Illustrative Mathematics
Program Overview
Grades K–5
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.

“The collaboration between Illustrative Mathematics and Imagine Learning over the years has been a wonderful partnership. As a certified partner, Imagine Learning really understands what Illustrative Mathematics is doing. Their platform maintains the integrity of the IM K–5 Math™ design, which ensures that the implementation of the curriculum is aligned to the authoring team’s intentions.”

Dr. William McCallum
Imagine Learning Illustrative Mathematics for Grades K–5

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

Each activity and lesson is part of a mathematical story across units and grade levels. This coherence 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 the 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 activate prior knowledge, and set up the day’s work.
**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.

**Activities and Independent Work**
Each activity starts with a launch that gives all students access to the task.

Next, independent work time allows them to grapple with problems individually before working in small groups.

The activity ends with a synthesis to ensure students have an opportunity to consolidate their learning by making connections between their work and the mathematical goals. Included in the independent work are two sets of practice problems that can be assigned by paper and pencil or digitally in the Imagine Learning (IL) Classroom.
Guiding Principles Across Grades K–5

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. The activities and routines are designed to give teachers opportunities to see what students already know—what they can notice and 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.

Purposeful Representations

In the materials, mathematical representations are used:

- To help students develop an understanding of mathematical concepts and procedures
- To guide students in solving problems.

Across lessons and units, students are systematically introduced to representations and encouraged to use ones that make sense to them. As their learning progresses, students make connections between different representations and the concepts or procedures they represent. Over time, they will see and understand more efficient methods of representation when solving problems, which supports the development of procedural fluency.
**Instructional Routines**

Instructional routines create structures so that 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.

Instructional routines support students in accessing the mathematics and require students to think and communicate mathematically.

**Community Building**

To support students in developing a productive disposition toward mathematics and to help them engage in mathematical practices, it is important for teachers to begin the school year by establishing norms and building a mathematical community. In a mathematical community, all students have the opportunity to express their mathematical ideas and discuss them with others, which encourages collective learning.
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.

Annotation Tool Daily instruction comes alive through 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 feature makes visibility of student work and timely feedback more efficient.
Embedded Teacher Support
Teacher reflection questions, embedded curriculum narratives, learning narrative videos, example lesson videos, a PLC framework, and math community structures continually support teacher learning.

Formative Assessment Tools
Teachers are equipped to monitor student progress through digital task statements, innovative staged centers, digital centers feedback, section checkpoints, and cool-downs. These provide real-time feedback and data to inform instructional decisions.
Student Experience

In Illustrative Mathematics for grades K–5, students enjoy mathematics, make mathematical connections, and develop conceptual understanding.

Students have print, digital, and manipulative resources for optimal instruction and enrichment.

Deep focus on conceptual understanding, procedural fluency, and application

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

Inspire Math Videos

Inspire Math Videos open each unit and are designed to provide real-world context, spark student curiosity, and increase engagement.

Embedded opportunities provide active discussion, reflection, and foster the mathematical practices
Students engage with the content via digital, print, and interactive resources, including virtual manipulatives and digital centers.

Centers
Centers are available in print or digitally. Digital centers are a fun and engaging way to allow students to play games against each other or the computer, all while reducing teacher prep and giving immediate feedback on student progress.
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 for Endurance and Perseverance

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

Access for Students with Disabilities

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

English Learners

Embedded supports for English Learners are also found in the Teaching notes. Mathematical Language Routines (MLR) 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.

Advanced Learners

Lessons include specific practice problems called “explorations” that are designed for students who are ready for more of a challenge.
Culturally Responsive Teaching and Learning

The materials are inclusive of various cultures and ethnicities and are free from bias in portraying ethnic groups, gender, age, class, cultures, religion, and people with disabilities. We address racial, cultural, and religious bias in the following ways:

- The materials contain a racial and ethnic balance in main characters and illustrations.
- A variety of racial, ethnic, and cultural groups are central figures in texts and illustrations.
- Figures within various racial, ethnic, and cultural groups reflect qualities such as leadership, intelligence, imagination, and courage.
- The materials provide an opportunity for a variety of racial, ethnic, and cultural perspectives.
- Biographical or historical content includes figures from various racial, ethnic, and cultural groups and their discoveries and contributions to society.

