HMH | (into) Math™

Teacher Edition: Planning and Pacing Guide

Grade K

Advocates for Excellence

To develop *Into Math*, we listened to teachers like you, who told us about their unique classroom challenges. Thanks to their voices, *Into Math* is more than just aligned to standards; it was built specifically to help you and your students succeed in the classroom and on high-stakes assessments.

Into Math was developed by a team of esteemed researchers and practitioners. These leaders work tirelessly to evolve instructional practices and advocate for clearer, more holistic, flexible, and active methodology in the classroom.

Edward B. Burger, PhD, is a mathematician who is also the president of Southwestern University in Georgetown, Texas. He is a former Francis Christopher Oakley Third Century Professor of Mathematics at Williams College, and a former vice provost at Baylor University. He has authored or coauthored numerous articles, books, and video series; delivered many addresses and workshops throughout the world; and made many radio and television appearances. He has earned many national honors, including the Robert Foster Cherry Award for Great Teaching. In 2013, he was inducted as one of the first fellows of the American Mathematical Society.

Juli K. Dixon, PhD, is a professor of mathematics education at the University of Central Florida (UCF). She has taught mathematics in urban schools at the elementary, middle, secondary, and post-secondary levels. She is a prolific writer who has published books, textbooks, book chapters, and articles. A sought-after speaker, Dr. Dixon has delivered keynotes and other presentations throughout the United States. Key areas of focus are deepening teachers' content knowledge and communicating and justifying mathematical ideas. She is a past chair of the National Council of Teachers of Mathematics Student Explorations in Mathematics Editorial Panel and a member of the board of directors for the Association of Mathematics Teacher Educators. You can find her on social media at @TheStrokeOfLuck.

Timothy D. Kanold, PhD, is an award-winning international educator, author, and consultant. He is a former superintendent and director of mathematics and science at Adlai E. Stevenson High School District 125 in Lincolnshire, Illinois. He is a past president of the National Council of Supervisors of Mathematics (NCSM) and the Council for the Presidential Awardees of Mathematics (CPAM). He has served on several writing and leadership commissions for National Council of Teachers of Mathematics during the past two decades, including the *Teaching Performance Standards* task force. He presents motivational professional development seminars worldwide with a focus on developing professional learning communities (PLCs) to improve teaching, assessing, and learning of *all* students. He has recently authored nationally recognized articles, books, and textbooks for mathematics education and school leadership, including *What Principals Need to Know About Teaching and Learning Mathematics* and *HEART!: Fully Forming Your Professional Life as a Teacher and Leader.* You can find him on social media at @tkanold.

Matthew R. Larson, PhD, is a past president of the National Council of Teachers of Mathematics (NCTM). Prior to serving as president of NCTM, he was the K–12 mathematics curriculum specialist for Lincoln Public Schools (Nebraska) where he currently serves as associate superintendent for instruction. A prolific speaker and writer, he is the coauthor of more than a dozen professional books. He was a member of the writing teams for the major publications *Principles to Actions: Ensuring Mathematical Success for All* (2014) and *Catalyzing Change in High School Mathematics: Initiating Critical Conversations* (2018). Key areas of focus include access and equity and effective stakeholder communication. He has taught mathematics at the secondary and college levels and held an appointment as an honorary visiting associate professor at Teachers College, Columbia University. You can find him on social media at @mlarson_math.

Steven J. Leinwand is a principal research analyst at the American Institutes for Research (AIR) in Washington, DC, and has nearly 40 years in leadership positions in mathematics education. He is a past president of the National Council of Supervisors of Mathematics and served on the National Council of Teachers of Mathematics Board of Directors. He is the author of numerous articles, books, and textbooks and has made countless presentations with topics including student achievement, reasoning, effective assessment, and successful implementation of standards. You can find him on social media at @steve_leinwand.

Jennifer Lempp is an author and educational consultant. She also currently serves as a coordinator in Fairfax County Public Schools, Virginia. She has taught at the elementary and middle school levels and served as a math coach for many years. She is Nationally Board Certified in Early Adolescence Mathematics and has facilitated professional development at the local, state, and national level on math workshop as a model for differentiated mathematics instruction. You can find her on social media at @Lempp5.

Program Consultants

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Harold Asturias is the director for the Center for Mathematics Excellence and Equity at the Lawrence Hall of Science, University of California. He specializes in connecting mathematics and English language development as well as equity in mathematics education.

Program Consultant

David Dockterman, EdD, operates at the intersection of research and practice. A member of the faculty at the Harvard Graduate School of Education, he provides expertise in curriculum development, adaptive learning, professional development, and growth mindset.

Blended Learning Consultant

Weston Kieschnick, Associate Partner ICLE, a former teacher, principal, instructional development coordinator, and dean of education, Weston Kieschnick has driven change and improved student learning in multiple capacities throughout his educational career. Now, as an experienced instructional coach and associate partner with ICLE, Kieschnick shares his expertise with teachers to transform learning through online and blended models.

STEM Consultants

Michael Despezio has authored many HMH instructional programs for science and mathematics. He has also authored numerous trade books and multimedia programs on various topics and hosted dozens of studio and location broadcasts for various organizations in the US and worldwide. Recently, he has been working with educators to provide strategies for implementing the Next Generation Science Standards.

Marjorie Frank An educator and linguist by training, a writer and poet by nature, Marjorie Frank has authored and designed a generation of instructional materials in all subject areas. Her other credits include authoring science issues of an award-winning children's magazine, writing game-based digital assessments, developing blended learning materials, and serving as instructional designer and coauthor of school-to-work software. She has also served on the adjunct faculty of Hunter, Manhattan, and Brooklyn Colleges.

Bernadine Okoro is a chemical engineer by training and a playwright, novelist, director, and actress by nature. Okoro went from working with patents and biotechnology to teaching in K–12 classrooms. She is a 12-year science educator, Albert Einstein Distinguished Fellow, original author of NGSS and a member of the Diversity and Equity Team. Okoro currently works as a STEM learning advocate and consultant.

Cary I. Sneider, PhD While studying astrophysics at Harvard, Cary Sneider volunteered to teach in an Upward Bound program and discovered his real calling as a science teacher. After teaching middle and high school science, he settled for nearly three decades at Lawrence Hall of Science in Berkeley, California, where he developed skills in curriculum development and teacher education. Over his career, Cary directed more than 20 federal, state, and foundation grant projects and was a writing team leader for the Next Generation Science Standards.
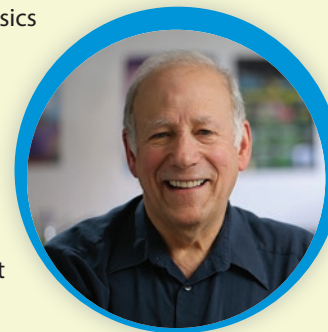
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Welcome to

HMH | into **Math**™

Perseverance Powers Student Growth

Designed from the ground up to meet the high expectations of Mathematics Standards, *Into Math* is the only solution built to track, predict, and propel growth for all your students in kindergarten through grade 12.
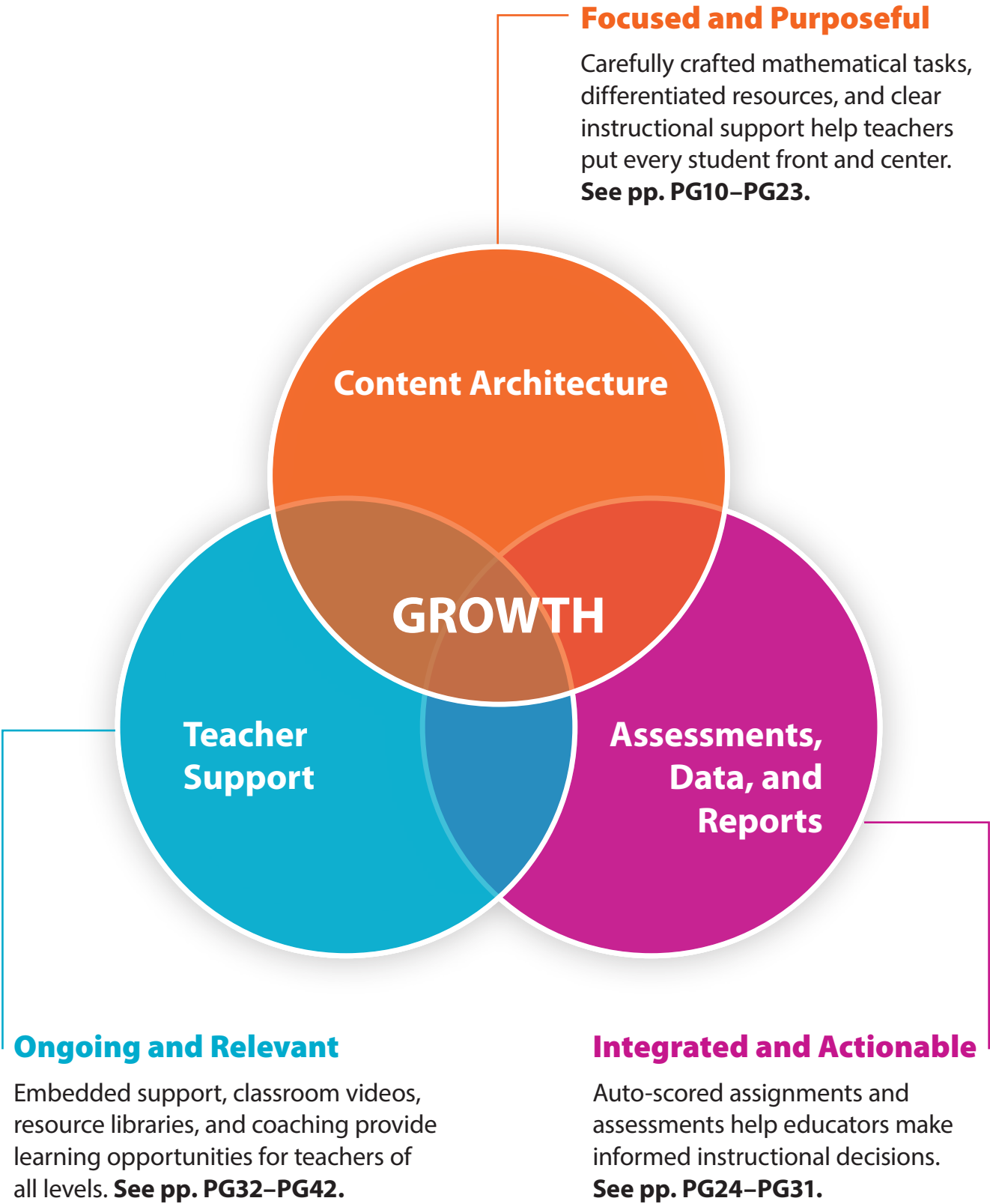
The Outcomes You Want

The *Into Math* system produces measurable outcomes:

- **students** who have mastered rigorous standards, equipped with skills to persevere when presented with challenging, real-world problems

- **teachers** who grow as professionals, able to apply current research-based strategies and best practices

- **educators** who leverage data to differentiate and adapt, ensuring success in high-stakes assessments

- **families** that use accessible tools to support learning at home

What Makes *Into Math* Students *Unstoppable*?

The *Into Math* system maximizes student growth by helping teachers deliver high-quality instruction while monitoring every student's success.

Focused and Purposeful

Carefully crafted mathematical tasks, differentiated resources, and clear instructional support help teachers put every student front and center. **See pp. PG10–PG23.**

Content Architecture

GROWTH

Teacher Support

Assessments, Data, and Reports

Ongoing and Relevant

Embedded support, classroom videos, resource libraries, and coaching provide learning opportunities for teachers of all levels. **See pp. PG32–PG42.**

Integrated and Actionable

Auto-scored assignments and assessments help educators make informed instructional decisions. **See pp. PG24–PG31.**

Content Architecture

Focus, Coherence, and Rigor

In *Into Math*, the progression of topics forms coherent learning arcs. The learning arcs are designed to build a foundation of conceptual understanding before teaching procedures. Opportunities for application occur throughout. An emphasis is placed on connections between concepts and skills. The learning arcs ensure delivery of rigorous instruction.

Learning Arc

Application Throughout

CONCEPTUAL	CONCEPTUAL AND PROCEDURAL	PROCEDURAL
Build Understanding	Connect Concepts and Skills	Apply and Practice

To help you visualize the arc and teach with purpose, *Into Math* has three types of lessons, each with a different focus and containing certain learning task types:

Build Understanding

Conceptual These lessons focus on opportunities for students to make sense of the mathematics and build conceptual understanding with real-world context.

- Spark Your Learning
- Build Understanding

Connect Concepts and Skills

Bridging These lessons focus on having students connect different conceptual representations, approaches, or strategies to more efficient procedures.

- Spark Your Learning
- Build Understanding
- Step It Out

Apply and Practice

Procedural These lessons focus on opportunities for students to develop procedural fluency and to apply concepts and procedures.

- Step It Out

Learning Tasks

Spark Your Learning tasks promote conceptual understanding. During these low floor/high ceiling tasks, students leverage prior learning and select manipulatives or representations that serve as their entry point. Teachers provide just-in-time support, helping students engage in meaningful discourse and learn to persevere. Teachers lead the class to shared understanding in a student-centered environment.

Build Understanding tasks are learning opportunities designed to help students understand lesson concepts. Teachers take a more active role, guiding discussion during whole-class instruction.

Step It Out tasks build upon students' conceptual understanding to promote procedural understanding and fluency. Teachers help students understand why the procedures are efficient and how they can be applied to solve similar problem types.

Creating a Learning Arc

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Teaching with Coherence

For students to make the most of their mathematics education, topics should be taught with coherence. This means that topics should be taught as connected ideas rather than within individual silos. Consider strategies for addition. Linking counting strategies with grouping strategies like making a ten in grade 1 supports students to develop fluency with basic facts, setting the stage to make sense of adding and subtracting with regrouping in grade 2.

A benefit of making connections within different mathematical topics is that students have multiple pathways to retrieve what they learned and therefore rely less on rote memorization. For example, students can use counting strategies like *counting on from the larger number,* to recognize that when counting on from a number close to ten, it might be easier to make a group of ten to add (see Figure 1).

Connecting Concepts and Procedures

Rigor describes the important balance between concepts and procedures. While balance is important, so is the order with which concepts and procedures are addressed. Concepts must be taught before procedures; otherwise, there is no motivation to make sense of the mathematics prior to using more efficient processes.

Figure 1 from Grade 1, Lesson 1.4

Step It Out

I Erik reads 6 books.
Kim reads 8 books.
How many books do they read?

A **THINK:** 8 is close to 10. So, start with 8. Use ⬤ to show 8 + 6.
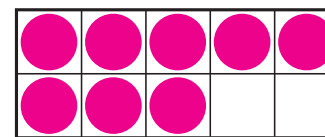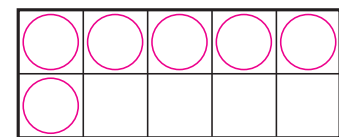
8   6

B Move some ⬤ to make a ten.

Consider subtracting multi-digit numbers without a deep understanding of place value. If students are taught the procedure to:

- line up the numbers,
- subtract the ones,
- subtract the tens, and
- subtract the hundreds

prior to understanding place value, then students may make the error of subtracting the digit with the lesser value from the digit with the greater value regardless of which "number" is "on top". This confusion often comes from students not understanding that when ones are subtracted from ones, then tens from tens, and then hundreds from hundreds, the values of multi-digit numbers do not change, the numbers are just grouped by place value. Students are less likely to make these errors with procedures when they have an understanding of place value and representing numbers flexibly. The learning arc is complete when concepts are taught first and then those concepts are linked to more efficient processes before the procedures are practiced and applied.

Content Architecture

Lesson Design

Into Math **classrooms are different.** Lessons are designed to help you incorporate research-based best practices into your instruction. This design is found in the print student books and in the interactive digital lessons, enabling you to utilize either pathway or a blended approach.

SPARK YOUR LEARNING

5-10 minutes

Teachers guide student discussions, help students persevere as they work together on a mathematical task, and build shared understanding by selecting students to explain their reasoning.

LEARN TOGETHER

5-10 minutes per task

Teachers facilitate learning during whole-group instruction, which ensures that students continue to play an active role in sharing their reasoning and understanding. In *Step It Out* features, students connect important processes and procedures to mathematical concepts.
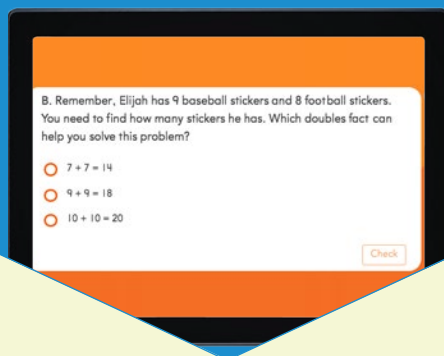
CHECK UNDERSTANDING

5 minutes

Teachers utilize this quick formative assessment to determine whether students have mastered lesson content and to identify which differentiation resources will be most useful for each student.

ONLINE

Digital and interactive versions of resources are available on Ed: Your Friend in Learning.
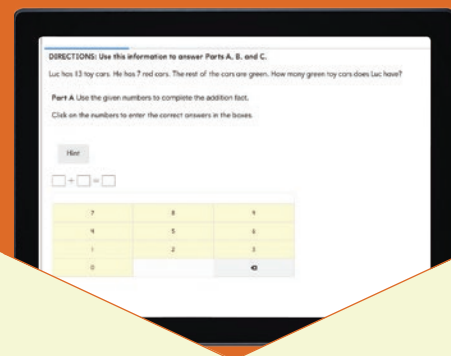
The pacing recommendations within each lesson can be modified based on individual preferences and teaching styles. Yearlong pacing recommendations are in the Pacing Guide starting on page PG46.

DIFFERENTIATION OPTIONS

Fill remaining time

A variety of leveled resources are available to help teachers differentiate early and effectively.

WRAP-UP AND HOMEWORK

5 minutes

Teachers bring the class together to summarize, using Exit Tickets, journal writing, "I Can" self-assessment, or anchor charts.

Small Groups

Teachers use the Tabletop Flipchart activity to guide small groups of students.

Independent Practice

Students can continue to the *On Your Own* portion of the lesson.

Math Centers

Print and digital games, readers, and activities can be used to set up centers.

Waggle

Waggle complements *Into Math* with personalized learning that supports students at all proficiency levels.

Content Architecture

Promoting Conceptual Understanding

Not All Tasks Are Equal. The *Spark Your Learning* tasks have been carefully crafted to promote reasoning and problem solving. The tasks can be solved using various solution strategies and have a low floor and a high ceiling to ensure every student can make progress and build understanding.

Teachers begin a **Spark Your Learning** task by setting goals and using language-development routines to help students understand the task, if needed.

Teachers support **productive perseverance** and foster a growth mindset as students work through the task. The Teacher Edition includes **student work samples** and provides support to help teachers correct common errors and assess and advance student understanding.

The **Talk Moves** routines encourage student discourse and also help teachers elicit reasoning and guide students.

A *Spark Your Learning* task is complete when the class comes to shared understanding and the teacher celebrates **student success**.

See It in Action
Professional Learning support includes classroom videos with hints, tips, and commentary from experts and authors.
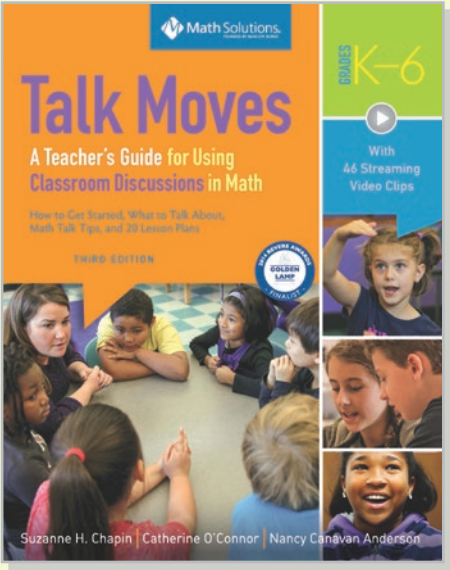
Promoting Perseverance

Juli K. Dixon, PhD
Professor, Mathematics Education
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Rigorous Tasks

There is little argument that students need to learn to persevere. Where the struggle exists is in determining the pathway to this important outcome. It begins with a good task. Good tasks are rigorous. Providing rigorous tasks sets the stage for students to engage in worthwhile activity around learning mathematics. Good tasks have "low floors" and "high ceilings" so that students have access to the content regardless of their prior achievement.

A rigorous task is one that supports students to do the sense-making. A goal might be to make connections between concepts and procedures, or possibly to determine a solution process when a procedure for the solution has not yet been introduced. Students are expected to explain and justify their thinking. Rigorous tasks afford students the opportunities to develop productive habits of mind around mathematical problem solving.

Just-in-Time Scaffolding

All too often, with best intentions, teachers or resources undermine the value of a good task by providing scaffolding too early. It is tempting to provide scaffolding to students at the first sign of struggle or even in anticipation of student struggle. However, if the struggle is productive, this scaffolding should be withheld. Instead of providing scaffolding just in case students might need it, scaffolding should be offered just in time, when there is evidence that a student's struggle is no longer productive.

While the opportunity to develop perseverance is reliant on access to good tasks, it is supported during instruction by effective teaching. For students to develop perseverance, they must engage in productive struggle. This means that scaffolding, on the student page or from the teacher, needs to be managed in a way that supports students to do the sense-making.

Scaffolding should be provided when students' engagement with the task is no longer productive or when the students' work is not leading to the learning objective. A key to effective teaching is to know when to provide the scaffolding and when to step aside to allow students to persevere.

Content Architecture

Real-World Relevance

Is your weight on the Moon proportional to your weight on Earth? Am I on track to meet my goal for number of steps walked today? How did people 10,000 years ago incorporate geometric designs into their jewelry? Projects and tasks in *Into Math* are carefully crafted, not only to ensure they have the appropriate level of rigor, but also to ensure students remain engaged and see the relevance of math in the world around them.

Each unit opens with a career-related project that students can work on throughout the unit.

STEM
POWERING INGENUITY

Cross-curricular tasks are found throughout the program, including STEM problems in each module and STEM-themed unit projects.

mindset works

Opportunities, strategies, and support to help students focus on mindset are embedded in every lesson and in the unit-level projects.

Content Architecture

Mathematical Practices and Processes

Into Math provides a focus on Mathematical Practices and Processes aligned to the lesson's learning goal and the tasks that meet the learning goal.

Each lesson focuses on Mathematical Practices and Processes based on the lesson's learning goal.

Each task references a focused Mathematical Practice and Process and includes probing questions to support student engagement and depth of understanding.

Students choose strategies and tools. The Teacher Edition provides additional support with Use Tools questions.

Students solidify their understanding and choose tools strategically. The Teacher Edition provides additional recommendations for student discourse.

Content Architecture

Mathematical Practices and Processes	Questions to Ask:
Make sense of problems and persevere in solving them. • *Spark Your Learning* tasks provide low floor/high ceiling, real-world problems accessible to all students. Students make sense of these problems to plan their solution pathways. • *Build Understanding* tasks present problems with some scaffolding, which supports students while they are making sense of problems. • *Turn and Talk* questions foster collaboration by asking students to discuss their solution pathways or to discuss how they know their solution makes sense.	• What is the problem asking? • How will you use that information? • What other information do you need? • What is another way to solve that problem? • What can you do if you don't know how to solve a problem? • Have you solved a problem similar to this one? • How do you know your answer makes sense?
Reason abstractly and quantitatively. • *Spark Your Learning* tasks provide real-world problems, accessible to all students. Each task is often supported with the language routine *Three Reads* to help students to reason abstractly and to look at quantities and units. • *Build Understanding* and *Step It Out* tasks present problems that require quantitative reasoning. • *Turn and Talk* questions ask students to discuss the representation of the problem and the meaning of the quantities and units with the context of the problem and solution. • *On Your Own* and *More Practice/Homework* include practice problems labeled *Reason*.	• What quantities are referenced? • How are the quantities related? • How can you represent this situation? • How are the quantities and the units related? • What are the correct units for the quantities in the problem? • How do you know your answer is reasonable?
Construct viable arguments and critique the reasoning of others. • *Connect to Vocabulary* provides context and definitions for academic vocabulary. • The language routine *Critique, Correct, and Clarify* has students correct work having a flawed explanation, argument, or solution method. • *Build Understanding* tasks encourage students to describe or explain their reasoning. • *Turn and Talk* questions ask students to discuss a flawed explanation, argument, or solution method. • *On Your Own* and *More Practice/Homework* include practice problems labeled *Construct Arguments* and *Critique Reasoning*.	• Will that method always work? How do you know? • What do you think about what the other student said? • Who agrees or disagrees, and why? • Does anyone have another way of looking at that? • What do you think will happen if…? • When would that not be true? • Does that make sense to you? Why?
Model with mathematics. • *Spark Your Learning* tasks provide students with opportunities to use mathematics they know to represent and solve a problem. • *Build Understanding* and *Step It Out* tasks present problems and then have students decide how to model the problems. • *Turn and Talk* questions ask students to describe or explain their models and why they chose a specific mathematical representation. • *On Your Own* and *More Practice/Homework* include practice problems labeled *Model with Mathematics*.	• Why is that a good model for this problem? • How can you use a simpler problem to help you find the answer? • What conclusions can you make from your model? • Do your results make sense within the context of the problem? • How would you change your model if…?

