VMATH ACCELERATES STUDENTS TO GRADE-LEVEL MATH ACHIEVEMENT

Foundational and Prerequisite Skills • Conceptual Development • Problem Solving • Representational, Abstract, and Concrete Models • Inquiry-Based Lesson Components • Student Collaboration • Writing Exercises • Connections to Real-World Math
Delivers **focused, standards-based instruction**, while also providing foundational skills necessary for grade-level success

Wraps around any **core math program**

Provides **conceptual development, procedural skill and fluency practice, and application activities**

Delivers **explicit support** in the skills expected by new, more rigorous standards

Focuses on **grade-level content** and **reinforces skills** taught in the core curriculum

Provides an **easy implementation model**

Provides **foundational lessons** to scaffold the instruction

Provides instruction to support the **progression of skills** outlined in state and national standards

Includes **comprehensive, built-in assessment**
FOCUSED, STANDARDS-BASED INSTRUCTION THAT INCREASES MATH ACHIEVEMENT

Vmath® is a targeted math intervention program for struggling students in grades 2–8 that provides additional opportunities to master critical math concepts and skills. Vmath is specifically designed to reinforce grade-level expectations. Through a balanced, systematic approach, Vmath creates successful learning experiences for students and develops confident, independent learners of mathematics. With a blended print and technology solution, or a digital-only option, Vmath delivers essential content using strategies proven to accelerate and motivate at-risk students.

“Since the implementation of Vmath, we have seen an increase in student performance on various assessments administered school-wide and ultimately produced significant increases on state and national assessments. We will continue to use Vmath because it is making a difference in the lives of our students.”

—Tammy Brown, Reading and Math Coach
Aliceville Middle School, Aliceville, AL
8 REASONS VMATH WORKS

1. CONSISTENT LESSON FORMAT

The four-step Vmath lesson format aligns with the major components of explicit instruction:

STEP 1: GET STARTED
Teacher Modeling

STEP 2: TRY IT TOGETHER
Student and Teacher Interaction

STEP 3: WORK ON YOUR OWN
Independent Work

STEP 4: CHECK UP
Error Analysis

2. CONCEPTUAL UNDERSTANDING

Vmath integrates instruction in math concepts consistently in every module:

POWERFUL TOOLS TO SUPPORT CONCEPTUAL UNDERSTANDING

3. VOCABULARY

Vmath lessons reinforce the academic vocabulary critical for student understanding. Teachers introduce the words at the start of each lesson, reinforce throughout the lesson, and provide multiple exposures to new vocabulary.

Academic Vocabulary
Before the lesson, introduce and discuss the Academic Vocabulary. Refer to the Academic Vocabulary as needed during the lesson.

• Commutative Property of Addition states that the order of the addends can be changed without affecting the sum
• Associative Property of Addition states that the grouping of the addends can be changed without affecting the sum

4. ADVENTURES

Vmath includes exciting photographs and real-life math situations that pose relevant, project-like questions in which students read, use data, answer open-ended questions, or write short paragraphs. All Adventures are included in a separate eBook.
**Vmath** is a great instructional program that provides students with basic learning tools in a building, sequential order to be successful in math. I truly believe in the program. In fact, I have all my students doing it, not just as an intervention program.

—Sergio Baca, Bilingual Teacher, El Paso ISD, TX

### 3 APPLICATION OF SKILLS

Several components of Vmath are geared toward helping students apply their learning. Each daily lesson provides opportunities for students to communicate their thinking.

- Math Writing
- Algebraic Thinking
- Explaining Answers
- Talking about Math

### 4 PROCEDURAL UNDERSTANDING

The “How To” box provides students with detailed steps so they can repeat procedures they learn.

“Build the Concept” boxes use visual models to help students develop a deeper understanding of targeted math concepts.

Extra Practice Pages reinforce automaticity. VmathLive hones computational fluency.

### 7 PROBLEM-SOLVING

Problem solving is introduced strategically throughout each Vmath module to help students: (1) formulate a plan, (2) implement the plan, and (3) explain their thinking.

**Vmath** Live Reinforces Automaticity by Using a 4-Step Plan

**Problem Solving**

The high temperature yesterday was 2°F. The forecast for today says the high temperature will be the opposite of the high temperature yesterday. What is the forecast for the high temperature today?

