imagine learning | Illustrative Mathematics LEARN MATH FOR LIFE

All Greens on EdReports

IM 6–8 MATH

Illustrative Mathematics

Program Overview
Grades 6–8

Illustrative Mathematics CERTIFIED

Authors, Research, and Certified Partnership

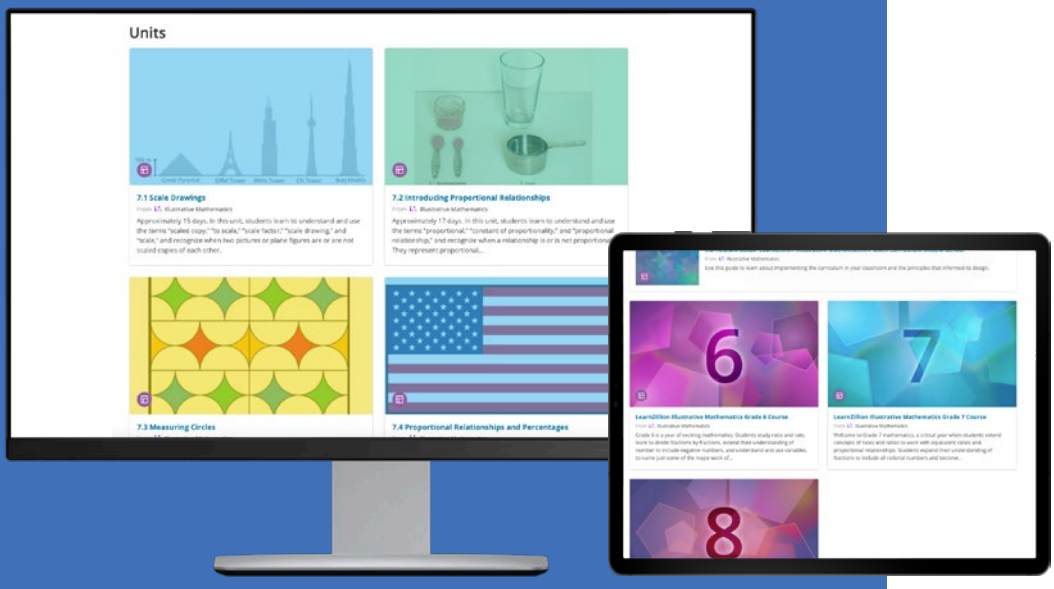
Illustrative Mathematics (IM) was authored by Dr. Bill McCallum and a team of math leaders focused on improving student outcomes in mathematics. The problem-based curriculum is built on best practices and research principles from NCTM, National Research Council, Smith & Stein, and others. The new IM K–5 Math completes the K–12 series.

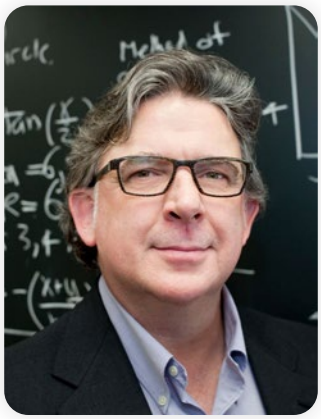
Certified Partnership

Imagine Learning is one of Illustrative Mathematics' Certified Partners. The IM Certified designation assures that the materials adhere to IM's philosophy and have been developed, reviewed, and approved by Illustrative Mathematics.

The Imagine Learning Illustrative Mathematics instructional experience aligns with the 2015 Every Student Succeed Act (ESSA) Theory of Change for effective evidence-based programs. The goal is to deliver an engaging and easy-to-implement instructional solution that leverages the power of high-quality curricula.

The result? Comprehensive support for teachers and positive learning outcomes for students.





"It's important for students to attach meaning to their work, and IM 6–8 Math does just that. The curriculum is structured so learners have opportunities to make connections between mathematical ideas and relate them to real-world contexts for success in algebra and beyond."

• • •

Dr. William McCallum

Imagine Learning Illustrative Mathematics

For Grades 6–8

A dynamic, engaging instructional experience that leverages the power of high-quality curricula:

Students enjoy mathematics, make mathematical connections, and develop conceptual understanding.

Teachers orchestrate discussions, synthesize understanding, and facilitate interactive lessons with confidence.

Imagine Learning partners with schools and districts for seamless integration and implementation.

Table of Contents

Instructional Design

The grades 6–8 series offers two pathways: a traditional, three-year sequence comprised of Grades 6, 7, and 8 courses, and a 2-year accelerated sequence that compresses three years of mathematics into the Accelerated 6 and 7 courses, allowing students to begin high school mathematics in 8th grade. The instructional design of both pathways supports all students through a coherent progression of mathematics based on the standards and research-based learning trajectories.

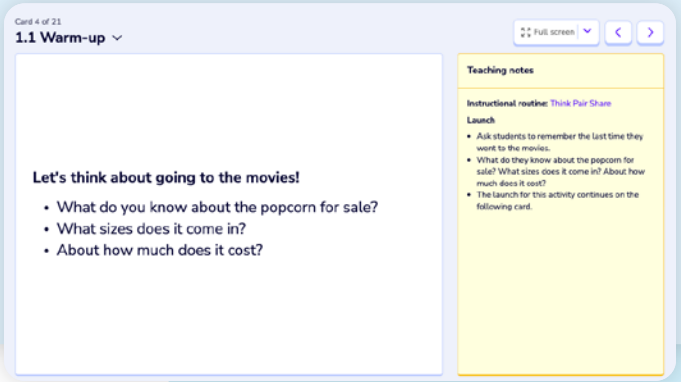
Each activity and lesson is part of a mathematical story across the units. This articulation allows students to view mathematics as a connected set of ideas that makes sense.

	Invitation to the mathematics	Deep study of concepts and procedures	Consolidating and applying
Unit Level	Introductory lesson	Instructional lessons	Culminating lesson
Lesson Level	Warm-up	Classroom activities	Synthesis and cool-down
Activity Level	Launch	Work time	Synthesis

The overarching design structure at each level is as follows:

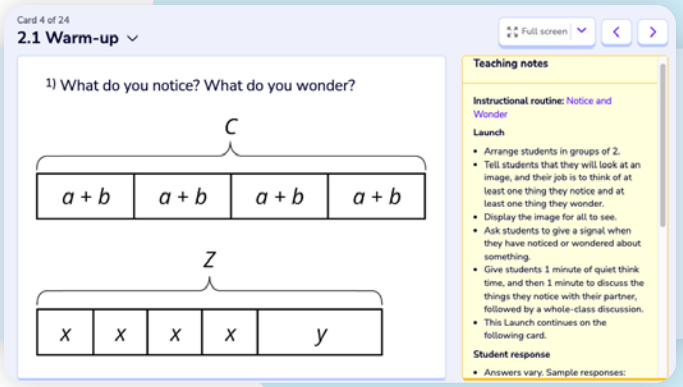
Units

Each unit starts with an invitation to mathematics. The first few lessons provide an accessible entry point for all students and offer teachers the opportunity to observe students' prior understandings.



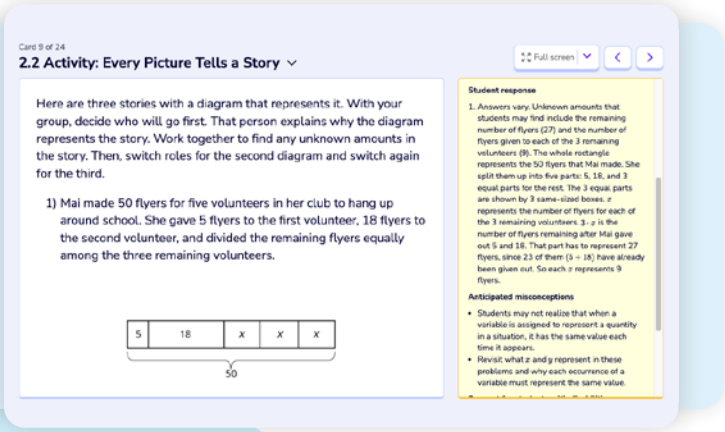
Lessons

Each lesson starts with a warm-up to set up the day's work or strengthen number sense and procedural fluency.



