Approach to Teaching & Learning:

Supporting a Love of Learning Math for All Students

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VISION

All Children Can Love Learning Math

MISSION

Zearn is a nonprofit curriculum publisher and software developer on a mission to ensure all children love learning math. We work with teachers nationwide to build inclusive classroom communities where all students have equal opportunities to belong and deeply learn the math content of their grade. At the core of our mission is a belief that an understanding and love of mathematics is critical to helping all children realize their potential and to creating a generation of engaged learners who can change the world.

In pursuit of that mission, Zearn publishes Zearn Math, a top-rated K–5 paper- and software-based curriculum that transforms the daily math block to create engagement and differentiation for all students. In addition to curricular materials, Zearn Math offers comprehensive professional development and School Accounts to support district- and school-wide learning.

INTEGRATED APPROACH TO TEACHING AND LEARNING

Zearn Math provides a uniquely integrated approach to math teaching and learning, connecting a rigorous curriculum with a cohesive classroom system, professional development based on pedagogical content, and actionable reports on student learning. This approach recognizes that top-rated instructional materials are most impactful when they are deeply integrated into classroom systems and teacher learning communities. With Zearn Math, educators are supported each day with the material, knowledge, and data they need to create engaging learning environments and differentiate instruction to reach all students.

Curriculum and Classroom Model that Build Deep Understanding and a Love of Learning Math

All students can love learning math if they experience engaging and differentiated instruction each day. Zearn Math’s thoughtfully designed curricular materials and rotational classroom model come together in the daily math block to support teachers in creating this type of learning for all students.

The top-rated curriculum teaches math as a progression of connected ideas, grounded in visual problem solving and the concrete to pictorial to abstract approach. Students learn in a rotational classroom model that embeds
differentiation, precise feedback, and multimodality learning into the daily math block by blending self-paced software-based lessons with teacher-led whole group and small group learning. As students work through Independent Digital Lessons, they learn and practice new concepts at their own pace with concrete and digital manipulatives, interactive videos, pictorial representations, paper-and-pencil transfer, and precise digital feedback at the moment of misconception. During Small Group Lessons, students model math with concrete manipulatives, represent their work on paper, discuss their reasoning aloud, and receive direct feedback from their teacher and classmates. Built on the belief that all math brains can grow, Zearn Math’s flexible learning environments accommodate learning differences and foster positive math mindsets and social belonging, so all students can love learning math.

**Professional Development that Strengthens Pedagogical Content Knowledge for Teachers**

A high-quality curriculum is most effective when paired with professional development that supports teachers as they deliver differentiated instruction each day. Zearn Math PD provides this support with up-front training to help classrooms get started and forty one-hour sessions, one for each Mission of every grade, that strengthen teachers’ pedagogical content knowledge throughout the year. As teachers gain expertise on the math concepts in the Zearn Math curriculum, they are better prepared to represent and scaffold those ideas for their students. Deep content knowledge also helps educators provide more supportive feedback to students who are struggling by enabling teachers to more precisely identify, interpret, and address misconceptions.

Teachers collaborate to build expertise on implementing Zearn Math, understanding the fluency, application, and conceptual content of each grade at the mission and lesson level, and engaging and supporting all students as they learn and persevere through areas of struggle. The comprehensive PD, delivered through an innovative on-demand platform, equips educators with the resources to inspire and maintain math learning communities throughout the year and from one school year to the next.

**Reports that Provide Insights into Student Learning for Teachers and Administrators**

Real-time visibility into student productivity and misconception data provides educators with precise and actionable insights they can use to inform math instruction at the classroom, building, and district level. Since Zearn Math includes a software-based lesson for every day of instruction, teachers and school leaders can access reports with meaningful data covering all K–5 math learning. Reports provide insight into students’ progress and pace through the curriculum, areas of struggle, and classroom systems to support or highlight. Zearn Math School Accounts include Admin Reports, which provide data and insights at the classroom and school level. With the full complement of Zearn Math Reports, administrators can drive strong curriculum usage and improvements in students’ math achievement and mindsets.
CORE INSTRUCTIONAL SHIFTS IN MATHEMATICS

Students learning with Zearn Math develop a deep understanding of key grade-level math concepts, can connect those concepts to prior learnings, and are able to apply their knowledge flexibly and accurately when encountering new situations, contexts, and problems. All curricular materials reflect the core instructional shifts of mathematics—focus, coherence, and rigor—which are research-based and internationally benchmarked. These shifts ensure K-5 students build the critical arithmetic foundations that prepare them to extend algebraic thinking in middle school and explore more advanced mathematics in later grades.

