imagine learning | Illustrative Mathematics
LEARN MATH FOR LIFE

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IM 9–12 MATH v.1

Illustrative Mathematics

Program Overview
Algebra 1, Geometry, Algebra 2

Illustrative Mathematics CERTIFIED®

Authors, Research, and Certified Partnership

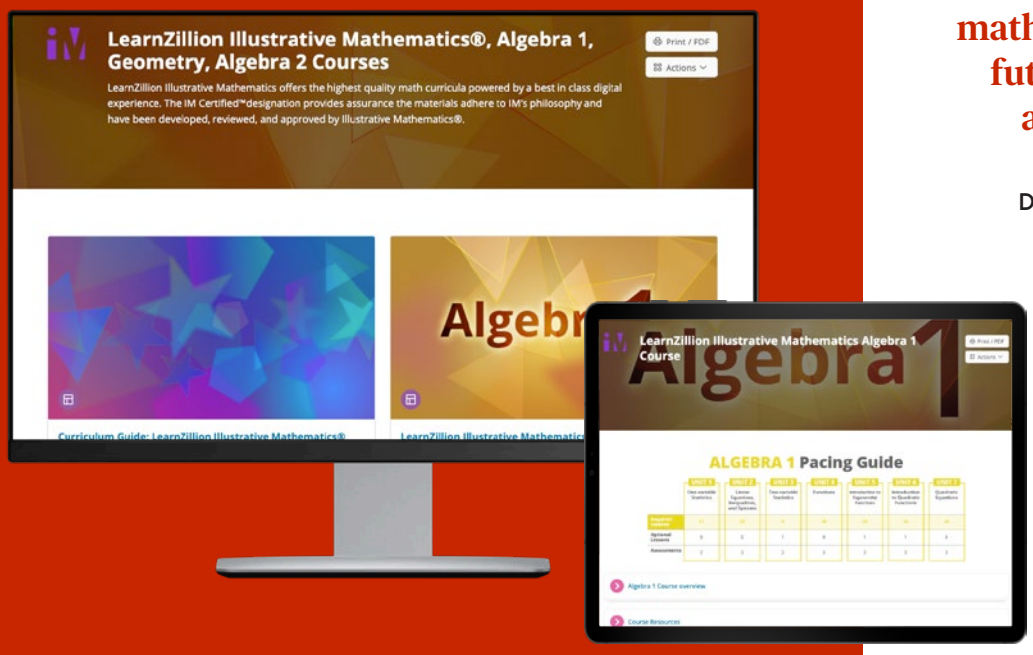
Dr. Bill McCallum and a team of math leaders authored Illustrative Mathematics (IM) to improve student outcomes in mathematics. The problem-based curriculum is built on best practices and research principles from NCTM, National Research Council, Smith & Stein, and others. The new IM K–5 Math completes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

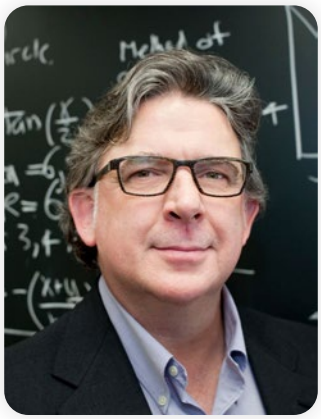
Certified Partnership

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

The Imagine Learning IM instructional experience aligns with the Every Student Succeeds 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.





"The IM 9–12 Math curriculum is our teacher-tested, standards-aligned curriculum, designed with high school learners in mind. The curriculum nurtures a comprehensive proficiency with functions, algebra, geometry, modeling, and statistics, and it encourages problem-solving skills students need to make use of mathematics in their future education and careers."

• • •

Dr. William McCallum

Imagine Learning Illustrative Mathematics

IM 9–12 MATH v.1

For Algebra 1, Geometry, Algebra 2

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.

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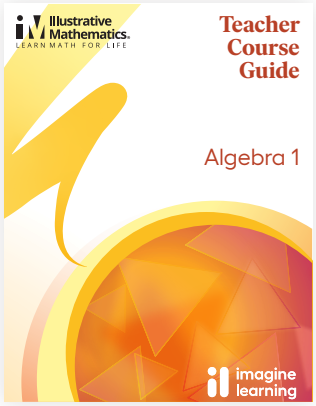
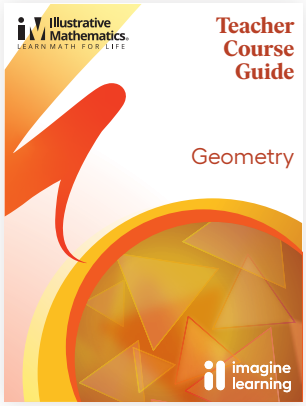
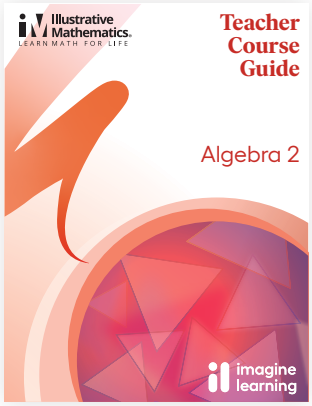






Instructional Design

The instructional design of the materials supports all students through a coherent progression of mathematics based on the standards and research-based learning trajectories.

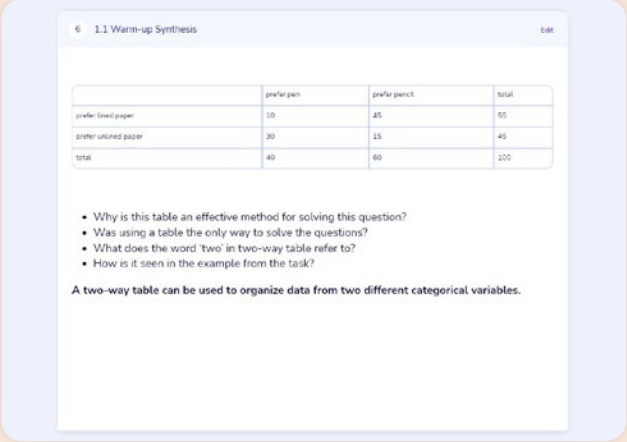
Each activity and lesson are part of a mathematical story across the units. This coherence allows students to view mathematics as a connected set of ideas that makes sense.

	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:

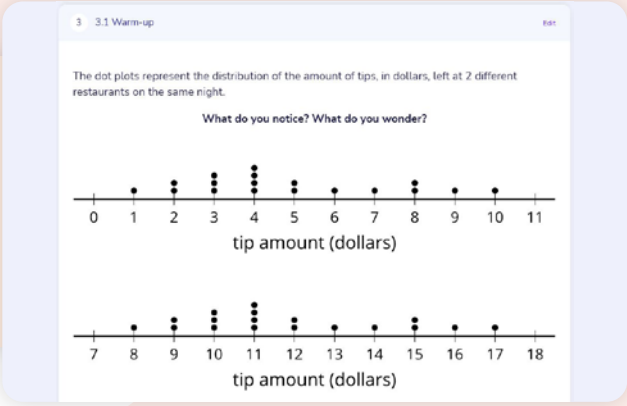
Units

Each unit starts with an invitation to mathematics. The first few lessons provide an accessible entry point for all students and allow teachers to observe students' prior understandings. Next, they move toward a deep study of concepts with time for consolidating and applying.