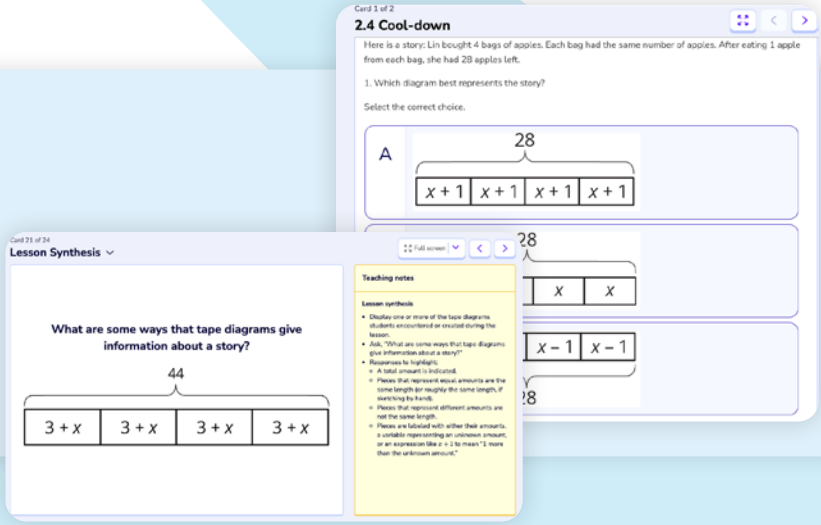
Instructional Activities

This is followed by instructional activities in which students are introduced to new concepts, procedures, contexts, or representations, or make connections between them.



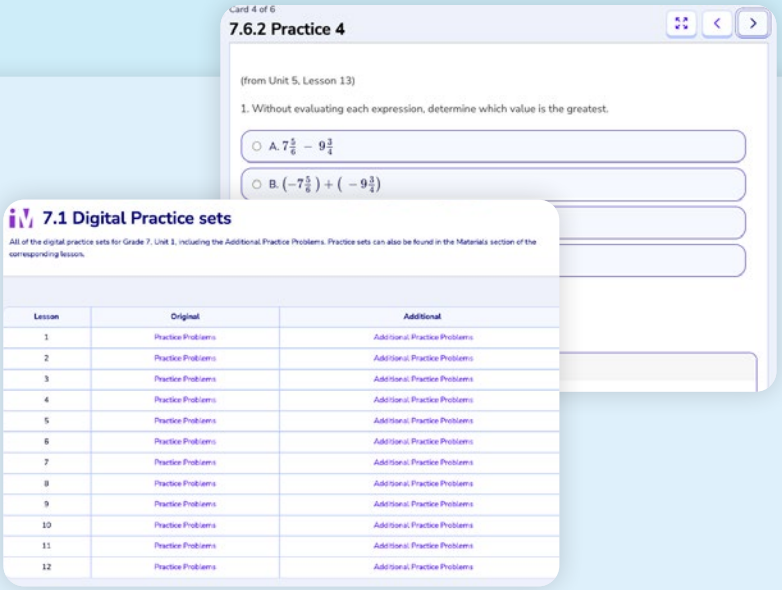
Synthesis and Cool-down

The lesson ends with a synthesis to consolidate understanding and make the learning goals of the lesson explicit, followed by a cool-down to apply what was learned.



Practice Problems

Each lesson includes a set of practice problems for independent work time. These can be used in class or as homework. Teachers have the option to assign via paper and pencil or digitally through Imagine Learning (IL) Classroom. There is also another digital set of problems that teachers can assign for additional practice opportunities.



- The practice problem set includes a few questions about the content of that lesson, as well as distributed practice from earlier content to ensure fluency.

Guiding Principles Across Grades 6–8

Learning Mathematics by Doing Mathematics

A problem-based instructional framework supports teachers in structuring lessons, so students are the ones solving the problems and learning mathematics. The activities and routines are designed to give students a chance to demonstrate what they already know —and show what they can figure out—before having concepts and procedures explained to them.

Balancing Rigor

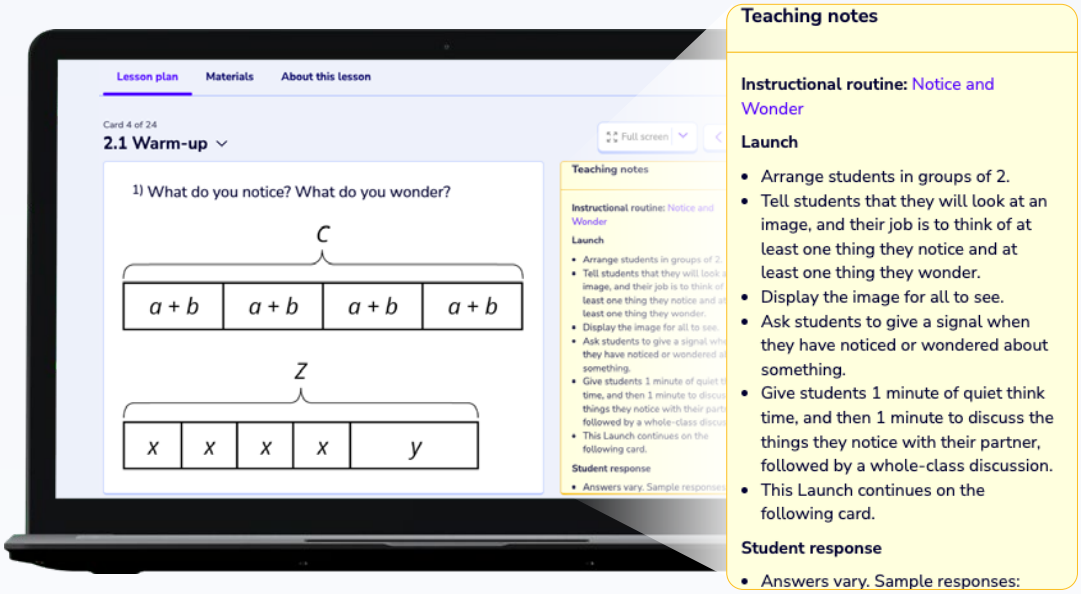
Three aspects of rigor are essential to mathematics: conceptual understanding, procedural fluency, and the ability to apply these concepts and skills to mathematical problems with and without real-world contexts. These aspects are developed together to support student understanding.

Establishing Norms

Structures around doing math together and sharing understandings play an important role in the success of a problem-based curriculum. Students must take risks, listen to each other, disagree respectfully, and honor equal time when working together in groups. Establishing norms helps teachers cultivate a community of learners where visible thinking is both expected and valued.

Instructional Routines

Instructional routines create structures so all students can engage and contribute to mathematical conversations. Throughout the curriculum, routines are introduced in a purposeful way to build a collective understanding of their structure.



Use of Digital Tools

The curriculum empowers students to become fluent users of digital tools that produce representations, solve problems, and communicate their reasoning. Imagine Learning (IL) Classroom embeds Desmos, GeoGebra, and other interactive tools at the point of use to amplify understanding and engagement.

Teacher Experience

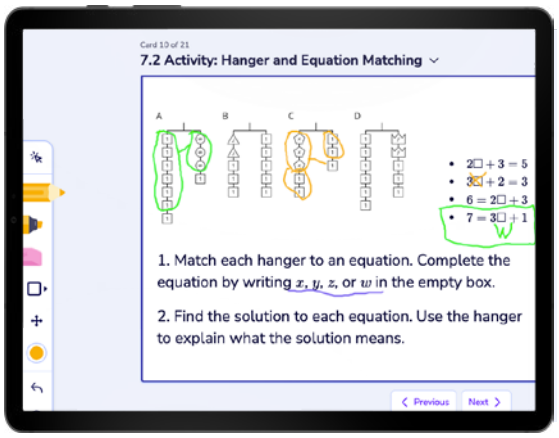
The program's resources are specially tuned to support teachers in planning and facilitating lessons across the various instructional models including face-to-face, hybrid, and distance learning.

Print versions of Teacher's Editions and Student Workbooks mirror digital offerings, ensuring the integrity of the rich Illustrative Mathematics content is maintained in any environment or instructional model.

