1–6 correct. Use Correction Procedures as needed.

Problems 9, 12, 13, and 18–21 **Reminder:** These problems require simplifying a fraction.

Problem 20 **Reminder:** This problem reviews ratios. Remind students that they need to add to find the total number of pieces of fruit before they can write the ratio.

4 Test Prep and Error Analysis

Check work and record results. Use the error analysis to determine reteaching or the skills needed for review and as a practice.

If student answered 1b: The student found the probability of picking a blue card instead of the probability of picking a pink card. Remind the student to read the problem carefully to determine for which event the probability is to be found.

If student answered 1c or 2a: The student found the probability of the event not happening. Remind the student to read the problem carefully to determine if the probability of the event happening or not happening is to be found.

If student answered 1d: The student subtracted the number of favorable outcomes from the total number of possible outcomes to get the denominator of the probability. Use transparency 1.5.9 to reteach how to find probabilities.

If student answered 2b: The student found the probability of picking an F instead of the probability of picking an A or E. Remind the student to read the problem carefully to determine for which event the probability is to be found.

If student answered 2d: The student found the probability of picking any card instead of the probability of picking an A or E. Remind the student to read the problem carefully to determine for which event the probability is to be found.

If student answered problem 3 incorrectly: The student did not recognize that answer choice c represents more than half of the cards. Review with the student how to compare fractions to $\frac{1}{2}$.

35 Level 1 Probability and Statistics

Independent Practice

MIXED PRACTICE

Start to review of a gameboard. Find the probability of each outcome as a fraction in simplest form.

- Roll: $\frac{1}{6}$
- Roll: $\frac{1}{6}$
- Roll: $\frac{1}{6}$
- Roll: $\frac{1}{6}$
- Write the probability in problem 9 as a decimal and a percent. $\frac{1}{6} = 0.1\overline{6} = 16.6\%$
- Write the probability in problem 10 as a decimal and a percent. $\frac{1}{6} = 0.1\overline{6} = 16.6\%$
- Write the probability in problem 11 as a decimal and a percent. $\frac{1}{6} = 0.1\overline{6} = 16.6\%$

MIXED APPLICATION

Solve each problem.

- A number of the six 6-digit 4-bonus, and 4-strings. What is the total of the number of strings in the total number of pieces of that? Write the ratio in simplest form.
 $6 + 6 + 6 + 6 = 24$
 $\frac{24}{6} = 4$ or 4 to 1 or 400%
- A paper bag contains 11 slips of paper. Each slip has a number from 1 to 10 written on it. One slip of paper is chosen from the bag. What is the probability of choosing a slip with an even number written on it? **Even numbers: 2, 4, 6, 8, 10**
 $\frac{5}{11}$
- There are 20 cards, 4 red, 7 white, and 9 green in the pack. If you pick a card at random from the pack, what is the probability, written as a percent, that it is a white card? **100%**
 $\frac{7}{20} = 0.35 = 35\%$

36 Level 1 Probability and Statistics

Test Prep

Answer each question.

- What is the probability of choosing a pink card?
 $\frac{1}{6}$
- What is the probability of picking a card that is not blue or yellow?
 $\frac{5}{8}$
- Three blue $\frac{1}{4}$ of the cards are pink. Write the fraction in simplest form as a percent? **Answer:** $\frac{3}{8}$ of the cards are pink. To the probability of choosing a pink card must be less than $\frac{3}{8}$. Choice C, $\frac{1}{4}$, is greater than $\frac{3}{8}$, so it cannot be the answer.

Extra Practice and Mixed Review

Start to review of a gameboard. Find the probability of each outcome as a fraction in simplest form.