Mathematical Practices and Processes	Questions to Ask:
Use appropriate tools strategically. • *Unit Openers* include a STEM task that has students use mathematics they know to complete a task and then reflect on strategies and tools they used. • *Spark Your Learning* tasks prompt students to choose tools as part of their solution pathways. Students are asked to explain their choices. • *Build Understanding* and *Step It Out* tasks have students choose tools and describe or explain their choices. • *Module Review* provides an opportunity for students to review the module content and reflect on the full meaning of this practice with a guided discussion. • *Turn and Talk* questions ask students to describe or explain why they chose a specific tool. • *On Your Own* and *More Practice/Homework* include practice problems labeled *Use Tools.*	• What could you use to help you solve the problem? • What strategy could you use to make that calculation easier? • How would estimation help you solve that problem? • Why did you decide to use…?
Attend to precision. • *Build Understanding* and *Step It Out* tasks provide vocabulary once students have explored the concept at point of learning and often are paired with *Connect to Vocabulary.* • The *Interactive Glossary* provides opportunities for students to make sense of vocabulary by having students record in their own words or with examples. • *Step It Out* tasks, *On Your Own,* and *More Practice/Homework* provide opportunities for students to focus on performing calculations accurately and efficiently. • *Turn and Talk* questions provide opportunities for students to communicate precisely to others by using accurate mathematical terms and definitions. • *On Your Own* and *More Practice/Homework* include practice problems labeled *Attend to Precision.*	• How do you know your answer is reasonable? • How can you use mathematics vocabulary in your explanation? • How do you know those answers are equivalent? • What does that mean?
Look for and make use of structure. • *Spark Your Learning* tasks provide opportunities for students to relate to structures they know as a way to make sense of the problem and find a solution pathway. • *Build Understanding* and *Step It Out* tasks connect concepts by showing an example and asking students to explain or describe a structure based on what is shown in the example. • *Turn and Talk* questions ask students to identify, describe, or explain a structure they used to solve a problem. • *On Your Own* and *More Practice/Homework* include practice problems labeled *Use Structure.*	• What rule did you use to make. . . ? • Why can you use that property in this problem? • How is that like…?
Look for and express regularity in repeated reasoning. • *Spark Your Learning* tasks provide opportunities for students to notice repeated calculations and other patterns leading to a general method or shortcut. • *Build Understanding* and *Step It Out* tasks connect repeated reasoning to a new general method or shortcut. • *Turn and Talk* questions ask students to describe or explain their reasoning. • *On Your Own* and *More Practice/Homework* include practice problems labeled *Use Repeated Reasoning.*	• How did you discover that pattern? • What other patterns can you find? • What do you remember about…? • What happens when…? • What if you…instead of…? • What might be a shortcut for…?

Content Architecture

Language Development

Language development and the development of mathematical understanding are interdependent. All students must be able to listen, speak, read, write, and converse to meet the rigorous expectations of standards and become proficient problem solvers.

B How can you write an equation to solve the problem?

Equation: _____

C The shop has _____ sunglasses.

Connect to Vocabulary

equations:
$$80 - 50 = 30$$
$$9 = 6 + 3$$
$$90 = 60 + 30$$

Before teaching new vocabulary, *Into Math* ensures that students have an opportunity to first build a foundation of conceptual understanding. Vocabulary emerges once students have the conceptual foundation on which to build meaning.

Turn and Talk Does your answer make sense? How do you know?

Vocabulary cards can be used with vocabulary games. The eGlossary includes vocabulary terms and definitions translated into ten different languages.

The Interactive Glossary provides space for students to make graphic organizers or drawings for each new vocabulary term.

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> "We must explicitly teach the language of mathematics in order to give students—especially English learners—access to mathematics."

Math is a second language for ALL students. *Into Math* is built on four design principles from the Stanford Center for Assessment, Learning, and Equity (SCALE). These four design principles promote the use and development of language as an integral part of instruction.[1]

1 Support Sense-Making

Scaffold tasks when needed, being sure to amplify (instead of simplify) language for students.
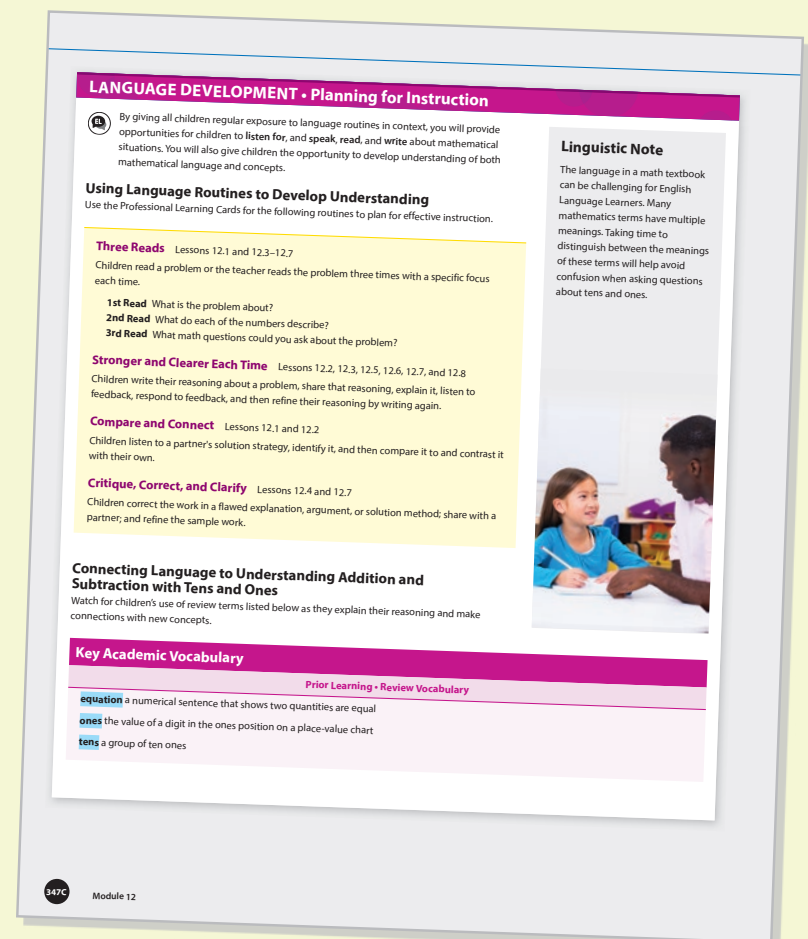
2 Optimize Output

Help students describe their mathematical reasoning and understanding.

3 Cultivate Conversation

Facilitate mathematical conversations among students.

4 Maximize Linguistic and Cognitive Meta-Awareness

Help students evaluate their use of language and see how mathematical ideas, reasoning, and language are connected.

LANGUAGE DEVELOPMENT • Planning for Instruction

By giving all children regular exposure to language routines in context, you will provide opportunities for children to **listen for**, and **speak**, **read**, and **write** about mathematical situations. You will also give children the opportunity to develop understanding of both mathematical language and concepts.

Using Language Routines to Develop Understanding
Use the Professional Learning Cards for the following routines to plan for effective instruction.

Three Reads Lessons 12.1 and 12.3–12.7
Children read a problem or the teacher reads the problem three times with a specific focus each time.

1st Read What is the problem about?
2nd Read What do each of the numbers describe?
3rd Read What math questions could you ask about the problem?

Stronger and Clearer Each Time Lessons 12.2, 12.3, 12.5, 12.6, 12.7, and 12.8
Children write their reasoning about a problem, share that reasoning, explain it, listen to feedback, respond to feedback, and then refine their reasoning by writing again.

Compare and Connect Lessons 12.1 and 12.2
Children listen to a partner's solution strategy, identify it, and then compare it to and contrast it with their own.

Critique, Correct, and Clarify Lessons 12.4 and 12.7
Children correct the work in a flawed explanation, argument, or solution method; share with a partner; and refine the sample work.

Connecting Language to Understanding Addition and Subtraction with Tens and Ones
Watch for children's use of review terms listed below as they explain their reasoning and make connections with new concepts.

Key Academic Vocabulary

Prior Learning • Review Vocabulary

equation a numerical sentence that shows two quantities are equal
ones the value of a digit in the ones position on a place-value chart
tens a group of ten ones

Linguistic Note
The language in a math textbook can be challenging for English Language Learners. Many mathematics terms have multiple meanings. Taking time to distinguish between the meanings of these terms will help avoid confusion when asking questions about tens and ones.

347C Module 12

The Language Routines as well as new and review vocabulary words are summarized on the Language Development page at the beginning of each module.

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1) J. Zwiers, et al., *Principles for the Design of Mathematics Curricula: Promoting Language and Content Development* (Stanford, CA: Stanford University, 2017).

Content Architecture

Language Development

The **5 Routines for Language Development** help teachers promote the design principles during instruction with routines that are structured, but adaptable, in a format for amplifying, assessing, and developing students' language. These Routines provide opportunities for students to listen, speak, and write about mathematical situations with practices that are appropriate and effective for all **language proficiency levels**.

1 **Three Reads –** To ensure understanding of mathematical questions, students read a problem three times with a specific focus each time.

> **EL** **SUPPORT SENSE-MAKING • Three Reads**
>
> Read the problem stem three times and prompt the children with a different question each time.
>
> **1** What is the problem about?
> Meg has some toy rings. She has some and then she gets some more.
>
> **2** What do each of the numbers describe?
> 20 is the number of toy rings she gets and 50 is the number of toy rings she has at the end.
>
> **3** What math questions could you ask about the problem?
> Possible questions: How many more rings does she get? How many does she have in all? How many did she start with?

2 **Stronger and Clearer Each Time –** Students use structure to write their reasoning behind a problem, share and explain their reasoning, listen to and respond to feedback, and then write again to refine their reasoning.

> **EL** **CULTIVATE CONVERSATION**
> **Stronger and Clearer**
>
> Have children share their work. Remind children to ask questions of each other that focus on how they can write equations to solve this problem. Did they use addition or subtraction to write the equation? Then, have them refine their answers.

3 **Compare and Connect –** Meta-awareness is strengthened as students listen to a partner's solution strategy and then identify, compare, and contrast this mathematical strategy.

> **EL** **CONNECT MATH IDEAS, REASONING, AND LANGUAGE** Compare and Connect
>
> Point out to children each cube train has 10 cubes. Before beginning the task, have children count forward and back by tens to 100. Have partners share their work and then compare and contrast.

4 **Critique, Correct, and Clarify –** Students correct sample work having a flawed explanation, argument, or solution method and share with a partner to reflect on and then refine the sample work.

> **EL** **OPTIMIZE OUTPUT**
> **Critique, Correct, and Clarify**
>
> Encourage children to question the thinking of their partner. Discuss how to solve the problem. Children should refine their responses.

5 **Collect and Display –** Students capture oral words and phrases learned and build a collective reference containing illustrations connected to mathematical concepts and terms within each module.

> **ANCHOR-CHART OPTION**
>
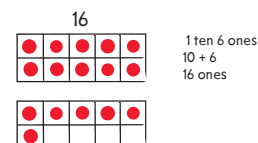> As you progress through the module, build and display an anchor chart.
>
> **EL** **CONNECT MATH IDEAS, REASONING, AND LANGUAGE** Collect and Display
>
> Have children build their own anchor chart in their Practice and Homework Journal.
>
> A completed chart for the module is shown here.

> Write Numbers as Tens and Ones
>
> 16
>
> 1 ten 6 ones
> 10 + 6
> 16 ones
>
> Quick Picture
>
> 16 = | ⋮   60 = ||||||

Teacher Tabletop Flipcharts, designed for reteaching and reinforcing each lesson's content with small groups, contain leveled scaffolding and support for English learners. These scaffolding suggestions ensure teachers will maintain the rigor and cognitive complexity level required for mathematical reasoning when supporting English learners.
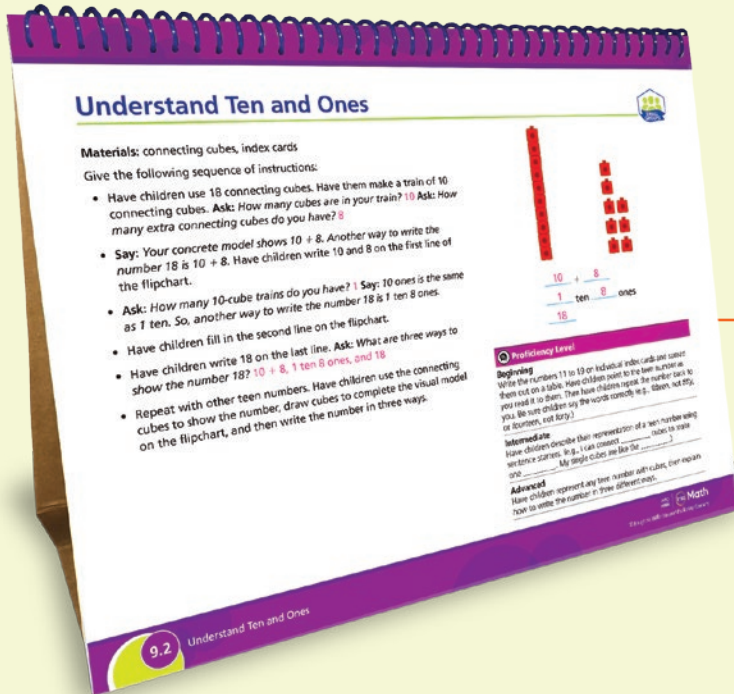
Three proficiency levels

EL Proficiency Level

Beginning
Write the numbers 11 to 19 on individual index cards and spread them out on a table. Have children point to the teen number as you read it to them. Then have children repeat the number back to you. Be sure children say the words correctly (e.g., *fifteen*, not *fifty*, or *fourteen*, not *forty*.)

Intermediate
Have children describe their representation of a teen number using sentence starters. (e.g., I can connect _____ cubes to make one _____. My single cubes are like the _____.)

Advanced
Have children represent any teen number with cubes, then explain how to write the number in three different ways.

School Home Letters are available in English, Spanish, Haitian-Creole, and Portuguese.
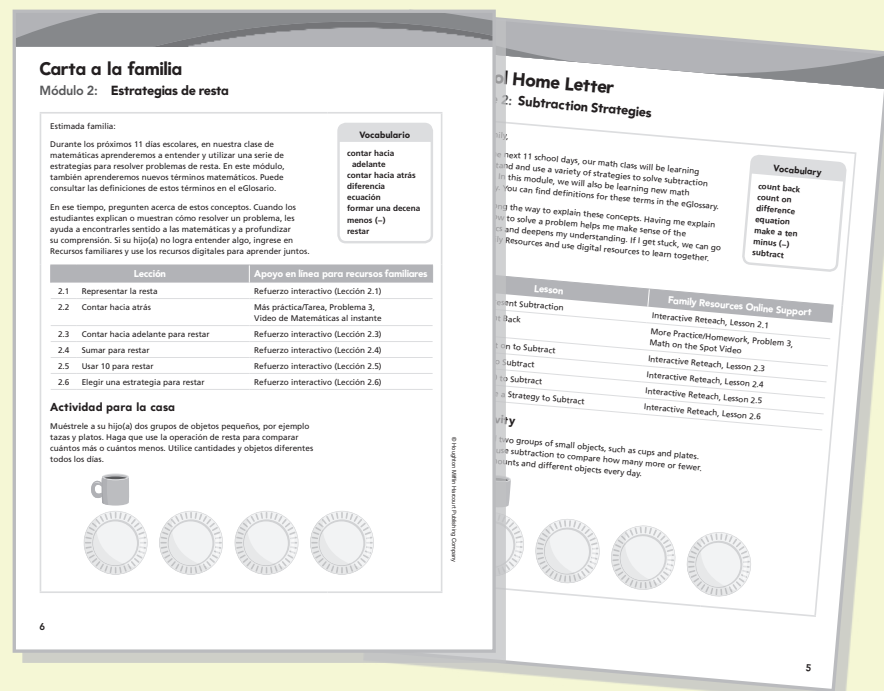
## Assess and Act to Accelerate Every Student

To help students grow, we must first understand where they are and what they need. Assessment tools embedded throughout *Into Math* monitor individual student progress and help teachers understand where students are tracking at any given point. The snapshot below represents what a student's data profile could look like after using *Into Math* for 95 days.

Administered three times per year, this adaptive assessment provides a Quantile® score and is predictive of performance on high-stakes assessment.

These short assessments diagnose prerequisite skills readiness, inform grouping, and measure progress.

Interim Growth Measure
3x year
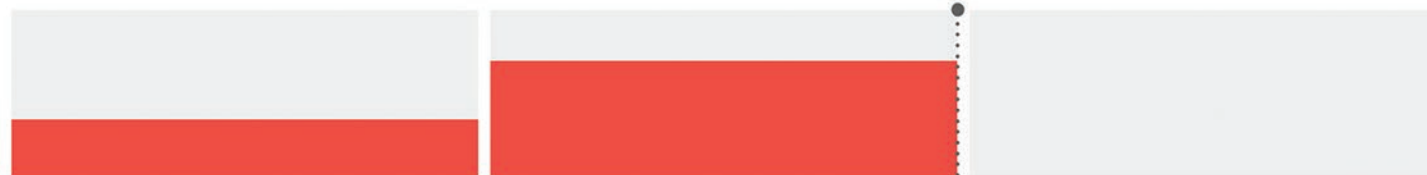
Module Readiness and Progress
15–20 per year   TIME TO GROUP

Lesson Practice and Homework
2x per week, 20 min each   TIME TO PRACTICE

DAY 95

Lesson Practice and Homework with try-again problems, embedded hints, and feedback help students apply what they're learning. Lesson-level formative assessments provide data that help teachers differentiate effectively.

Steven J. Leinwand
Principal Research Analyst
American Institutes for Research
Washington, DC

Assessment Is Only as Good as How We Use the Data

Assessment as Evidence Gathering

We know that effective assessments are far more than just tests we use to help us grade students. Instead, effective assessments are powerful vehicles for gathering evidence of readiness to learn (diagnostic), for learning (formative), and of learning (summative). We also know that the strength and usefulness of the evidence we gather depend on the alignment of these assessments with our standards and our learning goals, as well as on the balance among skills, concepts, and applications and among levels of depth of knowledge found in our assessments.

We plan and we teach. That is, we focus most on our curriculum and our instruction. However, the glue that holds much of our work together and that answers the critical questions about how successful we are being with our planning and teaching is our system of assessments.

Making Effective Use of the Evidence We Collect

Consider the questions to which we all seek reliable answers:

- Are my students ready for the material I'm about to teach?
- Is what I hoped to convey understood by my students? How well? What appears to need more reinforcement?
- Have my instructional strategies worked, or do they need adjustment?
- Can my students apply what they have learned?
- Have my students made connections with previously learned skills and concepts?
- Do I have to reteach the material?
- Which students need additional attention?
- What specific interventions are needed?
- Has previously taught material been retained?

We use diagnostic, formative, and summative assessments to gather data that help us answer each of these questions, but it is how these data are used that makes all the difference. For example, teachers regularly adjust their lesson plans and teach prerequisite skills and concepts on the basis of diagnostic assessments. Similarly, teachers celebrate success, group students, and reteach content based on formative assessments. Far too infrequently, teachers use summative assessments to identify class and individual problems and gaps, reteach in different ways, and incorporate additional instruction into upcoming units. Finally, teachers use all of these data to revise teaching activities and pacing.
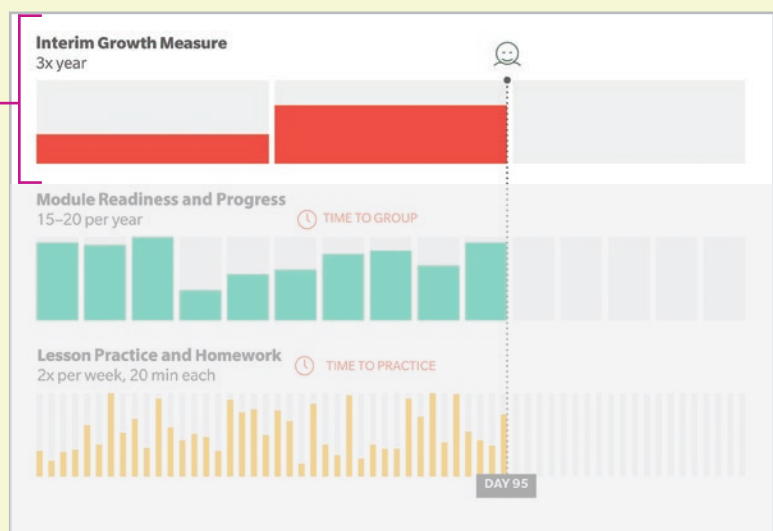
Ed: Your Friend in Learning

Teachers are the key to ensuring student growth. That's why we've designed *Into Math* with teachers' needs front of mind. Ed: Your Friend in Learning is your new friend in teaching, designed specifically to help you regain time and easily plan, create, and implement high-impact instruction all from one simple platform.

Within *Into Math*, data collection is automated; differentiation is targeted, clear, and easy to use; and professional development is embedded. The experience is both intuitive and customizable for teachers, allowing for simplicity in all areas of instruction.

Interim Growth Measure

This powerful growth measure assessment is designed to be administered in 40 minutes, three times per year. The system utilizes a secure bank of assessments to adapt to each student's ability and maps progress on the Quantile Framework®.

Interim Growth Measure
3x year

Module Readiness and Progress
15–20 per year   TIME TO GROUP

Lesson Practice and Homework
2x per week, 20 min each   TIME TO PRACTICE

DAY 95

Students can skip questions if needed and access read-aloud support. Feedback that encourages perseverance helps to motivate students.

Dynamic Reporting

Teachers can drill down into data for deeper insights into student performance. Multiple reports and views enable teachers to select those that work best for them, including charts, detailed comparisons, and totals.
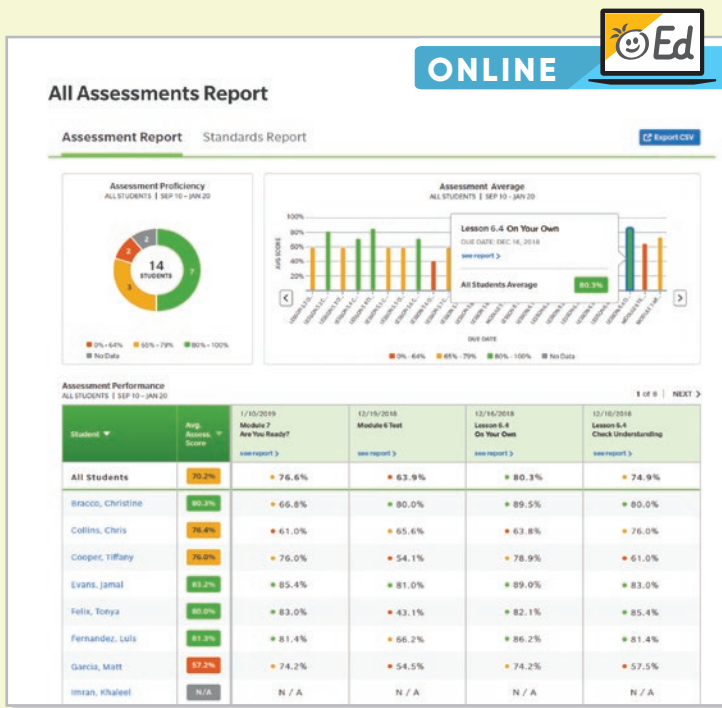
Assignment reports show detailed results for each assignment, including an item analysis view.
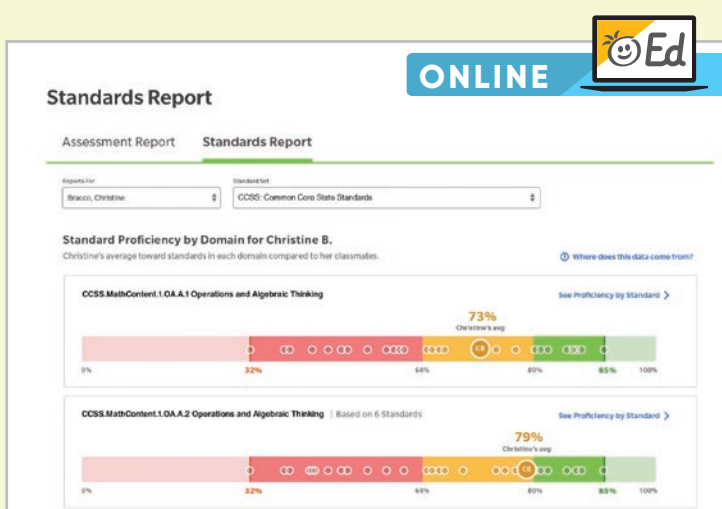
Standards reports show progress toward mastery of each of the Mathematics Standards.
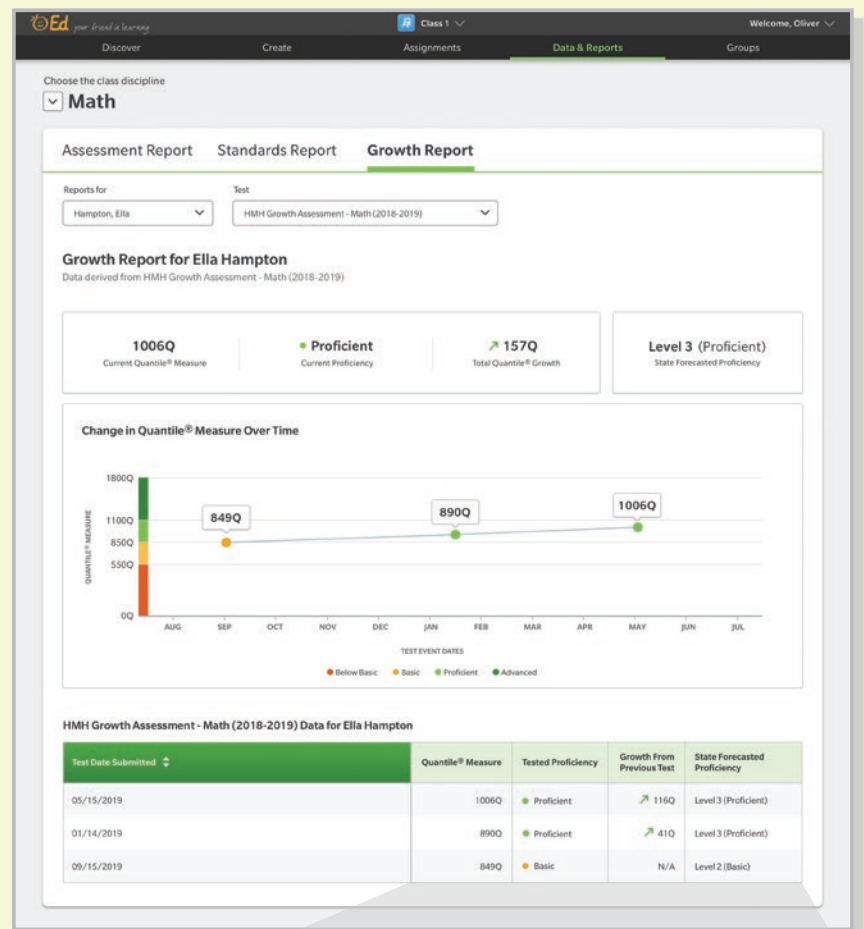
Quantile® Measure	Tested Proficiency	Growth From Previous Test	State Forecasted Proficiency
1006Q	● Proficient	↗ 116Q	Level 3 (Proficient)
890Q	● Proficient	↗ 41Q	Level 3 (Proficient)
849Q	● Basic	N/A	Level 2 (Basic)

Growth Reports help identify intervention needs and are linked to recommendations and groupings.