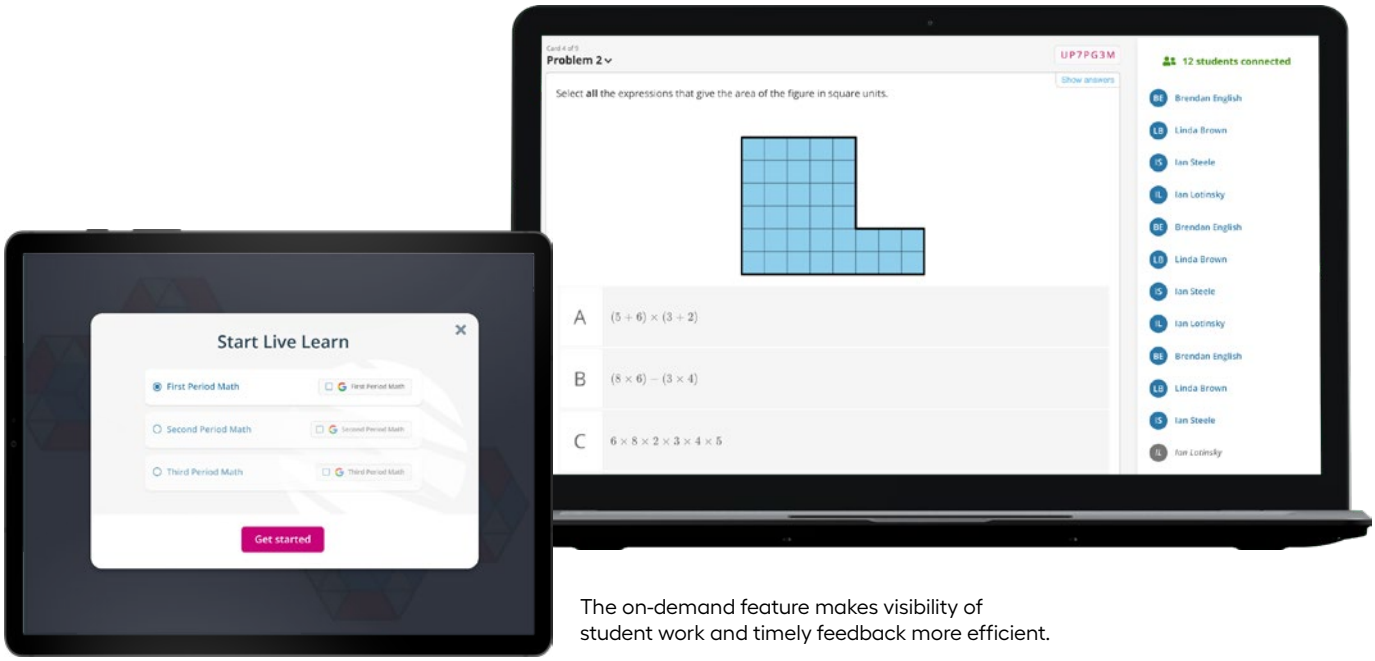
Flexibility and Personalization

Lesson cards can be projected or assigned to students, which allows flexibility for synchronous and asynchronous instruction. Lesson plans can be copied, edited, and customized as needed.

Daily instruction comes alive through the **annotation tool**, with the ability to write, draw, model, and share student work directly on the lesson cards. Teachers can annotate in lesson plan and fullscreen views.



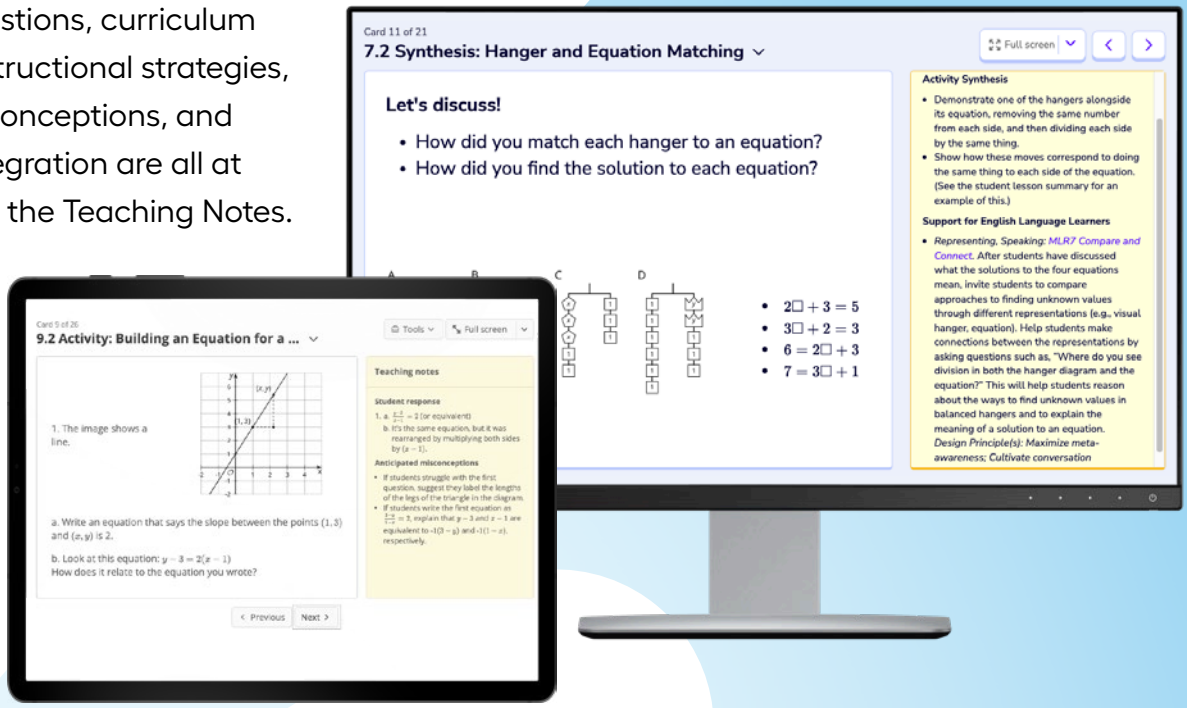
Live Learn allows for synchronous instruction virtually within the platform. Teachers can transition from asynchronous work time to a live session with one click.



The on-demand feature makes visibility of student work and timely feedback more efficient.

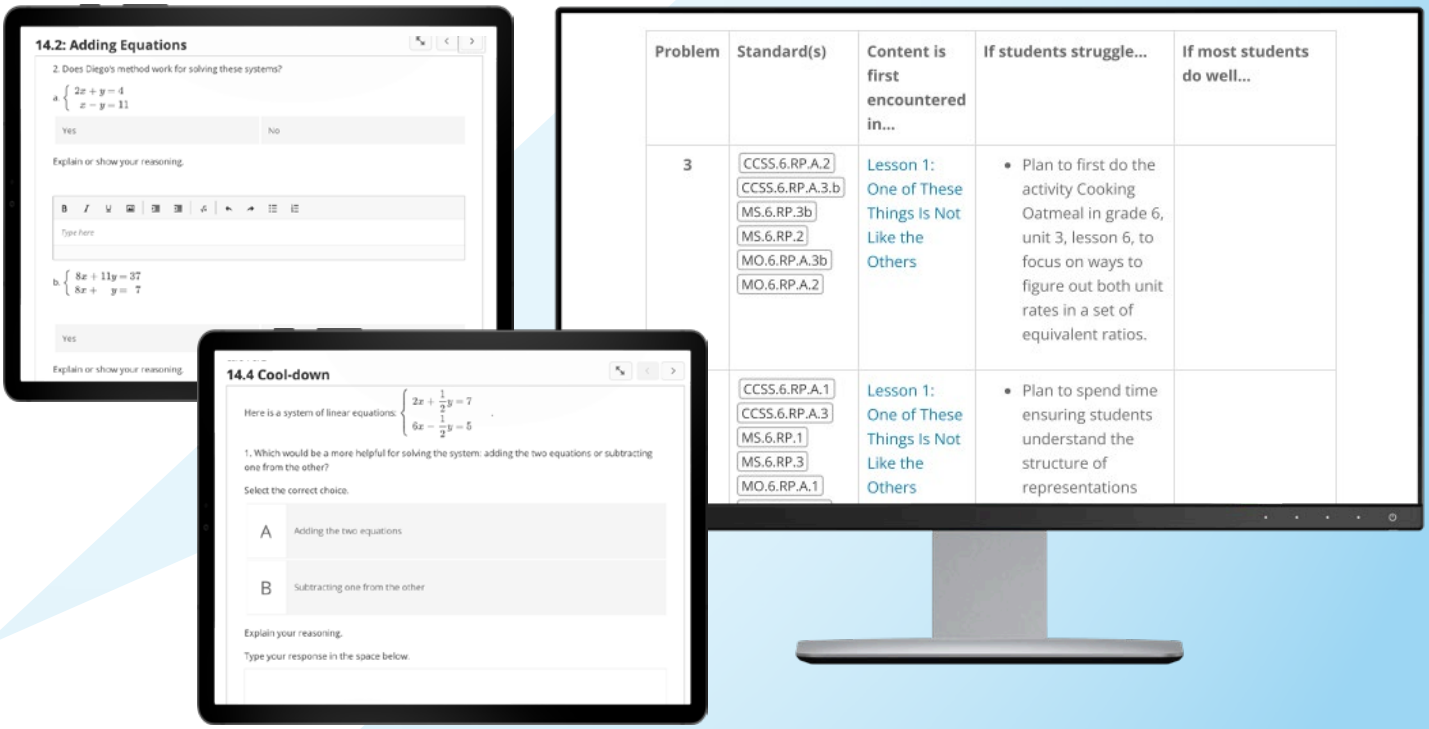
Embedded Teacher Support

Reflection questions, curriculum narratives, instructional strategies, common misconceptions, and digital tool integration are all at point-of-use in the Teaching Notes.



Formative Assessment Tools

Teachers are equipped to monitor student progress through diagnostic assessments, digital task statements, digital practice sets, cool-downs, and monitoring templates. These provide real-time feedback and data to inform instructional decisions.