- Roll: $\frac{1}{6}$
- Roll: $\frac{1}{6}$
- Roll: $\frac{1}{6}$
- Roll: $\frac{1}{6}$
- Write the probability in problem 9 as a decimal and a percent. $\frac{1}{6} = 0.1\overline{6} = 16.6\%$
- Write the probability in problem 10 as a decimal and a percent. $\frac{1}{6} = 0.1\overline{6} = 16.6\%$
- Write the probability in problem 11 as a decimal and a percent. $\frac{1}{6} = 0.1\overline{6} = 16.6\%$

Support your *Vmath Summer Adventure* program with *VmathLive*

Engage Students and Extend Learning

VmathLive is the optional online student component that aligns with and reinforces the instruction in *Vmath Summer Adventure*. In *VmathLive*, students in grades 2–8 practice math skills and concepts, prepare for high-stakes assessments, and play in real-time competitions of speed and skill with other students around the world. With *VmathLive*, students:

- Extend instructional time and increase time on task
- Build conceptual understanding through animated visualizations
- Develop academic math vocabulary presented in both English and Spanish
- Benefit from immediate, targeted error analysis



Vmath Increases Student Time on Task for Greater Results

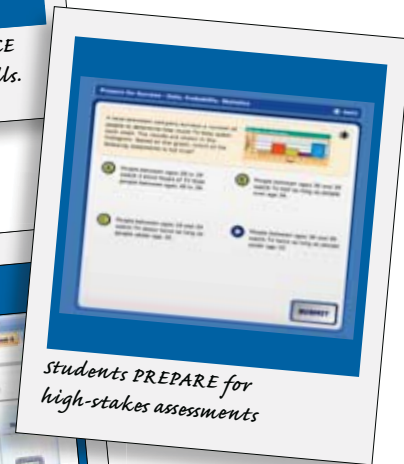
The summer course provided in *VmathLive* matches the units and modules in *Vmath Summer Adventure*. Whether at school or at home, *VmathLive* increases valuable time on task with:

- Guided tutorials
- Targeted practice
- High-stakes test preparation

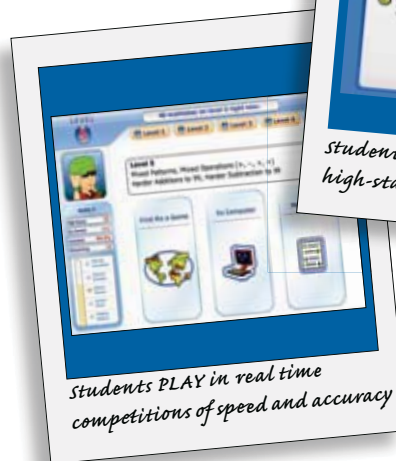
When integrated with *Vmath Summer Adventure* student achievement increases.



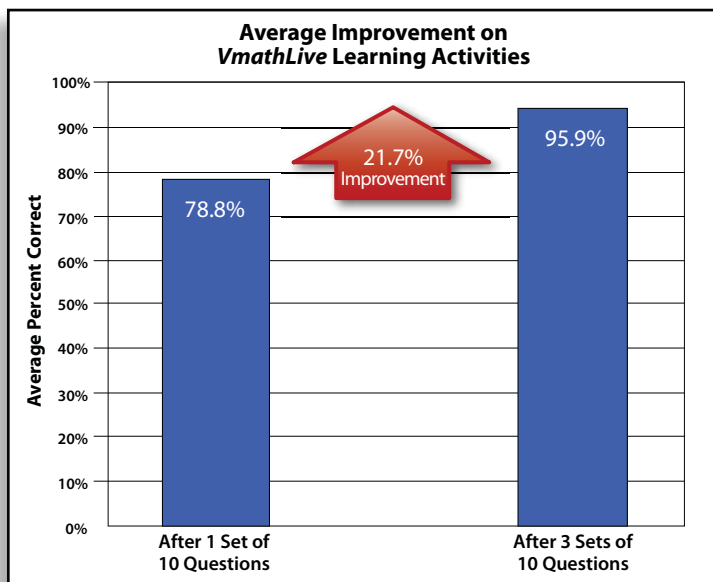
Students engage in **PRACTICE** of essential concepts and skills.



Students **PREPARE** for high-stakes assessments



Students **PLAY** in real time competitions of speed and accuracy



The average percent correct of 31,000 students after completing a Practice activity one time was 78.8. After completing the Practice activity three times, the average percent correct of the same students increased by 17.1 points to 95.9, which is equivalent to an improvement rate of 21.7%. The practice activities included problems that were generated randomly, leaving no possibility for students to memorize answers.



Contact Us to Learn More

voyagersopris.com/vmath-summer-adventure

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