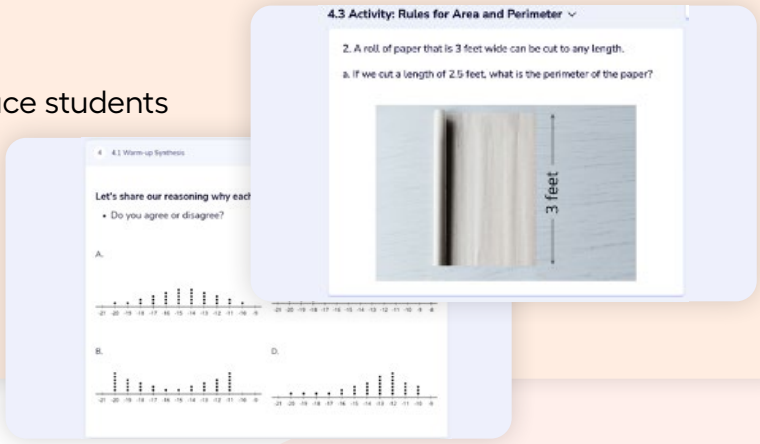
Lessons

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



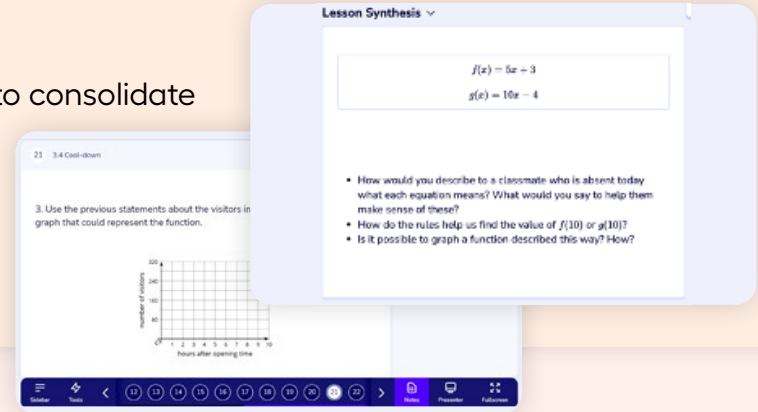
Instructional Activities

Next, instructional activities introduce students to new concepts, procedures, contexts, and representations — and help them make connections between them.



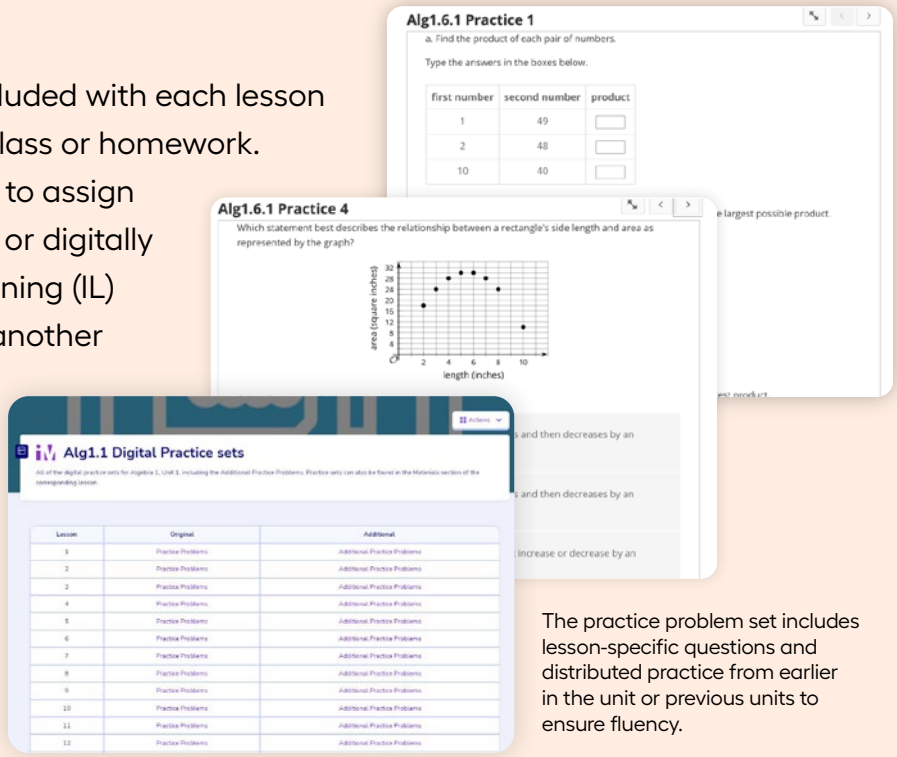
Synthesis

Each lesson ends with a synthesis to consolidate understanding and make the learning goals of the lesson explicit, followed by a cool-down to apply their learning.



Practice Problems

Practice problems are included with each lesson for independent work in class or homework. Teachers have the option to assign work by paper and pencil or digitally through the 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 lesson-specific questions and distributed practice from earlier in the unit or previous units to ensure fluency.

Design Principles across Algebra 1, Geometry, Algebra 2

Learning Mathematics by Doing Mathematics

A problem-based instructional framework supports teachers in structuring lessons so students are the ones doing the problem solving to learn the mathematics. Activities and routines allow teachers to see what students already know—and what they can notice and figure out—before explaining concepts and procedures.

Balancing Rigor

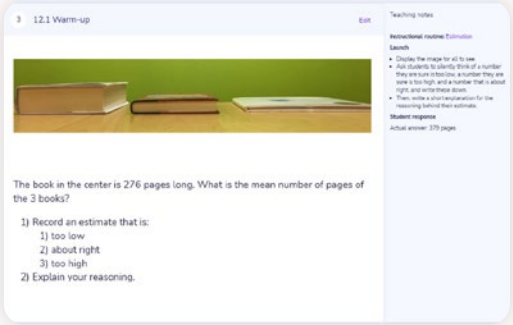
Three aspects of rigor are essential to mathematics: conceptual understanding, procedural fluency, and the ability to apply these concepts and skills to mathematical problems, both with and without real-world contexts. Illustrative Mathematics develops them together to support student understanding.