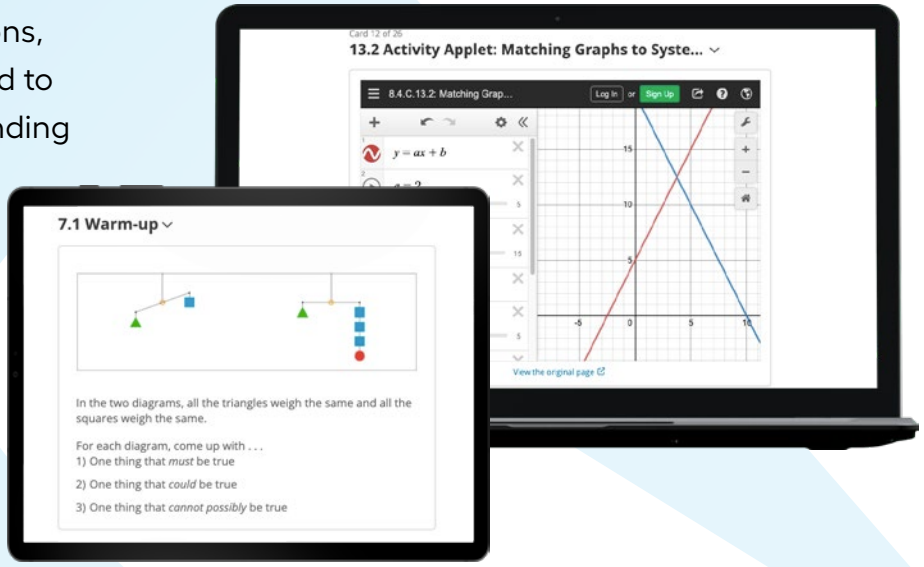
Student Experience

In Illustrative Mathematics, students enjoy mathematics, make mathematical connections, and develop conceptual understanding.

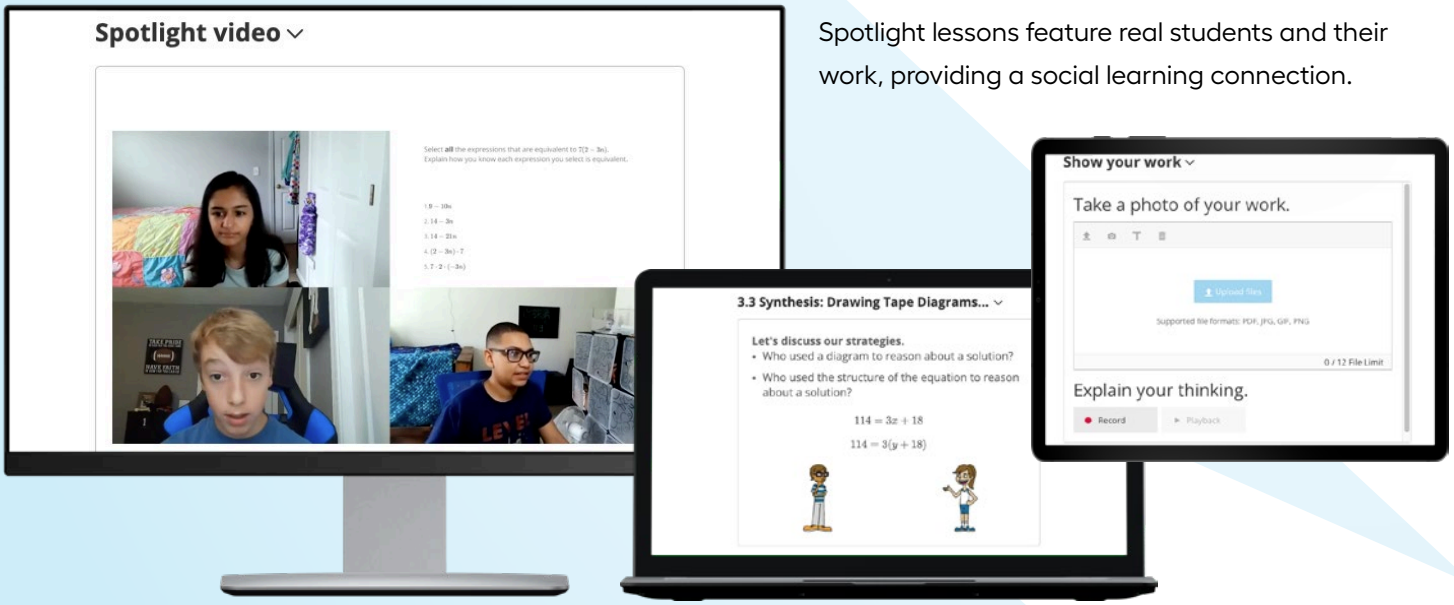
Students have print and interactive digital resources for optimal instruction and enrichment.

Deep Focus on Conceptual Understanding, Procedural Fluency, and Application

Instructional routines, representations, and digital tools are carefully utilized to help students develop an understanding of concepts and procedures.

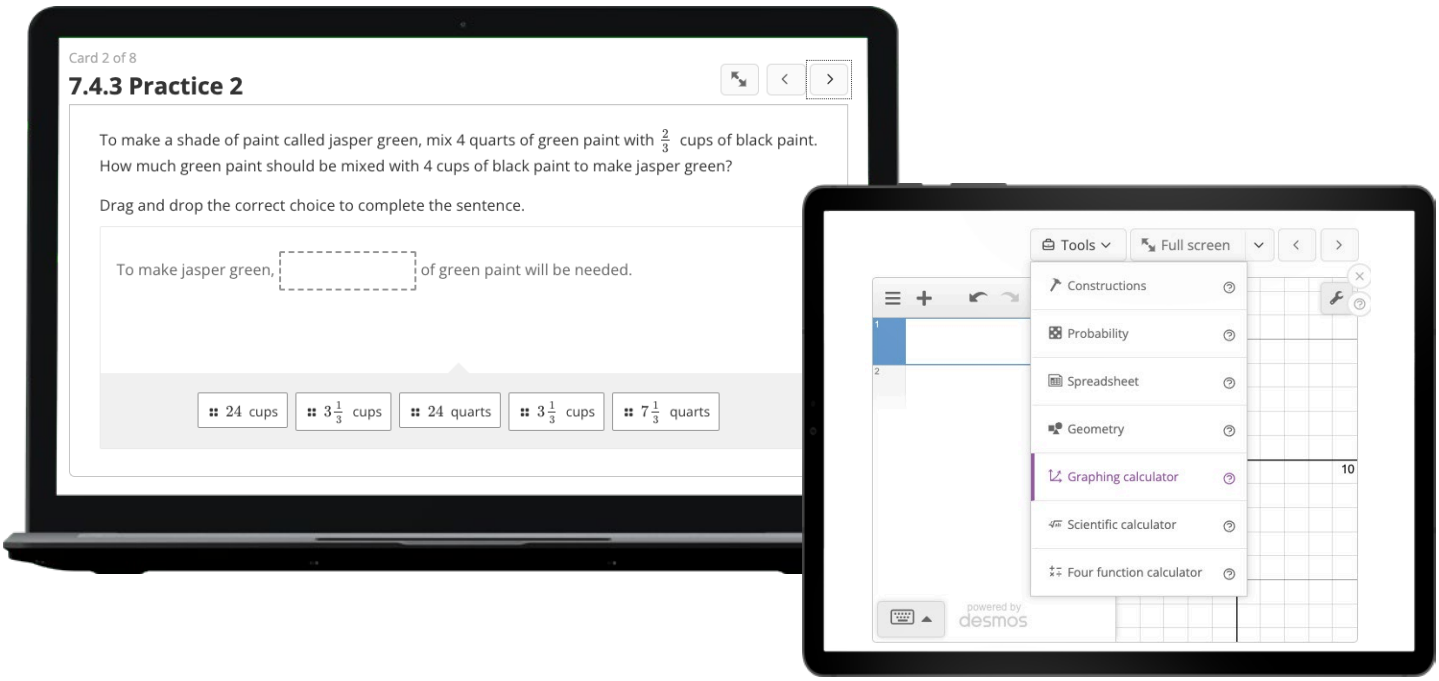


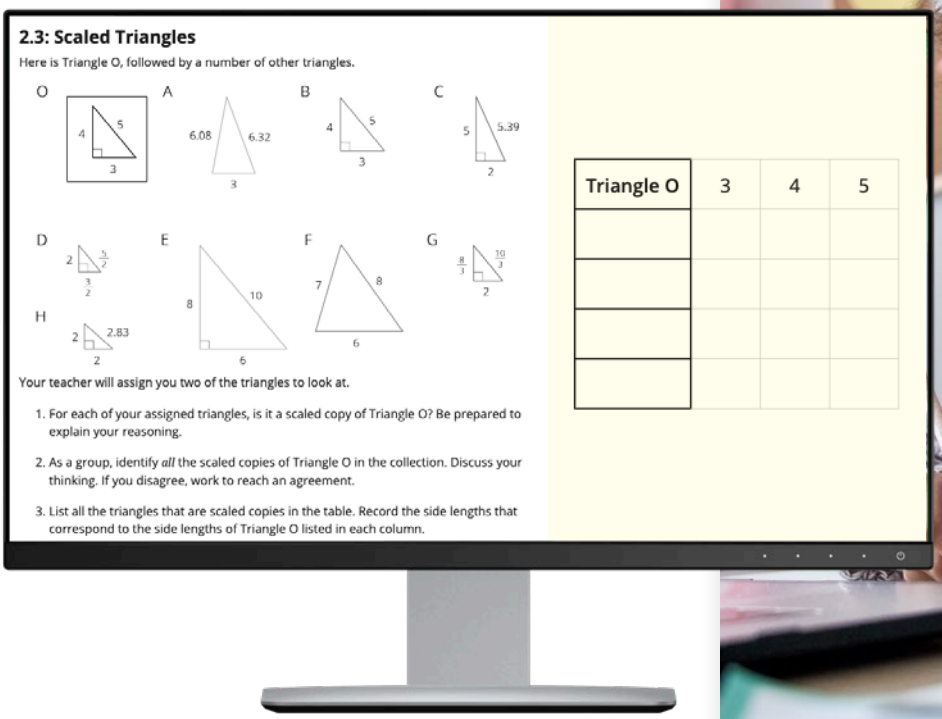
Embedded Opportunities For Active Discussion, Reflection, and Fostering Mathematical Practices

