



# Problem-Based Instruction: Making Unexpected Connections

Where curious learners become confident learners





# What Is Problem-Based Instruction?

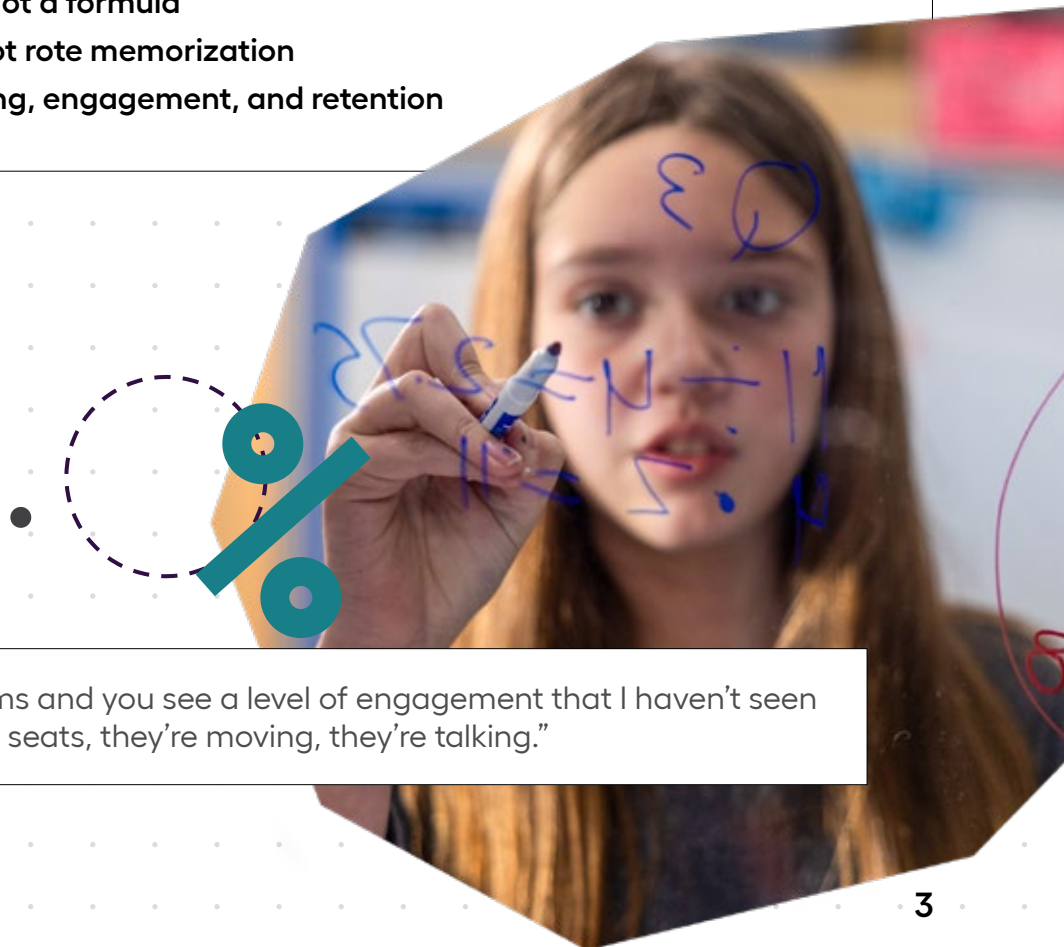
## Students learn math best by doing math

Problem-based instruction (PBI) makes math more meaningful by taking it deeper than simply solving for  $x$ . It's about reasoning, collaboration, and making sense of complex ideas. In Grades 6–12 in Imagine IM, students engage with math by exploring real-world scenarios, testing strategies, and discussing multiple approaches to a problem.



Rather than starting with a procedure, lessons begin with a **problem worth thinking about**, one that invites students to grapple with concepts, justify their reasoning, and develop lasting understanding. In short, PBI:

- **Begins with a question, not a formula**
- **Focuses on reasoning, not rote memorization**
- **Builds deep understanding, engagement, and retention**



“You walk into our classrooms and you see a level of engagement that I haven’t seen before... Kids are up on their seats, they’re moving, they’re talking.”