- **Find**: the forecast for the high temperature today
- **How**: Use a 4-step plan.
- **Solve**: Find the opposite of 2°F.

**Math Writing**

High temperature yesterday: _____

Opposite: _____

**Algebraic Thinking**

**Explain**

Is the answer reasonable? Explain. _____

### 8 DIFFERENTIATION

Vmath offers multiple opportunities to assess, reinforce, and differentiate instruction.

**English Language Learners**

Use the VmathLive Animated Math Dictionary to review the terms less than symbol and greater than symbol. Demonstrate the vocabulary at the beginning of the lesson as students gather around the computer screen or through a projection system if possible.

To distinguish between the less than symbol, <, and the greater than symbol, >, show students that the less than symbol looks like a tilted 4 and the greater than symbol looks like a tilted 7 and that 4 is less than 7.

When working comparison problems, have students say the math sentences aloud, reinforcing the names for the symbols.

**Students with Special Needs**

Have students draw a number line for reference that shows -10 to 10, labeling the left arrow with the words Lesser, Less than, and Least, all of which begin with the letter L. This will be a visual cue for students to remember that numbers farther to the left on a number line are less than numbers toward the right.
Vmath Third Edition stems from a strong research foundation as well as the strong instructional approach of previous editions of Vmath, which have been validated in schools across the country. The three snapshots here show evidence of effectiveness for Vmath Second Edition.

42 States and 262 Districts: Grades 2–8; 3-Year Cohort—2009–2012
In a nationwide study, students enrolled in Vmath increased their overall proficiency as measured by the Progress Assessments. Administered four times a year in the Second Edition, the Progress Assessments indicate students’ optimal learning range and monitor progress toward grade-level goals. The Progress Assessments yield a Quantile score based on the Quantile Framework® for Mathematics.

Vmath Students Make Significant Quantile Gains

Typical* Gains vs. Vmath Student Quantile Gains

Vmath Students Exceed Typical* Quantile Growth to Close the Achievement Gap with Grade-Level Peers

*These are typical results for an average student at the 50th percentile over 30 weeks based on research from MetaMetrics®.
Oklahoma Statewide: Impact of Vmath on Student Math Performance

During the 2008–2009 school year, Oklahoma students in grades 3–8 demonstrated meaningful math gains after 26 weeks. Students rapidly accelerated their math skills and improved their overall math achievement.

<table>
<thead>
<tr>
<th>Grade Level</th>
<th>Initial Effect Size</th>
<th>Final Effect Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>3rd Grade</td>
<td>1.18</td>
<td>1.22</td>
</tr>
<tr>
<td>4th Grade</td>
<td>1.22</td>
<td>1.2</td>
</tr>
<tr>
<td>5th Grade</td>
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<td>.58</td>
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<tr>
<td>6th Grade</td>
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<td>7th Grade</td>
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<td>0</td>
</tr>
<tr>
<td>8th Grade</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

El Paso ISD, TX: Performance Gain on TAKS Math Section

El Paso ISD began implementing Vmath in the 2005–2006 school year to boost student achievement in math. After four years with the program, each grade made substantial gains and has outperformed the state as measured by the percentage of students passing the state assessment between 2006 and 2009.

For more results, visit the “Proven Success” page at www.voyagersopris.com/vmath

*Effect sizes were calculated using the Initial and Final Assessment scores. Effect sizes (for differences expressed as means) of 0.2 are considered small, 0.5 are medium, and 0.8 are large (Cohen, 1988). An effect size of 0.3 is considered to be educationally meaningful.
STREAMLINED APPROACH PROVIDES PROGRESSION TO GRADE-LEVEL MATH PERFORMANCE

- 7 levels
- 7 modules per level; first module in every level is a Foundational Module that reviews instruction from previous grade levels
- 10–15 lessons per module plus 2 preskills lessons
- Built-in time for differentiation and assessment
- Every module includes preskills, extra practice, and reteach activities

LEVEL D
1. Foundations
2. Whole Numbers
3. Whole Number Addition and Subtraction
4. Whole Number Multiplication
5. Whole Number Division
6. Fractions and Money
7. Data, Measurement, and Geometry

LEVEL E
1. Foundations
2. Addition and Subtraction
3. Multiplication and Division
4. Understanding Fractions and Equivalence
5. Operations on Fractions and Relationship to Decimals
6. Geometry
7. Measurement and Data