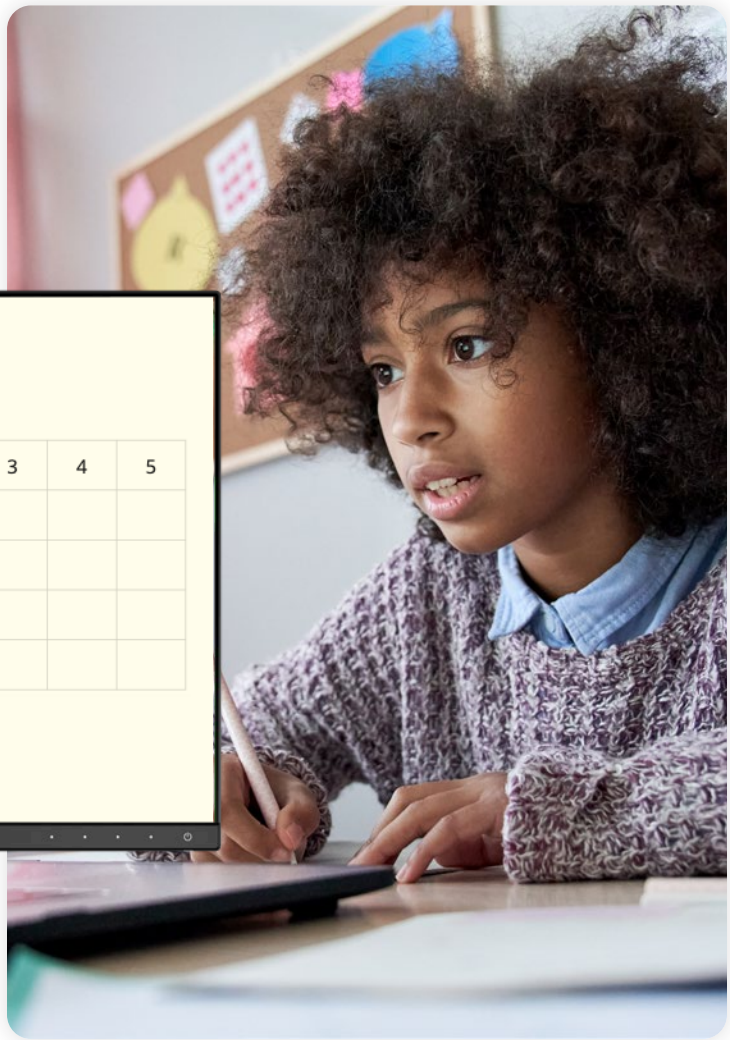


Spotlight lessons feature real students and their work, providing a social learning connection.

Students Engage with the Content through Digital, Print, and Interactive Resources







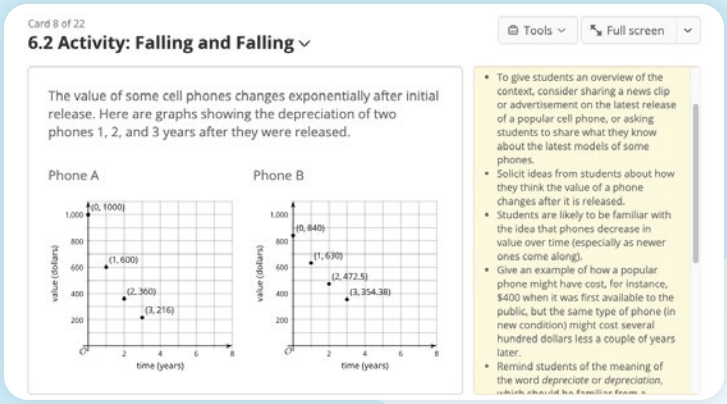
Equity and Access

There are three major design principles to support all learners:

Provide access for all ..... Presume competence ..... Provide a strength-based approach

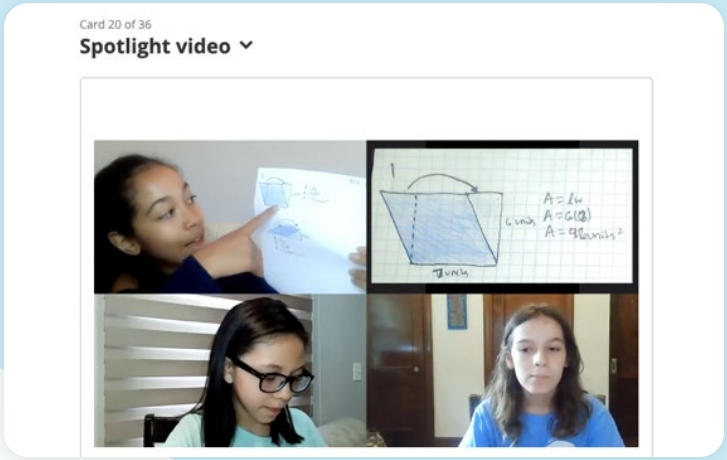
Embedded structures to foster endurance and perseverance

In the curriculum, careful attention is given to the complexity of contexts, as well as to students' potential familiarity with given contexts and representations.



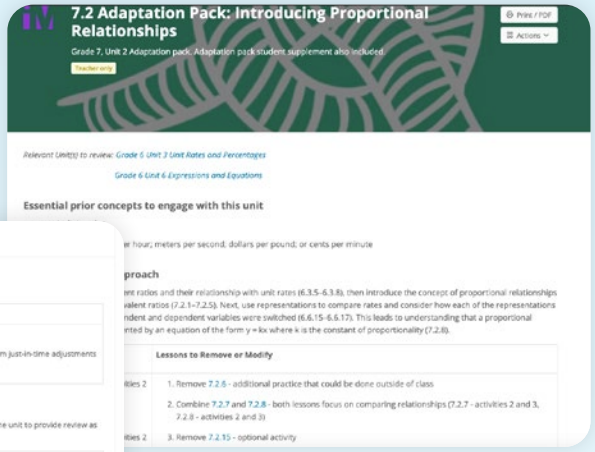
Peer modeled conversations

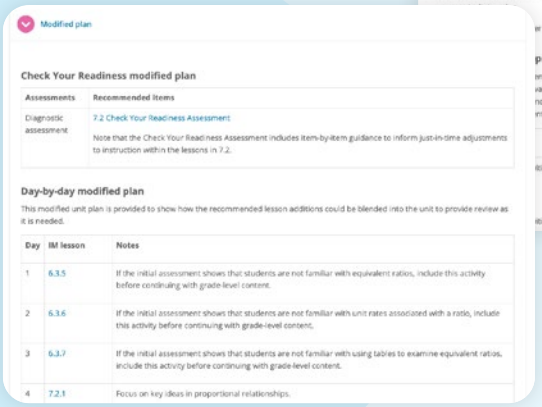
Student Spotlight Lessons are anchored by videos showing interactive discussions between groups of students, along with visuals of their individual approaches. The on-demand example conversations between peers foster engagement and collaboration.

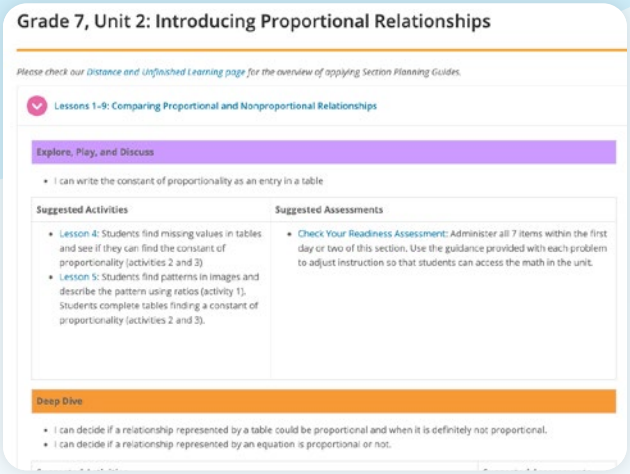


Resources to mitigate unfinished learning

Adaptation Packs are designed to address unfinished or gaps in learning that students may have from previous experiences.