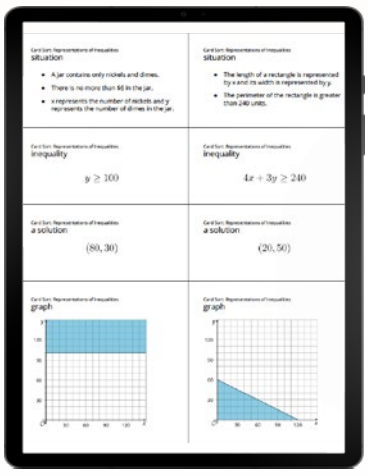
Establishing Norms

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

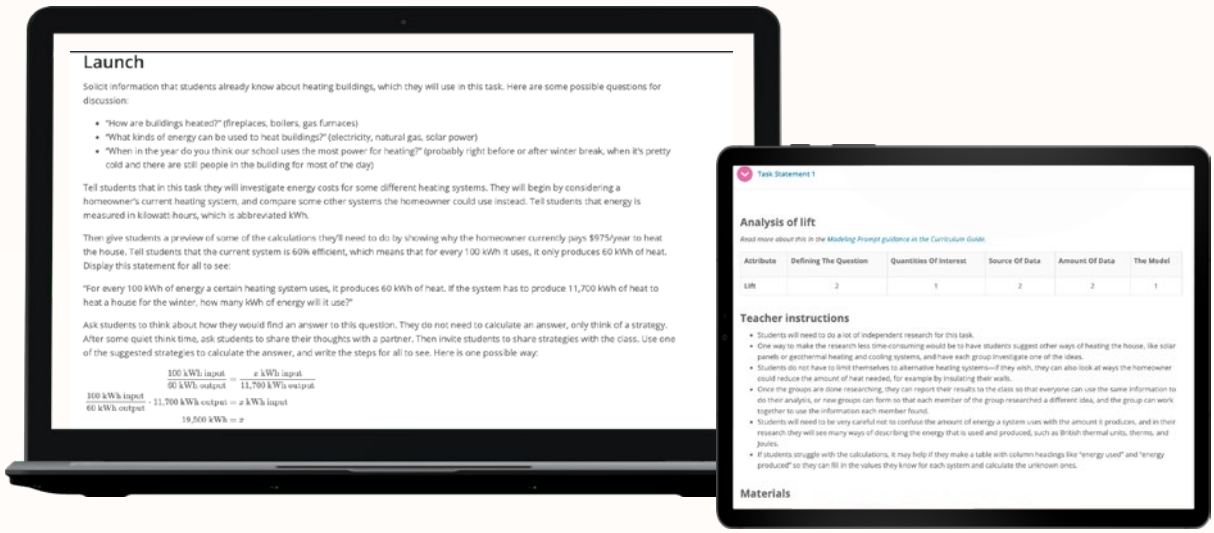




Card Sort encourages students to categorize mathematical entities based on shared characteristics or connections.

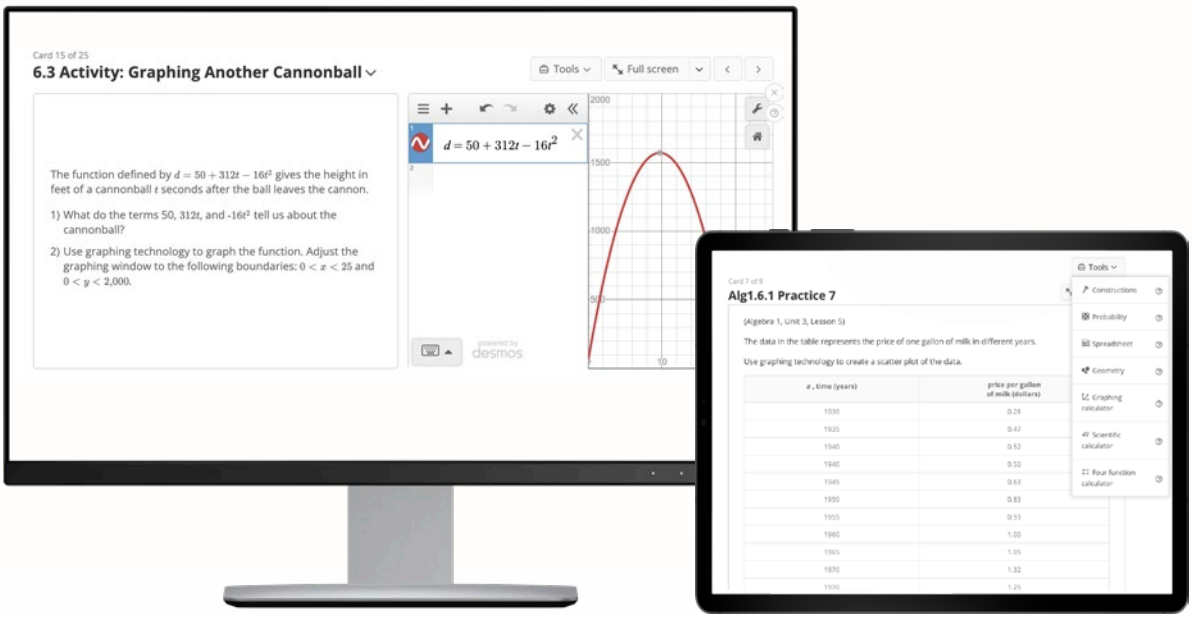
Mathematical Modeling

Mathematical modeling is the process of choosing and using appropriate mathematics and statistics to analyze empirical situations, understand them better, and improve decisions. The program offers modeling prompts and guidance to support students in making inferences, evaluating choices, and validating outcomes.



Use of Digital Tools

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



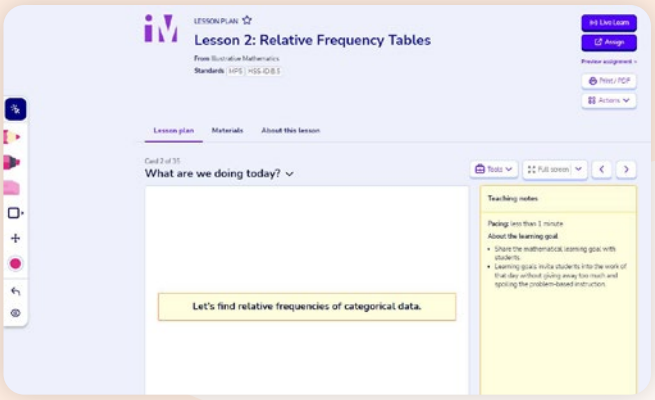
Teacher Experience

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 that the integrity of the rich Illustrative Mathematics content is maintained in any environment or instructional model.

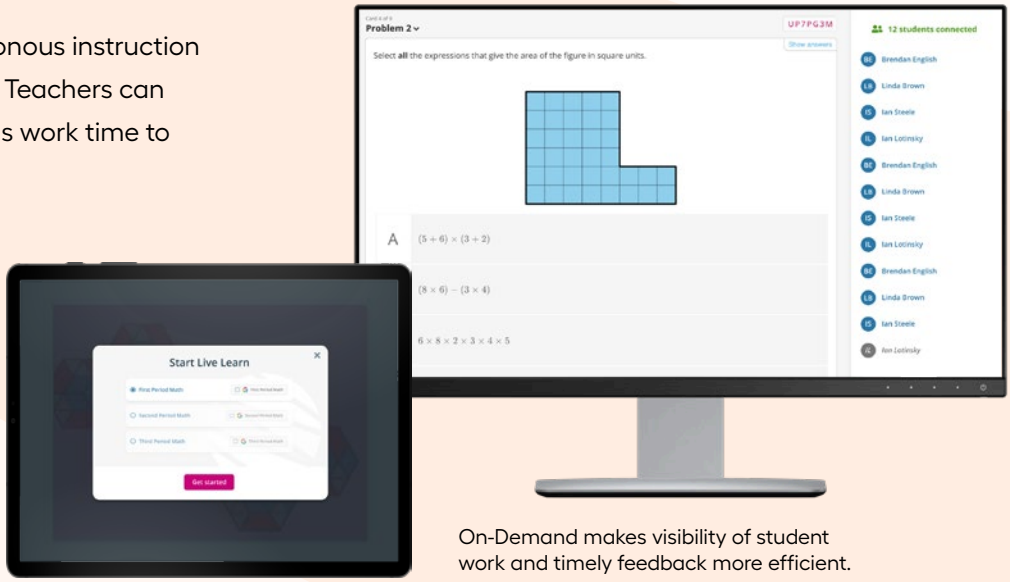
Flexibility and Personalization

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.

