

# Publishers Background Information

## Accelerate Learning

Accelerate Learning Inc. produces STEMscopes™, a comprehensive suite of results-oriented STEM curriculum and professional development solutions created by educators for educators, STEMscopes Math is highly adaptable and affordable and supports instruction in any kind of learning environment.

## STEMscopes Math

STEMscopes Math is built on an instructional philosophy that promotes conceptual understanding of mathematics through hands-on exploration, inquiry, discovery, and analysis. Each lesson includes a series of investigations and activities to bring mathematics to life so students learn by doing and fully engage in the process. Intentional cultivation of concepts and skills solidifies our students' ability to make relevant connections and applications in the context of the real world.

Lessons are built using the research-based 5E + IA model, consisting of Engage, Explore, Explain, Elaborate, Evaluate, Intervention, and Acceleration. Each component of this lesson cycle features specific resources to support not only our students' understanding of mathematical concepts but also that of our teachers.

With a robust set of resources, including game-based assignments and virtual manipulatives, your students have plenty of opportunities to collaborate, think critically, and gain new understandings of math concepts. Scaffolding, differentiation, and small-group instruction are easy to facilitate and allow students to explore a variety of mathematical approaches in real-world contexts.

## Curriculum Design and Lesson Structure

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## Key Features of STEMscopes Math

### One Stop Shop!

Get all your instructional resources in one place—there’s no need to log in anywhere else to connect STEMscopes resources to your lesson plans and more.

### Grade Passback

Any graded activity taken in STEMscopes instantly transfers to your school/district gradebook.

### Data Integration

Enhance teacher-to-teacher interaction and collaboration by using STEMscopes lesson materials from the comfort of your LMS

### All School Information Systems

We integrate with all SIS that schools/districts use.



### Intentional Instructional Design

One key feature of STEMscopes Math curriculum is the **intentionality** of our instructional design at the course, unit, and lesson level, including the **scope and sequence** and **pacing** as well as the **rationale** behind these. We also take care to offer resources and guidance to those providing **support for teachers** and other stakeholders in effective use of the curricular resources.



### Authentic Assessment

Throughout the curriculum, at the unit and lesson level, we use a variety of tasks designed as **formative and summative assessments**. Our resources include not only those intended for **instructional assessment** but also **guidance** for their **effective implementation** as well as support for **teachers and students** to **analyze** the results and use them to **facilitate progress**.



### Equity

STEMscopes Math provides a variety of resources that promote **support for all learners**, including scaffolding for **emergent bilingual learners at various proficiency levels** and students who have **not yet demonstrated mathematical proficiency on a concept** as well as **enrichment** for those who have. These resources include **student materials** that support **differentiated instruction** and those that offer **guidance for teachers** in using the materials to provide **equity of instruction**.



### Coherence and Depth

An essential feature of the approach used by *STEMscopes Math* is providing students with frequent opportunities to engage in practice that demonstrates their **mastery of the TEKS** and ensuring that these practice opportunities require an **ever-increasing depth of understanding** over time. Additionally, the curriculum is developed in such a way that students encounter the same core concepts over **different grade levels** and in **different contexts**. By accessing **prior knowledge** and using **consistent language and materials**, we ensure that students make connections and see patterns that make concepts meaningful and lasting.



### Balance of Conceptual and Procedural Knowledge

A key feature of how *STEMscopes Math* develops mathematical thinking is our approach to **balancing conceptual and procedural knowledge**. The three elements of this approach are as follows. First, the curriculum requires students to **analyze, evaluate, and eventually create** their own mental models to represent mathematical concepts, and **apply these models to solve unique problems**. Second, the curriculum provides opportunities to **practice mathematical procedures** to develop efficient, flexible, and accurate applications of these procedures. Third, the curriculum is designed so that conceptual and procedural knowledge are given **equal emphasis and focus**, and this balance is **communicated** implicitly and explicitly to **students and teachers**.



### Productive Struggle

*STEMscopes Math* provides frequent opportunities for students to engage in **independent problem solving** and supports them in **reflecting on, explaining, and justifying** multiple approaches and solutions. Our materials support teachers as they guide students through this process, including how to provide **explanatory feedback and varied linguistic scaffolds** that help students **persevere** and work through anticipated **misconceptions**.



### Practice Opportunities

*STEMscopes Math* focuses on **quality, not quantity**. Math instruction should develop lifelong problem-solvers and critical thinkers. Research shows that this cannot be achieved by giving students multiple pages of repetitive practice problems. Instead, **deep conversations, conceptual understanding, and culturally diverse real-world connections** are encouraged when students practice content using a few tasks that are focused and purposeful.





### Instructional Support

*STEMscopes Math resources include **prompts** and **guidance** for effective lesson delivery and **facilitation** for a wide variety of instructional methods. You will find guidance on quality questioning, feedback based on students' answers, and anticipated student misconceptions. Our embedded supports offer guidance for **differentiated instruction, enrichment, and extension activities** as well as those that offer guidance in using the materials to provide **equitable** instruction.*



### Planning Guidance

*STEMscopes Math provides multiple tools for planning guidance. A full-year view is provided in the scope and sequence document for each grade level. We also include lesson planning guides and suggested scope calendars. While the natural progression of mathematics was used to determine the order and pace, our scopes are designed to be flexible and used in any order.*

### Flexible Implementation

STEMscopes Math is a flexible program that can be delivered in a multitude of ways. The program can be used in a 1:1 classroom and in a traditional classroom setting. Printed journals that mimic the digital platform are available for purchase, and online student resources can be printed and distributed to students.