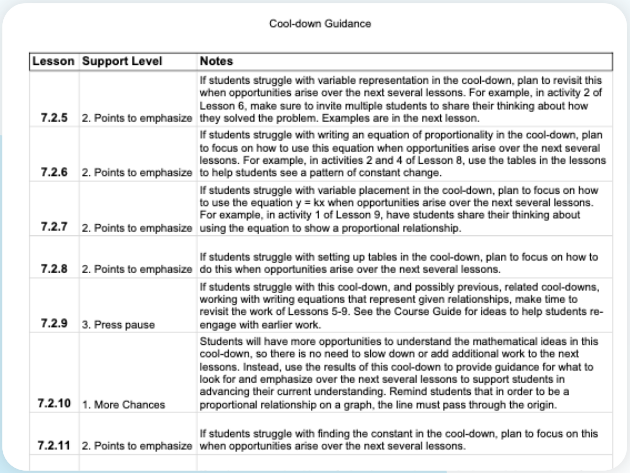






Section Level Planning Guides identify essential lessons and activities that address major work of the grade or prerequisites, and provide guidance on distance learning activities to support each lesson or activity.

Cool-down support addresses newly discovered unfinished learning and identifies opportunities to revisit content in future lessons, without stopping to re-teach a concept.



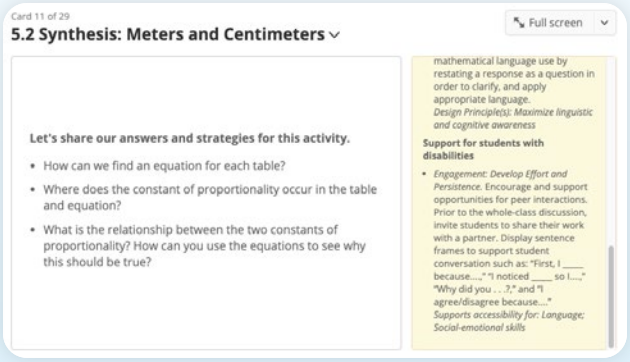
Cool-down Guidance

Lesson	Support Level	Notes
7.2.5	2. Points to emphasize	If students struggle with variable representation in the cool-down, plan to revisit this when opportunities arise over the next several lessons. For example, in activity 2 of Lesson 6, make sure to invite multiple students to share their thinking about how they solved the problem. Examples are in the next lesson.
7.2.6	2. Points to emphasize	If students struggle with writing an equation of proportionality in the cool-down, plan to focus on how to use this equation when opportunities arise over the next several lessons. For example, in activities 2 and 4 of Lesson 8, use the tables in the lessons to help students see a pattern of constant change.
7.2.7	2. Points to emphasize	If students struggle with variable placement in the cool-down, plan to focus on how to use the equation y = kx when opportunities arise over the next several lessons. For example, in activity 1 of Lesson 9, have students share their thinking about using the equation to show a proportional relationship.
7.2.8	2. Points to emphasize	If students struggle with setting up tables in the cool-down, plan to focus on how to do this when opportunities arise over the next several lessons.
7.2.9	3. Press pause	If students struggle with this cool-down, and possibly previous, related cool-downs, working with writing equations that represent given relationships, make time to revisit the work of Lessons 5-9. See the Course Guide for ideas to help students re-engage with earlier work.
7.2.10	1. More Chances	Students will have more opportunities to understand the mathematical ideas in this cool-down, so there is no need to slow down or add additional work to the next lessons. Instead, use the results of this cool-down to provide guidance for what to look for and emphasize over the next several lessons to support students in advancing their current understanding. Remind students that in order to be a proportional relationship on a graph, the line must pass through the origin.
7.2.11	2. Points to emphasize	If students struggle with finding the constant in the cool-down, plan to focus on this when opportunities arise over the next several lessons.

Equity and Access, continued

Access for Students with Disabilities

There are embedded supports for students with disabilities that can be found in the teaching notes. These supports were designed using the Universal Design for Learning (UDL) guidelines. These align to one of the three principles of UDL: engagement, representation, and action and expression.


Card 11 of 29

5.2 Synthesis: Meters and Centimeters

Full screen

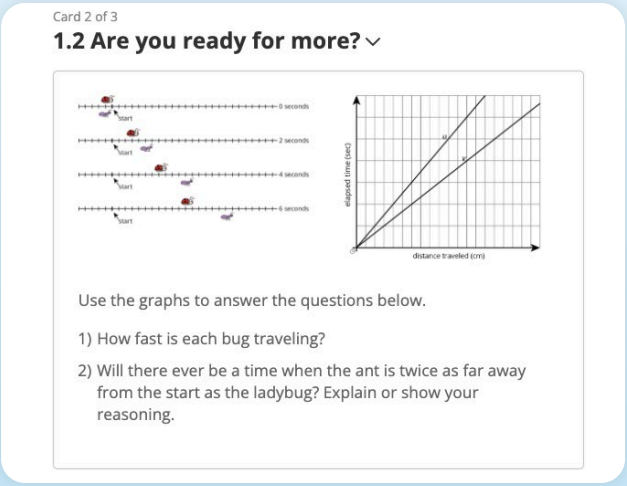
Let's share our answers and strategies for this activity.

- How can we find an equation for each table?
- Where does the constant of proportionality occur in the table and equation?
- What is the relationship between the two constants of proportionality? How can you use the equations to see why this should be true?

mathematical language use by restating a response as a question in order to clarify, and apply appropriate language.
Design Principle(s): Maximize linguistic and cognitive awareness

Support for students with disabilities

- *Engagement: Develop Effort and Persistence.* Encourage and support opportunities for peer interactions. Prior to the whole-class discussion, invite students to share their work with a partner. Display sentence frames to support student conversation such as: "First, I ____ because...." "I noticed ____ so I...." "Why did you ... ?," and "I agree/disagree because...."
Supports accessibility for: Language; Social-emotional skills


Card 2 of 3

1.2 Are you ready for more?

Use the graphs to answer the questions below.

1) How fast is each bug traveling?

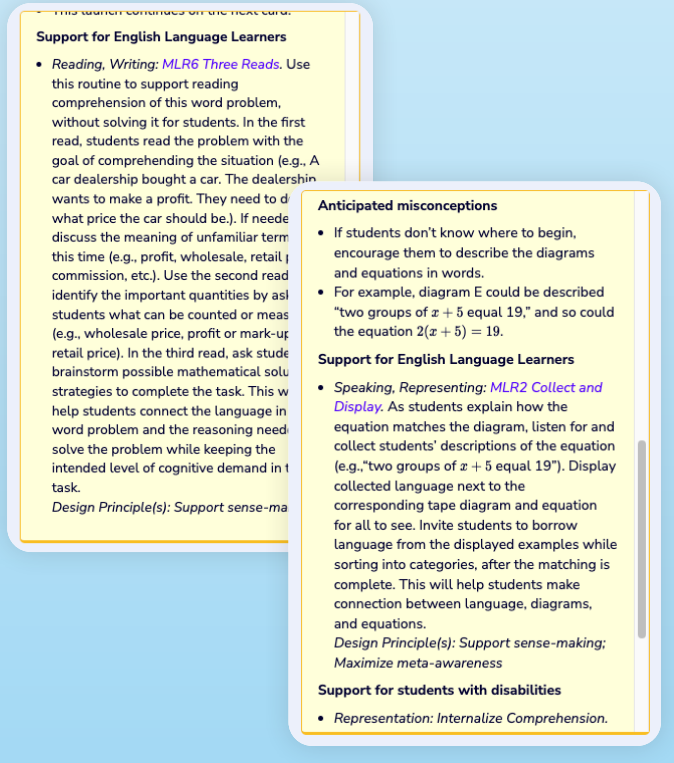
2) Will there ever be a time when the ant is twice as far away from the start as the ladybug? Explain or show your reasoning.

Advanced Learners

Lessons include "Are you Ready for More?" extension problems to challenge students. These exercises go deeper into grade-level mathematics and often make connections between the topic at hand and other concepts.

English Language Learners

Embedded supports for English learners are found in the teaching notes. Mathematical language routines are based on the UL/SCALE framework developed at Stanford University. The eight consistent routines simultaneously support students' learning of mathematical practices, content, and language.