Assessments, Data, and Reports

Module Readiness and Progress

Whether you use the autoscored digital assessments or the paper-and-pencil versions in the Assessment Guide, the module assessments make it easy for teachers to leverage data. A variety of reports available on Ed: Your Friend in Learning give you unparalleled insight into student performance.

Interim Growth Measure
3x year

Module Readiness and Progress
15–20 per year TIME TO GROUP

Lesson Practice and Homework
2x per week, 20 min each TIME TO PRACTICE

DAY 95

Name
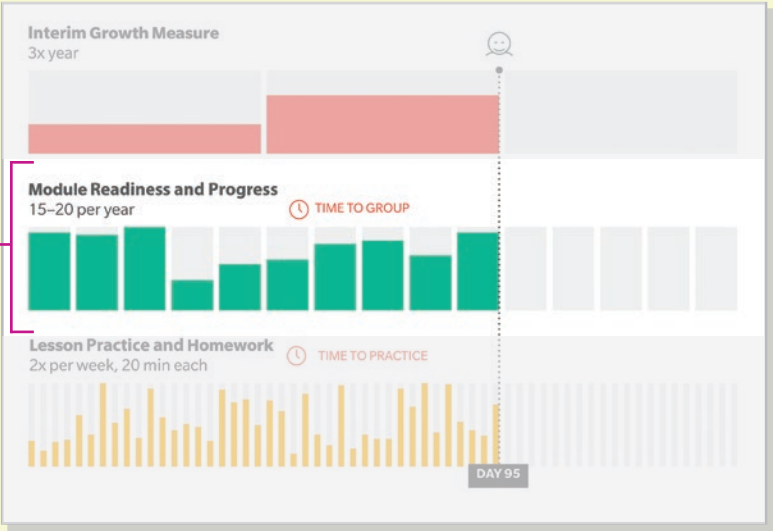
Module 3 Review

Vocabulary
Use the equation to answer the questions.

1. Circle the addends.
$3 + 7 = 10$

2. Write the equation with the addends in a different order.
$7 + 3 = 10$

Concepts and Skills
Fill in the bubble next to the addition that can be used to solve the problem.

3. Jared sees 5 stars in the sky. Then he sees 4 more. How many stars does Jared see now?

● $\begin{array}{r} 5 \\ +4 \\ \hline 9 \end{array}$ ○ $\begin{array}{r} 4 \\ +4 \\ \hline 8 \end{array}$ ○ $\begin{array}{r} 5 \\ +5 \\ \hline 10 \end{array}$

4. Kiaya has 2 red bows and 5 purple bows. How many bows does Kiaya have?

○ $2 + 3 = 5$ ● $5 + 2 = 7$ ○ $3 + 5 = 8$

Module 3   one hundred seven **107**

The Module Review in the Student Edition helps prepare students for the Module Test. The Module Test is a summative assessment for monitoring student progress. Intervention recommendations are provided for students who need extra support.

Name ONLINE Ed

Are You Ready?
Complete these problems to review prior concepts and skills you will need for this module.

Ways to Make 5
Use ■ ■. Show different ways to make 5.
Color to show what you did. Possible answer shown.

1.

Use Symbols to Add
Use the picture. Write the addition equation.

2. $3 + 7 = 10$

Draw Equal Groups
Draw a circle below each picture to show an equal number of circles and birds.

3.

76 seventy-six

The module *Are You Ready?* is a diagnostic assessment of important prerequisite skills for the upcoming module. A Data-Driven Intervention chart is available in the Teacher Edition.

Data-Driven Grouping

One of the most valuable and time-saving tools for teachers is the online Recommend Groups feature. It synthesizes data from assessments and places students into leveled groups. You can easily modify the recommended groups yourself as needed.
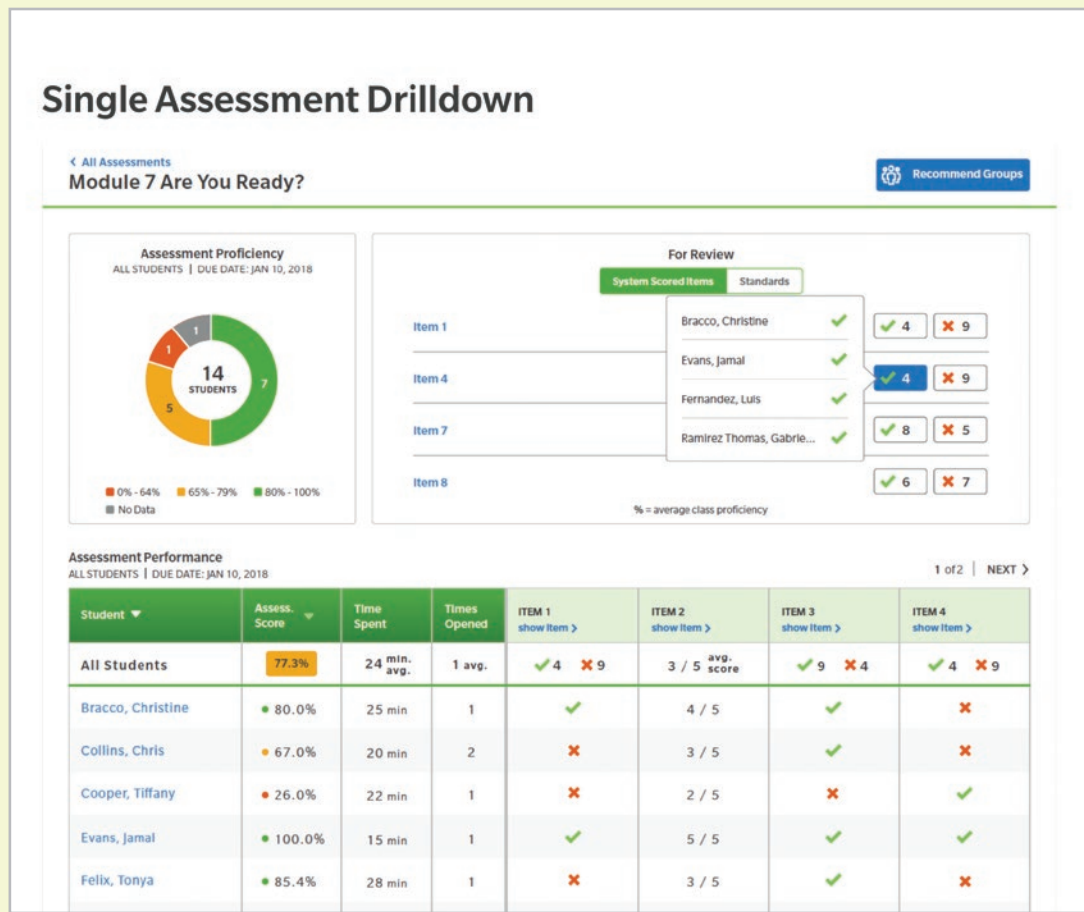
From your groups, assign differentiated resources based on student performance.
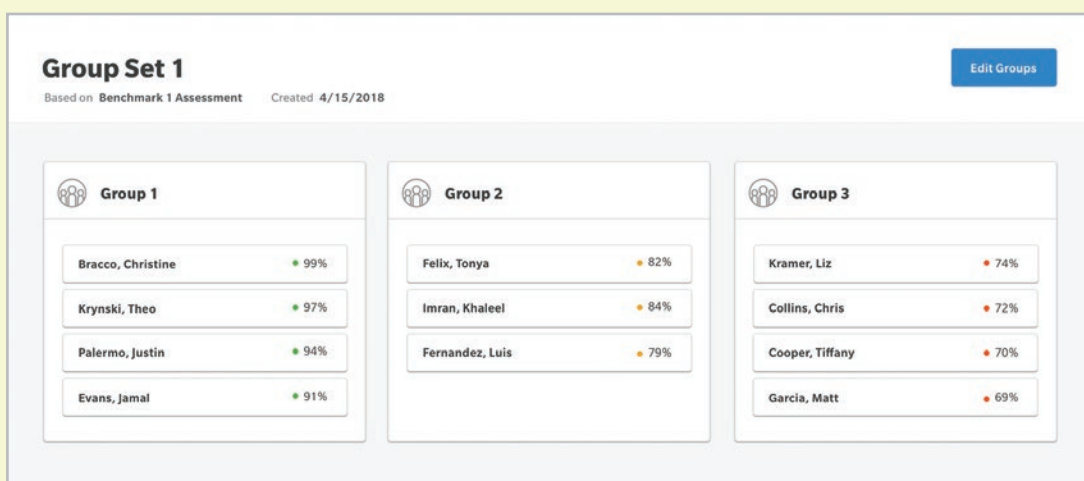
Assessments, Data, and Reports

Lesson Practice and Homework

MAKING SURE EVERY STUDENT GROWS Lesson-level formative assessments and the *Into Math* system reports help teachers differentiate, ensuring every student feels appropriately challenged and makes progress toward lesson goals.

Interim Growth Measure
3x year

Module Readiness and Progress
15–20 per year — TIME TO GROUP

Lesson Practice and Homework
2x per week, 20 min each — TIME TO PRACTICE

DAY 95
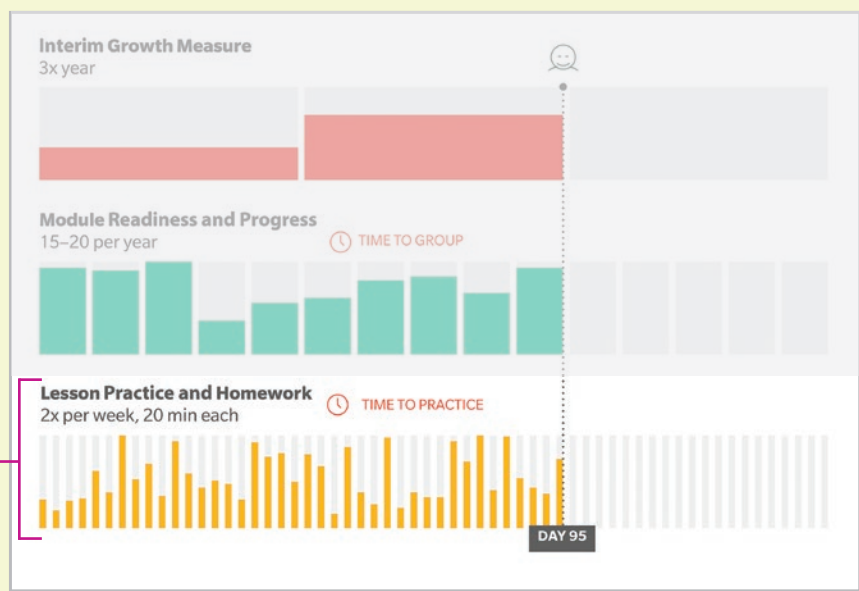
TEACHER EDITION The Teacher Edition shows the variety of differentiated resources available for each lesson.
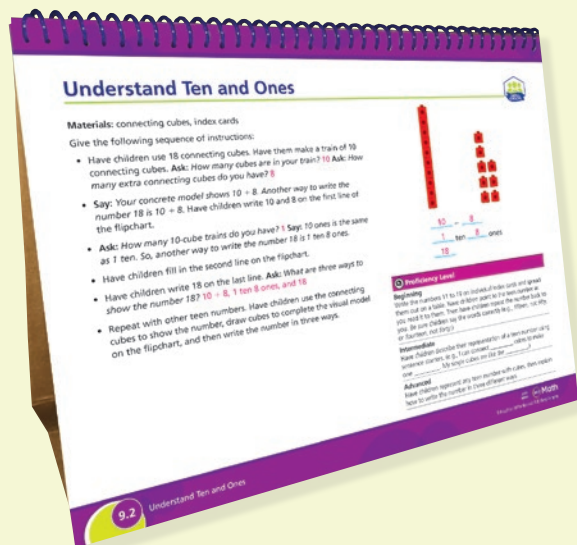
FLIPCHART Teachers can work with students who have not yet mastered lesson content in small groups using the Tabletop Flipchart Mini-Lesson. It provides an alternative approach to help students who are *Almost There* master lesson content. Small-group activities for students who are *On Track* or *Ready for More* are printed in the Teacher Edition.

MATH CENTER KIT
The differentiated centers kit contains additional resources for use in math centers. These resources include games, readers, standards practice, fluency builders, and projects.

Assessments, Data, and Reports

LEVERAGE THE POWER OF STUDENT DATA

Interactive versions of Reteach, Challenge, Additional Practice, Fluency, RtI Tier 2, and RtI Tier 3 worksheets can be assigned online, and teachers can see student results in reports.
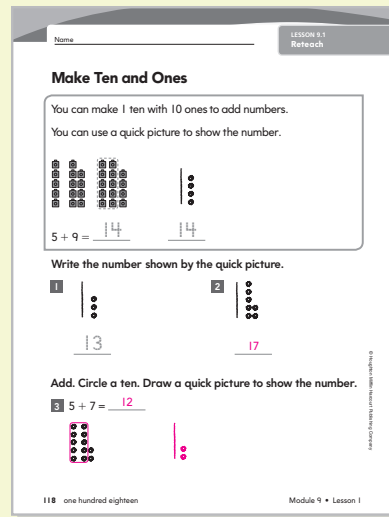
Reteach Worksheet
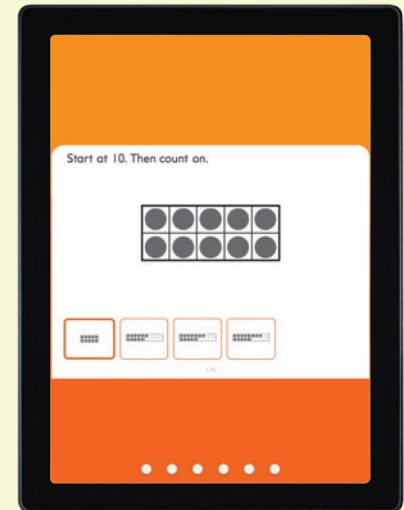
Interactive RtI Tier 3

EMPOWER STUDENTS WITH *WAGGLE*™

Waggle can supplement your *Into Math* instruction by providing adaptive, targeted student practice.

Start Here →

Teacher Instruction
The teacher leads an *Into Math* lesson and moves through the lesson/program structure until it is time for differentiation.

Targeted Content
Waggle recommends instructional content based on students' individual needs, preparing them for the next *Into Math* lesson.

Lesson Assignment
The teacher can either assign specific learning goals to complement *Into Math* instruction or ask *Waggle* to auto-assign.

Embedded Assessment
Waggle pinpoints precise skill gaps during students' practice—no additional testing required.

Skills-Based Practice
Students engage in adaptive, skills-based practice while being supported by innovative ELD features.

Teacher Support

Supporting Best Practices

Into Math classrooms maximize student growth by providing teachers with content designed around research-based, effective teaching practices, such as those described in *Principles to Actions* (NCTM, 2014).[1]

- Establish mathematics goals to focus learning.
- Implement tasks that promote reasoning and problem solving.
- Use and connect mathematical representations.
- Facilitate meaningful mathematical discourse.
- Pose purposeful questions.
- Build procedural fluency from conceptual understanding.
- Support productive struggle in learning mathematics.
- Elicit and use evidence of student thinking.

TEACHER TO TEACHER

From the Classroom

Use and connect mathematical representations One of the things I want to find out about my children at the beginning of the year is what mathematical representations they are familiar with. Have they used ten frames, number paths, rekenreks, or pictures of hands? I spend time each day with small groups using visual addition problems, asking children to share their solution strategies. I make notes of who is consistently counting by ones, who is counting on, and whether anyone is using number relationships.

In whole class discussions, I also start asking questions to encourage children to visualize quantities and make connections between representations. If we are talking about the number 12 for example,

I ask children to close their eyes and picture that number on a ten frame. I might ask, "How many ten frames do you need to show 12? How do you know? What would 12 look like with your fingers? What would be colored on a 100 chart?"

After these different representations are sketched and children have justified how each one shows 12, I say something like, "Show me the 2 in each representation. Show me the 10 in each representation. Why is there a 10 and a 2 in each representation?"

Discussions like these help me learn about my new children and start introducing them to tools that we will use all year long.

Teacher to Teacher tips, aligned to the NCTM Effective Mathematics Teaching Practices, were written by educators for educators.

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1) National Council of Teachers of Mathematics, *Principles to Actions: Ensuring Mathematical Success for All* (Reston, VA: NCTM, 2014).

Student work samples help teachers understand student thinking behind possible solution pathways.

Spark Your Learning • **Student Samples**

During the *Spark Your Learning,* listen and watch for strategies children use. See samples of student work on this page.

Show Adding Tens — Strategy 1

$|| \ ||||| = 7$ tens

If children . . . draw lines to show the starting number and then draw more lines to show the number of tens they tossed, they demonstrate they can make an accurate visual model. By including the sum, these children also demonstrate an understanding of adding tens.

Have these children . . . share their work with the class. **Ask:**
- How does drawing a visual model help you understand the problem?

Show Combined Group — Strategy 2

$||||||$ (7 tens)

If children . . . toss a 5 and draw lines to show 7 tens and indicate the value by writing the number, they may have shown the solution correctly, but the model does not match the action of the problem. To help children learn how to make effective visual models, guide them to show the action in the problem.

Activate prior knowledge . . . by having these children draw another visual model. **Ask:**
- What is the action in the problem?
- How can you draw the tens to show you are adding them together?

COMMON ERROR: Shows Ones not Tens

$|| \circ\circ\circ\circ\circ$

If children . . . show the starting number, but then show the number they tossed as ones rather than tens, they did not understand adding tens and more tens.

Then intervene . . . by reviewing concrete and visual models of tens with the children. Have them toss the number cube again. **Ask:**
- What number did you toss?
- How many tens do you add to the starting number?

349D   Module 12

Show Adding Tens — Strategy 1

$|| \ ||||| = 7$ tens

Carefully crafted tasks, student-centered learning, small groups, and hands-on manipulatives play important roles in an *Into Math* classroom. The *Into Math* Teacher Edition contains point-of-use support to help teachers facilitate learning and implement research-based best practices into their instruction.

Every module includes a professional learning video that features a teacher or HMH author working with real students who are engaging with actual content from the program. The videos include modeling and discussion of effective teaching practices and also feature the Language Routines and Talk Moves strategies.

Leveled Questions and Sample Guided Instruction features help teachers ask questions that facilitate student understanding without giving away the answer.

Empowering Teachers

Into Math is designed to provide opportunities for each and every student to grow. Formative assessment and effective differentiation are critical to student success. However, care must be taken not to turn classrooms into unintentional tracking systems, which often create gates instead of gateways. Access to effective teaching and learning, a high-quality curriculum, and high expectations promote equitable math classrooms.

Math Solutions
FOUNDED BY MARILYN BURNS

Professional Learning Cards help teachers effectively implement the Talk Moves and Language Routines, ensuring student reasoning and discourse play a key role in instruction.

Talk Moves

- Adding On
- Reasoning
- Repeating
- Revoicing
- Turn and Talk
- Waiting

Language Routines

- Three Reads
- Critique, Correct, and Clarify
- Stronger and Clearer Each Time
- Compare and Connect
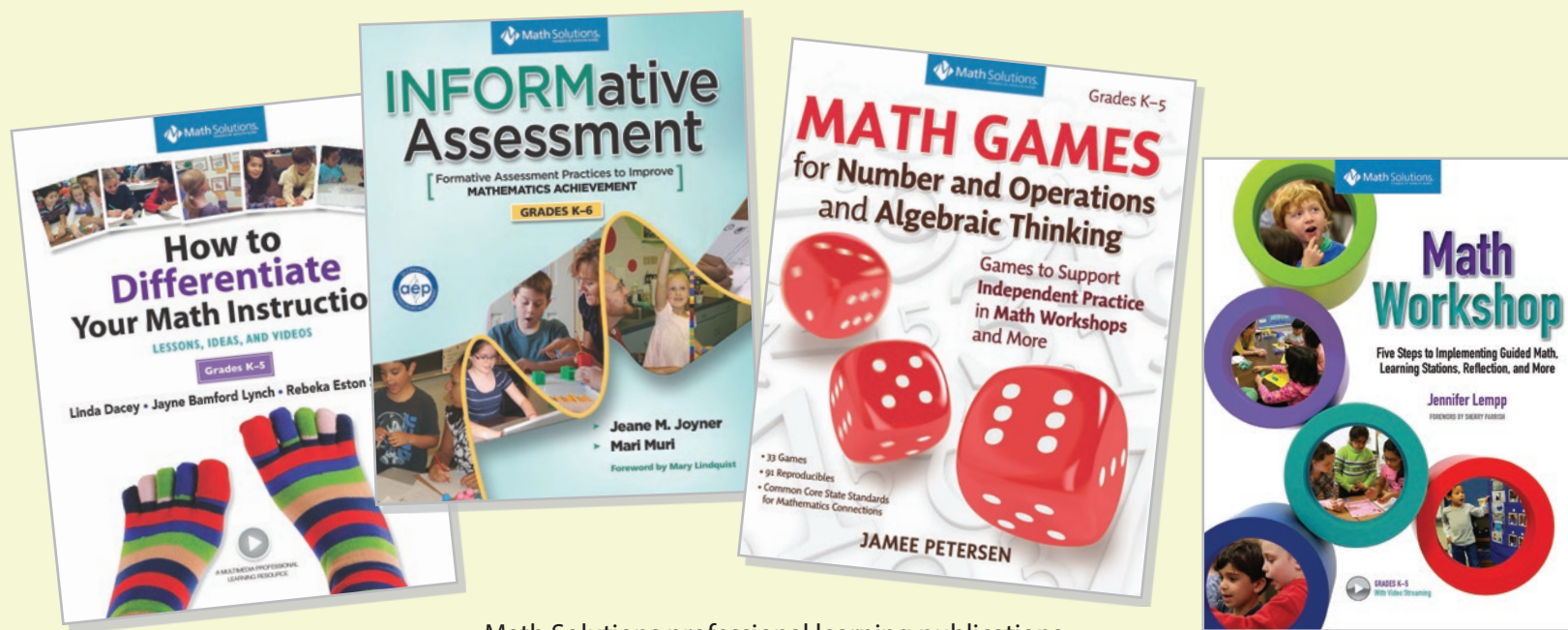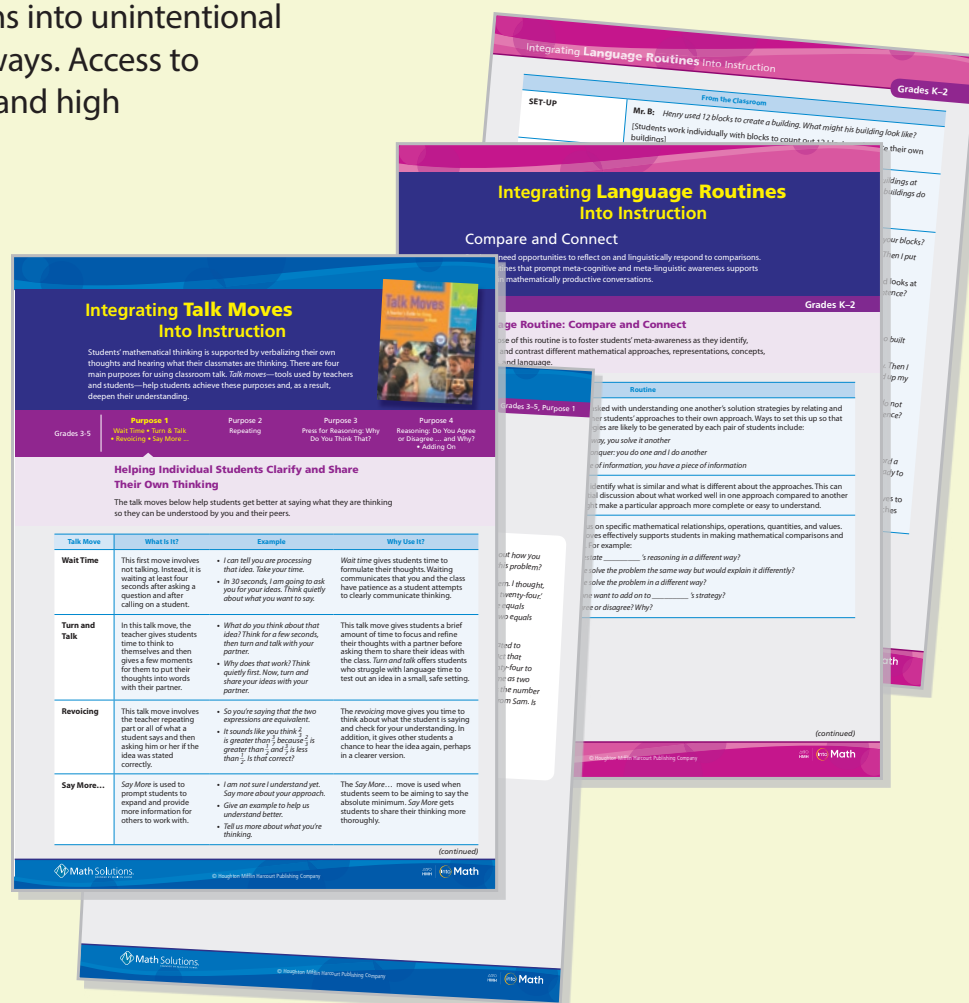
Math Solutions professional learning publications, available to enhance your professional library, are referenced in the *Into Math* Teacher Edition.