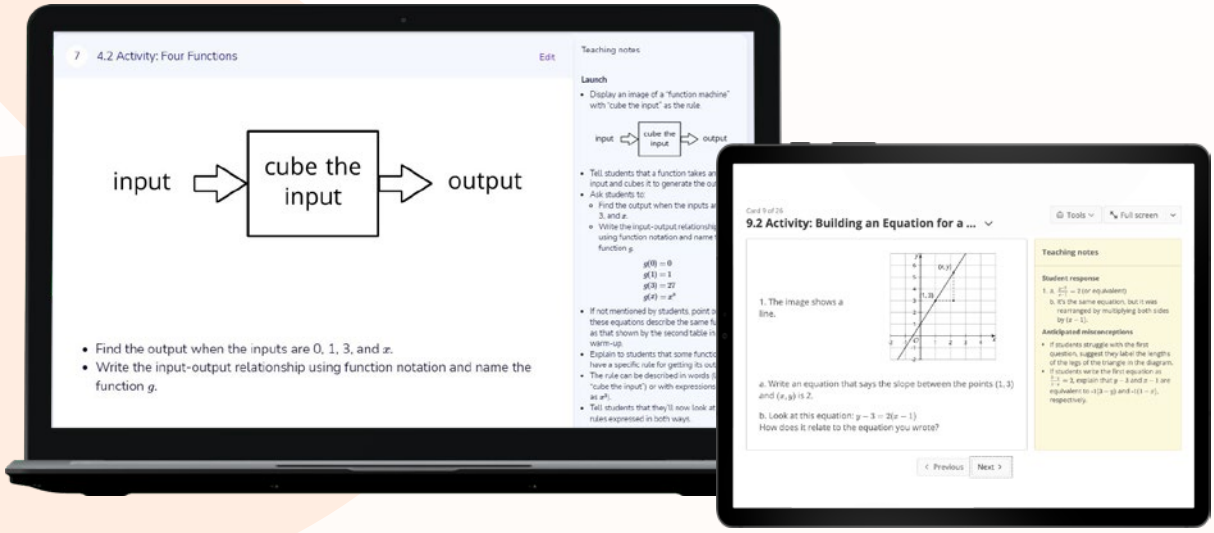
Live Learn allows for synchronous instruction virtually within the platform. Teachers can transition from asynchronous work time to a live session with one click.



On-Demand makes visibility of student work and timely feedback more efficient.

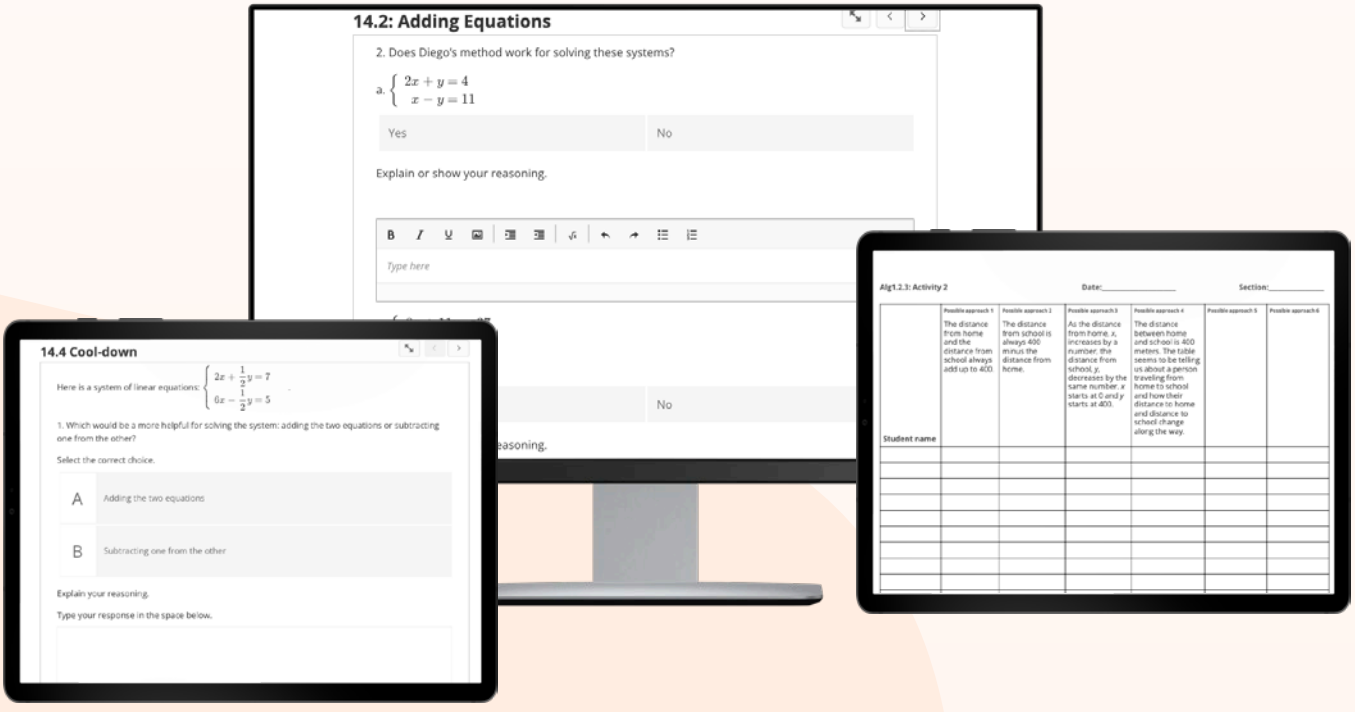
Embedded Teacher Support

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



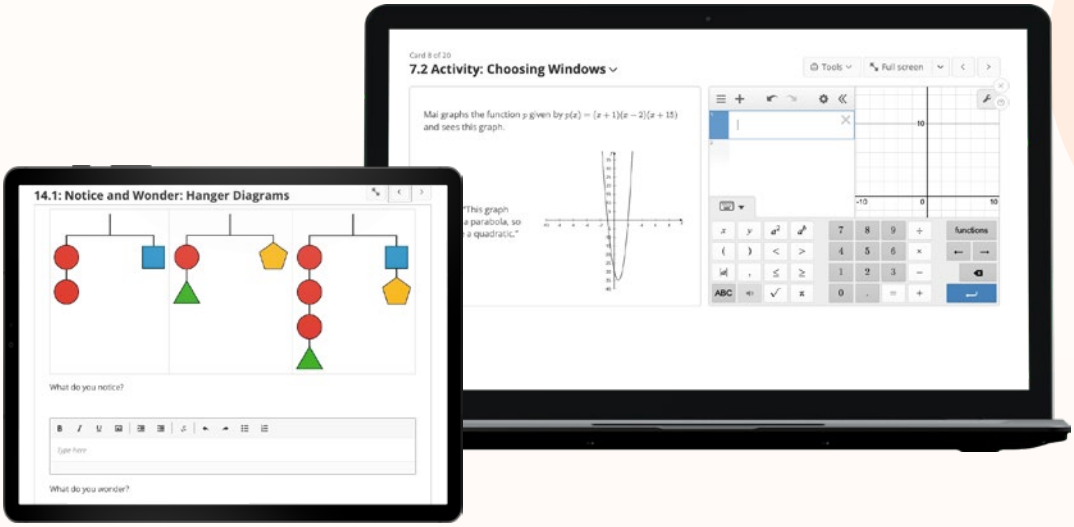
Student Experience

With Imagine Learning, students enjoy mathematics, make mathematical connections, and develop conceptual understanding.