Support for English Language Learners

- *Reading, Writing: MLR6 Three Reads.* Use this routine to support reading comprehension of this word problem, without solving it for students. In the first read, students read the problem with the goal of comprehending the situation (e.g., A car dealership bought a car. The dealership wants to make a profit. They need to d what price the car should be.). If neede discuss the meaning of unfamiliar term this time (e.g., profit, wholesale, retail commission, etc.). Use the second read identify the important quantities by asl students what can be counted or meas (e.g., wholesale price, profit or mark-up retail price). In the third read, ask stude brainstorm possible mathematical solu strategies to complete the task. This w help students connect the language in word problem and the reasoning need solve the problem while keeping the intended level of cognitive demand in t task.
Design Principle(s): Support sense-ma

Anticipated misconceptions

- If students don't know where to begin, encourage them to describe the diagrams and equations in words.
- For example, diagram E could be described "two groups of $x + 5$ equal 19," and so could the equation $2(x + 5) = 19$.

Support for English Language Learners

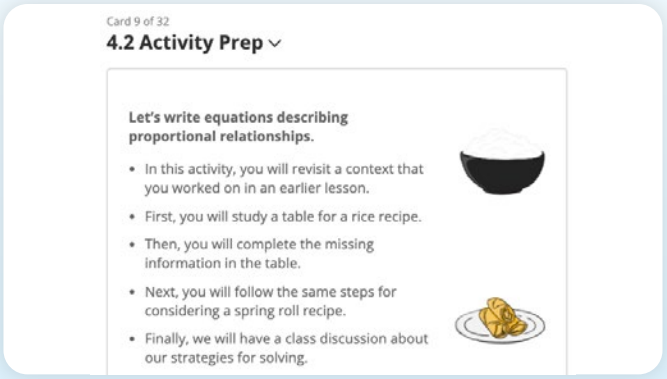
- *Speaking, Representing: MLR2 Collect and Display.* As students explain how the equation matches the diagram, listen for and collect students' descriptions of the equation (e.g.,"two groups of $x + 5$ equal 19"). Display collected language next to the corresponding tape diagram and equation for all to see. Invite students to borrow language from the displayed examples while sorting into categories, after the matching is complete. This will help students make connection between language, diagrams, and equations.
Design Principle(s): Support sense-making; Maximize meta-awareness

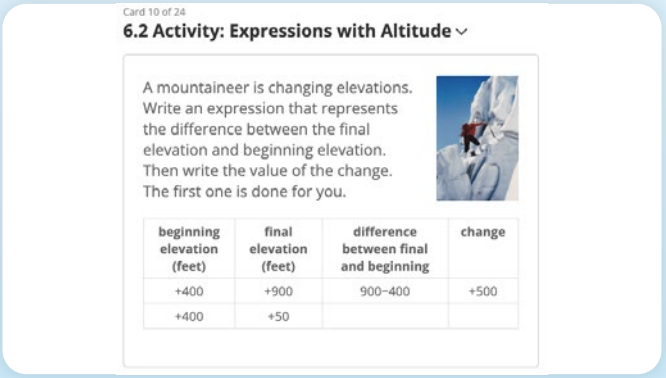
Support for students with disabilities

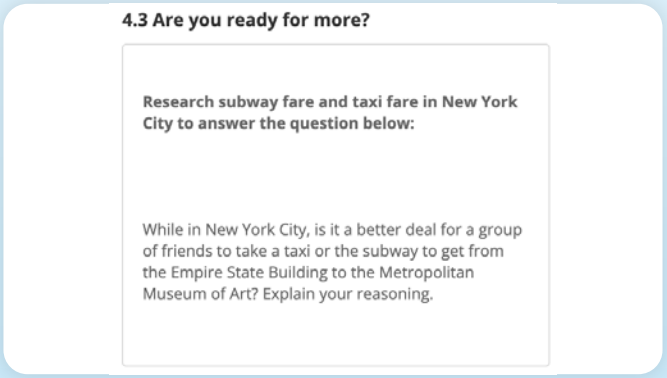
- *Representation: Internalize Comprehension.*

Culturally Responsive Teaching and Learning

The materials are inclusive of a variety of cultures and ethnicities and are free from bias in the portrayal of ethnic groups, gender, age, class, cultures, religion, and people with disabilities.



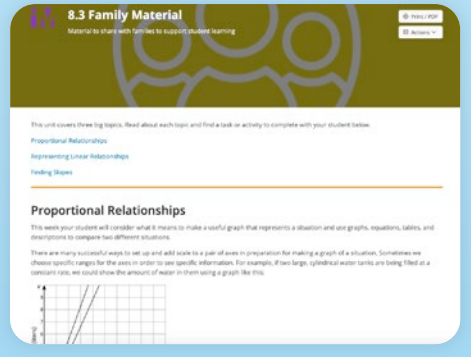


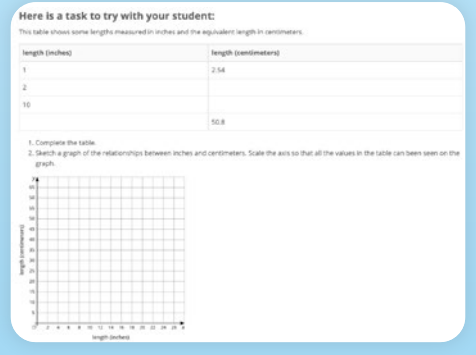


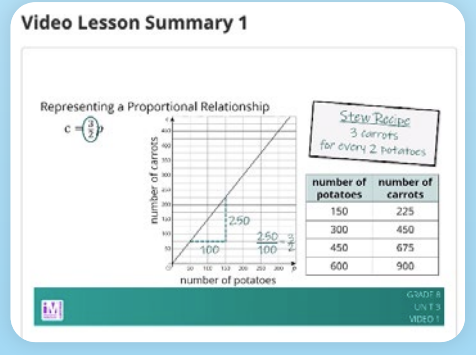
Home Connections

Each unit includes family support materials that explain the key ideas and concepts in family-friendly language. There are also tasks to create a stronger school-home connection and empower parents and caregivers to support students outside of the classroom.

The grade 6–8 series includes lesson summary videos for checking understanding and reviewing important concepts and vocabulary. Parents and caregivers can use these as a resource for homework help.







Assessment

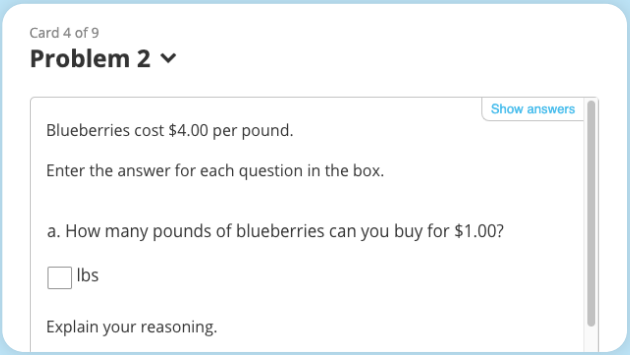
Measure understanding and meet learning goals

Illustrative Mathematics offers opportunities for both formative and summative assessment that empower teachers to measure student understanding and progress against learning goals.

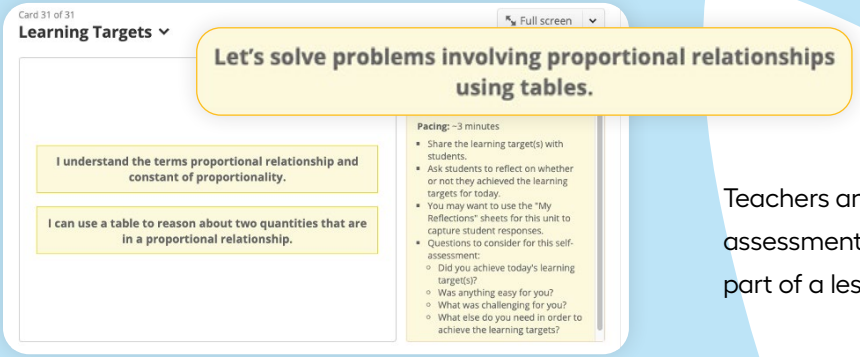
Digital assessment resources include new generation item types including multiple choice, multiple select, and other tech-enhanced item types.

Formative Assessment

The Illustrative Mathematics instructional design offers regular, embedded options for monitoring student progress and providing constructive feedback.

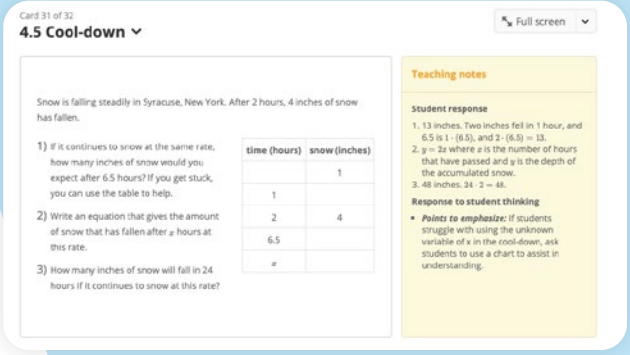


Each unit begins with a **Check Your Readiness diagnostic assessment** of concepts and skills that are prerequisite to the unit. Teachers can use these to identify students with particular below-grade needs or topics to carefully address during the unit.