Home Connections

Each unit includes a guide that explains the key ideas and concepts in family-friendly language. These pages are meant to create a stronger school-home connection and empower parents and guardians to support students at home. Additionally, parents and caregivers have access to family support videos that include prior learning, vocabulary explanations, math in pictures, and an easy-to-implement activity.

These pages also include some examples of tasks for parents and guardians to try at home. A Spanish version is available.
Assessment

In each unit...

PRE-UNIT PRACTICE
These problems address prerequisite concepts and skills for the unit. Teachers can use these problems as a formative assessment to identify unfinished learning that can be carefully addressed during the unit.

END-OF-UNIT ASSESSMENT
Each unit (starting in grade K, unit 2) includes an end-of-unit assessment to ascertain what students have learned at the conclusion of the unit. Problems vary in difficulty and depth of knowledge. Technology enhanced item types are used in the digital versions.

END-OF-COURSE ASSESSMENT
All grade levels include an end-of-course assessment to evaluate student performance over the year. This can be administered digitally or as a written assessment.
In each section...

SECTION CHECKPOINTS
Grades K and 1 include a checklist of indicators for teachers to determine if students are meeting section-level learning goals. Grades 2–5 offer problem checkpoints to assess section level learning goals.

Practice problems are available for each lesson (starting in grade K, unit 4). These can be used for in-class practice, homework, or to assess learning and contain two sets for additional practice opportunities.

Each section contains two or more explorations, designed to engage students in thinking creatively about the mathematics of the unit at school or at home.
In each lesson...

Each instructional task is accompanied by commentary about expected student responses and teacher guidance to enrich discourse and discussion.

Digital task statements within the platform allow participation with lesson activities whether students are in class, hybrid, or distance learning models.
Each lesson, in grades 2–5, includes a cool-down (similar to an exit ticket) to gauge student understanding of that day’s lesson. Grades K and 1 have them throughout each Section, but they may not appear in every lesson.

DATA AND REPORTING
The data dashboard provides a view of aggregated digital assessment and lesson use data. It enables educators to identify areas that may need support, provides quick callouts for standards that may require further investigation based on digital assessment results, and give educators insight on individual student performance across assessments.
Program Components

Teacher Components*

The Imagine Learning (IL) Classroom digital license includes access to all print components, teacher notes, classroom and distance learning-ready lesson cards with teacher annotation, assignable lessons and assessments, family materials, extension problems, digital interactives, digital assessments, digital practice sets, centers activities including data from digital centers, PLCs, reports, and more!

- Teacher course guide (print)
- Teacher unit guides (units 1–8 or 9 depending on grade level) (print)
- Teacher resource packs (print)
- Imagine Learning (IL) Classroom teacher license (digital)
- Learning narrative videos
- Lesson example videos
- Spanish translations available
Professional Services

The IL 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.

Ongoing and self-directed professional development is also available within the Imagine Learning (IL) Classroom for use by teachers. Included are learning narrative videos that give teachers insight into the unit objectives, models, and possible student errors and misconceptions, and lesson example videos that show authentic IL IM classrooms, teachers, and students in action.

Student Components*

Imagine Learning (IL) Classroom digital license includes access to student workbook content, interactive lessons, videos, virtual manipulatives, digital assessments, digital practice sets, and more!

- Student workbooks (units 1–8 or 9 depending on grade level) (print) – available in English and Spanish
- Imagine Learning (IL) Classroom student license (digital)

Classroom manipulative kits and virtual manipulatives for each grade level

Spanish translations available

*Grade 3 images shown; other grade levels include the same Teacher and Student components.