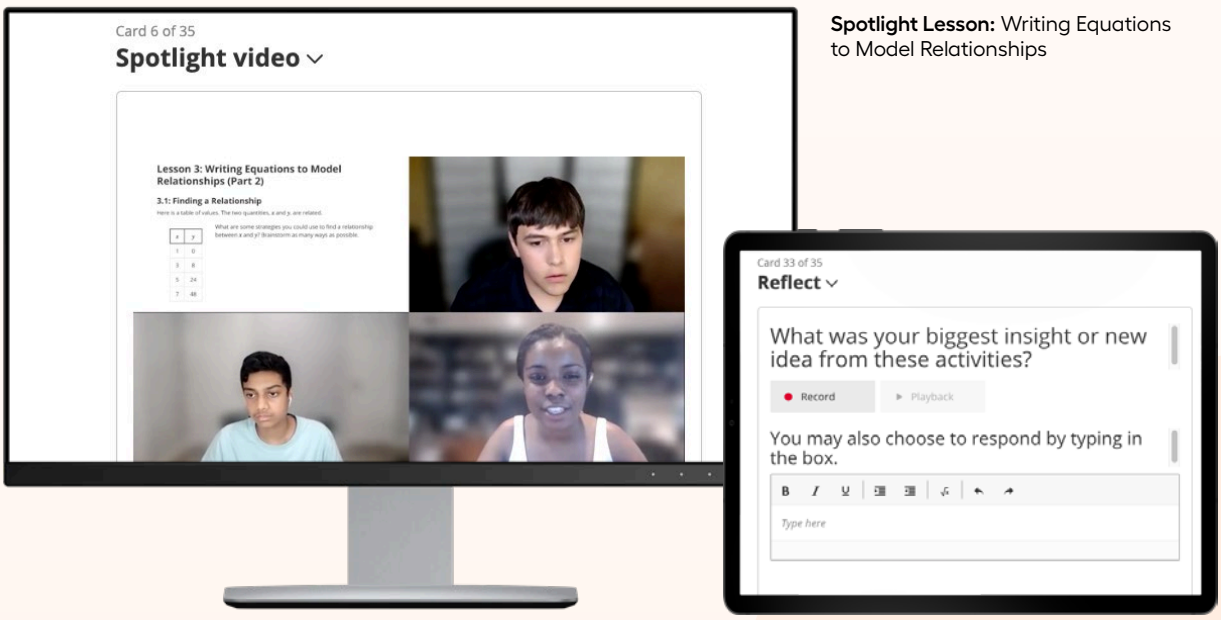
Students have access to print and interactive digital resources for optimal instruction and enrichment.

Deep Focus on Conceptual Understanding, Procedural Fluency, and Application

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

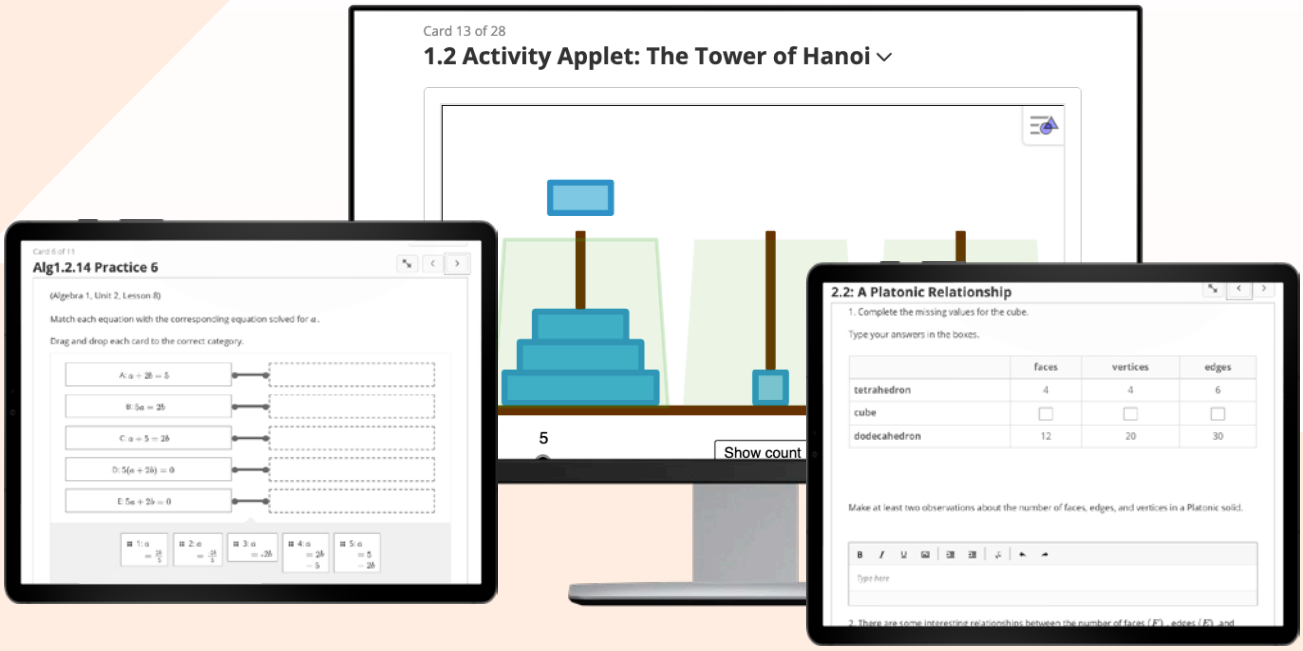


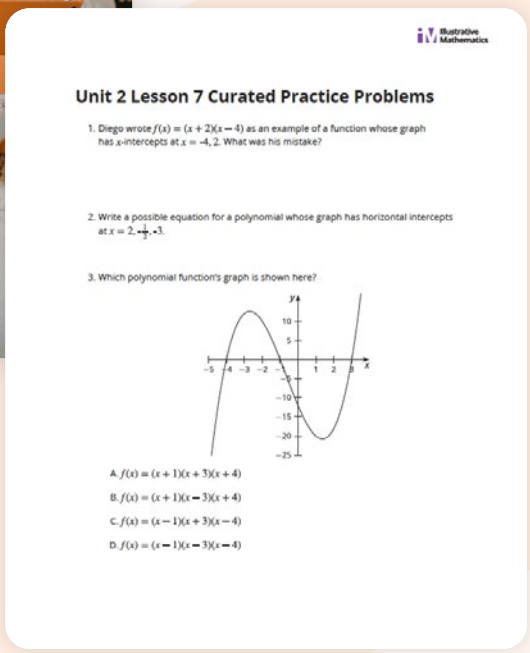
Embedded Opportunities for Active Discussion, Reflection, and Fostering Mathematical Practices



Spotlight Lesson: Writing Equations to Model Relationships

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





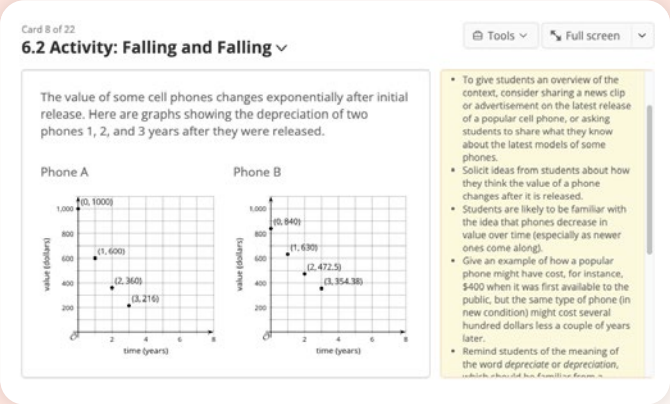
Equity and Access

There are three major design principles to support all learners.