Learning Goals invite students into the work of that day.

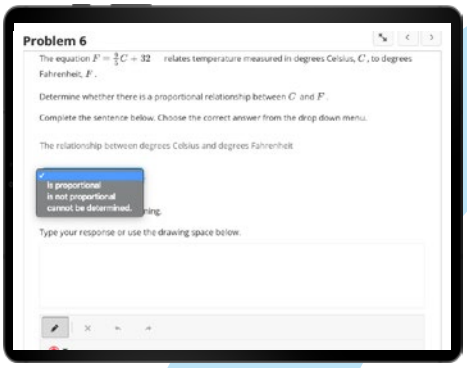
Teachers and students can use **learning targets** as formative assessment prompts for a reflection or self-assessment as part of a lesson synthesis.

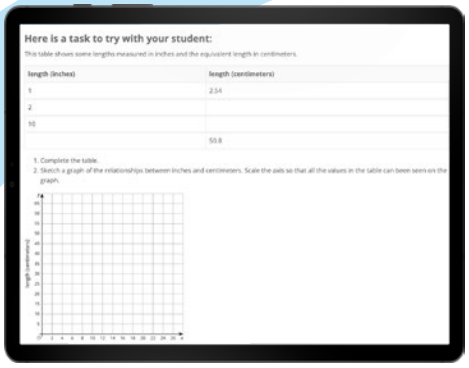


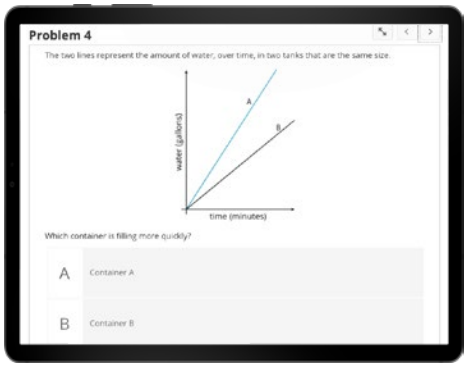
Each lesson includes a **Cool-Down** to assess that day's lesson.

Summative Assessment

Each unit includes an end-of-unit **written and digital assessment** to assess what students have learned at the conclusion of the unit. In longer units, **a mid-unit assessment** is also available.







Digital assessments allow students to access, record, and submit their questions and answers for a variety of technology-enhanced item types including multiple choice, multiple select, drag-and-drop, cloze, graphing, labeling, constructed response, short essay, and drawing types.

All **summative assessment** problems include a complete solution and standard alignment. Multiple-choice and multiple response problems often include a reason for potential errors.

Digital Practice

Additionally, a set of cumulative practice problems is provided for each lesson that can be used for homework or practice.

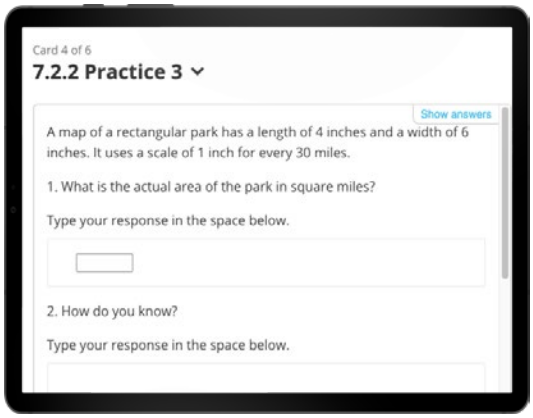
Performance Tasks

Most units have culminating lessons where students have an opportunity to show off their problem-solving skills or apply the mathematics they have learned to a real-world problem.

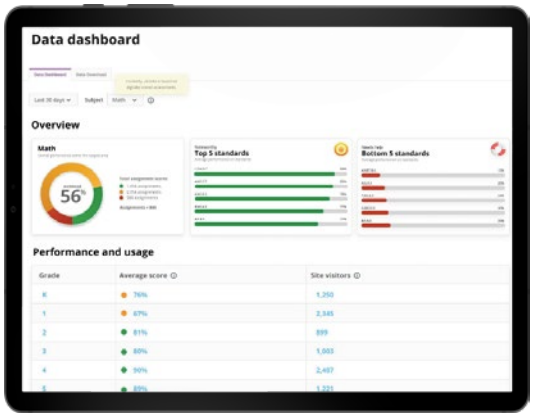
Data and Reporting

Real-time reporting is available for teachers to give them actionable data. Class Performance Reports show assignment scores and item analysis and year over year retention data.

Drill downs allow teachers to analyze student work for open-ended item type.



- Digital Practice



Program Components

LearnZillion Illustrative Mathematics Grade 6 Course

From Illustrative Mathematics

Grade 6 is a year of exciting mathematics. Students study ratio and rate, learn to divide fractions by fractions, extend their understanding of number to include negative numbers, and understand and use variables, to name just some of the major work of...

LearnZillion Illustrative Mathematics Grade 7 Course

From Illustrative Mathematics

Welcome to Grade 7 mathematics, a critical year when students extend concepts of rates and ratios to work with equivalent ratios and proportional relationships. Students expand their understanding of fractions to include all rational numbers and become...

LearnZillion Illustrative Mathematics Grade 8 Course

From Illustrative Mathematics

In this course, eighth graders tackle exciting new ideas and concepts in preparation for work in high school. They extend earlier understandings of proportional relationships to study linear relationships and work with linear equations in one and two v...

Accelerated Grade 6

From Illustrative Mathematics

The Accelerated Grade 6 course introduces students to many of the big ideas that are a cornerstone of middle school mathematics and beyond. Students study ratio and rate, learn to divide fractions by fractions, extend their understanding of number to i...

Accelerated Grade 7

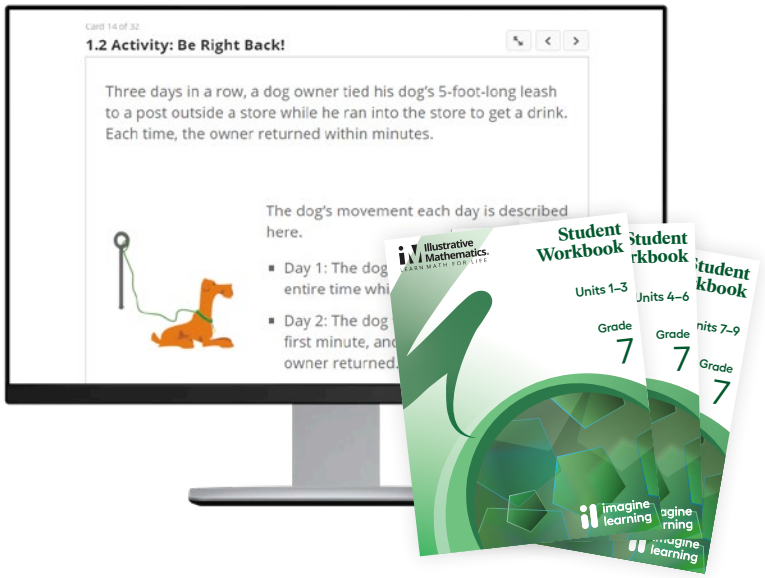
From Illustrative Mathematics

Students complete the work of middle school in this course. Students work with linear equations in one and two variables, deepen their understanding of proportional relationships and express linear relationships using equations, tables, and graphs. Stu...

Teacher Components*

- Teacher Course Guide (print)
- Teacher Unit Guides (units 1–9) (print)
- Imagine Learning (IL) Classroom teacher license (digital)

Imagine Learning (IL) Classroom includes access to all print components, teacher notes, pacing guides, materials lists, glossary, classroom and distance learning-ready lesson cards with annotation functionality, assignable lessons and assessments, **Student Spotlight** lessons, modeling prompts, family materials, extension problems, digital interactives (including Desmos and GeoGebra), videos, digital assessments, digital practice sets, **Live Learn**, adaptation packs, data dashboard, reports, and more.



Student Components*

- Student Workbooks (units 1–9) (print)
- Imagine Learning (IL) Classroom student license (digital)

Imagine Learning (IL) Classroom includes access to student workbook content, interactive lessons, Student Spotlight lessons, glossary, lesson summary videos, Digital interactives (including Desmos and GeoGebra), digital student task statements, digital assessments, digital practice sets, and more.

Professional Services

Imagine Learning Illustrative Mathematics Professional Development offerings support teachers, coaches, and administrators in effectively implementing the curriculum and platform with integrity throughout their program adoption.

Lesson example videos are embedded directly in the Imagine Learning Classroom digital experience for on-demand implementation support. These showcase authentic IL IM classrooms, teachers, and students in action.

There are virtual and in-person options to support the unique needs of your school or district. The workshop modules give participants the opportunity to learn, apply, and synthesize their understandings.

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