Matthew R. Larson, PhD
Past President, National Council
of Teachers of Mathematics
Lincoln Public Schools
Lincoln, Nebraska
Math Solutions Senior Fellow

Ensuring Access and Equity

Access

Access and equity are a guiding principle of effective mathematics programs in which each and every student has access to effective instruction, high expectations, high-quality curriculum, and the support necessary to learn mathematics at a deep level (NCTM, 2014). *Into Math* provides the structure and resources needed to effectively differentiate instruction and support student learning.

The *Into Math* curriculum is rigorous and supports students' conceptual understanding, procedural fluency, and reasoning and problem-solving abilities through an intentional lesson and module design. *Into Math*'s frequent and embedded data checkpoints—linked to targeted instructional supports in print, digital, small-group, and math center options—are designed to ensure that each and every student has access to *Into Math*'s high-quality curriculum.

Equitable Instructional Practices

Mathematics teaching involves more than helping students acquire concepts and skills; it also includes supporting students in coming to see themselves as capable of learning, participating in, and becoming users of mathematics. Implementing equitable instructional practices can improve students' classroom experience, learning outcomes, and disposition toward mathematics.

The mathematics teaching practices included in *Into Math* provide an instructional framework for cultivating students' confidence and belief in their ability to learn and use mathematics. For example, the tasks in Spark Your Learning are designed as "low-floor/high-ceiling" tasks that all students can access but that can also be extended to provide challenge. These tasks motivate learning, focus on building students' conceptual understanding to help ensure procedural fluency, encourage the use of multiple representations, and help students develop a positive disposition toward mathematics and themselves as learners.

Similarly, Turn and Talk prompts position students as mathematically competent and capable of sharing their thinking and participating in mathematical arguments. Through discourse, students realize that their thinking serves an important role in learning mathematics and cultivate their confidence as learners[1], which, in turn, improves the learning outcomes of each and every student.

> **Turn and Talk** How does knowing $6 + 4 = 10$ help you find $10 - 6 = \blacksquare$? Explain.

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1) D. Huinker & V. Bill, *Taking Action: Implementing Effective Mathematics Teaching Practices in K–Grade 5*, ed. M. S. Smith (Reston, VA: NCTM, 2017).

Teacher Support

Building a Culture of Professional Growth

A blend of in-person and online support with Math Solutions® coaches fosters a culture of professional growth and inspires a culture of math achievement with every student, in every classroom, every day.

Coaches from Math Solutions® will work side by side with teachers to develop instructional practices that promote reasoning and problem-solving skills. Our goal is to support teachers as they create learning environments where students are encouraged to become fearless problem solvers.

During the *Getting Started with Into Math* session, teachers receive a Professional Learning Guide. The Professional Learning Guide is also available on Ed: Your Friend in Learning.

Math Solutions® Partner with Math Solutions® to deepen your practice to meet the learning needs of each and every student and effectively maneuver the challenges you face in your classroom every day.
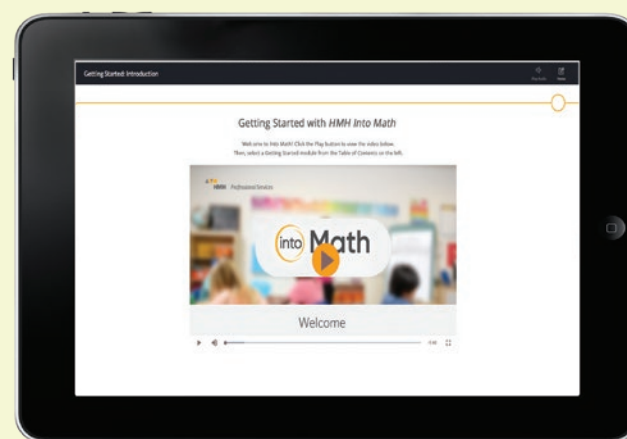
Getting Started Modules can be accessed anywhere and anytime on Ed: Your Friend in Learning.

The single greatest determinant for success in a classroom is the teacher. Math Solutions® coaches partner with you as you make critical decisions that impact student learning.

Weston Kieschnick
Associate Partner
International Center for
Leadership in Education
Littleton, Colorado

Blended Learning That Works

Purposeful Technology Use + Old-School Wisdom

We know that digital tools and future-focused learning environments are critical when preparing our students for the real world. But what about the tried-and-true teaching strategies that have always driven real and measurable learning? Where do these fit in?

The Bold School Framework for Strategic Blended Learning™ puts teachers back into the digital learning equation. Its practical yet powerful approach shows how purposeful technology use combined with old-school wisdom can elevate instruction and enhance learning.

Effective 21st-century learning blends sound pedagogical practices with digital elements to create engaging rigorous and relevant experiences. As educators, we are accountable for the learning outcomes and career readiness of our students. Technology and digital tools, when implemented strategically to enhance—not replace—sound pedagogy, create effective and efficient blended learning experiences for students. Here's how it works.

Bold School Framework for Strategic Blended Learning™	
Step 1	Identify Desired Academic Outcome(s)
Step 2	Select a Goal-Aligned Instructional Strategy That *Works*
Step 3	Choose Digital Tool(s)
Step 4	Plan Blended Instruction
Step 5	Self-Assess Your Plans and Progress with a Framework

The goal of using technology isn't just to use technology—it's student achievement. We must approach blended learning with greater intention than just "What am I going to do with (insert tech tool here) today?" With this mindset, every teacher can support students through the power of digital learning.

Fostering Learning Mindsets

Through a partnership with Mindset Works®, *Into Math* incorporates the latest research, strategies, and practices to build a community of resilient, curious learners.

- Introduce the learning mindsets—growth mindset, relevance, belonging, and purpose—to help students better understand their self perception and attitudes toward learning.
- Establish the tenets of growth mindset, so that each student understands that he or she has the capacity to learn and grow.
- Target the research-based stances and skills that are key to student agency, engagement, and academic success.

Connect with Families and Community

Engaging with families and the community is critical to student success in school. *Into Math* provides resources to help teachers interact with families throughout the school year.

- **Math on the Spot** video tutorials provide instruction of the math concepts covered and allow for family involvement in their child's learning. The write-in format of the Student Edition gives families a front-row seat to their child's thinking and progress over time, encouraging a strong home–school connection.
- **School Home Letters** inform families about the skills, strategies, and topics students are encountering at school, extending rich dialogue beyond the classroom.
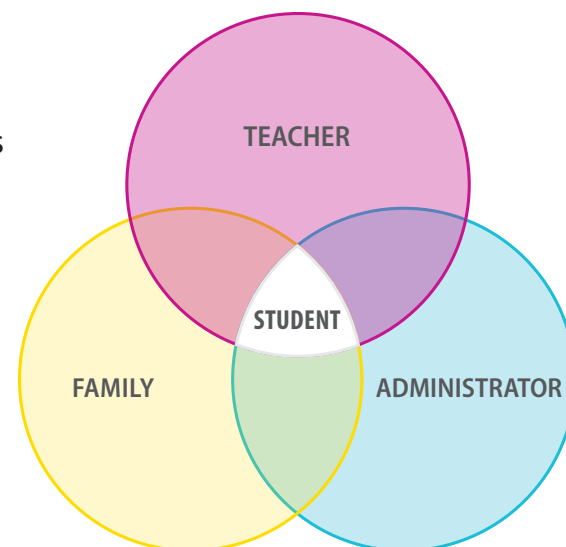
David Dockterman, EdD
Lecturer, Harvard Graduate
School of Education
Cambridge, Massachusetts

Understanding Mindset

Into Math fosters a growth mindset by explicitly teaching students that intelligence is not a fixed trait, but rather hard work and determination are crucial factors in raising academic achievement. Students often believe that their ability to excel in mathematics is fixed. Carol Dweck, a psychologist at Stanford University and leading researcher in student motivation and development, highlights the academic benefits of adopting a "growth" mindset rather than a "fixed" mindset.

Growth Mindset

Growth mindset is the idea that intelligence and abilities can be developed through dedication and work. "This view creates a drive towards learning and a resilience that is essential for great accomplishment. Virtually all great people have had these qualities."[1] Instruction and classroom community can foster a growth mindset by explicitly teaching that effort has a meaningful impact on learning.[2] Students with a growth mindset believe:

- Practice and effort are key elements in developing intelligence.
- Persistence and perseverance are important factors in triumphing over setbacks and failures.
- Mistakes and struggle are part of the learning process.

Fixed Mindset

Students who have a fixed mindset believe that intelligence and abilities are fixed traits that cannot be developed. Students who view their intelligence as fixed from birth are more likely to experience decreased confidence and performance when faced with challenges.[3] Students with a fixed mindset

- believe intelligence is a fixed quantity that you either possess or lack,
- put in less effort and give up easily, and
- fear failure and are less likely to take risks.

Teaching Growth Mindset

Feedback and classroom discourse can have a lasting impact on how students view intelligence.[4] By adopting a growth mindset and productive learning strategies, students are more likely to step up to challenges and persevere through and bounce back from adversity. Use the following strategies:

- Teach that intelligence and abilities are developed.
- Praise students' efforts and strategies rather than their intelligence.
- Use "mistakes" or incorrect answers as teachable moments.

1) C. Dweck, *Mindset: The New Psychology of Success*. (New York, NY: Penguin Random House, 2006).

2) L.S. Blackwell, K.H. Trzesniewski, C.S. Dweck, "Theories of Intelligence Predict Achievement Across an Adolescent Transition: A Longitudinal Study and an Intervention," *Child Development* 78, no. 1 (January-February 2007): 246–263.

3) Blackwell, Trzesniewski, Dweck, "Theories of Intelligence . . . ," 246–263.

4) M. Malmivuori, "Affect and Self-Regulation," *Educational Studies in Mathematics* 63, no. 2 (October 2006): 149–164.

Teacher Support

Unpacking Math Standards

Into Math is built on a carefully crafted Learning Spine based on the Mathematics Standards, with a coherent progression from kindergarten through algebra and beyond. The *Into Math* system allows for easy access forward or backward across the K–12 Mathematical Progressions, providing teachers with the tools to navigate prerequisite and follow-on concepts and skills.

Build Understanding

12.1 Represent Adding Tens

LESSON FOCUS AND COHERENCE

■ Major □ Supporting ○ Additional

Mathematics Standards

■ Add within 100, including adding a two-digit number and a one-digit number, and adding a two-digit number and a multiple of 10, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. Understand that in adding two-digit numbers, one adds tens and tens, ones and ones; and sometimes it is necessary to compose a ten.

Mathematical Practices and Processes (MP)
• Reason abstractly and quantitatively.
• Model with mathematics.
• Look for and make use of structure.

I Can Objective
I can add multiples of ten with multiples of ten.

Learning Objective
Add tens to decade numbers.

Language Objective
• Explain how to add tens to tens.
• Explain how to use equations to show problems.

Vocabulary
Review Vocabulary: equations, ones, tens

Lesson Materials: base-ten blocks, number cube, connecting cubes

Mathematical Progressions

Prior Learning	Current Development	Future Connections
Children: • composed and decomposed numbers 11 to 19 into tens and ones. (GrK, 17.1–17.4) • used drawings and equations to show how to compose and decompose numbers. (GrK, 17.1–17.4)	Children: • add two-digit numbers with a multiple of ten, within 100. • use concrete models, drawings, and strategies to solve and reason problems. • understand how to add two-digit numbers with multiples of ten.	Children: • will use addition and subtraction within 100 to solve various problem types. (Gr2, 15.1–15.3) • will solve addition and subtraction problems using drawings and equations with a symbol for the unknown number. (Gr2, 14.1–14.4)

UNPACKING MATH STANDARDS

Add within 100, including adding a two-digit number and and a one-digit number, and adding a two-digit number and a multiple of 10, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. Understand that in adding two-digit numbers, one adds tens and tens, ones and ones; and sometimes it is necessary to compose a ten.

What It Means to You

In this lesson, only a portion of the standard is taught. Children learn to add two-digit numbers with tens, by adding tens with tens. Children practice the concept by solving word problems using concrete models and visual models, and then write matching equations.

Before children can attain proficiency with addition and subtraction, they require plenty of experiences - modeling and solving various problem types with the unknown quantity in various positions in the equation.

Lesson 12.1

Every lesson includes support that addresses the focus and coherence within the *Into Math* curriculum, derived directly from the Mathematics Standards. Clear progressions along the path to algebra provide insight into Prior Learning and Future Connections and the point-of-use tools necessary to differentiate instruction based on student data.

MODULE **12**

PLANNING

UNDERSTAND ADDITION AND SUBTRACTION WITH TENS AND ONES

Introduce and Check for Readiness
• Module Opener • Are You Ready?

data checkpoint

Lesson 1—1 Day Build Understanding	**Represent Adding Tens** **Learning Objective:** Add tens to decade numbers. Online Professional Learning Video Review Vocabulary: equations, tens, ones
Lesson 2—1 Day Build Understanding	**Represent Subtracting Tens** **Learning Objective:** Subtract tens from decade numbers.
Lesson 3—1 Day Connect Concepts and Skills	**Add or Subtract Tens** **Learning Objective:** Add and subtract multiples of ten from decade numbers. Write and solve equations that match the word problems.
Lesson 4—1 Day Connect Concepts and Skills	**Use a Hundred Chart to Add** **Learning Objective:** Use a hundred chart to add ones and tens to a two-digit number and write the equation that matches the problem. Online Professional Learning Video
Lesson 5—1 Day Connect Concepts and Skills	**Represent Addition with Tens and Ones** **Learning Objective:** Use concrete models to add multiples of ten or ones to two-digit numbers and write equations to solve the problem.
Lesson 6—2 Days Connect Concepts and Skills	**Represent Make Ten to Add** **Learning Objective:** Add a two-digit number and a one-digit number by making a ten using concrete models and visual models and write an equation to show the problem.
Lesson 7—1 Day Connect Concepts and Skills	**Represent Make Ten to Add with a Visual Model** **Learning Objective:** Use an open number line to add tens and ones to two-digit numbers by making a ten and write an equation to show the problem.
Lesson 8—1 Day Apply and Practice	**Use Mental Math to Find 10 Less and 10 More** **Learning Objective:** Use mental math to find 10 less than and 10 more than a number.

Assessment
• Module 12 Test (Forms A and B)
• Unit 4 Performance Task after Module 13

data checkpoint

See the entire scope and sequence in the Planning and Pacing Guide.

347A Module 12

● Build Understanding ● Connect Concepts and Skills ● Apply and Practice

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The Learning Arc within modules or across modules carefully sequences instruction, allowing for students to first build understanding of concepts, then to bridge their understanding by making connections between concepts, and finally to move to procedural fluency through application and practice.

Timothy D. Kanold, PhD
Mathematics Educator
Chicago, Illinois

Progressions and Algebra Readiness

Algebra Readiness in 2020 and Beyond

Algebra as a course of study today is integrated around four progressions of elementary and middle school content leading to the algebra course: Number and Operations, Operations and Algebraic Thinking, Statistics and Probability, and Functions.

	Grades K–5	Grades 6–7	Grade 8 and Algebra
1	Number and Operations Base Ten	The Number System Extended	Expand to Numbers Not Rational
2	Operations and Algebraic Thinking	Writing, Interpreting, and Using Expressions and Equations	Modeling with and Solving Linear Equations and Systems
3	Measurement and Data	Statistics and Probability Variability, Inferences, and Chance	Statistics and Probability Bivariate Data, Lines of Best Fit
4	Number and Operations Fractions	Analyze and Apply Ratios and Proportional Relationships	Functions Define, Evaluate, and Compare

The Operations and Algebraic Thinking progression strand is unique to the K–5 preparation for the algebra readiness curriculum.

The Operations and Algebraic Thinking Progression

Operations and Algebraic Thinking is a K–5 progression that feeds directly into the middle school progression for linear expressions and equations.

At grade levels K–2, this progression focuses on counting, place value, and addition and subtraction of whole numbers. The emphasis is on representing and solving Add To, Take From, Put Together/Take Apart, and Compare problem situations for addition and subtraction. This work will help students to "see" multiplication as groups of objects and as represented by a rectangular array or model in Grades 3–5. Conceptual building blocks are developed for the eventual multiplication of whole numbers.

At grade levels 3–5, this progression expands into the conceptual student understanding needed for students to "see" patterns, properties, and expressions in problem situations—the early foundations of what will become known as algebra. These progressions include multiplication and division problem situations with equal groups, arrays, area, and comparisons. Third graders focus on fluency when multiplying and dividing within 100, fourth graders analyze shape and number patterns, and fifth graders use problem situations that allow them to both write and interpret numerical expressions based on earlier student work with whole numbers.

Supporting Intervention Needs

Into Math provides the supports teachers need to ensure each and every student succeeds. Data informs teachers' use of differentiated Small-Group and Math Center options in every lesson. *Into Math* includes intervention content for use in a core classroom.

Appropriate Tier 2 and Tier 3 Mini-Lessons address prerequisite concepts and skills needed for success and can be identified by the diagnostic *Are You Ready?* module assessment.

Every lesson includes a Teacher Tabletop Flipchart Mini-Lesson and a lesson Reteach to support students' Tier 1 needs.

HMH also offers robust Intervention Solutions for students who need targeted and intensive intervention. Developed by Marilyn Burns, *Do the Math* has thirteen modules that are organized into four topics—Addition and Subtraction, Multiplication, Division, and Fractions. These modules provide carefully scaffolded instruction to build conceptual understanding and develop numerical reasoning. See pages PG72–PG73.

- grades 1 and up
- can be used during core instruction or in a separate instruction block
- effective and easily managed instruction with embedded assessments
- includes digital resources
- six weeks of 30-minute lessons in each module

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Notes & Reflections

Pacing Guide

Lesson	Mathematics Standards, Grade K	Pacing
Unit 1 COUNT SEQUENCE AND NUMBERS TO 5		
Module 1: Represent Numbers to 5 with Objects		
Lesson 1.1 Represent 1 and 2	■ When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object. ■ Count to answer "how many?" questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1–20, count out that many objects.	1 day
Lesson 1.2 Represent 3 and 4	■ When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object. ■ Count to answer "how many?" questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1–20, count out that many objects.	1 day
Lesson 1.3 Represent 5	■ When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object. ■ Count to answer "how many?" questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1–20, count out that many objects.	1 day
Lesson 1.4 Represent 0	■ When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object. ■ Count to answer "how many?" questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1–20, count out that many objects.	1 day
Lesson 1.5 Ways to Make 5	■ Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted. ■ Decompose numbers less than or equal to 10 into pairs in more than one way, e.g., by using objects or drawings, and record each decomposition by a drawing or equation (e.g., $5 = 2 + 3$ and $5 = 4 + 1$).	1 day

Lesson	Mathematics Standards, Grade K	Pacing
Module 2: Represent Numbers to 5 with a Written Numeral		
◯ Lesson 2.1 Count and Write 0 and 1	■ Write numbers from 0 to 20. Represent a number of objects with a written numeral 0–20 (with 0 representing a count of no objects). ■ When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object.	1 day
◯ Lesson 2.2 Count and Write 2 and 3	■ Write numbers from 0 to 20. Represent a number of objects with a written numeral 0–20 (with 0 representing a count of no objects). ■ When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object. ■ Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted.	1 day
◯ Lesson 2.3 Count and Write 4 and 5	■ Write numbers from 0 to 20. Represent a number of objects with a written numeral 0–20 (with 0 representing a count of no objects). ■ When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object. ■ Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted.	1 day
◯ Lesson 2.4 Count and Write Numbers to 5	■ Write numbers from 0 to 20. Represent a number of objects with a written numeral 0–20 (with 0 representing a count of no objects). ■ When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object. ■ Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted.	1 day
◯ Lesson 2.5 Count and Order to 5	■ Understand that each successive number name refers to a quantity that is one larger. ■ When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object.	1 day

Pacing Guide

Lesson	Mathematics Standards, Grade K	Pacing
Module 3: Matching and Counting Numbers to 5		
Lesson 3.1 Identify a Greater Number of Objects Within 5	◾ Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies.	1 day
Lesson 3.2 Identify a Lesser Number of Objects Within 5	◾ Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies.	1 day
Lesson 3.3 Match Equal Groups of Objects Within 5	◾ Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies.	1 day
Lesson 3.4 Compare Groups Within 5 by Counting	◾ Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies.	1 day
Lesson 3.5 Compare Groups Within 5 by Matching	◾ Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies.	1 day
Lesson 3.6 Compare Numbers Within 5	◾ Compare two numbers between 1 and 10 presented as written numerals.	1 day
Module 4: Classify, Count, and Sort Objects		
Lesson 4.1 Classify and Count by Color	☐ Classify objects into given categories; count the numbers of objects in each category and sort the categories by count.	1 day
Lesson 4.2 Classify and Count by Shape	☐ Classify objects into given categories; count the numbers of objects in each category and sort the categories by count.	1 day
Lesson 4.3 Classify and Count by Size	☐ Classify objects into given categories; count the numbers of objects in each category and sort the categories by count.	1 day
Lesson 4.4 Classify, Count, and Sort by Count	☐ Classify objects into given categories; count the numbers of objects in each category and sort the categories by count.	1 day
Module 5: Add To and Take From Within 5		
Lesson 5.1 Act Out Addition Problems Within 5	◾ Represent addition and subtraction with objects, fingers, mental images, drawings, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations. ◾ Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.	1 day
Lesson 5.2 Act Out Subtraction Problems Within 5	◾ Represent addition and subtraction with objects, fingers, mental images, drawings, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations. ◾ Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.	1 day

Lesson	Mathematics Standards, Grade K	Pacing
Lesson 5.3 Solve Add To Problems Within 5	■ Represent addition and subtraction with objects, fingers, mental images, drawings, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations. ■ Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.	2 days
Lesson 5.4 Solve Take From Problems Within 5	■ Represent addition and subtraction with objects, fingers, mental images, drawings, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations. ■ Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.	2 days
Lesson 5.5 Write Addition Equations Within 5	■ Represent addition and subtraction with objects, fingers, mental images, drawings, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations. ■ Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.	2 days
Lesson 5.6 Write Subtraction Equations Within 5	■ Represent addition and subtraction with objects, fingers, mental images, drawings, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations. ■ Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.	2 days
Lesson 5.7 Solve Result Unknown Word Problems Within 5	■ Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem. ■ Fluently add and subtract within 5.	2 days
Module 6: Put Together and Take Apart Within 5		
Lesson 6.1 Represent Addition Problems Within 5 Using Objects and Drawings	■ Represent addition and subtraction with objects, fingers, mental images, drawings, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations. ■ Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.	1 day
Lesson 6.2 Represent Subtraction Problems Within 5 Using Objects and Drawings	■ Represent addition and subtraction with objects, fingers, mental images, drawings, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations. ■ Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.	1 day
Lesson 6.3 Solve Put Together Problems Within 5	■ Represent addition and subtraction with objects, fingers, mental images, drawings, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations. ■ Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.	2 days

Pacing Guide

Lesson	Mathematics Standards, Grade K	Pacing
Module 6: Put Together and Take Apart Within 5		
Lesson 6.4 Solve Take Apart Problems Within 5	■ Represent addition and subtraction with objects, fingers, mental images, drawings, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations. ■ Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.	2 days
Lesson 6.5 Represent Addition Using Mental Images	■ Represent addition and subtraction with objects, fingers, mental images, drawings, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations. ■ Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.	2 days
Lesson 6.6 Represent Subtraction Using Mental Images	■ Represent addition and subtraction with objects, fingers, mental images, drawings, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations. ■ Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.	2 days
Lesson 6.7 Solve Word Problems Within 5	■ Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem. ■ Fluently add and subtract within 5.	2 days
Unit 2 COUNT SEQUENCE AND NUMBERS TO 10		
Module 7: Represent Numbers 6 to 10 with Objects		
Lesson 7.1 Represent 6 and 7	■ When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object. ■ Count to answer "how many?" questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1–20, count out that many objects.	1 day
Lesson 7.2 Represent 8 and 9	■ When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object. ■ Count to answer "how many?" questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1–20, count out that many objects.	1 day
Lesson 7.3 Represent 10	■ When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object. ■ Count to answer "how many?" questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1–20, count out that many objects.	1 day

Lesson	Mathematics Standards, Grade K	Pacing
Module 8: Represent Numbers 6 to 10 with a Written Numeral		
Lesson 8.1 Count and Write 6 and 7	■ Write numbers from 0 to 20. Represent a number of objects with a written numeral 0–20 (with 0 representing a count of no objects). ■ Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted. ■ When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object.	1 day
Lesson 8.2 Count and Write 8 and 9	■ Write numbers from 0 to 20. Represent a number of objects with a written numeral 0–20 (with 0 representing a count of no objects). ■ Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted. ■ When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object.	1 day
Lesson 8.3 Count and Write 10	■ Write numbers from 0 to 20. Represent a number of objects with a written numeral 0–20 (with 0 representing a count of no objects). ■ Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted. ■ When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object.	1 day
Lesson 8.4 Count and Order to 10	■ Understand that each successive number name refers to a quantity that is one larger. ■ When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object.	1 day
Module 9: Use the Count Sequence to Count to 100		
Lesson 9.1 Count to 100 by Ones	■ Count to 100 by ones and by tens.	1 day
Lesson 9.2 Count to 100 by Tens	■ Count to 100 by ones and by tens.	1 day
Lesson 9.3 Count Forward from a Given Number	■ Count forward beginning from a given number within the known sequence (instead of having to begin at 1).	1 day

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Lesson	Mathematics Standards, Grade K	Pacing
Module 10: Compare Numbers to 10		
Lesson 10.1 Identify a Greater Number of Objects Within 10	■ Understand that each successive number name refers to a quantity that is one larger. ■ Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies.	1 day
Lesson 10.2 Identify a Lesser Number of Objects Within 10	■ Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies.	1 day
Lesson 10.3 Match Equal Groups of Objects Within 10	■ Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies.	1 day
Lesson 10.4 Compare Groups Within 10 by Counting	■ Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies.	1 day
Lesson 10.5 Compare Groups Within 10 by Matching	■ Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies.	1 day
Lesson 10.6 Compare Numbers Within 10	■ Compare two numbers between 1 and 10 presented as written numerals.	1 day
Module 11: Add To and Take From Within 10		
Lesson 11.1 Act Out Addition Problems Within 10	■ Represent addition and subtraction with objects, fingers, mental images, drawings, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations. ■ Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.	1 day
Lesson 11.2 Act Out Subtraction Problems Within 10	■ Represent addition and subtraction with objects, fingers, mental images, drawings, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations. ■ Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.	1 day
Lesson 11.3 Solve Add To Problems Within 10	■ Represent addition and subtraction with objects, fingers, mental images, drawings, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations. ■ Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.	2 days
Lesson 11.4 Solve Take From Problems Within 10	■ Represent addition and subtraction with objects, fingers, mental images, drawings, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations. ■ Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.	2 days