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

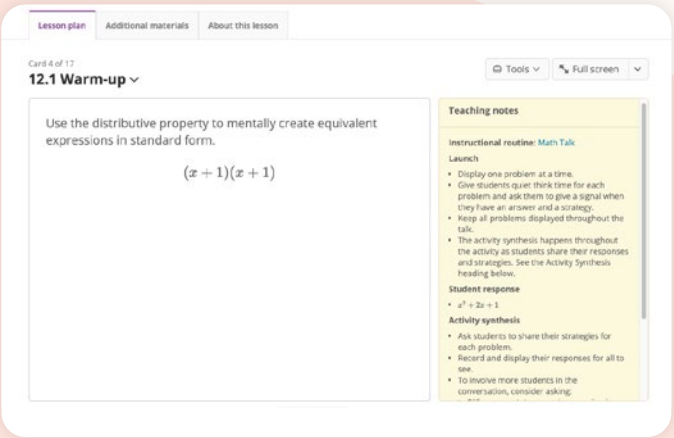
Embedded structures to foster endurance and perseverance

The curriculum gives careful attention to the complexity of contexts and students' potential familiarity with given contexts and representations.



Algebra 1 extra support materials

Students who need extra preparation to succeed in Algebra 1 benefit from developing positive beliefs about mathematics. These give students opportunities to access grade-level mathematics in age-appropriate contexts.

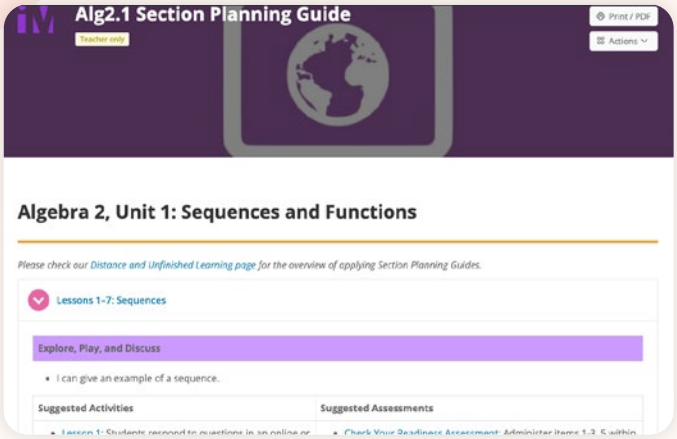


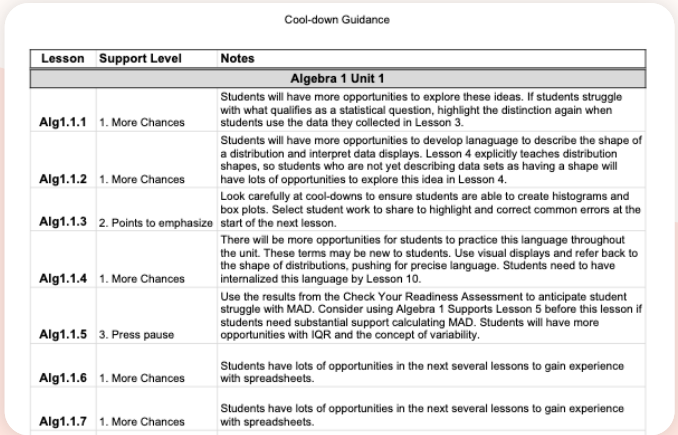
Algebra 1 Extra Support Materials utilize a few high-leverage instructional routines focused on number sense, precision of language, and mathematical reasoning that all students can access.

Resources to mitigate unfinished learning

Curriculum Adaptation Packs target unfinished learning and gaps in understanding 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 distance learning activities that support each lesson or activity.





Cool-down Guidance

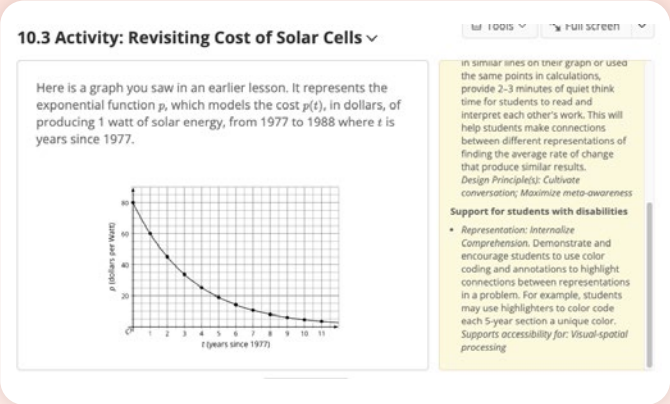
Lesson	Support Level	Notes
		Algebra 1 Unit 1
Alg1.1.1	1. More Chances	Students will have more opportunities to explore these ideas. If students struggle with what qualifies as a statistical question, highlight the distinction again when students use the data they collected in Lesson 3.
Alg1.1.2	1. More Chances	Students will have more opportunities to develop lanaguage to describe the shape of a distribution and interpret data displays. Lesson 4 explicitly teaches distribution shapes, so students who are not yet describing data sets as having a shape will have lots of opportunities to explore this idea in Lesson 4.
Alg1.1.3	2. Points to emphasize	Look carefully at cool-downs to ensure students are able to create histograms and box plots. Select student work to share to highlight and correct common errors at the start of the next lesson.
Alg1.1.4	1. More Chances	There will be more opportunities for students to practice this language throughout the unit. These terms may be new to students. Use visual displays and refer back to the shape of distributions, pushing for precise language. Students need to have internalized this language by Lesson 10.
Alg1.1.5	3. Press pause	Use the results from the Check Your Readiness Assessment to anticipate student struggle with MAD. Consider using Algebra 1 Supports Lesson 5 before this lesson if students need substantial support calculating MAD. Students will have more opportunities with IQR and the concept of variability.
Alg1.1.6	1. More Chances	Students have lots of opportunities in the next several lessons to gain experience with spreadsheets.
Alg1.1.7	1. More Chances	Students have lots of opportunities in the next several lessons to gain experience with spreadsheets.

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

Equity and Access, continued

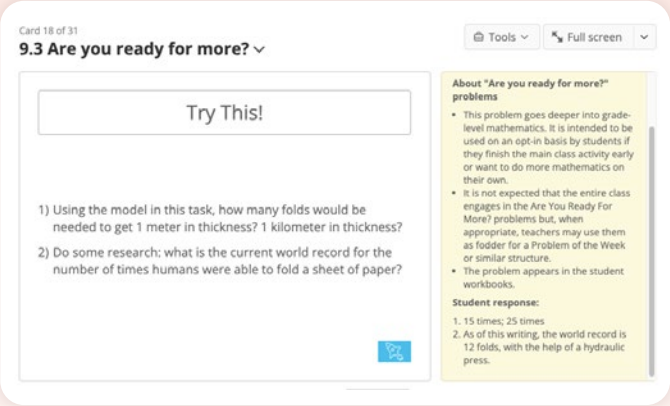
Access for Students with Disabilities

There are embedded supports for students with disabilities in the teaching notes. Each support aligns to one of the three principles of UDL (Universal Design for Learning): engagement, representation, and action and expression.