LEVEL F
1. Foundations
2. Whole Numbers and Decimals
3. Operations with Whole Numbers and Decimals
4. Fractions
5. Algebraic Reasoning
6. Data Analysis
7. Geometry and Measurement

LEVEL G
1. Foundations
2. Rational Numbers Part A
3. Rational Numbers Part B
4. Expressions, Equations, and Inequalities
5. Proportional Thinking
6. Geometry
7. Data

LEVEL H
1. Foundations
2. Rational Numbers Part A
3. Rational Numbers Part B
4. Expressions, Equations, and Inequalities
5. Proportionality
6. Geometry
7. Data, Probability, and Statistics

LEVEL I
1. Foundations
2. Real Numbers
3. Equations
4. Functions Part A
5. Functions Part B
6. Transforming Geometry
7. Geometry

Visit www.voyagersopris.com/vmath for complimentary samples
4 TYPES OF LESSONS
Engage Students, Scaffold Content, and Focus on Math Concepts

<table>
<thead>
<tr>
<th>Vmath LESSONS (see page 10)</th>
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</thead>
<tbody>
<tr>
<td>• Four-step lessons: Get Started, Try It Together, Work on Your Own, Check Up</td>
</tr>
<tr>
<td>• Explicit instruction that reinforces skills, concepts, or problem solving</td>
</tr>
<tr>
<td>• 40–45 minutes (with implementation options for 20–30 minutes)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MATH FLASH LESSONS (see page 12)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Reinforce concepts and skills most frequently tested</td>
</tr>
<tr>
<td>• 20-minute lessons</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HANDS-ON LESSONS (see page 13)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Four-step lessons: Get Ready, Discover, Discover Box, Explore More</td>
</tr>
<tr>
<td>• Develop deeper conceptual understanding through the use of common manipulatives</td>
</tr>
<tr>
<td>• 40–45 minutes; included in Levels D–I</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>GIZMOS LESSONS (see page 14)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Four-step lessons: Get Ready, Discover, Discover Box, Explore More</td>
</tr>
<tr>
<td>• Reinforce conceptual understanding with online digital manipulatives and interactive simulations</td>
</tr>
<tr>
<td>• Infuse fun, easy-to-navigate activities for diverse learners</td>
</tr>
</tbody>
</table>

"Vmath breaks it down for kids who are having difficulty with math. I have seen the growth. It is a great program that definitely motivates the kids. I really appreciate Vmath and what it has brought to my class and the fact that it has helped so many of my kids do much better in math."

—Giovanni Amorante, Vmath Teacher
Country Club Middle School, Miami, FL
Lesson 7

Objective
To write an equivalent fraction

Academic Vocabulary
Before the lesson, introduce and discuss the Academic Vocabulary. Refer to the Academic Vocabulary as needed during the lesson.

- equivalent fractions
- fractions that represent or name the same number

GET STARTED

Classroom Routine
VMATH

HOW TO

Carefully Crafted

To write an equivalent fraction

New Skills

- Write an Equivalent Fraction

NEW SKILLS

To write an equivalent fraction

Getting Started

Lesson 7

• Equivalent Fractions

What is the next step? (Multiply the numerator and denominator of a fraction by the same number. Start with the fraction

Problem 1

The rectangle in problem 1 that is shaded orange is divided into equal parts. What fractional part of the rectangle is shaded orange?

Write the fraction using words by writing the numerator in words, writing a hyphen, then writing the denominator as an ordinal number. How is the fraction written using words? (four-eighths)

Problem 2

What is the next step? (Divide both the numerator and denominator of a fraction by the same number. Start with the fraction

Problem 3

Look at the picture in problem 3. What fractional part of the rectangle is shaded orange? (2) Look at the parts of the rectangles in problems 1 and 2 that are shaded orange and compare them with the part of the rectangle in problem 3 that is shaded orange. What can be said about the fractional parts? (They represent the same amount.) The fractions

Problem 4

In this problem, a fraction equivalent to

Problem 5

In this problem, a fraction equivalent to

Problem 6

In this problem, a fraction equivalent to

Try It Together

Work with students to complete these skills.

In this problem, a fraction equivalent to

Equivalent fractions can be found by either multiplying or dividing the numerator and denominator of a fraction by the same number. Start with the fraction

Model the following skills for students.