Lesson	Mathematics Standards, Grade K	Pacing
◯ Lesson 11.5 Write Addition Equations Within 10	■ Represent addition and subtraction with objects, fingers, mental images, drawings, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations. ■ Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.	2 days
◯ Lesson 11.6 Write Subtraction Equations Within 10	■ Represent addition and subtraction with objects, fingers, mental images, drawings, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations. ■ Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.	2 days
◯ Lesson 11.7 Solve Result Unknown Word Problems Within 10	■ Represent addition and subtraction with objects, fingers, mental images, drawings, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations. ■ Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.	2 days
Module 12: Put Together and Take Apart Within 10		
◯ Lesson 12.1 Represent Addition Problems Within 10 Using Objects and Drawings	■ Represent addition and subtraction with objects, fingers, mental images, drawings, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations. ■ Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.	1 day
◯ Lesson 12.2 Represent Subtraction Problems Within 10 Using Objects and Drawings	■ Represent addition and subtraction with objects, fingers, mental images, drawings, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations. ■ Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.	1 day
◯ Lesson 12.3 Solve Put Together Problems Within 10	■ Represent addition and subtraction with objects, fingers, mental images, drawings, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations. ■ Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.	2 days
◯ Lesson 12.4 Solve Take Apart Problems Within 10	■ Represent addition and subtraction with objects, fingers, mental images, drawings, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations. ■ Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.	2 days

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
Lesson	Mathematics Standards, Grade K	Pacing
Module 12: Put Together and Take Apart Within 10		
Lesson 12.5 Solve Word Problems Within 10	■ Represent addition and subtraction with objects, fingers, mental images, drawings, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations. ■ Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.	2 days
Module 13: Ways to Make Numbers to 10		
Lesson 13.1 Ways to Make 6 and 7	■ Decompose numbers less than or equal to 10 into pairs in more than one way, e.g., by using objects or drawings, and record each decomposition by a drawing or equation (e.g., $5 = 2 + 3$ and $5 = 4 + 1$). ■ Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted.	1 day
Lesson 13.2 Ways to Make 8	■ Decompose numbers less than or equal to 10 into pairs in more than one way, e.g., by using objects or drawings, and record each decomposition by a drawing or equation (e.g., $5 = 2 + 3$ and $5 = 4 + 1$). ■ Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted.	1 day
Lesson 13.3 Ways to Make 9	■ Decompose numbers less than or equal to 10 into pairs in more than one way, e.g., by using objects or drawings, and record each decomposition by a drawing or equation (e.g., $5 = 2 + 3$ and $5 = 4 + 1$). ■ Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted.	1 day
Lesson 13.4 Ways to Make 10	■ Decompose numbers less than or equal to 10 into pairs in more than one way, e.g., by using objects or drawings, and record each decomposition by a drawing or equation (e.g., $5 = 2 + 3$ and $5 = 4 + 1$). ■ Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted.	1 day
Lesson 13.5 Make 10 from a Given Number	■ For any number from 1 to 9, find the number that makes 10 when added to the given number, e.g., by using objects or drawings, and record the answer with a drawing or equation.	1 day

Lesson	Mathematics Standards, Grade K	Pacing
UNIT 3 GEOMETRY		
Module 14: Analyze and Compare Three-Dimensional Shapes		
Lesson 14.1 Identify and Describe Spheres	○ Correctly name shapes regardless of their orientations or overall size. ○ Identify shapes as two-dimensional (lying in a plane, "flat") or three-dimensional ("solid"). □ Analyze and compare two- and three-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts (e.g., number of sides and vertices/"corners") and other attributes (e.g., having sides of equal length).	1 day
Lesson 14.2 Identify and Describe Cubes	○ Correctly name shapes regardless of their orientations or overall size. ○ Identify shapes as two-dimensional (lying in a plane, "flat") or three-dimensional ("solid"). □ Analyze and compare two- and three-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts (e.g., number of sides and vertices/"corners") and other attributes (e.g., having sides of equal length).	1 day
Lesson 14.3 Identify and Describe Cylinders	○ Correctly name shapes regardless of their orientations or overall size. ○ Identify shapes as two-dimensional (lying in a plane, "flat") or three-dimensional ("solid"). □ Analyze and compare two- and three-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts (e.g., number of sides and vertices/"corners") and other attributes (e.g., having sides of equal length).	1 day
Lesson 14.4 Identify and Describe Cones	○ Correctly name shapes regardless of their orientations or overall size. ○ Identify shapes as two-dimensional (lying in a plane, "flat") or three-dimensional ("solid"). □ Analyze and compare two- and three-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts (e.g., number of sides and vertices/"corners") and other attributes (e.g., having sides of equal length).	1 day
Lesson 14.5 Build Shapes	□ Model shapes in the world by building shapes from components (e.g., sticks and clay balls) and drawing shapes.	1 day
Module 15: Describe Positions of Objects		
Lesson 15.1 Use *Above* and *Below* to Describe Position	○ Describe objects in the environment using names of shapes, and describe the relative positions of these objects using terms such as *above, below, beside, in front of, behind,* and *next to.*	1 day
Lesson 15.2 Use *Next To* and *Beside* to Describe Position	○ Describe objects in the environment using names of shapes, and describe the relative positions of these objects using terms such as *above, below, beside, in front of, behind,* and *next to.*	1 day

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Lesson	Mathematics Standards, Grade K	Pacing
Module 15: Describe Positions of Objects		
Lesson 15.3 Use *In Front Of* and *Behind* to Describe Position	○ Describe objects in the environment using names of shapes, and describe the relative positions of these objects using terms such as *above, below, beside, in front of, behind,* and *next to*.	1 day
Module 16: Analyze and Compare Two-Dimensional Shapes		
Lesson 16.1 Identify and Describe Circles	○ Correctly name shapes regardless of their orientation or overall size. ☐ Analyze and compare two- and three-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts (e.g., number of sides and vertices/"corners") and other attributes (e.g., having sides of equal length). ☐ Model shapes in the world by building shapes from components (e.g., sticks and clay balls) and drawing shapes.	1 day
Lesson 16.2 Identify and Describe Squares	○ Correctly name shapes regardless of their orientation or overall size. ☐ Analyze and compare two- and three-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts (e.g., number of sides and vertices/"corners") and other attributes (e.g., having sides of equal length). ☐ Model shapes in the world by building shapes from components (e.g., sticks and clay balls) and drawing shapes.	1 day
Lesson 16.3 Identify and Describe Triangles	○ Correctly name shapes regardless of their orientation or overall size. ☐ Analyze and compare two- and three-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts (e.g., number of sides and vertices/"corners") and other attributes (e.g., having sides of equal length). ☐ Model shapes in the world by building shapes from components (e.g., sticks and clay balls) and drawing shapes.	1 day
Lesson 16.4 Identify and Describe Rectangles	○ Correctly name shapes regardless of their orientation or overall size. ☐ Analyze and compare two- and three-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts (e.g., number of sides and vertices/"corners") and other attributes (e.g., having sides of equal length).	1 day
Lesson 16.5 Identify and Describe Hexagons	○ Correctly name shapes regardless of their orientation or overall size. ☐ Analyze and compare two- and three-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts (e.g., number of sides and vertices/"corners") and other attributes (e.g., having sides of equal length).	1 day
Lesson 16.6 Compose Simple Shapes	☐ Compose simple shapes to form larger shapes.	1 day

Lesson	Mathematics Standards, Grade K	Pacing
○ Lesson 16.7 Compare Two-Dimensional and Three-Dimensional Shapes	○ Identify shapes as two-dimensional (lying in a plane, "flat") or three-dimensional ("solid").	1 day
	☐ Analyze and compare two- and three-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts (e.g., number of sides and vertices/"corners") and other attributes (e.g., having sides of equal length).	

Unit 4   NUMBER AND OPERATIONS IN BASE TEN

Module 17:   Place Value Foundations: Represent Numbers to 20

Lesson	Mathematics Standards, Grade K	Pacing
Lesson 17.1 Compose Ten Ones and Some More Ones to 14	■ Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted.	1 day
	■ Count to answer "how many?" questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1–20, count out that many objects.	
	■ Compose and decompose numbers from 11 to 19 into ten ones and some further ones, e.g., by using objects or drawings, and record each composition or decomposition by a drawing or equation (e.g., $18 = 10 + 8$); understand that these numbers are composed of ten ones and one, two, three, four, five, six, seven, eight, or nine ones.	
Lesson 17.2 Compose Ten Ones and Some More Ones to 15	■ Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted.	1 day
	■ Count to answer "how many?" questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1–20, count out that many objects.	
	■ Compose and decompose numbers from 11 to 19 into ten ones and some further ones, e.g., by using objects or drawings, and record each composition or decomposition by a drawing or equation (e.g., $18 = 10 + 8$); understand that these numbers are composed of ten ones and one, two, three, four, five, six, seven, eight, or nine ones.	

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Lesson	Mathematics Standards, Grade K	Pacing
Module 17: **Place Value Foundations: Represent Numbers to 20**		
Lesson 17.3 Compose Ten Ones and Some More Ones to 19	■ Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted. ■ Count to answer "how many?" questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1–20, count out that many objects. ■ Compose and decompose numbers from 11 to 19 into ten ones and some further ones, e.g., by using objects or drawings, and record each composition or decomposition by a drawing or equation (e.g., $18 = 10 + 8$); understand that these numbers are composed of ten ones and one, two, three, four, five, six, seven, eight, or nine ones.	1 day
Lesson 17.4 Represent Numbers to 20	■ Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted. ■ Count to answer "how many?" questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1–20, count out that many objects. ■ Compose and decompose numbers from 11 to 19 into ten ones and some further ones, e.g., by using objects or drawings, and record each composition or decomposition by a drawing or equation (e.g., $18 = 10 + 8$); understand that these numbers are composed of ten ones and one, two, three, four, five, six, seven, eight, or nine ones.	1 day
Module 18: **Place Value Foundations: Represent Numbers to 20 with a Written Numeral**		
Lesson 18.1 Count and Write 11 to 14	■ Compose and decompose numbers from 11 to 19 into ten ones and some further ones, e.g., by using objects or drawings, and record each composition or decomposition by a drawing or equation (e.g., $18 = 10 + 8$); understand that these numbers are composed of ten ones and one, two, three, four, five, six, seven, eight, or nine ones. ■ Write numbers from 0 to 20. Represent a number of objects with a written numeral 0–20 (with 0 representing a count of no objects).	1 day
Lesson 18.2 Count and Write 15	■ Compose and decompose numbers from 11 to 19 into ten ones and some further ones, e.g., by using objects or drawings, and record each composition or decomposition by a drawing or equation (e.g., $18 = 10 + 8$); understand that these numbers are composed of ten ones and one, two, three, four, five, six, seven, eight, or nine ones. ■ Write numbers from 0 to 20. Represent a number of objects with a written numeral 0–20 (with 0 representing a count of no objects).	1 day

Lesson	Mathematics Standards, Grade K	Pacing
○ Lesson 18.3 Count and Write 16 to 19	■ Compose and decompose numbers from 11 to 19 into ten ones and some further ones, e.g., by using objects or drawings, and record each composition or decomposition by a drawing or equation (e.g., $18 = 10 + 8$); understand that these numbers are composed of ten ones and one, two, three, four, five, six, seven, eight, or nine ones. ■ Write numbers from 0 to 20. Represent a number of objects with a written numeral 0–20 (with 0 representing a count of no objects).	1 day
○ Lesson 18.4 Count and Write 20	■ Write numbers from 0 to 20. Represent a number of objects with a written numeral 0–20 (with 0 representing a count of no objects). ■ Count to answer "how many?" questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1–20, count out that many objects.	1 day
Unit 5 MEASUREMENT		
Module 19: Length and Height		
Lesson 19.1 Describe Attributes of Length and Height	○ Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object.	1 day
Lesson 19.2 Compare and Describe Lengths	○ Directly compare two objects with a measurable attribute in common, to see which object has "more of"/"less of" the attribute, and describe the difference.	1 day
Lesson 19.3 Compare and Describe Heights	○ Directly compare two objects with a measurable attribute in common, to see which object has "more of"/"less of" the attribute, and describe the difference.	1 day
Module 20: Weight		
Lesson 20.1 Describe Attributes of Weight	○ Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object.	1 day
Lesson 20.2 Compare and Describe Weights	○ Directly compare two objects with a measurable attribute in common, to see which object has "more of"/"less of" the attribute, and describe the difference.	1 day
Lesson 20.3 Describe More Than One Attribute of an Object	○ Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object.	1 day

End-of-Year Options

Getting Ready Lessons

A variety of end-of-year options are available for teachers who aim to complete core instruction before a high-stakes assessment is administered. Utilizing standards reports or the recommendations tool, you can find and review content that students did not master or retain. Or, you can use the Getting Ready lessons. These lessons present on-grade-level content that is essential for setting a foundation for success with next year's content.

The Getting Ready lessons include teacher support and student assessments.

Corrections

Standards and Mathematical Practices and Processes

Standards	Student Edition Lessons
Domain COUNTING AND CARDINALITY	
Cluster: Know number names and the count sequence.	
Count to 100 by ones and by tens.	9.1, 9.2
Count forward beginning from a given number within the known sequence (instead of having to begin at 1).	9.3
Write numbers from 0 to 20. Represent a number of objects with a written numeral 0–20 (with 0 representing a count of no objects).	2.1, 2.2, 2.3, 2.4, 8.1, 8.2, 8.3, 18.1, 18.2, 18.3, 18.4
Cluster: Count to tell the number of objects.	
Understand the relationship between numbers and quantities; connect counting to cardinality.	
• When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object.	1.1, 1.2, 1.3, 1.4, 2.1, 2.2, 2.3, 2.4, 2.5, 7.1, 7.2, 7.3, 8.1, 8.2, 8.3, 8.4
• Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted.	1.5, 2.2, 2.3, 2.4, 8.1, 8.2, 8.3, 13.1, 13.2, 13.3, 13.4, 17.1, 17.2, 17.3, 17.4
• Understand that each successive number name refers to a quantity that is one larger.	2.5, 8.4, 10.1
Count to answer "how many?" questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1–20, count out that many objects.	1.1, 1.2, 1.3, 1.4, 7.1, 7.2, 7.3, 17.1, 17.2, 17.3, 17.4, 18.4
Cluster: Compare numbers.	
Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies.	3.1, 3.2, 3.3, 3.4, 3.5, 10.1, 10.2, 10.3, 10.4, 10.5
Compare two numbers between 1 and 10 presented as written numerals.	3.6, 10.6
Domain OPERATIONS AND ALGEBRAIC THINKING	
Cluster: Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.	
Represent addition and subtraction with objects, fingers, mental images, drawings, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations.	5.1, 5.2, 5.3, 5.4, 5.5, 5.6, 6.1, 6.2, 6.3, 6.4, 6.5, 6.6, 11.1, 11.2, 11.3, 11.4, 11.5, 11.6, 11.7, 12.1, 12.2, 12.3, 12.4, 12.5
Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.	5.1, 5.2, 5.3, 5.4, 5.5, 5.6, 5.7, 6.1, 6.2, 6.3, 6.4, 6.5, 6.6, 6.7, 11.1, 11.2, 11.3, 11.4, 11.5, 11.6, 11.7, 12.1, 12.2, 12.3, 12.4, 12.5

Correlations

Standards	Student Edition Lessons
Decompose numbers less than or equal to 10 into pairs in more than one way, e.g., by using objects or drawings, and record each decomposition by a drawing or equation (e.g., $5 = 2 + 3$ and $5 = 4 + 1$).	1.5, 13.1, 13.2, 13.3, 13.4
For any number from 1 to 9, find the number that makes 10 when added to the given number, e.g., by using objects or drawings, and record the answer with a drawing or equation.	13.5
Fluently add and subtract within 5.	5.7, 6.7
Domain NUMBER AND OPERATIONS IN BASE TEN	
Cluster: Work with numbers 11–19 to gain foundations for place value.	
Compose and decompose numbers from 11 to 19 into ten ones and some further ones, e.g., by using objects or drawings, and record each composition or decomposition by a drawing or equation (e.g., $18 = 10 + 8$); understand that these numbers are composed of ten ones and one, two, three, four, five, six, seven, eight, or nine ones.	17.1, 17.2, 17.3, 17.4, 18.1, 18.2, 18.3
Domain MEASUREMENT AND DATA	
Cluster: Describe and compare measurable attributes.	
Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object.	19.1, 20.1, 20.3
Directly compare two objects with a measurable attribute in common, to see which object has "more of"/"less of" the attribute, and describe the difference.	19.2, 19.3, 20.2
Cluster: Classify objects and count the number of objects in each category.	
Classify objects into given categories; count the numbers of objects in each category and sort the categories by count.	4.1, 4.2, 4.3, 4.4
Domain GEOMETRY	
Cluster: Identify and describe shapes.	
Describe objects in the environment using names of shapes, and describe the relative positions of these objects using terms such as *above, below, beside, in front of, behind,* and *next to.*	15.1, 15.2, 15.3
Correctly name shapes regardless of their orientations or overall size.	14.1, 14.2, 14.3, 14.4, 16.1, 16.2, 16.3, 16.4, 16.5
Identify shapes as two-dimensional (lying in a plane, "flat"), or three-dimensional ("solid").	14.1, 14.2, 14.3, 14.4, 16.7
Cluster: Analyze, compare, create, and compose shapes.	
Analyze and compare two- and three-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts (e.g., number of sides and vertices/"corners") and other attributes (e.g., having sides of equal length).	14.1, 14.2, 14.3, 14.4, 16.1, 16.2, 16.3, 16.4, 16.5, 16.7

Standards	Student Edition Lessons
Model shapes in the world by building shapes from components (e.g., sticks and clay balls) and drawing shapes.	14.5, 16.1, 16.2, 16.3
Compose simple shapes to form larger shapes.	16.6

Correlations

Mathematical Practices and Processes	Student Edition Lessons
Into Math covers all Mathematical Practice and Process standards as an integral part of instruction and practice. For a summary of how the program features address each Mathematical Practice and Process standard see PG18-PG19. These pages include probing *Questions to Ask* that support each Mathematical Practice and Process standard.	
Make sense of problems and persevere in solving them. Mathematically proficient students start by explaining to themselves the meaning of a problem and looking for entry points to its solution. They analyze givens, constraints, relationships, and goals. They make conjectures about the form and meaning of the solution and plan a solution pathway rather than simply jumping into a solution attempt. They consider analogous problems, and try special cases and simpler forms of the original problem in order to gain insight into its solution. They monitor and evaluate their progress and change course if necessary. Older students might, depending on the context of the problem, transform algebraic expressions or change the viewing window on their graphing calculator to get the information they need. Mathematically proficient students can explain correspondences between equations, verbal descriptions, tables, and graphs or draw diagrams of important features and relationships, graph data, and search for regularity or trends. Younger students might rely on using concrete objects or pictures to help conceptualize and solve a problem. Mathematically proficient students check their answers to problems using a different method, and they continually ask themselves, "Does this make sense?" They can understand the approaches of others to solving complex problems and identify correspondences between different approaches.	In every lesson. Some examples include 2.1, 3.4, 4.2, 6.5, 10.5, 14.1, 17.2, 19.2, 20.3
Reason abstractly and quantitatively. Mathematically proficient students make sense of quantities and their relationships in problem situations. They bring two complementary abilities to bear on problems involving quantitative relationships: the ability to *decontextualize*—to abstract a given situation and represent it symbolically and manipulate the representing symbols as if they have a life of their own, without necessarily attending to their referents—and the ability to *contextualize*, to pause as needed during the manipulation process in order to probe into the referents for the symbols involved. Quantitative reasoning entails habits of creating a coherent representation of the problem at hand; considering the units involved; attending to the meaning of quantities, not just how to compute them; and knowing and flexibly using different properties of operations and objects.	1.1, 1.2, 1.3, 1.4, 1.5, 2.1, 2.2, 2.3, 2.4, 3.1, 3.2, 3.4, 3.5, 4.1, 4.2, 4.3, 4.4, 5.1, 5.2, 5.5, 5.6, 5.7, 6.1, 6.2, 6.3, 6.4, 6.5, 6.6, 6.7, 7.1, 7.2, 7.3, 8.1, 8.2, 8.3, 8.4, 10.1, 10.2, 10.3, 10.4, 10.5, 10.6, 11.5, 11.7, 12.2, 12.3, 12.4, 12.5, 13.1, 13.2, 13.3, 13.4, 17.1, 17.2, 17.3, 17.4, 18.1, 18.2, 18.3, 18.4, 19.2, 19.3
Construct viable arguments and critique the reasoning of others. Mathematically proficient students understand and use stated assumptions, definitions, and previously established results in constructing arguments. They make conjectures and build a logical progression of statements to explore the truth of their conjectures. They are able to analyze situations by breaking them into cases, and can recognize and use counterexamples. They justify their conclusions, communicate them to others, and respond to the arguments of others. They reason inductively about data, making plausible arguments that take into account the context from which the data arose. Mathematically proficient students are also able to compare the effectiveness of two plausible arguments, distinguish correct logic or reasoning from that which is flawed, and—if there is a flaw in an argument—explain what it is. Elementary students can construct arguments using concrete referents such as objects, drawings, diagrams, and actions. Such arguments can make sense and be correct, even though they are not generalized or made formal until later grades. Later, students learn to determine domains to which an argument applies. Students at all grades can listen or read the arguments of others, decide whether they make sense, and ask useful questions to clarify or improve the arguments.	19.1, 19.2, 19.3, 20.1, 20.2, 20.3

Mathematical Practices and Processes	Student Edition Lessons
Model with mathematics. Mathematically proficient students can apply the mathematics they know to solve problems arising in everyday life, society, and the workplace. In early grades, this might be as simple as writing an addition equation to describe a situation. In middle grades, a student might apply proportional reasoning to plan a school event or analyze a problem in the community. By high school, a student might use geometry to solve a design problem or use a function to describe how one quantity of interest depends on another. Mathematically proficient students who can apply what they know are comfortable making assumptions and approximations to simplify a complicated situation, realizing that these may need revision later. They are able to identify important quantities in a practical situation and map their relationships using such tools as diagrams, two-way tables, graphs, flowcharts and formulas. They can analyze those relationships mathematically to draw conclusions. They routinely interpret their mathematical results in the context of the situation and reflect on whether the results make sense, possibly improving the model if it has not served its purpose.	5.3, 5.4, 5.5, 5.6, 5.7, 6.4, 6.5, 6.7, 11.1, 11.2, 11.3, 11.4, 11.5, 11.6, 11.7, 12.1, 12.5, 13.5
Use appropriate tools strategically. Mathematically proficient students consider the available tools when solving a mathematical problem. These tools might include pencil and paper, concrete models, a ruler, a protractor, a calculator, a spreadsheet, a computer algebra system, a statistical package, or dynamic geometry software. Proficient students are sufficiently familiar with tools appropriate for their grade or course to make sound decisions about when each of these tools might be helpful, recognizing both the insight to be gained and their limitations. For example, mathematically proficient high school students analyze graphs of functions and solutions generated using a graphing calculator. They detect possible errors by strategically using estimation and other mathematical knowledge. When making mathematical models, they know that technology can enable them to visualize the results of varying assumptions, explore consequences, and compare predictions with data. Mathematically proficient students at various grade levels are able to identify relevant external mathematical resources, such as digital content located on a website, and use them to pose or solve problems. They are able to use technological tools to explore and deepen their understanding of concepts.	In every Spark Your Learning, Module Review, and the following lessons: 2.5, 3.1, 3.2, 4.1, 4.2, 4.3, 6.1, 6.2, 6.4, 7.3, 8.4, 11.1, 11.2, 11.3, 11.4, 11.6, 12.2, 12.3, 12.4, 14.5

Correlations

Mathematical Practices and Processes	Student Edition Lessons
Attend to precision. Mathematically proficient students try to communicate precisely to others. They try to use clear definitions in discussion with others and in their own reasoning. They state the meaning of the symbols they choose, including using the equal sign consistently and appropriately. They are careful about specifying units of measure, and labeling axes to clarify the correspondence with quantities in a problem. They calculate accurately and efficiently, express numerical answers with a degree of precision appropriate for the problem context. In the elementary grades, students give carefully formulated explanations to each other. By the time they reach high school they have learned to examine claims and make explicit use of definitions.	1.1, 1.2, 1.3, 1.4, 2.1, 2.2, 2.3, 2.4, 3.3, 3.4, 3.5, 3.6, 4.4, 6.3, 9.3, 10.1, 10.2, 10.3, 10.5, 11.5, 13.5, 14.1, 14.2, 14.3, 14.4, 14.5, 15.1, 15.2, 15.3, 16.1, 16.2, 16.3,16.4, 16.5, 16.6, 16.7, 17.1, 17.2, 17.3, 17.4, 18.4, 19.1, 19.2, 20.1, 20.2, 20.3
Look for and make use of structure. Mathematically proficient students look closely to discern a pattern or structure. Young students, for example, might notice that three and seven more is the same amount as seven and three more, or they may sort a collection of shapes according to how many sides the shapes have. Later, students will see 7×8 equals the well remembered $7 \times 5 + 7 \times 3$, in preparation for learning about the distributive property. In the expression $x^2 + 9x + 14$, older students can see the 14 as 2×7 and the 9 as $2 + 7$. They recognize the significance of an existing line in a geometric figure and can use the strategy of drawing an auxiliary line for solving problems. They also can step back for an overview and shift perspective. They can see complicated things, such as some algebraic expressions, as single objects or as being composed of several objects. For example, they can see $5 - 3(x - y)^2$ as 5 minus a positive number times a square and use that to realize that its value cannot be more than 5 for any real numbers x and y.	1.5, 2.5, 3.3, 9.1, 9.2, 9.3, 13.1, 13.2, 13.3, 13.4, 13.5, 14.4, 16.2, 16.3, 16.4, 16.5, 16.6, 16.7, 18.1, 18.2, 18.3, 18.4
Look for and express regularity in repeated reasoning. Mathematically proficient students notice if calculations are repeated, and look both for general methods and for shortcuts. Upper elementary students might notice when dividing 25 by 11 that they are repeating the same calculations over and over again, and conclude they have a repeating decimal. By paying attention to the calculation of slope as they repeatedly check whether points are on the line through (1, 2) with slope 3, middle school students might abstract the equation $(y - 2)/(x - 1) = 3$. Noticing the regularity in the way terms cancel when expanding $(x - 1)(x + 1)$, $(x - 1)(x^2 + x + 1)$, and $(x - 1)(x^3 + x^2 + x + 1)$ might lead them to the general formula for the sum of a geometric series. As they work to solve a problem, mathematically proficient students maintain oversight of the process, while attending to the details. They continually evaluate the reasonableness of their intermediate results.	3.6, 9.2, 12.1, 13.4

Teacher Notes

Notes & Reflections

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Problem Solving Structures

Introducing Students to a Variety of Structures

We all want the same for students, to be independent problem solvers and thinkers. The types of problems we provide and the way we present them can ultimately support or hinder students. Most students are not given the opportunity to truly reason with a variety of word problems. Rather, students are often given problems that closely resemble the first problem below. The problem contains two numbers that you act upon in some way. The answer to the problem is unknown. However, students should be exposed to problems that have the start or the change unknown as well.