Advanced Learners

Lessons include **Try This** problems to challenge students. These problems go deeper into grade-level mathematics and often connect the topic at hand with other concepts.



English Language Learners

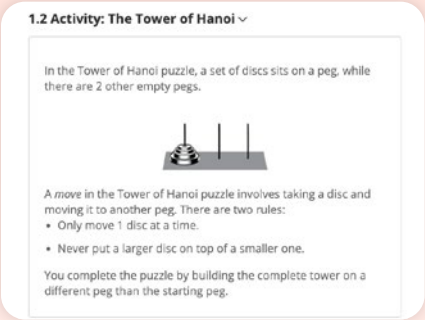
Embedded supports for English learners are found in the Teaching Notes. Mathematical Language Routines are based on the UL/SCALE framework developed at Stanford University. The eight consistent routines simultaneously support students' learning of mathematical practices, content, and language.

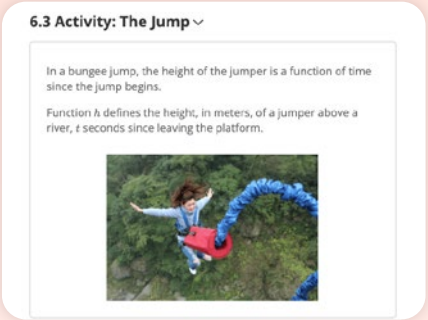
Support for English Language Learners

- *Representing, Conversing: MLR7 Compare and Connect.* Use this routine to prepare students for the whole-class discussion. At the appropriate time, invite students to create a visual display that shows their strategy for the last question. Allow students time to quietly circulate and analyze the strategies in at least 2 other displays in the room. Give students quiet think time to consider how the strategies are alike and how they are different. Next, ask students to find a partner to discuss what they noticed. This will help students make connections between the strategies used to solve for an unknown input value.
  Design Principle(s): Optimize output; Cultivate conversation

Culturally Responsive Teaching and Learning

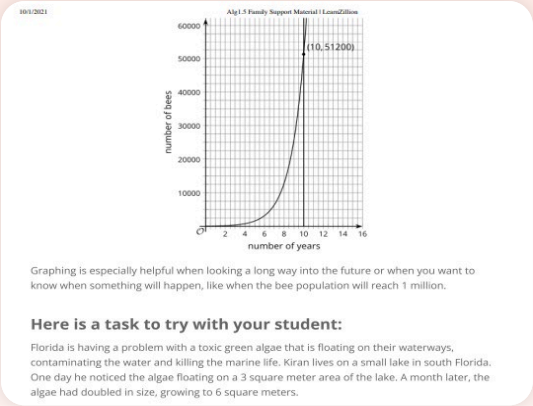
The materials are inclusive of a variety of cultures and ethnicities and are free from bias in the portrayal of ethnic groups, gender, age, class, cultures, religion, and people with disabilities.





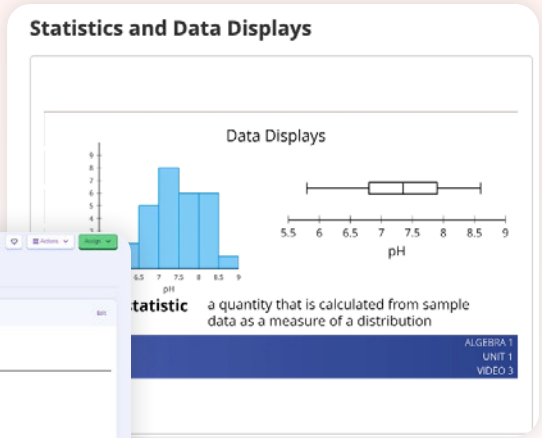
Home Connections

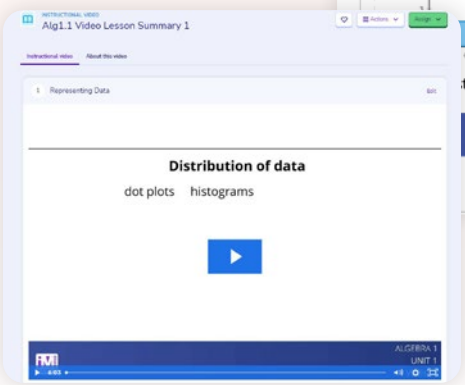
Each unit includes Family Support Materials that explain the key ideas and concepts in family-friendly language. There are also tasks to create a stronger school-home connection and empower parents and caregivers in supporting students outside the classroom.



Algebra 1 Video Lesson Summaries

Algebra 1 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

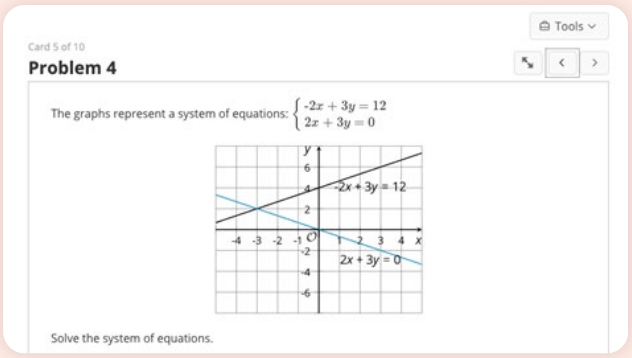
Measure understanding and meet learning goals

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

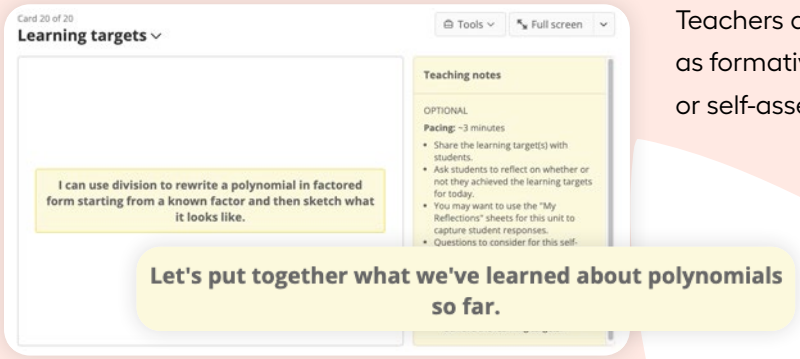
Digital assessment resources include new generation item types including multiple choice, multiple select, and other tech-enhanced item types.

Formative Assessment

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

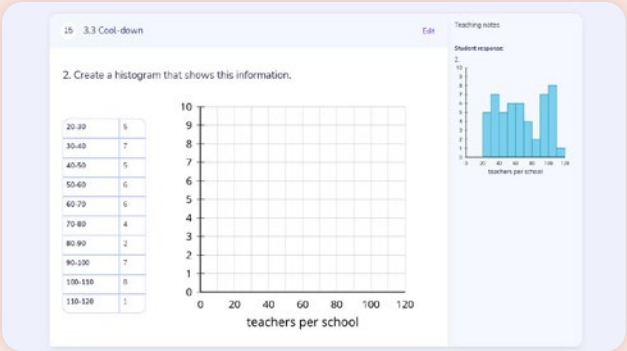


Each unit begins with a **Check Your Readiness diagnostic assessment** of concepts and skills that are prerequisite to the unit. Teachers can use these to identify students with particular below-grade needs or topics to carefully address during the unit.