**Rogelio A., Principal**

# How Does Imagine IM Enable PBI?

Structure, support, and flexibility for real classrooms

Imagine IM brings the power of problem-based instruction to life with a consistent, teacher-supported structure that maximizes opportunities for student-centered learning.

**Each lesson follows a consistent design:**

	Invitation to the Mathematics	Deep Study of Concepts and Procedures	Consolidating and Applying
Course Level	Invitational Unit	Deep Study Units	Consolidation Unit
Unit Level	Introductory Lesson	Instructional Lessons	Culminating Lesson
Lesson Level	Warm-up	Classroom Activities	Synthesis and Cool-down
Activity Level	Launch	Work Time	Synthesis

This structure creates a rhythm that students recognize and trust, giving them space to explore ideas, take risks, and reflect on what they've learned.

Throughout the lesson, **embedded instructional routines** support:

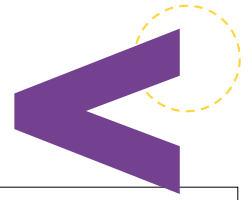
- Student-to-student discussion
- Collaborative problem-solving
- Real-time opportunities to share reasoning and compare strategies

**Teacher Guides** include everything educators need to lead confidently — from pacing support and guiding questions to scaffolds that help all learners access the math.

Because every classroom is different, Imagine IM also includes **built-in supports for multilingual learners and students with diverse needs**, including **Math Language Routines (MLRs)**, **visual models**, and **vocabulary frames** to make academic language visible and actionable.

# How Does PBI Engage *All* 6–12 Students?

X



Access, equity, and identity in every lesson

**Imagine IM** is built to ensure that math learning is not only rigorous but truly inclusive. Lesson supports make productive struggle possible for all learners, not just those who are already confident in math.

Tasks are **real-world and culturally relevant**, helping students see math as something that connects to their lives and identities, not something separate from them.

Built-in **Math Language Routines (MLRs)** give students structured opportunities to express ideas, clarify their reasoning, and use academic language authentically. These routines, grounded in research from Stanford UL/SCALE, are especially powerful for multilingual learners and students developing confidence in communication.

All supports — from **visual models to sentence frames** — are aligned with college- and career-ready math standards and best practices for multilingual learners, making sure that equity isn't just an add-on, but a fundamental part of how math is taught.



“How are you supposed to learn without making mistakes? Mistakes help your brain grow.”

Seventh-Grade Student

# Technology and Tools That Power PBI

Built for engagement, collaboration, and real-time feedback

In 6–12, Imagine IM digital tools **deepen engagement, support collaboration, and provide real-time insight**. From lesson openers to summative assessments, the platform includes tools that support the **problem-based approach**:

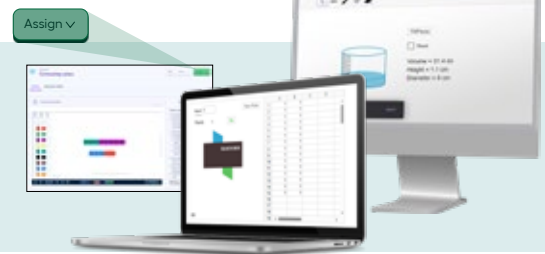
## Inspire Math Videos

**Inspire Math videos** introduce and revisit concepts through real-world problems



## Interactive Digital Tasks

**Interactive digital tasks** and **Desmos-powered tools** allow students to explore, model, and visualize math



## Live Learn and Annotation Tools

**Live Learn** and the **Annotation Tool** give teachers flexibility to lead synchronous lessons, mark up content, and showcase student work in person or online