Let's consider these two problems:

- Anna has 7 books checked out from the library. She returns 4 books. How many books does Anna still have to return?
- Anna reads 7 books, and Jon reads 4 books. How many more books does Anna read than Jon?

Both problems could be solved using the equation $7 - 4 =$ _____. However, as students begin to translate story problems, the context of these problems varies quite a bit. The first can be considered a "take away" problem and the second a "compare" problem. If we always refer to subtraction as "take away," then we are removing the true context of the mathematics that exists in the world around us.

Various problem structures exist for addition, subtraction, multiplication, and division. Students do not need to be able to identify these structures, but it's important that teachers know the variety of structures and expose students to them.

Don't Steal the Struggle

The context within word problems helps to support mathematical thinking. Many teachers may shy away from problem solving, seeing it as more complex than a "numbers only" problem. However, students do not need to master the skill of computation in order to solve problems. In fact, the context used in problem solving can often help students make sense of the numbers, making the students more successful.

When introducing a word problem, don't be tempted to model a similar problem first and then give students a problem that simply contains different numbers. This results in stealing the students' struggle and takes away the opportunity for thinking and reasoning. Moreover, students should be encouraged to solve problems using whatever strategy or technique that they wish. It is also important to note that teachers should not teach "key words" to students as a system of support for students. Students are often told that words like "altogether" and "in all" are supposed to signal to students that they are to add, while words like "how many more" mean they are to subtract. However, key words can lead students to choose the wrong operation. Teaching key words takes away the thinking and sends the message that there is no reasoning necessary—that math is just about numbers and is not even a part of our real life. What is most important is their reasoning and why they chose to solve it in the way they did. The strategies used by students provide teachers with a great deal of information about where a student is and where to go next with him or her.

Addition and Subtraction Problem Situations—Add To/Take From

Add To/Take From problems have three components. There is an initial quantity—the **start**. The **change** is the action upon that initial quantity. The outcome of the action upon the initial quantity is the **result**.

	RESULT UNKNOWN	INTO MATH EXAMPLES
ADD TO	A problem in which the **start** and **change** (what is *added to* the start) are given in the problem. The **result** (the outcome of performing the action) of the change is not known and is what the students determine.	**3** Two birds are sitting on a branch. One more bird flies in to join them. How many birds are sitting on the branch now? $2 + 1 = \square$ Example from Lesson 5.3, Problem 3 • Additional Lessons 5.1, 5.7, 11.1
TAKE FROM	A problem in which the **start** and **change** (what is *taken from* the start) are given in the problem. The **result** (the outcome of performing the action) of the change is not known and is what the students determine.	**3** Two kittens are playing in some leaves. One kitten goes to sleep. How many kittens are still playing in the leaves? $2 - 1 = \square$ Example from Lesson 5.4, Problem 3 • Additional Lessons 5.7, 11.2, 11.7

Problem Types

Addition and Subtraction Problem Situations—Add To/Take From

Add To/Take From problems have three components. There is an initial quantity—the **start**. The **change** is the action upon that initial quantity. The outcome of the action upon the initial quantity is the **result**.

	CHANGE UNKNOWN	INTO MATH EXAMPLES
ADD TO	A problem in which the **start** and **result** (the outcome of the performing action) are given in the problem. The **change** (what is added to the start) is not known and is what the students determine.	**7** There are two lions. Then some lions join them. There are four lions now. How many lions joined them? $2 + \square = 4$ Example from Lesson 5.5, Problem 7 • Additional Lesson 5.5
TAKE FROM	A problem in which the **start** and **result** (the outcome of the performing action) are given in the problem. The **change** (what is taken from the start) is not known and is what the students determine.	**7** Three horses are grazing in a field. Some horses leave. One horse is grazing now. How many horses leave? $3 - \square = 1$ Example from Lesson 5.6, Problem 7 • Additional Lesson 5.6

Addition and Subtraction Problem Situations—Put Together/Take Apart

In a *Put Together/Take Apart* problem, both quantities are already present. Unlike an *Add To/Take From* problem, these problems do not involve a change in the situation. The **total** is unknown or one or both of the **quantities** (or **groups**) are unknown.

PUT TOGETHER/ TAKE APART	**TOTAL UNKNOWN**	***INTO MATH* EXAMPLES**
	A problem in which the **two groups/quantities** are known. The **total** is not known and is what the students determine.	There are seven orange flowers and three yellow flowers in the field. How many total flowers are there? $7 + 3 = \square$ Example from Lesson 12.1, Problem 5 • Additional Lessons 6.3, 6.7, 12.3
	ADDEND UNKNOWN	***INTO MATH* EXAMPLES**
	A problem in which **one of the two groups/quantity** is known and the **total** is also known. The **other group/quantity** is not known and is what the students determine.	There are four toys on the floor. Two are toy cars and the rest are toy planes. How many toys are planes? $4 - \square = 2$ Example from Lesson 6.4, Problem 7 • Additional Lessons 12.2, 12.4, 12.5

Teacher Notes

Notes & Reflections

Notes & Reflections

Differentiated Support Using *Do The Math*

Do The Math can be implemented with *Into Math* core instruction during the Differentiated Options block or as a separate instruction block. Depending on student level, *Do The Math* instruction can be provided as Tier 1, 2, or 3 support.

Do The Math as Tier 1 Support *Do The Math* Addition & Subtraction modules provide Tier 1 supports for the following **Kindergarten** skills as shown in the table below.

Kindergarten Skills	Addition & Subtraction Modules			
	Number Core	A	B	C
Understand addition as joining.	X			
Represent addition with objects, fingers, mental images, drawings, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations.	X	X		
Record each composition for a number from 11 to 19 from ones by a drawing or equation (e.g., 18 = 10 + 8).	X			
For any number from 1 to 9, find the number that makes 10 when added to the given number.	X	X		
Fluently add within 5.	X			
Compose numbers from 11 to 19 from ten ones and some further ones.	X	X		
Understand that 10 ones is 1 ten.	X	X		
Add within 10.	X	X		
Solve addition word problems within 10.	X	X		
Understand subtraction as taking away.	X			
Represent subtraction with objects, fingers, mental image, drawings, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations.	X			
Fluently subtract within 5.	X			
Subtract within 10.	X			
Solve subtraction word problems with 10.	X			

> More information on implementation models, Tiered recommendations, and additional lessons that connect to core content are provided in the *Do The Math* Core Connections Guide, included in the *Do The Math* Teacher Bookcase.

Manipulatives and Tools

Into Math provides opportunities for students to choose manipulatives and tools to help them make sense of mathematics and connect to mathematical representations. Giving students the opportunity to choose a manipulative or tool for a task provides a teacher insight into students' understanding of connections they are making with prior learning.

The tables below will help you plan which manipulatives and tools to have available for students during lesson instruction.

● Manipulative Kit   ● Basic Manipulative Kit   ● Teacher Resource Masters

Module	Manipulatives and Tools by Lesson
Module 1: Represent Numbers to 5 with Objects	● ● **connecting cubes** Lessons 1.1–1.5 ● ● **two-color counters** Lessons 1.1–1.5
Module 2: Represent Numbers to 5 with a Written Numeral	● ● **connecting cubes** Lessons 2.1–2.3, 2.5 ● ● **two-color counters** Lessons 2.1–2.3, 2.5
Module 3: Matching and Counting Numbers to 5	● ● **connecting cubes** Lessons 3.1–3.6 ● ● **two-color counters** Lessons 3.1–3.6
Module 4: Classify, Count, and Sort Objects	● ● **connecting cubes** Lessons 4.1, 4.2, and 4.4 ● ● **plane shapes** Lessons 4.2 and 4.4 ● ● **two-color counters** Lessons 4.1 and 4.3
Module 5: Add To and Take From Within 5	● ● **connecting cubes** Lessons 5.1, 5.3–5.7 ● ● **two-color counters** Lessons 5.1–5.7
Module 6: Put Together and Take Apart Within 5	● ● **connecting cubes** Lessons 6.1–6.6 ● **Dominoes** Lesson 6.5–6.6 ● **Dot Cards** Lessons 6.5–6.6 ● **Dot Plates** Lessons 6.5–6.6 ● ● **two-color counters** Lessons 6.1–6.6
Module 7: Represent Numbers 6 to 10 with Objects	● ● **connecting cubes** Lessons 7.1–7.3 ● **Ten Frames** Lessons 7.1–7.3 ● ● **two-color counters** Lessons 7.1–7.3
Module 8: Represent Numbers 6 to 10 with a Written Numeral	● ● **connecting cubes** Lesson 8.4 ● ● **pattern blocks** Lesson 8.3 ● ● **two-color counters** Lessons 8.1–8.4

Manipulatives and Tools

● Manipulative Kit   ● Basic Manipulative Kit   ● Teacher Resource Masters

Module	Manipulatives and Tools by Lesson
Module 9: Use the Count Sequence to Count to 100	● **Corn Maze Puzzle** Lesson 9.1 ● **Count by Tens Puzzle** Lesson 9.2
Module 10: Compare Numbers to 10	● ● **connecting cubes** Lessons 10.1–10.5 ● ● **two-color counters** Lessons 10.1–10.5
Module 11: Add To and Take From Within 10	● ● **connecting cubes** Lessons 11.1–11.6 ● ● **two-color counters** Lessons 11.1–11.6
Module 12: Put Together and Take Apart Within 10	● ● **connecting cubes** Lessons 12.1–12.4 ● ● **two-color counters** Lessons 12.1–12.4
Module 13: Ways to Make Numbers to 10	● ● **connecting cubes** Lessons 13.1–13.5 ● ● **two-color counters** Lessons 13.1–13.5
Module 14: Analyze and Compare Three-Dimensional Shapes	● **Cone Pattern** Lesson 14.4 ● **Cube Pattern** Lesson 14.2 ● **Cylinder Pattern** Lesson 14.3 ● **solid shapes** Lessons 14.1–14.5
Module 15: Describe Positions of Objects	● **solid shapes** Lessons 15.1–15.3
Module 16: Analyze and Compare Two-Dimensional Shapes	● **Pattern Blocks** Lesson 16.6 ● ● **plane shapes** Lessons 16.1, 16.2, and 16.7 ● **Semantic Map** Lesson 16.1
Module 17: Place Value Foundations: Represent Numbers to 20	● ● **connecting cubes** Lessons 17.1–17.4 ● ● **two-color counters** Lessons 17.1–17.3
Module 18: Place Value Foundations: Represent Numbers to 20 with a Written Numeral	● ● **connecting cubes** Lessons 18.1–18.4 ● **Ten Frames** Lessons 18.1–18.4 ● ● **two-color counters** Lessons 18.1–18.4

Unit 1 Performance Assessment

Count on It

Task Summary The Unit 1 Performance Assessment will have students:

- Write numbers from 0 to 5 and count objects in successive order.
- Represent a number of objects with a written numeral from 0 to 5.
- Solve addition and subtraction word problems.
- Understand that each successive number refers to one larger.
- Compare two numbers between 1 and 5.
- Classify objects into given categories.

If students encounter difficulties in completing any of the tasks, use the information below to aid in interpreting student performance and to identify suggestions for follow-up and intervention.

Item	Content Focus	DOK	Intervene with
1	Write numerals from 0 to 20. Represent a number of objects with a written numeral 0–20.	1	Reteach 2.1 Reteach 2.2 Reteach 2.4
2	Classify objects into given categories.	1	Reteach 4.2
3	Represent addition with equations.	2	Reteach 5.5
4	Represent subtraction with equations.	2	Reteach 5.6

Additional teacher support and a scoring rubric can be found in your Assessment Guide.

Unit 2 Performance Assessment

Ella's Collage
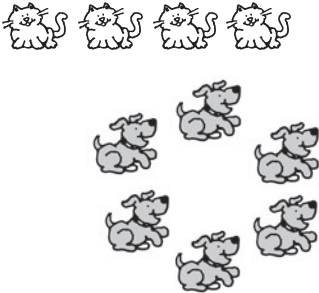
Task Summary The Unit 2 Performance Assessment will have students:

- Write numbers from 0 to 10.
- Count to answer "how many?" questions about as many as 10 things arranged in a rectangular array or a circle.
- Identify whether the number of objects in one group is greater than the number of objects in another group.
- Represent addition with equations and solve addition word problems.

If students encounter difficulties in completing any of the tasks, use the information below to aid in interpreting student performance and to identify suggestions for follow-up and intervention.

Item	Content Focus	DOK	Intervene with
1	Solve addition word problems within 10.	2	Reteach 6.3
2	Add within 10 to solve problems with both addends unknown.	2	Reteach 13.2 Reteach 13.3 Reteach 13.4
3	Count to answer "how many?" questions about as many as 20 things.	2	Reteach 7.4
4	Compare two numbers between 1 and 10 presented as written numerals.	2	Reteach 10.6
5	Count to 100 by ones.	1	Reteach 9.1

Additional teacher support and a scoring rubric can be found in your Assessment Guide.

Unit 3 Performance Assessment

Shape Safari

Task Summary The Unit 3 Performance Assessment will have students:
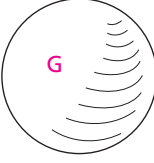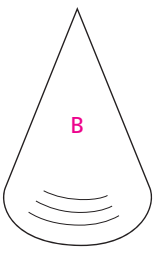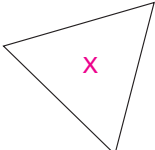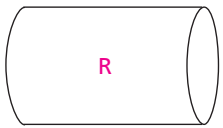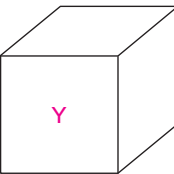
- Describe objects in the environment using names of shapes, and describe the relative positions of these objects.
- Correctly name shapes regardless of their orientations or overall size.
- Analyze and compare two- and three-dimensional shapes.
- Compose simple shapes to form larger shapes.

If students encounter difficulties in completing any of the tasks, use the information below to aid in interpreting student performance and to identify suggestions for follow-up and intervention.

Item	Content Focus	DOK	Intervene with
1	Correctly name shapes regardless of their orientation or overall size.	1	Reteach 14.1
2	Describe the relative positions of shapes.	2	Reteach 15.1
3	Analyze and compare two-dimensional shapes.	2	Reteach 16.1 Reteach 16.3
4	Compose simple shapes to form larger shapes.	2	Reteach 16.6

Additional teacher support and a scoring rubric can be found in your Assessment Guide.

Unit 4 Performance Assessment

Buttons and Flowers

Task Summary The Unit 4 Performance Assessment will have students:
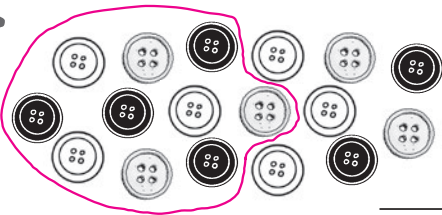
- Write numbers from 0 to 20.
- Represent a number of objects with a written numeral.
- Compose and decompose numbers from 11 to 19 into ten ones and some further ones.
- Understand that these numbers are composed of ten ones and one, two, three, four, five, six, seven, eight, or nine ones.

Name _____

Unit 4
Performance Task

Buttons and Flowers
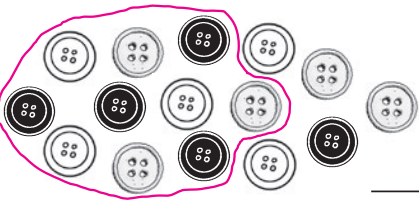
1

Possible grouping of ten is shown.

17

2

Possible grouping of ten is shown.

15

Directions:
Yoshi and Neela collect buttons.
1–2. For each set, circle 10 buttons, count how many in all, and write the number.

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Unit 4
Performance Task

Name _____

3

14   Possible answer:

4

Possible answer. Check children's drawings.

5 $10 + 4 = 14$

Directions:
3. Yoshi and Neela are picking flowers. They pick more than 10 flowers but no more than 19 flowers. Write a number that could be the number of flowers they pick. **4.** Place counters in the ten frames to show that number. Draw the counters. **5.** Complete the number sentence to show how to make that number.

Kindergarten • Unit 4 • Performance Task   139

If students encounter difficulties in completing any of the tasks, use the information below to aid in interpreting student performance and to identify suggestions for follow-up and intervention.

Item	Content Focus	DOK	Intervene with
1	Write numbers from 0 to 20. Represent a number of objects with a written numeral 0–20.	1	Reteach 18.3 Reteach 18.4
2	Write numbers from 0 to 20. Represent a number of objects with a written numeral 0–20.	1	Reteach 18.3 Reteach 18.4
3	Represent a number of objects with a written numeral 0–20.	2	Reteach 18.1
4	Compose and decompose 11 to 19 into ten ones and some further ones.	2	Reteach 17.3
5	Compose and decompose 11 to 19 into ten ones and some further ones.	2	Reteach 17.4

Additional teacher support and a scoring rubric can be found in your Assessment Guide.

Unit 5 Performance Assessment

Weight, Length, and Height

Task Summary The Unit 5 Performance Assessment will have students:

- Describe measurable attributes of objects, such as length or weight.
- Directly compare two objects with a measurable attribute in common to see which object has "more of"/"less of" the attribute.
- Describe the difference between two objects in regard to a measurable attribute.

If students encounter difficulties in completing any of the tasks, use the information below to aid in interpreting student performance and to identify suggestions for follow-up and intervention.

Item	Content Focus	DOK	Intervene with
1	Directly compare two objects with a measurable attribute in common, to see which object has "more of" the attribute, and describe the difference.	2	Reteach 20.2
2	Directly compare two objects with a measurable attribute in common, to see which object has "more of" the attribute, and describe the difference.	2	Reteach 19.2
3	Directly compare two objects with a measurable attribute in common, to see which object has "more of" the attribute, and describe the difference.	2	Reteach 19.3

Additional teacher support and a scoring rubric can be found in your Assessment Guide.

Into Math Solutions and Components

Core Materials

Student Materials

ONLINE
- Access all program materials
- Complete and submit assignments and assessments
- Assign Interactive Practice with Hints, Corrective Feedback, and Try Again support
- Track progress
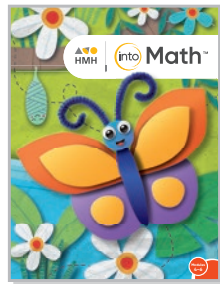
Student Edition*
Multi-volume: write-in, consumable
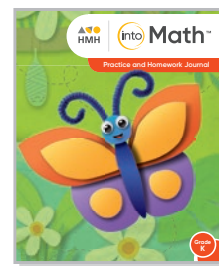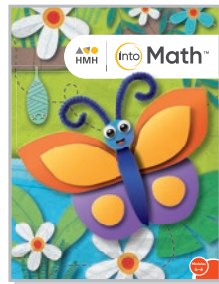
Practice and Homework Journal*
One volume: write-in, consumable

Teacher Materials

ONLINE
- Access all program materials
- Plan lessons
- Assign materials
- View reports
- Group students and get recommendations
- Access immediate scores / item analysis
- Access reports on standards and skills
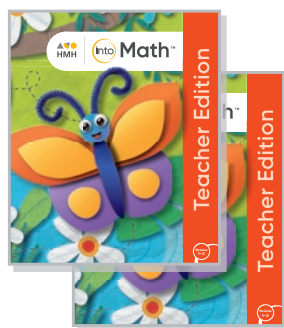
Teacher Edition
Conveniently sized for at-home planning
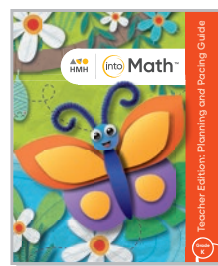
Planning and Pacing Guide
Correlations, resources, and pacing

Module Support Videos
Classroom videos featuring learning tasks, Language Routines, Talk Moves, and differentiation

Assessments

ONLINE
- Access and assign Math Growth Measure interim assessment
- Access and assign digital assessments and reports
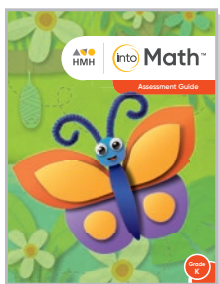
Assessment Guide*
Secure assessment masters for teachers, including Form A and Form B for every module
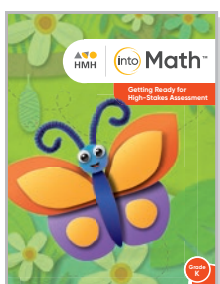
Getting Ready for High Stakes Assessment*
High Stakes Assessment readiness practice for every Math Standard, with three half-length Practice Tests

*All print and digital student-facing materials are available in Spanish.

Differentiation and Support Materials

Digital and interactive versions of resources are available on Ed: Your Friend in Learning.

ONLINE
- Math Center Activities
- Fluency Checks
- Digital Readers
- Poggles Digital Game
- Multilingual Glossary
- Digital Toolbox
- Math on the Spot tutorial videos
- School Home Letters
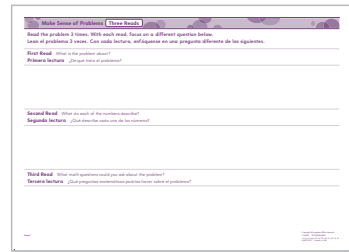
MathBoard
Write-on / wipe-off
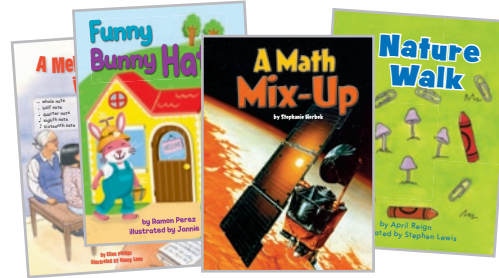
Readers
With Lexile® scores
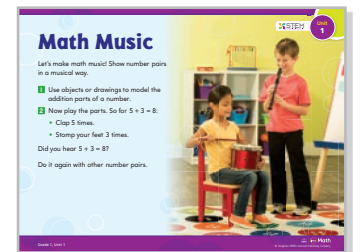
Unit Project Cards
Featuring STEM and careers

ONLINE
- Math Center Activities
- Interactive Reteach, Challenge, Additional Practice, and RtI
- Interactive Fluency Checks
- Digital Readers
- Poggles Digital Game
- Getting Ready for High Stakes Assessment Checks
- MTSS/RtI Tier 2 and Tier 3 Materials
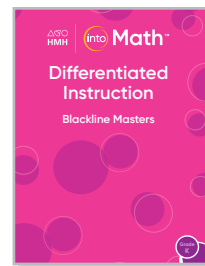
Differentiated Instruction*
Reteach, Challenge, Additional Practice, Fluency
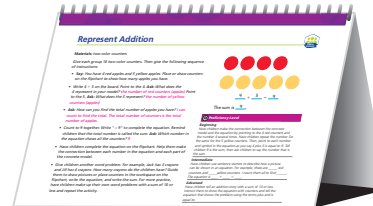
Tabletop Flipchart
Mini-lessons for reteaching to targeted small groups
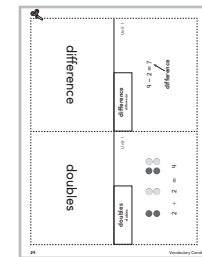
Vocabulary Cards and Games*
Meaningful and fun activities
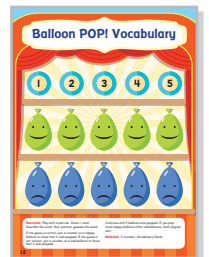
Classroom Manipulatives Kit
Hands-on materials

Differentiated Centers
Math Center organizers

Professional Learning and Implementation Support

ONLINE
- Getting Started Module
- Professional Learning Guide provided during implementation training
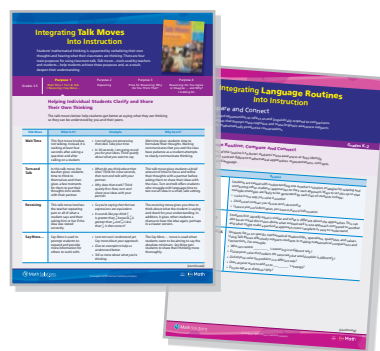
Professional Learning Cards
Feature Talk Moves and Language Routines

Getting Started Module and Professional Learning Guide
Implementation support

Academic Notebooks and Math Journals

Into Math has a variety of options to help students summarize learning. The Practice and Homework Journal includes several page types that students can add to Academic Notebooks or Math Journals.

Interactive Glossary

As you learn about each new term, add notes, drawings, or sentences in the space next to the definition. Doing so will help you remember what each term means.

Possible summaries:
My Vocabulary Summary

A

add
sumar

Add to find how many altogether.

$3 + 2 = 5$

$2 + 2 = 4$

addend
sumando

$1 + 3 = 4$

$2 + 3 = 5$

addend

B

bar graph
gráfica de barras

Flowers in the Garden

Sports We Like

Glossary J27

Interactive Glossary

Possible summaries:
My Vocabulary Summary

C

cent (¢)
centavo
A penny has a value of 1 cent (1¢).