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

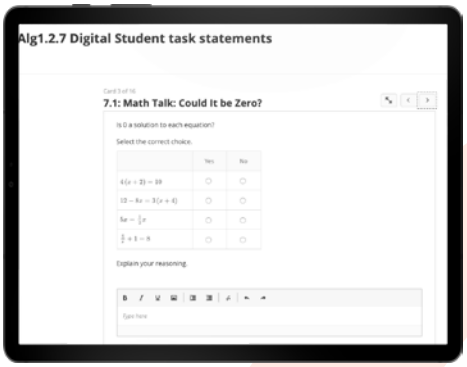
Learning Goals invite students into the work of that day.

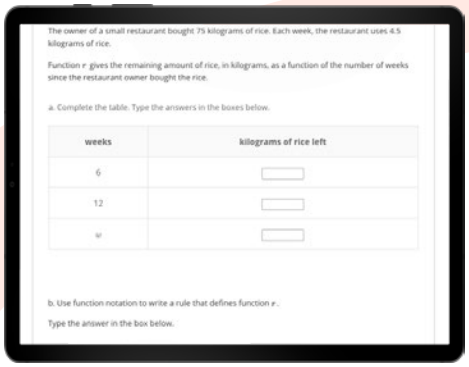


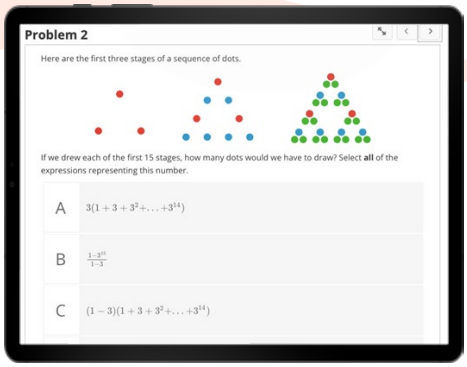
Each lesson includes a **Cool-Down** to assess that day's lesson.

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.







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.

In longer units, a **mid-unit assessment** is also available.

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

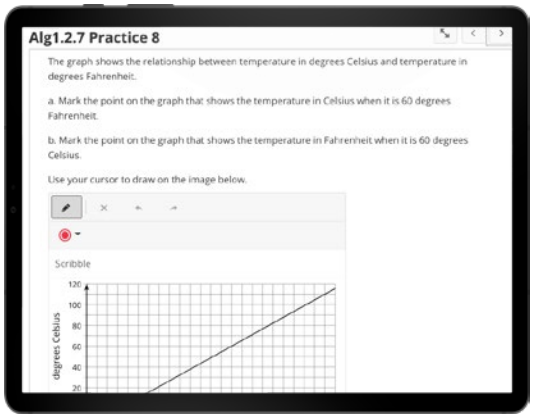
Digital Practice

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

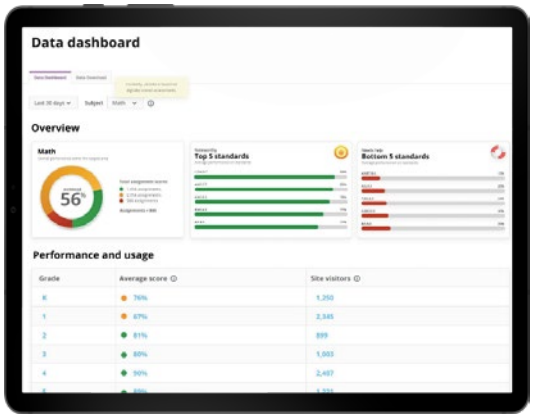
Most units have culminating lessons with **performance tasks** where students have an opportunity to show off their problem-solving skills or apply the mathematics they have learned to a real-world problem.

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

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

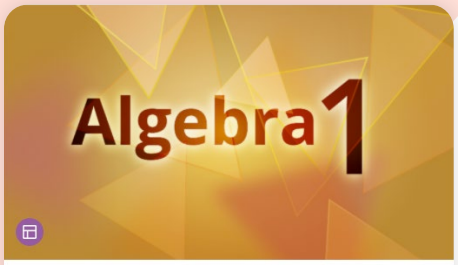


- Digital Practice



Program Components

IM 9–12 MATH™ v.1



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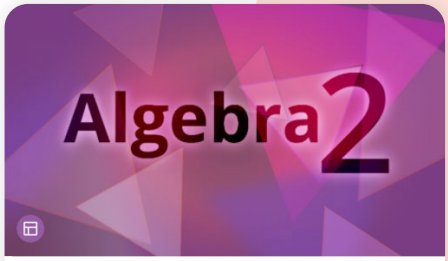

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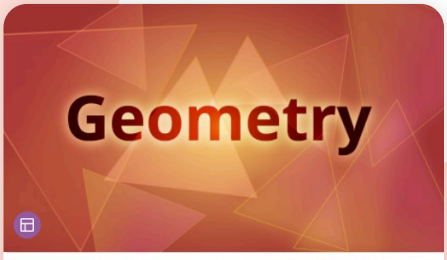

LearnZillion Illustrative Mathematics Geometry Course
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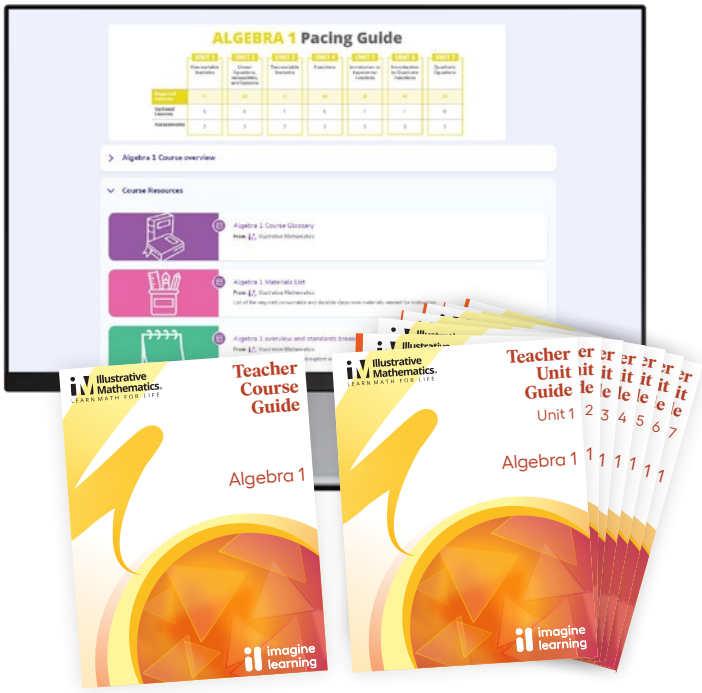
Teacher Components*

- Teacher Course Guide (print)
- Teacher Unit Guides (units 1–7 or 8 depending on course) (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, Algebra 1 extra support materials, Algebra 1 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 1–7 or 8 depending on course) (print)
- Imagine Learning (IL) Classroom Student License (digital)

Imagine Learning (IL) Classroom Includes access to student workbook content in English and Spanish, interactive lessons, Algebra 1 extra support materials, Algebra 1 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

The Imagine Learning IM professional development offerings support teachers, coaches, and administrators in effectively implementing the curriculum and platform with integrity throughout their program adoption.

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

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