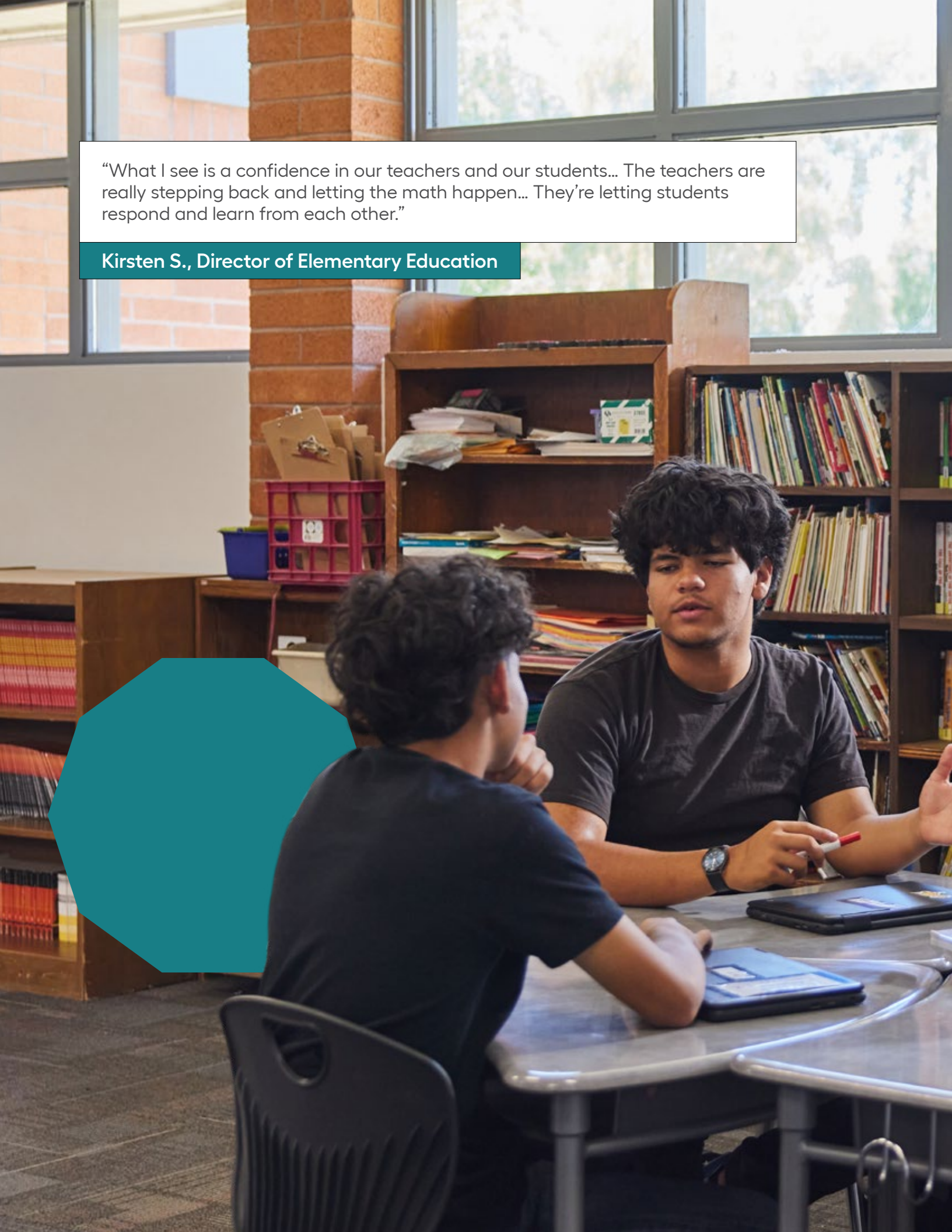
## Auto-Scored Tasks


**Auto-scored tasks** and **built-in dashboards** provide immediate feedback and class-level insights




“What I see is a confidence in our teachers and our students... The teachers are really stepping back and letting the math happen... They’re letting students respond and learn from each other.”

Kirsten S., Director of Elementary Education





Imagine IM makes problem-based instruction practical, purposeful, and joyful for students and teachers alike.

- Fully aligned to **college- and career-ready math standards**
  - Supports **conceptual understanding, fluency, and collaboration**
  - Available **in print + digital, English and Spanish**
  - Includes **Integrated and Algebra** pathways
- 



[www.imaginelearning.com/imagine-im](http://www.imaginelearning.com/imagine-im)  
877-725-4257 • [solutions@imaginelearning.com](mailto:solutions@imaginelearning.com)