1¢

1 cent is the value of a penny.

circle
círculo

cone
cono

has a curved surface and a flat surface

count back
contar hacia atrás

$8 - 1 = 7$
Start at 8.
Count back 1.
You are on 7.

Count back 2.
$7 - 2 = 5$

J28 Glossary

Students should add to their Interactive Glossary throughout the year as they develop understanding for each term. See the complete Interactive Glossary on pp. PG106–PG117.

Interactive Standards

	Student Edition Lessons	My Progress
Cluster: Understand and apply properties of operations and the relationship between addition and subtraction.		
Apply properties of operations as strategies to add and subtract.	3.1, 3.2, 3.3, 3.4, 3.5	
Understand subtraction as an unknown-addend problem.	2.4, 4.1	
Cluster: Add and subtract within 20.		
Relate counting to addition and subtraction (e.g., by counting on 2 to add 2).	1.2, 2.2, 2.3	
Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on; making ten (e.g., $8 + 6 = 8 + 2 + 4 = 10 + 4 = 14$); decomposing a number leading to a ten (e.g., $13 - 4 = 13 - 3 - 1 = 10 - 1 = 9$); using the relationship between addition and subtraction (e.g., knowing that $8 + 4 = 12$, one knows $12 - 8 = 4$); and creating equivalent but easier or known sums (e.g., adding $6 + 7$ by creating the known equivalent $6 + 6 + 1 = 12 + 1 = 13$).	1.3, 1.4, 1.5, 1.6, 1.7, 2.4, 2.5, 2.6, 3.7, 4.1, 4.2, 4.3, 4.4, 4.7, 13.5	
Cluster: Work with addition and subtraction equations.		
Understand the meaning of the equal sign, and determine if equations involving addition and subtraction are true or false.	3.6, 11.3	
Determine the unknown whole number in an addition or subtraction equation relating to three whole numbers.	2.4, 4.1, 4.5, 4.6	

Mathematics Standards J3

Use the Interactive Standards Chart to record mastery of each standard.

Students can use the My Learning Summary pages to create their own Anchor Charts.

Name

Module 1
Addition Strategies

My Learning Summary

Module 1 Learning Summary J9

Anchor Charts can be developed throughout a module and placed on the classroom wall.

Represent 1 and 2

 1
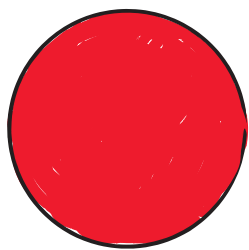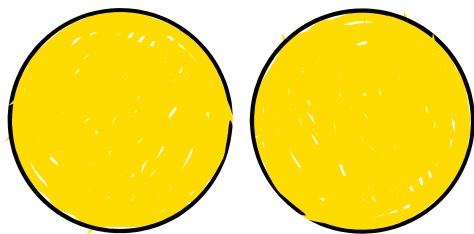
 2

Represent 3 and 4
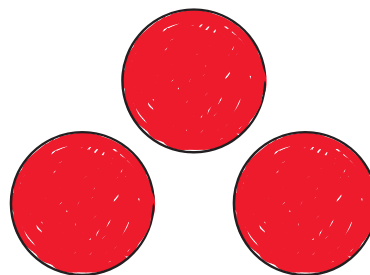
 3
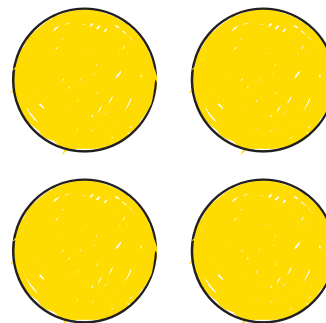
 4

Represent 0
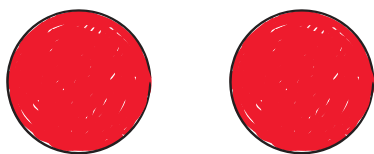
 2

0

Ways to Make 5
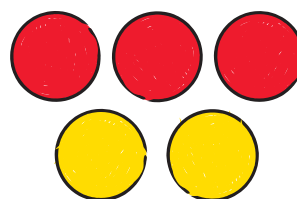
 3 and 2
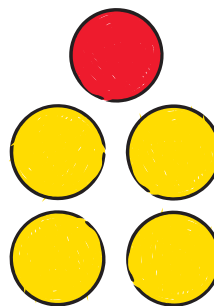
 1 and 4

Count and Write 0 to 5

0   zero

●   1   one
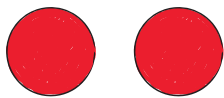
● ●   2   two

● ● ●   3   three
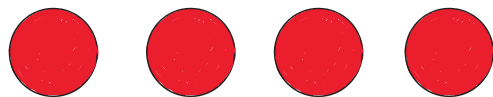
● ● ● ●   4   four
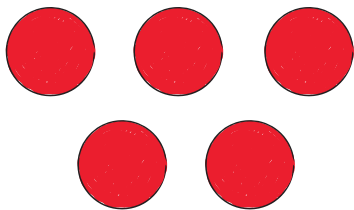
● ● ●
  ● ●   5   five

Greater than
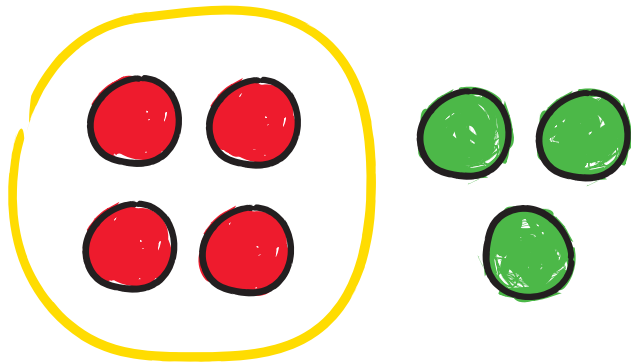
Less than
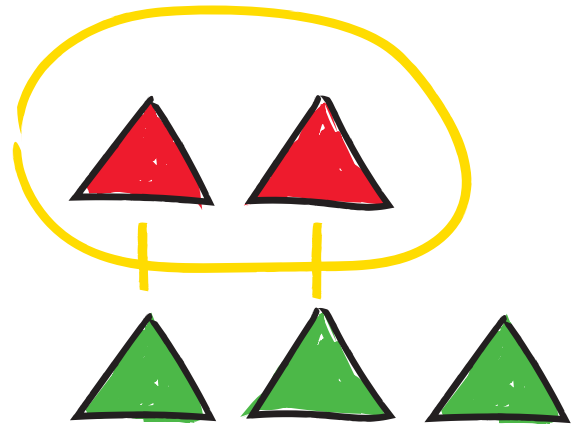
Equal to
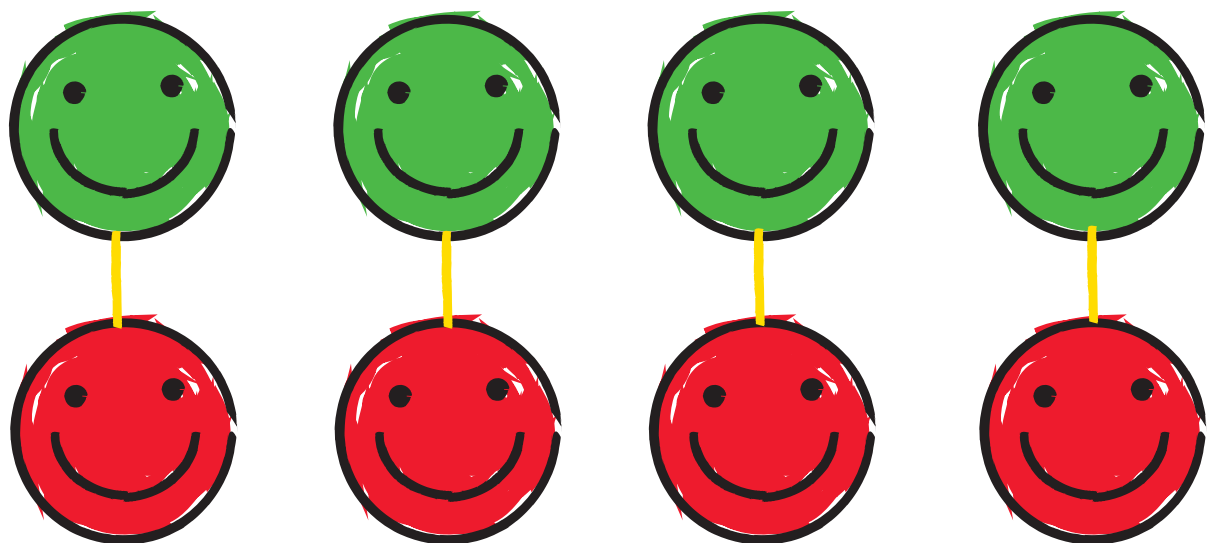
Classify and Count by Color
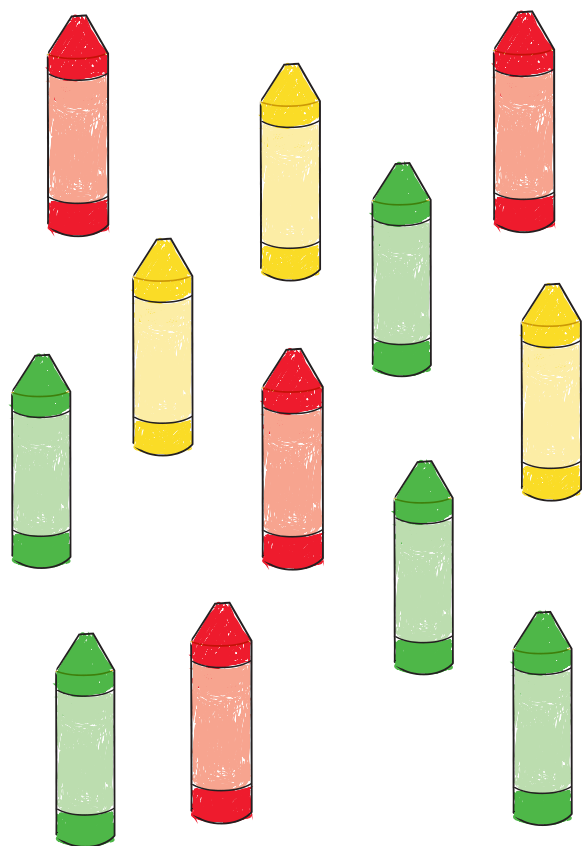
Classify
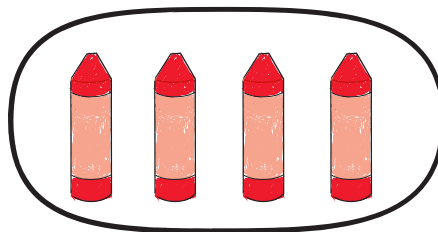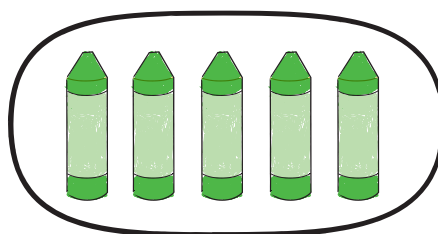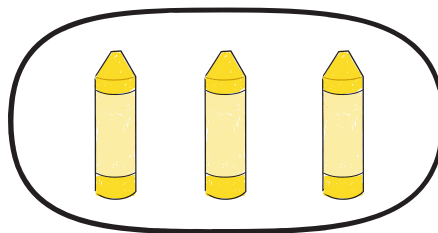
Count
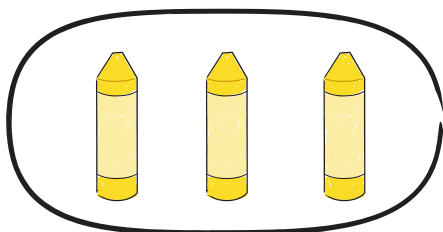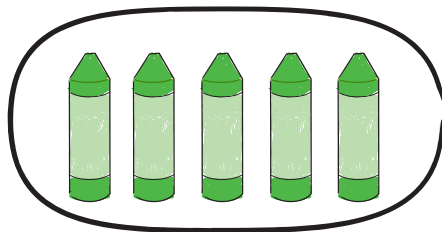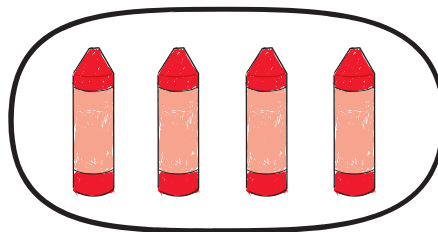
3   5   4

Add

When we add, we (join) together

total
join   plus
more   combine
bigger   and
big   in all

3   +   2=5
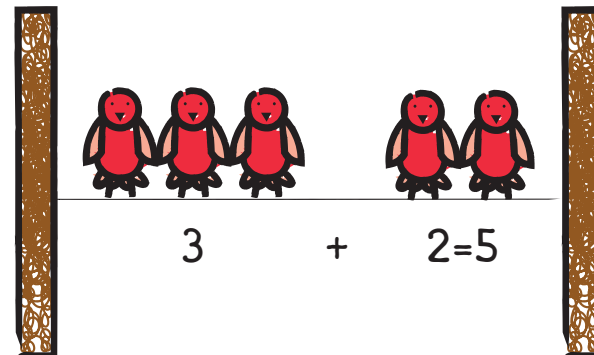
Subtract

When we (subtract,) we take from.

smaller   less
number   amount
taken from
are left
take away
fewer

5-2=3
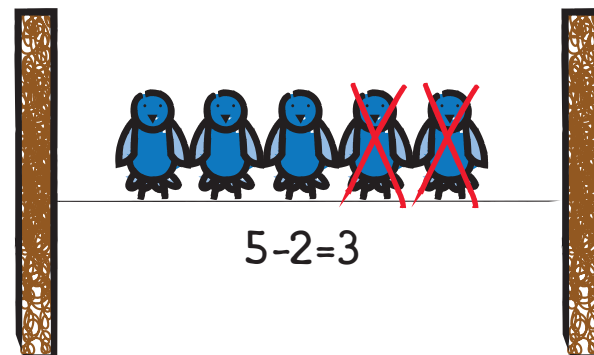
Solve Put Together and Take Apart Word Problems

2 + 3 = 5
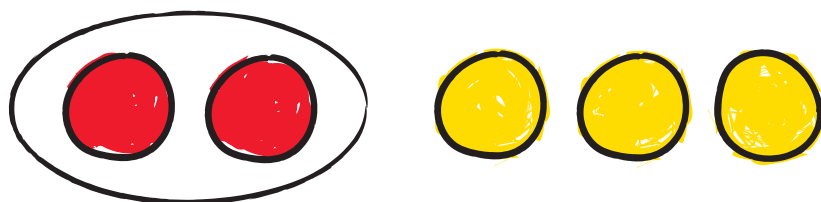
5 - 2 = 3

Represent 6 to 10

6

7

8

9

10
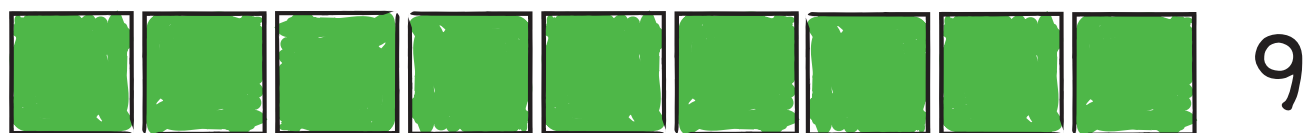
Count and Write 6, 7, 8, 9, and 10
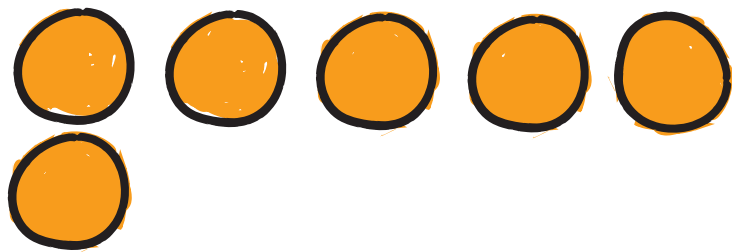
6 six
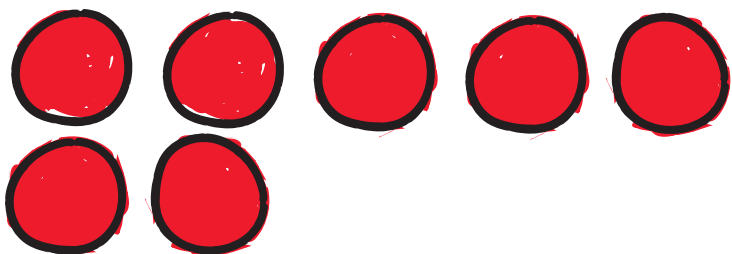
7 seven
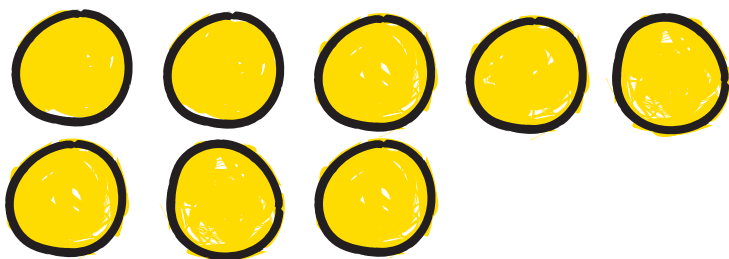
8 eight
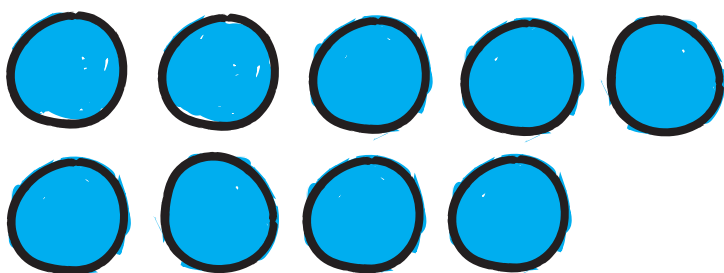
9 nine
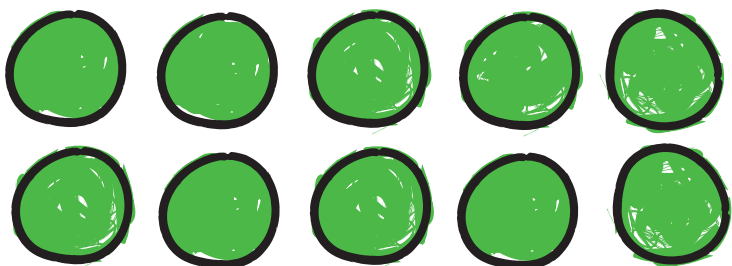
10 ten

Count to 100

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Possible examples of ways to count to 100:

◯ Count by ones

▇ Count by tens

↷ Count by ones, starting with a number other than 1

Greater than
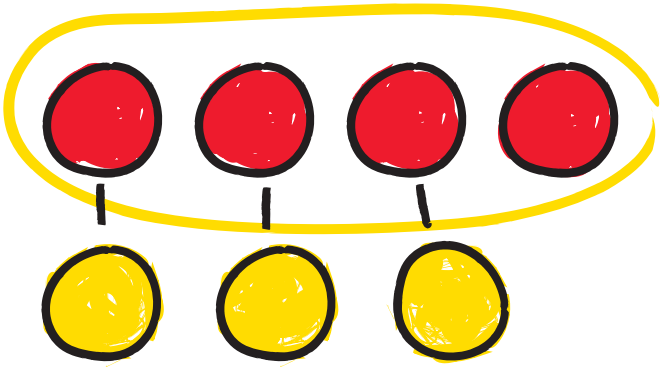
Less than
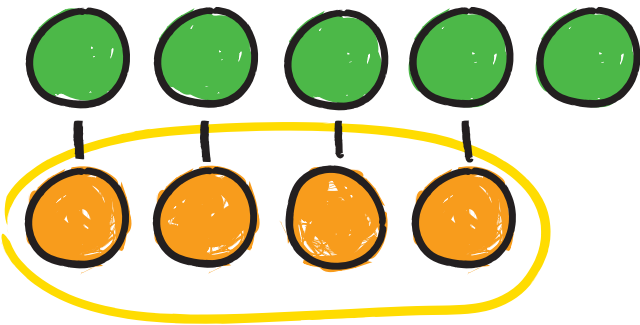
Equal
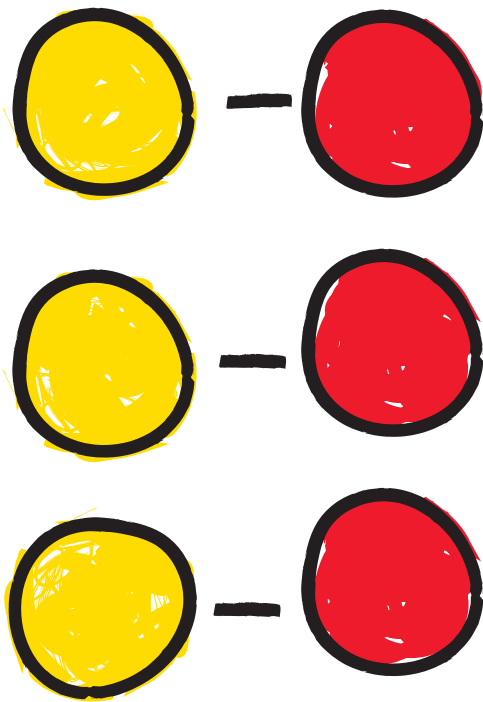
Solve Addition Problems Within 10
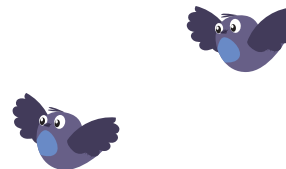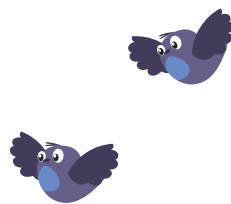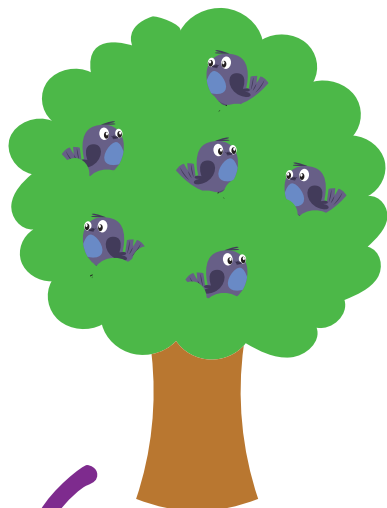
$$6 + 4 = 10$$

Solve Subtraction Problems Within 10

$$10 - 3 = 7$$

Put Together and Take Apart

Add
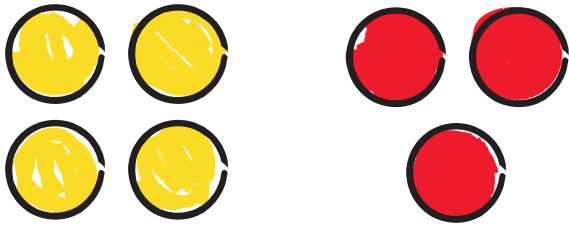
$$4 + 3 = 7$$

plus

Put together

Subtract

$$6 - 2 = 4$$

minus

Take apart

Ways to Make 6

6 = 1 + 5

6 = 2 + 4

6 = 3 + 3

6 = 4 + 2

6 = 5 + 1

Spheres
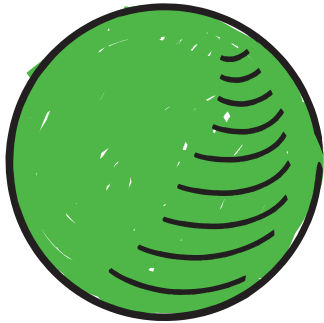
solid
round
curved surfaces
three-dimensional

Cubes
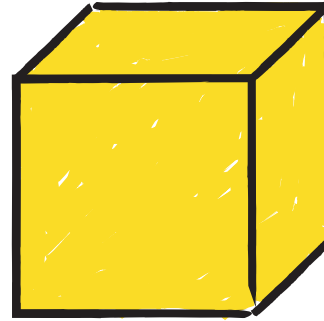
solid
6 flat surfaces
three-dimensional

Cylinders
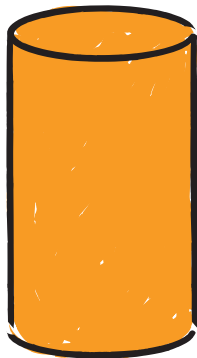
solid
1 curved surface
2 flat surfaces
three-dimensional

Cones
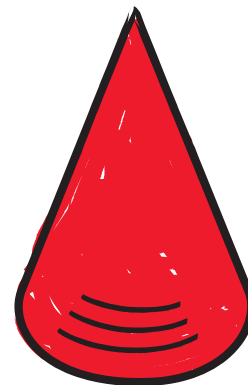
solid
1 curved surface
1 flat surface
three-dimensional

Use Above and Below, Next To and Beside, and In Front Of and Behind
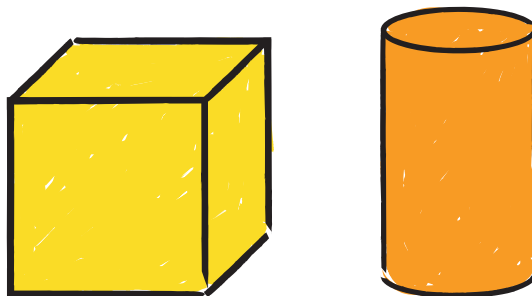
The cube is **beside** the cylinder.
The cylinder is **next to** the cube.

The cube is **above** the sphere.
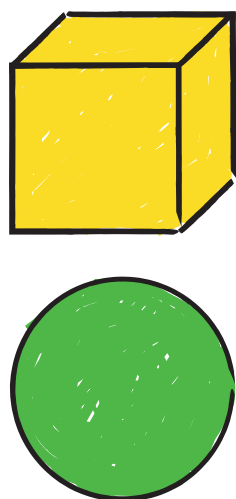
The sphere is **below** the cube.