Review and Model

Before the lesson, introduce and discuss the Academic Vocabulary. Refer to the Academic Vocabulary as needed during the lesson.

- equivalent fractions
- fractions that represent or name the same number

Focus on Academic Vocabulary

Consistent Application of Skills

Students apply learning to answer skill-building and problem-solving questions

Emphasis on Conceptual Development

Carefully Crafted Teacher Dialogue

Lesson 7 • Equivalent Fractions

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Write an Equivalent Fraction

Lesson 7

• Equivalent Fractions

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10 www.voyagersopris.com/vmath
Online Math Practice Builds Fluency
VmathLive engages students with online learning and math games

Daily Informal Assessments
Allow teachers to check for understanding and intervene with targeted corrective feedback

Error Analysis—If/Then Support
Helps teachers provide corrective feedback, review, and reteach

Lesson 7

**Lesson 7** Equivalent Fractions

**Monitor Independent Work**
Before students begin independent work, review the HOW TO process example. As you review, emphasize the words of mathematics by having students read aloud the words shown at the right for each process step.

**Problems 9–21**
Have students work independently. Check work and have students total the number correct and record results. Instruct students to record a 4 if they got 12 or 13 correct, a 3 for 11 correct, a 2 for 10 correct, a 1 for 9 correct, a 0 for 8 or 9 correct, a 2 for 7 correct, and a 1 for 1–6 correct. Use Additional Resources as needed.

**Problem 19 Reminder**
First, write a fraction with the number of people who only drink lemonade as the numerator and the total number of people as the denominator.

Then write equivalent fractions by dividing the numerator and denominator by the same number.

**Check Up**
**Assess Informally**
Error Analysis
Check work and record results. Use the error analysis to determine which skills need review, reteaching, or extra practice.

If student answered problems 1 or 2 incorrectly: Remind the student that the numerator and denominator of the original fraction must be either multiplied by the same number or divided by the same number to obtain an equivalent fraction. Use Additional Resources in 5.4.7 to reteach or find equivalent fractions.

If student answered problem 3 incorrectly: While students work together, review the steps for writing equivalent fractions with the student. Then have the student solve the fractions 5/10, and 10/20 obtained from.

**Differentiation**
**Additional Resources**

VmathLive
Module: Understanding Fractions and Equivalence
Activity: Equivalent Fractions

Vmath Reach
Reach Student Book page XX
Reach Teacher Edition page XX

Extra Practice
Student Book page XX

**Explanation**

**Peer Collaboration**

**Built-in Differentiation**

**Technology**
Have students practice math fluency while competing against one another online in VmathLive activities.

**Students with Special Needs**
When solving word problems involving equivalent fractions, students may find it helpful to draw models of the fractions given in the problem. A common error that occurs when drawing these models is using unequal whole models. Emphasize to students how important it is to draw the models so that they are the same size and the same shape. If they are not, the shaded fractions may show an incorrect answer.

**English Language Learners**
Use the VmathLive Glossary to review the term equivalents. Have students write in the vocabulary at the beginning of the lesson. Students gather around the computer and write, through a projection system if possible.

Have students work with a partner to name synonyms for equivalent. Possible answers include equal to, the same as, identical. Write several fractions on the board. Have pairs work together to find at least one equivalent fraction for each fraction on the board.

**Lesson 7** Equivalent Fractions
Lesson 1

Objective
To use a protractor to measure angles and to find missing measures of angles

Model the following skills for students.
Look at the angle Elise is measuring. Angle $\angle RST$ is shown on a protractor. What type of angle is $\angle RST$? (Acute angle)
Is the measure of an acute angle greater than or less than the measure of a right angle? (Less than)
The protractor has two scales, an inner scale and an outer scale. Both scales go from $0^\circ$ to $180^\circ$ in opposite directions. Look at the ray $SR$. Between what two numbers is it pointing on the inner scale? (70 and 80) Between what two numbers is it pointing on the outer scale? (100 and 110) Because $\angle RST$ is an acute angle, use the inner scale. Count the tick marks from 70. How many tick marks is it to where ray $SR$ is pointing? (4) What is the measure of $\angle RST$? (74°)

