About Open Up Resources

Open Up Resources is a nonprofit developing the highest quality core curricula available to districts, provided for free to promote instructional equity.

We partner with the country's foremost materials experts to develop exceptional curriculum and deliver essential implementation support, from printing to professional development. Our mission is to provide students and educators with equal access to superb, standards-aligned core programs, regardless of district resources.

Our middle school math program, authored by the team at Illustrative Mathematics, was refined through classroom use by 175 teachers during the 2016–17 school year and released as a free Open Educational Resource in August, 2017. Already, this core curriculum has been adopted in hundreds of districts across the United States.

Illustrative Mathematics is currently developing a high school math curriculum to accompany the middle school curriculum, and it will be available for the 2019–20 school year.

Mathematical Foundations of the Curriculum

The *Open Up Resources 6–8 Math* curriculum was designed around the principle that students should spend time in mathematics class *doing* math. As a problem-based curriculum, these materials give students opportunities every day to make sense of problems and persevere in solving them. At the appropriate time in the development of the mathematical ideas, students are expected to make mathematical arguments, critique the reasoning of others, and attend to precision in their use of language. Throughout the materials, students encounter tasks that require them to reason abstractly and quantitatively, look for and make use of structure, and express regularity in repeated reasoning.

These materials carefully and deliberately engage students in all three aspects of rigor: conceptual understanding, procedural fluency, and application of mathematics. We promote conceptual understanding, to help students grasp the 'why' behind the 'how'. Students have the opportunity to use different strategies and representations to consolidate their conceptual understanding by using more efficient methods, supporting the shift towards procedural fluency. Procedural fluency is developed over time, and distributed practice supports this development. As the materials progress, students have increasingly sophisticated opportunities to model with mathematics, to support their ability to apply mathematical or statistical concepts and skills to a novel situation.

The materials present students with examples of mathematical or statistical ideas set in various real world and mathematical contexts before the ideas are named and studied as objects in their own right. For example, in the beginning of interacting with a new idea, students have the space and time to play with the idea in intuitive ways

and to talk about it in terms that make sense to them, rather than in formal terms. Later, formal language is introduced and connected to these informal experiences.

It is common to see mathematical representations used as tools for problem solving. This is valuable when the representations are linked to developing understanding, but representations can also be productive tools for understanding. This curriculum makes heavy and thoughtful use of representations to support both objectives. When appropriate, representations are introduced from more concrete to more abstract. Any representation introduced is connected to symbolic methods. Students are encouraged to use representations that make sense to them, but also connect their existing understanding to more efficient methods.

Each course contains nine instructional units. The first eight units are anchored by several big ideas for that grade level. Units are organized with an intentional flow: the first few lessons offer an invitation to the mathematics, the next lessons provide an opportunity for deep study to develop concepts and procedures, and lessons near the end of each section and unit allow students to consolidate ideas and to apply them to new contexts. Deep study includes conceptual understanding, procedural skill and fluency work. Lessons have a similar flow as units: warm-up (invitation), one or more instructional activities (deep study), synthesis (consolidate), and cool down (apply). Activities reflect a similar structure: launch (invitation), student work time (deep study), synthesis (consolidate). Practice and work toward fluency is ongoing and part of every lesson.

Some of the paper-and-pencil student activities include online components that students may access on a digital device. Such versions are included only when the digital medium offers a meaningful benefit to achieving the learning goals of the lesson.

Professional Learning Support

The *Open Up Resources 6–8 Math* program is designed to elevate math practice, and success starts with supporting teachers with necessary practice shifts. Teachers concur; in surveys of the early adopters of the curriculum, 95% of teachers said that in-person professional development was key to their success with the materials.

Our team of former educators helps districts to tailor professional development plans around district needs and capacity. We offer both in-person and virtual PD delivery, as well as support for train-the-trainer implementations.

Implementation Support

We provide the following implementation services and support:

Flexible Classroom Deployment
We offer the curriculum in identical digital and print versions, which allows districts flexibility in implementation: fully digital, fully print, or a mix of print and digital.

Affordable Print Materials

We offer full-color print materials that are delivered to schools in convenient class sets. Because we negotiate deeply discounted print rates, districts find our print materials offer significant savings versus self-printing options, though we also provide free print-ready files via our website.

Multiple Digital Access Options

For 1:1 classrooms, we provide many ways to access to the curriculum:

- Online, via our website
- Within a Learning Management System; our Common Cartridge files support LMS integration
- Via the free, classroom-friendly Microsoft OneNote app

Classroom Kits

We offer grade-level-specific kits comprising all required curriculum manipulatives.

To learn more about this curriculum and its related support, please visit im.openupresources.org.