The sphere is **behind** the cone.
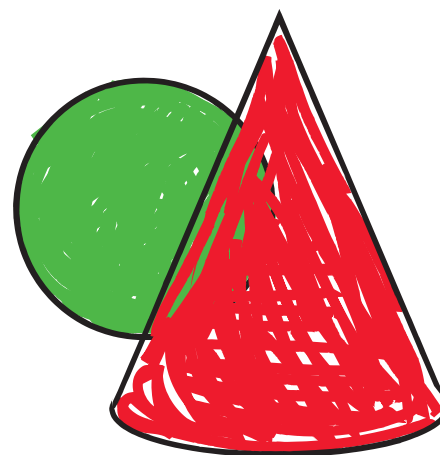
The cone is **in front of** the sphere.

Circles
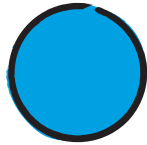
flat, curved
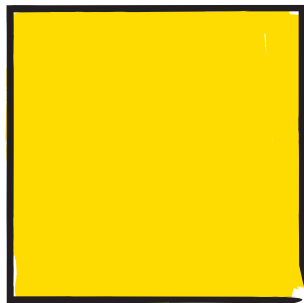
Squares
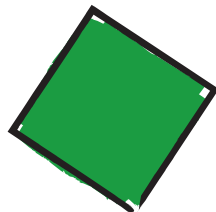
four sides,
four corners
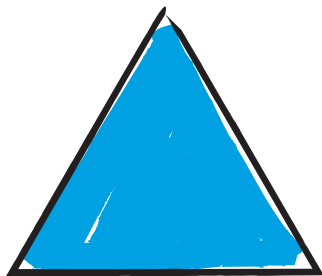
Triangles
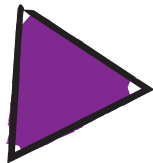
three sides,
three corners

Rectangles
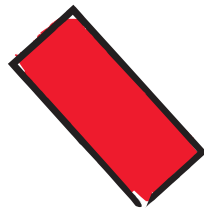
four sides,
four corners
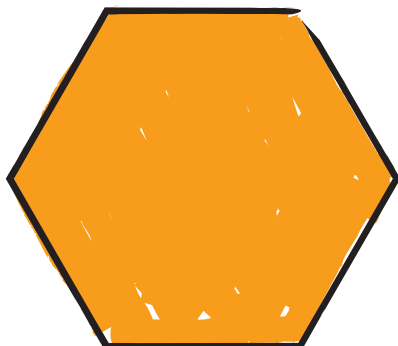
Hexagons

six sides,
six corners

© Houghton Mifflin Harcourt Publishing Company
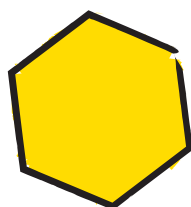
Compose Ten Ones and Some More Ones

11
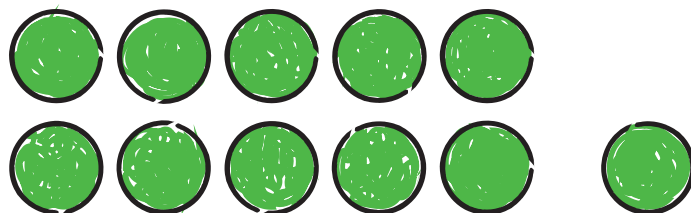
10 ones and 1 more one

12
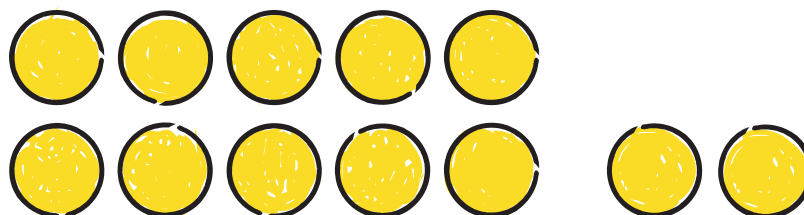
10 ones and 2 more ones

13
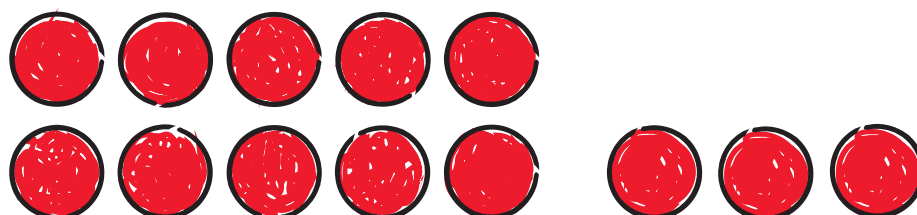
10 ones and 3 more ones

14
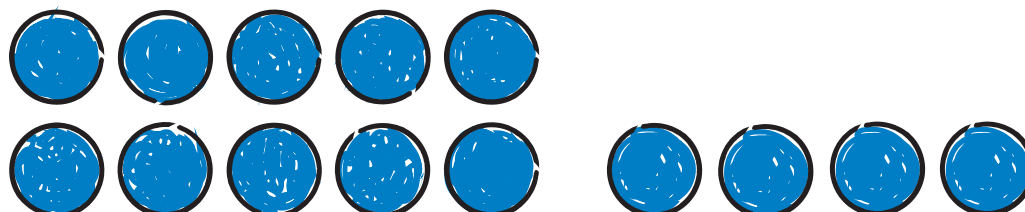
10 ones and 4 more ones

Count and Write 11 to 14

Count and write 11
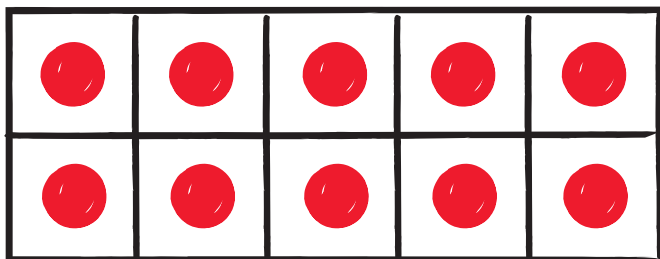
$$10 + 1 = 11$$

Count and write 12
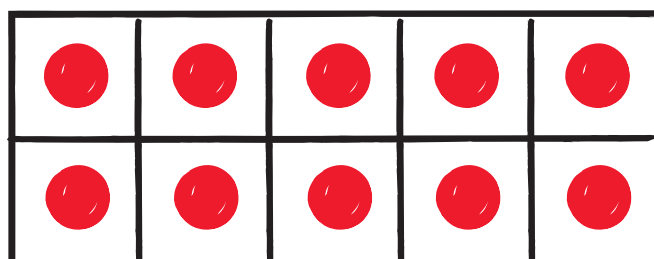
$$12 = 10 + 2$$

Count and write 13
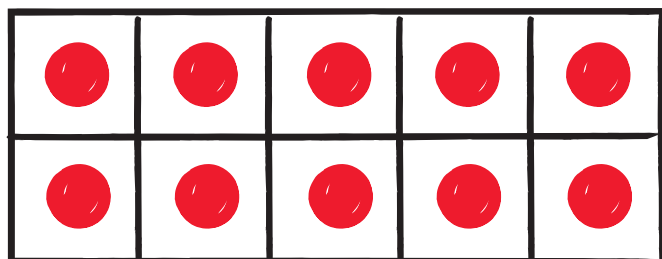
$$13 = 10 + 3$$

Count and write 14

$$10 + 4 = 14$$

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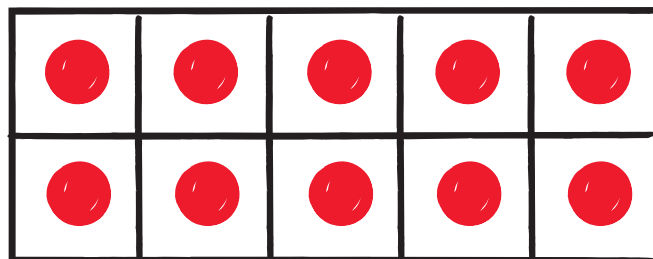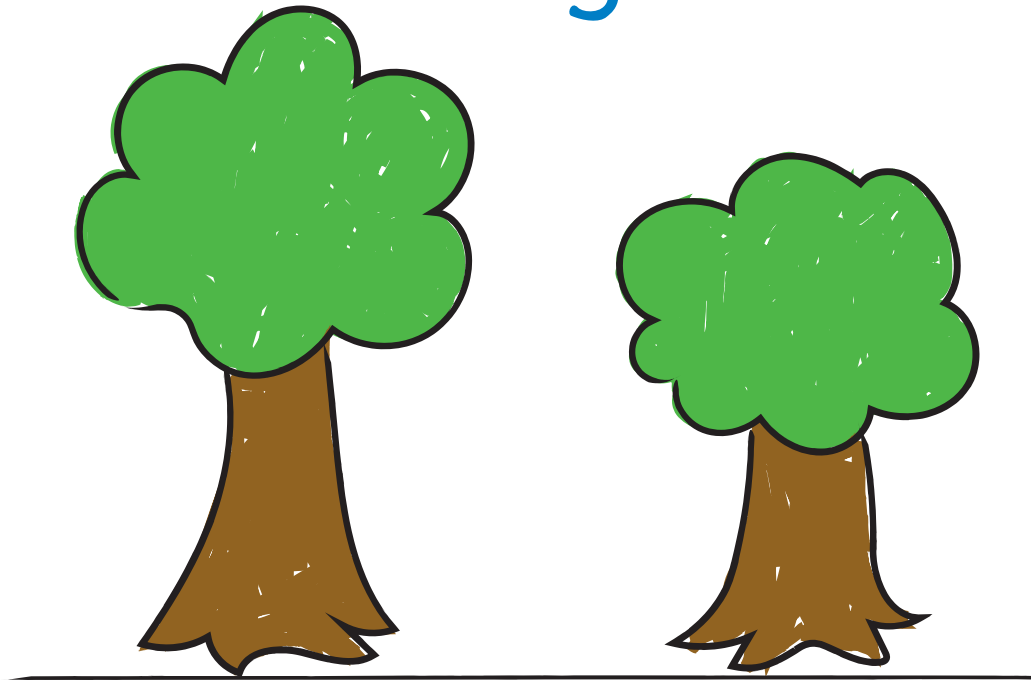
Height

Taller   Shorter

Length
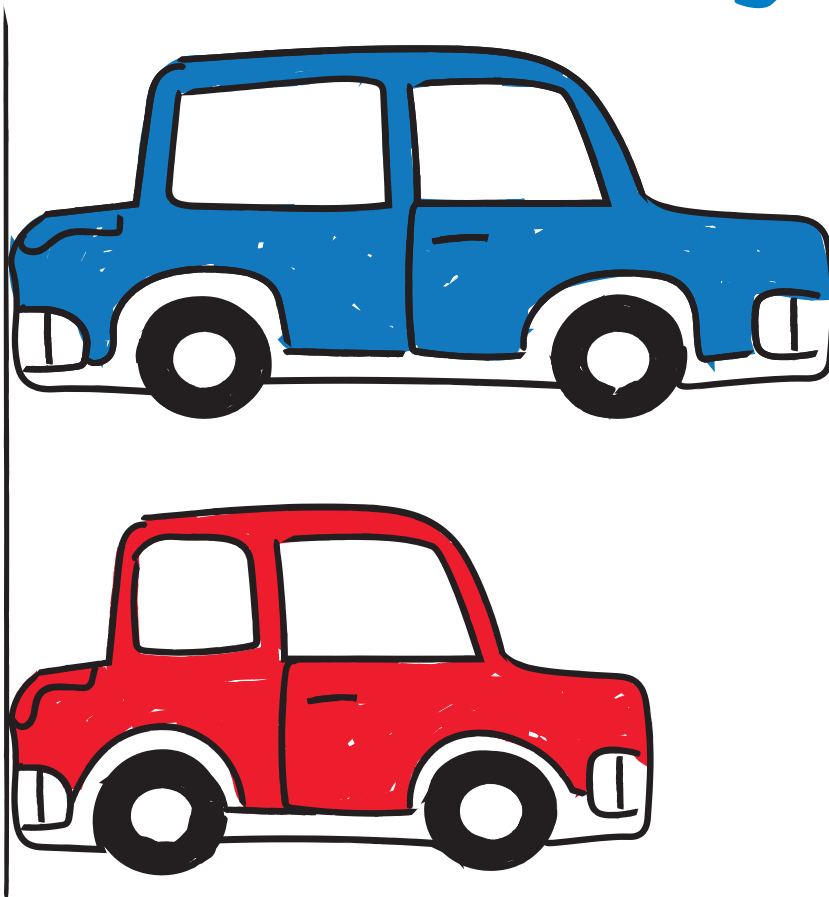
Longer

Shorter

Weight
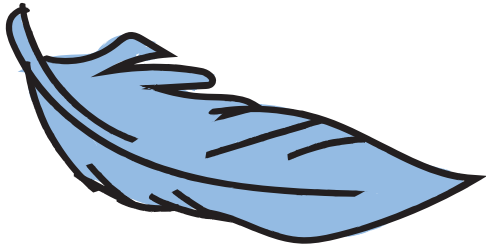
Light

Heavy

Lighter
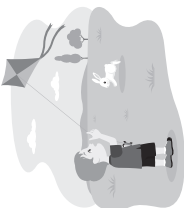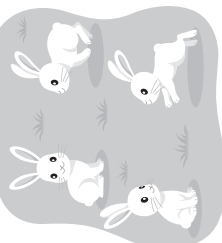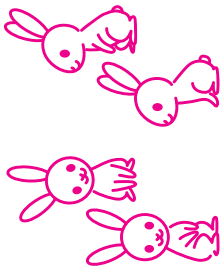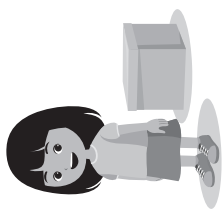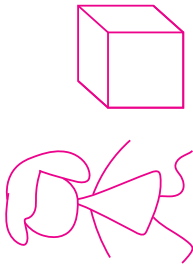
Heavier
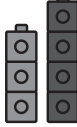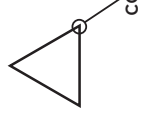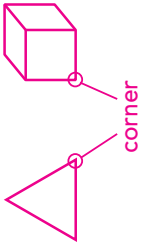
Notes & Reflections

Interactive Glossary

As you learn about each new term, add notes, drawings, or sentences in the space next to the definition. Doing so will help you remember what each term means.

Possible summaries:
My Vocabulary Summary

A

above
arriba, encima

The kite is **above** the rabbit.

add
sumar

$3 + 2 = 5$

$3 + 2 = 5$

addend
el sumado1

$3 + 2 = 5$
addend

$3 + 2 = 5$

Interactive Glossary

Possible summaries:
My Vocabulary Summary

Add To
ampliar

Two bunnies **add to** two bunnies for a total of four bunnies.

$2 + 2 = 4$

and
y

and
$2 + 2$

and
$2 + 2$

B

behind
detrás

The box is **behind** the girl.

Interactive Glossary

C

Possible summaries:
My Vocabulary Summary

category / categoría	**fruits** **toys**
fruits	
toys	
circle / círculo	
classify / clasificar	**apples** **not apples**
apples	
not apples	

Interactive Glossary

Possible summaries:
My Vocabulary Summary

below / debajo	
The rabbit is **below** the kite.	
beside / junto a	
The tree is **beside** the bush.	
big / grande	**big**
big	

Interactive Glossary

Possible summaries:
My Vocabulary Summary
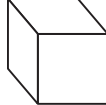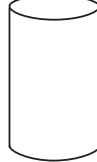
column
columna

← column

compare
comparar

cone
cono

corner
esquino

corner
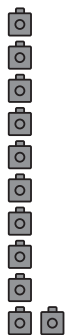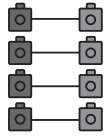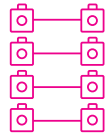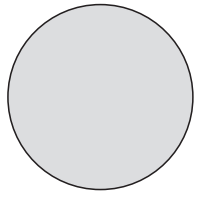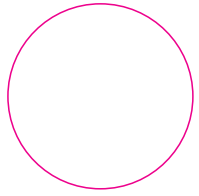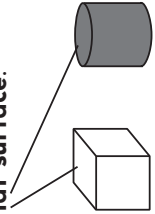
Interactive Glossary

Possible summaries:
My Vocabulary Summary

count
contar

1   2   3   4   5

Count the number of cubes to find the total number.

cube
cubo

curved surface
superficie curva

Some solids have a **curved surface.**

cylinder
cilindro

Interactive Glossary

E

Possible summaries:
My Vocabulary Summary

eight
ocho

eighteen
dieciocho

eleven
once

equal to
igual a

the number of cubes in the top group is **equal to** the number of cubes in the bottom group

equation
la ecuació

$4 + 1 = 5$

$4 + 1 = 5$

Glossary

J37

Interactive Glossary

F

Possible summaries:
My Vocabulary Summary

fifteen
quince

five
cinco

flat
plano

A circle is a **flat** shape.

flat surface
superficie plana

Some solids have a **flat surface.**

J38

Glossary

Planning and Pacing Guide

Interactive Glossary

Possible summaries:
My Vocabulary Summary

four
cuatro

fourteen
catorce

G

greater than
mayor que

9 is **greater than** 6

H

heavier
más pesado

heavier
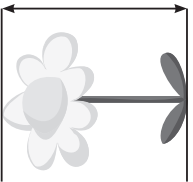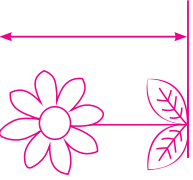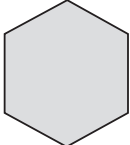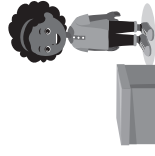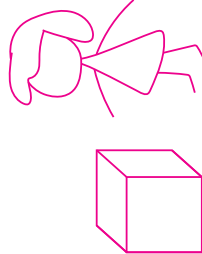
Interactive Glossary

Possible summaries:
My Vocabulary Summary

height
la altura

Height: the distance from top to bottom

hexagon
hexágono

I

in front of
delante de

The box is **in front of** the girl.
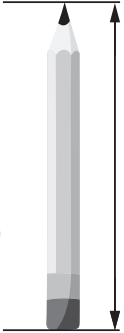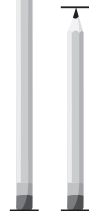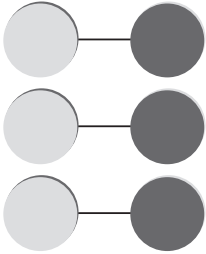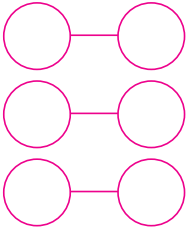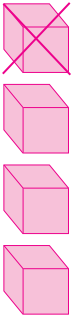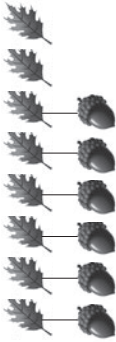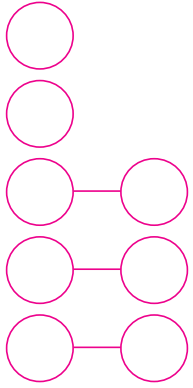
Interactive Glossary

Possible summaries:
My Vocabulary Summary

length
el largo

Length: the distance from one end of an object to the other

3 + 2 = 5

---

less than
mentos quel

9

11

9 is **less than** 11

9 is **less than** 11.

---

lighter
más liviano

lighter

---

longer
más largo

longer

longer

Glossary

Interactive Glossary

Possible summaries:
My Vocabulary Summary

is equal to
es igual a

3 + 2 = 5

What is on the left side of the equal sign (=) **is equal to** what is on the right side of the equal sign (=).

3 + 2 = 5

J

join
juntar

2 + 1 = 3

2 + 1 = 3

L

larger
más grande

2

3

A quantity of 3 is **larger** than a quantity of 2.

3 is larger than 2.

Glossary

Interactive Glossary

M

match
emparejar

Possible summaries:
My Vocabulary Summary

minus
menos

$4 - 1 = 3$

4 **minus** 1 is equal to 3

$4 - 1 = 3$

more
más

2 **more** leaves

2 more circles
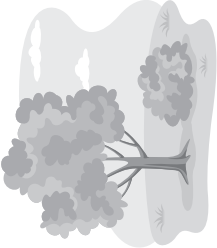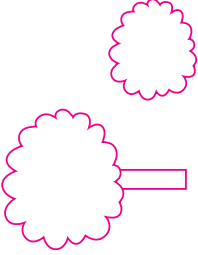
Interactive Glossary

N
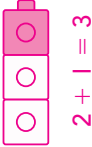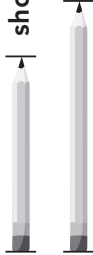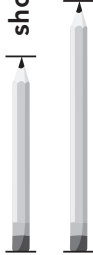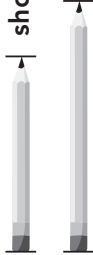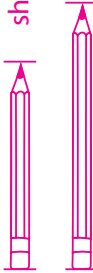
next to
al lado de

The bush is **next to** the tree.

Possible summaries:
My Vocabulary Summary

nine
nueve

nineteen
diecinueve

O
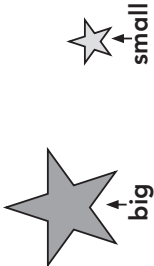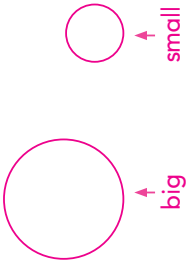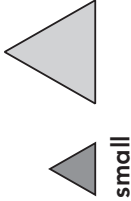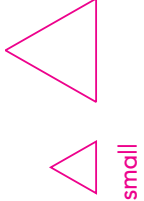
one
uno

Interactive Glossary

My Vocabulary Summary

Possible summaries:

row
fila

row →

S

seven
siete

seventeen
diecisiete

shorter
más corto

shorter

Interactive Glossary

My Vocabulary Summary

Possible summaries:

ones
unidades

3 ones

P

plus
más

2 **plus** 1 is equal to 3

$2 + 1 = 3$

Put Together
armar

$2 + 2 = 4$

R

rectangle
rectángulo

Planning and Pacing Guide

Interactive Glossary

Possible summaries:
My Vocabulary Summary

| solid | A cylinder is a **solid** shape. | |
| sólido | solid | solid |

| sort | All of these are gray. All of these are white. | |
| ordenar | You can **sort** these shapes. | |

| sphere | | |
| esfera | | |

| square | | |
| cuadrado | | |

Glossary

Interactive Glossary

Possible summaries:
My Vocabulary Summary

| side | | |
| lado | side | side |

| six | | |
| seis | | |

| sixteen | | |
| dieciséis | | |

| size | | |
| tamaño | big · small | big · small |

| small | | |
| pequeño | small | small |

Glossary

Interactive Glossary

Possible summaries:
My Vocabulary Summary

taller
más alto — taller

ten
diez

thirteen
trece

three
tres
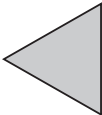
three-dimensional shapes
figuras tridimensionales

Interactive Glossary

Possible summaries:
My Vocabulary Summary

subtract
restar — $3 - 1 = 2$

$3 - 1 = 2$

T

Take Apart
desmontar — $5 - 2 = 3$

take away
para llevar

Take From
llevarse — $3 - 1 = 2$

$3 - 1 = 2$

Interactive Glossary

Possible summaries:
My Vocabulary Summary

two-dimensional shapes
figuras bidimensionales

U

unknown
la incógnita

$4 + \underline{\quad} = 6$

$4 + \underline{\quad} = 6$

V

vertex
vértice

vertex

vertex

Interactive Glossary

Possible summaries:
My Vocabulary Summary
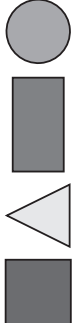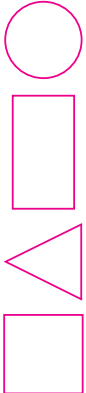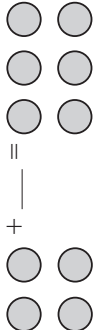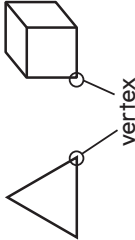
total
sumar

$2 + 4 = 6$
total

Adding 2 marbles to 4 marbles makes a **total** of 6 marbles.

triangle
triángulo

twelve
doce

twenty
veinte

two
dos

Possible summaries:

My Vocabulary Summary

W

weight
el peso

Weight: how heavy or light something is

Z

zero
cero

there are **zero** fish, none

Glossary

J53

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D

data checkpoint, every module includes an autoscored Are You Ready? diagnostic assessment and a Module Test summative assessment. Every lesson includes an autoscored Check Understanding formative assessment. When you assign autoscored assignments on Ed: Your Friend in Learning, you will have immediate access to data and recommendations for differentiation.
   Are You Ready?, appears in every module. 4, 28, 52, 80, 100, 142, 186, 202, 222, 238, 266, 308, 338, 364, 388, 404, 438, 458, 480, 496
   Check Understanding, appears in every lesson. *See, for example,* 7, 11, 15, 19, 23, 31, 35, 39, 43, 47, 55, 59, 63, 67, 71, 75, 83, 87, 91, 95, 103, 107
   Module Test, *26A, 50A, 78A, 98A, 140A, 182A, 200A, 220A, 236A, 264A, 306A, 336A, 360A, 386A, 402A, 434A, 456A, 476A, 494A, 510A*
data-driven instruction, every module includes data charts to help you drive instruction to support students for the Are You Ready? and Module Review assessments. Every lesson includes differentiation support following the Check Understanding assessment to support students. *Teacher Edition: Planning and Pacing Guide* PG24–PG31
developing math language, *3C, 27C, 51C, 79C, 99C, 141C, 185C, 201C, 221C, 237C, 265C, 307C, 317C, 363C, 387C, 403C, 437C, 457C, 479C, 495C*
diagnostic assessment
   Are You Ready? (*see* Are You Ready?)
differentiated instruction, every lesson includes leveled activities for pulled small groups and leveled print and digital activities for Math Centers. Some examples are *5C, 9C, 13C, 17C, 21C, 29C, 33C, 37C, 41C, 45C, 53C, 57C, 61C, 65C, 69C, 73C, 81C, 85C, 89C, 93C*
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