Work with students to complete the following skills.
You can find the measure of an unknown angle using given angles. Look at the diagram. You know the measure of $\angle RST$ and the measure of a right angle. What is the measure of $\angle RST$? (74°) What is the measure of a right angle? (90°)
To find the measure of the unknown angle, first write an equation. Which two angles equal the measure of a right angle? (\( \angle RST \) and the unknown angle) So, to find the measure of the unknown angle, use the equation $74^\circ + 7 = 90^\circ$. Solve by using the opposite operation, subtraction. What is the measure of the unknown angle? (16°)

CCSS Objectives: 4.MD.C.5a; 4.MD.C.5b; 4.MD.C.6; 4.MD.C.7

Multiple Question Types
Questions reinforce the concepts and skills needed for success

Explicit Instruction
Content reflects new standards

Rigorous Content
Content reflects new standards
Background Information for Teachers

Getting Students Ready to Learn
Teachers review prerequisite skills before modeling new concepts

Students Reason, Write, and Justify
Asks students to explain what they have observed, apply critical-thinking skills, and use deductive reasoning

Students Discover Key Math Concepts
As students use manipulatives to discover key math concepts, teachers guide student learning through the use of effective questioning strategies

Students Explore on Their Own
Students apply their learning to solve additional problems independently

Objectives
Lesson 8

CCSS Objective: 4.NF.A.1

Hands-On: Understanding the Simplest Form of a Fraction Using Fraction Strips

Problem 1
The rectangles in Problem 1 are the same size. Into how many equal parts is the first rectangle divided? (4) How many parts are shaded? (2) What fractional part of the rectangle is shaded? (2/4) The second rectangle is divided into 3 parts instead of 4 parts. What part of the rectangle is shaded? (2) What do you notice about the amount of shading on these? (It is the same.) The fractions 2/4 and 1/2 are equivalent fractions.

Problem 2
In Problem 2, the rectangles are the same size. The first rectangle is divided into how many equal parts? (3) How many parts are shaded? (1) What fractional part of the rectangle is shaded? (1/3) The second rectangle is divided into 3 parts instead of 3 parts. What part of the rectangle is shaded? (1) What do you notice about the amount of shading on these? (It is the same.) The fractions 1/3 and 1 are equivalent fractions.

Materials
• Copy Master: Fraction Strips on Teacher page XX
• scissors
• envelopes or small plastic bags

Lesson Notes
Before beginning the lesson, be sure each student has a Student Book, a part of scissors, a copy of Copy Master: Fraction Strips, and an envelope or small plastic bag.

This conceptual lesson is designed to give students a visual method of understanding the meaning of simplest form of a fraction. When using fraction strips, remind students that the denominator of the fraction tells the total number of parts and the numerator tells how many parts to use.

Remind students that when the entire fraction strip is used, it is called a fraction bar. When just one or a few parts of the entire fraction strip are used, each separate piece is called a fraction bar.

Have students use scissors to cut apart the fraction strips on their copy of Copy Master: Fraction Strips. Have students use the fraction strips in an envelope or small plastic bag.

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Lesson 12

Gizmos: No Alien Left Behind (Division with Remainders)

Making Connections
Students work independently using the Gizmos to solve problems by applying concepts they have discovered.

Engaging Content
Use the green slider to set the number of alien children. Use the yellow slider to set the size of each bus. Use the green slider to set the bus size to 4. Slide the knob to show 12 in the display box. Click Recall. How many aliens are there? 23 aliens. Each bus holds a group of 4 aliens. How many groups are there? 6 groups. How many aliens remain? 3 aliens.

Lesson 12

Gizmos

Objective
To model division with remainders.

Materials
• Gizmo: No Alien Left Behind (Division with Remainders)

Lesson Notes
Before beginning the lesson, be sure students have their Student Books and are ready to work at the computers.

Students will need to log in to the No Alien Left Behind (Division with Remainders) Gizmo to complete problem 1. Students can select the number of aliens and the bus size directly into each box and press Enter rather than using the sliders to record the number. Note that the aliens can also be dropped into place, either in line or back to the school.

The Recall button moves the buses back in place at the start. If students have additional time, they can then answer Assessment Questions 1–5 on the Gizmo. They can click on the Click Your Answers button to see how well they did on the assessment.

Problem 1
Have students log in to the No Alien Left Behind (Division with Remainders) Gizmo using the instructions in the box. Orient them to the Gizmo by reading aloud the description:

The alien school children from the planet Zigmo travel to the alien school planet to take part in a science competition. They can only travel in groups of 4 alien children.

