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.

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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.

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

2.3: Scaled Triangles

Here is Triangle O, followed by a number of other triangles.

Your teacher will assign you two of the triangles to look at.

1. For each of your assigned triangles, is it a scaled copy of Triangle O? Be prepared to explain your reasoning.

2. As a group, identify all the scaled copies of Triangle O in the collection. Discuss your thinking. If you disagree, work to reach an agreement.

3. List all the triangles that are scaled copies in the table. Record the side lengths that correspond to the side lengths of Triangle O listed in each column.
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.

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

**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.
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.

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.
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.
Program Components

LearnZillion Illustrative Mathematics Grade 6 Course
From IM. 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 IM. 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 IM. 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 variables...

Accelerated Grade 6
From IM. 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 IM. 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. Situ...
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.