(Problem 1)

How many aliens are there? 23 aliens. Each bus holds a group of 4 aliens. How many groups are there? 6 groups. How many aliens remain? 3 aliens.

Problem 2
Click Recall. For problem 2, use the green slider to set the number of alien children to 37. Use the yellow slider to set the size of each bus to 4. How many buses of that size are needed so no alien child is left behind? 9 buses. How many aliens remain? 0 aliens.

Problem 3
For problem 3, use the green slider to set the number of alien children to 37. Use the yellow slider to set the size of each bus to 5. If there are 5 aliens on a bus, how many buses are needed? 7 groups. How many aliens remain? 2 aliens.

Problem 4
Move the mouse to highlight each number in the division sentence. Use the explanation for each highlight to complete the diagram. How many aliens are there? 23 alleles. Each bus holds a group of 4 aliens. How many groups are there? 6 groups. How many aliens remain? 3 aliens.

Problem 5
Click Recall. For problem 4, use the green slider to set the number of alien children to 17. Use the yellow slider to set the size of each bus to 4. Drag buses to load the aliens aboard buses. Can all of the aliens be loaded onto buses? No! How many buses are full? 4 buses. How many aliens remain? 17 aliens.

Problem 6
Move the mouse to highlight each number in the division sentence. Use the explanation for each highlight to complete the diagram. How many aliens are there? 17 aliens. Each bus holds a group of 4 aliens. How many groups are there? 4 groups. How many aliens remain? 1 alien.

Assessment Questions

1. How many aliens are there? 23 aliens. Each bus holds a group of 4 aliens. How many groups are there? 6 groups. How many aliens remain? 3 aliens.

2. Use the green slider to set the number of alien children to 37. Use the yellow slider to set the size of each bus to 4. How many buses of that size are needed so no alien child is left behind? 9 buses. How many aliens remain? 0 aliens.

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5. Move the mouse to highlight each number in the division sentence. Use the explanation for each highlight to complete the diagram. How many aliens are there? 17 aliens. Each bus holds a group of 4 aliens. How many groups are there? 4 groups. How many aliens remain? 1 alien.

Review Prerequisite Skills
Teachers and students review prerequisite skills needed to discover concepts.
POWERFUL ASSESSMENT INFORMS INSTRUCTION

The Vmath assessments help teachers identify student needs, differentiate instruction to accelerate learning, and monitor progress to ensure mastery.

The Vmath assessment system evaluates student learning and monitors progress throughout the intervention:

**Initial and Final Assessments** identify student weaknesses and determine (along with district criteria) appropriate entry points into instruction. They also measure student growth and mastery throughout the course.

**Progress Assessments** are administered three times throughout the school year to monitor progress. These tests yield a Quantile score, which can help guide teachers’ instructional decisions.

**Module Pre- and Posttests** provide teachers with data to measure a student’s response to the Vmath intervention and to help make instructional adjustments.

**Ongoing informal assessments** help teachers gauge students’ reactions to instructions, listen as students respond to questions, and evaluate daily work—specific review and reteaching suggestions are provided. Check Up questions allow teachers to informally assess students after each lesson.

*Vmath* was easy to implement. The materials were self-contained and ready to go. I loved the pre- and posttests because they enabled me to see what the children knew or didn’t know.

—Bernice Friesenhahn, Compensatory Education Teacher
Olympia Elementary School, Universal City, TX
DIFFERENTIATION INFORMED BY DATA

Responding to Data

Vmath has built-in opportunities to ensure instruction meets specific student needs based on performance data.

<table>
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<tr>
<th>ASSESSMENT</th>
<th>IF...</th>
<th>THEN...</th>
<th>RESOURCES</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENTERING THE CURRICULUM</td>
<td>Initial Assessment</td>
<td>Students score below 60%</td>
<td>They would benefit from the Foundations Module at the beginning of each level</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Foundations Module</td>
</tr>
<tr>
<td>BEGINNING OF EACH MODULE</td>
<td>Pretest</td>
<td>Students score above 70%</td>
<td>They are ready for the lessons in the module</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Students score below 70%</td>
<td>They would benefit from additional skill acquisition in the Preskills Lessons</td>
</tr>
<tr>
<td>WITHIN EACH MODULE</td>
<td>Lesson Check Ups or Planned Differentiation Days</td>
<td>Students do not demonstrate understanding of lesson content</td>
<td>They would benefit from Extra Practice, Reteach Lessons, or VmathLive</td>
</tr>
<tr>
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</tr>
<tr>
<td>AFTER EACH MODULE</td>
<td>Post-Test</td>
<td>Students score above 70%</td>
<td>No further instruction is needed—they are ready to move on to the next module</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Students score below 70%</td>
<td>They would benefit from Reteach or VmathLive assignments</td>
</tr>
</tbody>
</table>

Since using Vmath with the VmathLive component, we have seen a huge difference in our students from last year to this year. This year’s sixth graders are so much further ahead.

Claudia Askew, Special Education Teacher
Russelville Middle School, Russellville, AL
Integrated Support for Students with Special Needs

To enhance instruction for students with special needs, lesson-specific teaching strategies are included in the Teacher Editions. The teaching strategies for students with special needs provide teachers with adaptations to meet the learning challenges of these students.

**Example**

In this example, the teacher is reminded to reinforce the vocabulary being used in the lesson and to provide a visual model.

---

Integrated Support for English Language Learners

To enhance instruction for English language learners, lesson-specific teaching strategies are included in the Teacher Editions. ELL strategies suggest detailed activities that focus on increasing student understanding of the language of mathematics.

**English Language Learners**

Use the VmathLive Animated Math Dictionary to review the terms less than symbol and greater than symbol. Demonstrate the vocabulary at the beginning of the lesson as students gather around the computer screen or through a projection system if possible.

To distinguish between the less than symbol, <, and the greater than symbol, >, show students that the less than symbol looks like a tilted 4 and the greater than symbol looks like a tilted 7 and that 4 is less than 7.

When working comparison problems, have students say the math sentences aloud, reinforcing the names for the symbols.

**Example**

In this example, the teacher is reminded of ways to build practice opportunities with mathematical language used in the lesson.

---

**Students with Special Needs**

Have students draw a number line for reference that shows -10 to 10, labeling the left arrow with the words Lesser, Less than, and Least, all of which begin with the letter L. This will be a visual cue for students to remember that numbers farther to the left on a number line are less than numbers toward the right.
PACING GUIDE FOR MODULES PROVIDES FLEXIBILITY

The pacing models below reflect the implementation flexibility offered by Vmath. The lessons are designed for 45-minute sessions (recommended) or 20–30 minutes as a flexible option. The implementation plans designate time for differentiation and assessment.

### 45-Minute Implementation*

<table>
<thead>
<tr>
<th>Day</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activity</td>
<td>+</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lessons 1–5</td>
<td>D</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lessons 6–10</td>
<td>D</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

Example based on students scoring above 70 percent on Module Pretest

### 20–30-Minute Implementation*

<table>
<thead>
<tr>
<th>Day</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
<th>16</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activity</td>
<td>+</td>
<td>Preskills Lesson 1 &amp; 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lessons 1–5</td>
<td>D</td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lessons 6–10</td>
<td>D</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<td></td>
</tr>
</tbody>
</table>

Example based on students scoring below 70 percent on Module Pretest

### Example based on students scoring above 70 percent on Module Pretest

### Example based on students scoring below 70 percent on Module Pretest

**KEY**
- ✤ = Pre- and Posttest
- ☀ = Differentiation

* All models are approximations.
PACING AT THE LESSON LEVEL

Each of the different lessons included within Vmath has a predictable lesson structure and can be adjusted to a 20–30-minute implementation or a 45-minute implementation. They can also be adjusted to fit multiple scheduling options. The following charts outline some pacing suggestions at the lesson level based on various implementation models.

### 20–30-Minute Implementation

**Vmath Lesson—2-Day Lesson Cycle**

<table>
<thead>
<tr>
<th>Day One</th>
<th>Lesson Structure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Get Started</td>
<td>6–8 minutes</td>
</tr>
<tr>
<td>Try It Together</td>
<td>6–12 minutes</td>
</tr>
<tr>
<td>Work On Your Own</td>
<td>8–10 minutes</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Day Two</th>
<th>Lesson Structure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Get Started</td>
<td>2–3 minutes</td>
</tr>
<tr>
<td>Work On Your Own</td>
<td>6–10 minutes</td>
</tr>
<tr>
<td>Check Up</td>
<td>12–17 minutes</td>
</tr>
</tbody>
</table>

**Math Flash Lessons (Levels D–I)**

Taught entirely in one 20–30 minute block

**Hands-on and Gizmos Lessons (Levels D–I)**

<table>
<thead>
<tr>
<th>Day One</th>
<th>Lesson Structure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Get Ready</td>
<td>5–10 minutes</td>
</tr>
<tr>
<td>Discover</td>
<td>15–20 minutes</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Day Two</th>
<th>Lesson Structure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Get Ready and Discover Box</td>
<td>3–4 minutes</td>
</tr>
<tr>
<td>Discover Box</td>
<td>6–12 minutes</td>
</tr>
<tr>
<td>Explore More</td>
<td>11–14 minutes</td>
</tr>
</tbody>
</table>

### 45-Minute Implementation

**Vmath Lessons—1 Per Day**

<table>
<thead>
<tr>
<th>Lesson Structure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Get Started</td>
</tr>
<tr>
<td>Try It Together</td>
</tr>
<tr>
<td>Work On Your Own</td>
</tr>
<tr>
<td>Check Up</td>
</tr>
</tbody>
</table>

**Lesson Structure (Levels D–I)**

| Math Flash                          | 20–30 minutes                                       |
| VmathLive or Reteach                | 15–20 minutes                                       |

**Hands-on and Gizmos Lessons (Levels D–I)**

<table>
<thead>
<tr>
<th>Lesson Structure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Get Ready</td>
</tr>
<tr>
<td>Discover</td>
</tr>
<tr>
<td>Discover Box</td>
</tr>
<tr>
<td>Explore More</td>
</tr>
</tbody>
</table>

Each level in Vmath contains:
- 6 core modules
- 1 Foundational Module; used when students score below 70 percent on Initial Assessment

Each module contains:
- 10 or 15 lessons
- 2 Preskills Lessons; used if students score below 70 percent on the module Pretest
- Built-in assessment and differentiation

IMPLEMENTATION SPECIALISTS WORK WITH DISTRICTS TO DEVELOP CUSTOM IMPLEMENTATION PLANS
STREAMLINED TEACHER MATERIALS
Teacher Edition—includes all modules
Teacher Edition eBook
Assessment Guide eBook
Vmath Teacher Center

TEACHER CENTER
Everything in One Place

Access to online learning tools
Access to eBooks
Interactive whiteboard activities
Access to assessment and reporting tools
ENGAGING STUDENT MATERIALS

Student Math Pack—7 modules
- Student Math Pack eBook
- Reteach eBook
- Adventure eBook

Vmath Student Center—includes:
- VmathLive
- Gizmos
- Vmath Testing Center

STUDENT CENTER
Easy to Navigate
OUR GOAL:
PROVIDE THE HIGHEST LEVEL OF EDUCATOR SUPPORT TO INCREASE STUDENT ACHIEVEMENT

Service does not come in a box; it must be custom-built to meet the specific needs of districts, schools, administrators, and teachers. Firmly grounded in research, the Voyager Sopris Learning approach is built around the “Five Keys to Success,” which form the foundation for a personalized strategy for planning, training, and ongoing support.

Our team specializes in partnering with schools and districts to build custom Vmath implementation support plans—including planning, training, and ongoing support—to ensure all stakeholders are prepared to implement and sustain Vmath implementation. Key stages of Vmath implementation include:

Visit www.voyagersopris.com/vmath to review training options and a comprehensive menu of services.
INSTRUCTIONAL PRINCIPLES SUPPORTED BY RESEARCH

Vmath uses widely accepted principles of effective intervention instruction for struggling students and provides a balance of conceptual understanding, fluency, and problem solving.

Vmath Instructional Principles

- Explicit Instruction
- Visual Models
- Conceptual Understanding
- Problem Solving
- Procedural Skill and Fluency
- Error Analysis
- Use of Assessments

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SUPPORT STUDENTS IN REACHING RIGOROUS MATHEMATICS STANDARDS

Visit www.voyagersopris.com/vmath to access:

• Complimentary samples
• Video tour of technology components
• CCSS and state-specific standards correlations
• Flexible implementation options

Implement digitally, with print components, or with a combination of print and digital.