The Zearn Math curriculum is green-lighted by EdReports, an independent nonprofit that conducts in-depth reviews of instructional materials. EdReports evaluated Zearn Math along each core instructional shift, defined in their review rubric as:

» **Focus**: determine whether instructional materials assess the appropriate grade-level content and spend the majority of class time on the major clusters of each grade.

» **Coherence**: determine whether instructional materials attend to supporting work to enhance focus, are viable for one year, are consistent with the progressions of the standards, and are coherent within a single grade.

» **Rigor**: determine if each grade’s instructional materials reflect the balances in the standards by helping students develop conceptual understanding, procedural skill and fluency, and application.¹

Zearn Math received full marks across each of these dimensions, indicating a thoughtful integration of the shifts in mathematics into all curricular materials.

¹EdReports, *Math K-8 Review Rubric*
LEARNING PRINCIPLES

In conjunction with the core instructional shifts in mathematics, a set of foundational learning principles guides the design of Zearn Math. These principles are grounded in teacher practice, education research, and brain science. Together, they enable the daily differentiation and engagement essential to helping all students love learning math.

Everyone belongs and all math brains can grow.

Through a commitment to inclusivity and accessibility, Zearn Math creates classroom math communities where all students feel they belong and can love learning math. The curriculum fosters growth mindsets and a tenacity for learning, so students believe in their capacity to grow and are able to persevere through challenge.

Flexible learning environments deepen engagement and understanding.

Every day with Zearn Math, students have multiple ways to engage in learning, acquire knowledge, and demonstrate understanding as they learn across a mix of instructional formats. Zearn Math’s flexible approach accommodates learning differences, encourages curiosity and exploration, and builds a participatory math dialogue.

Feedback, while learning, is precise, timely, supportive, and safe.

During independent learning and in small groups with their teacher, students receive safe, in-the-moment feedback that precisely addresses areas of misconception. When students learn in this type of feedback-rich and supportive environment, they become resilient, self-directed learners and can love learning math.

On-ramps, remediation, and pedagogical content PD allow all children to access grade-level math.

Zearn Math recognizes that all students may not be on grade level at all times and provides on-ramps and remediation support for areas of unfinished learning. Pedagogical content PD supports teachers as they address the needs of all the learners in their classroom.
Concept exploration begins in the concrete.
Zearn Math follows the concrete to pictorial to abstract approach, which teaches children to understand math concepts in an intuitive and tangible way. All students build a deep and sustainable understanding of math when they learn with this flexible and rich pedagogical approach.

Problem solving starts with visualization and drawing a picture.
Math is about reasoning and solving problems. Just as mathematicians often achieve breakthroughs by visualizing solutions, students learning with Zearn Math build flexible and accurate problem-solving skills by representing their thinking with pictures.

Learning math is coherent and fun.
Children who love math describe the curiosity and joy of exploring connections between concepts and working through problems. Zearn Math allows students to access math understanding—and have fun along the way—by teaching math as a progression of coherent ideas rather than as disconnected procedures.

AN EVOLVING CURRICULUM
As a nonprofit organization, Zearn is committed to dedicating its resources to improving Zearn Math to better serve students and teachers. Zearn Math is based on the scope and sequence of EngageNY; using field research, input from partner educators, advances in education research, and an extensive data set from student software-based learning, Zearn makes iterative updates to strengthen the Zearn Math student learning experience and curricular materials.
Daily Differentiation and Engagement with Zearn Math

Zearn Math is designed to create daily math instruction that is differentiated and engaging in order to ensure all children love learning math. The components of Zearn Math are outlined in the following sections.

TEACHER-LED INSTRUCTION

Live instruction with Zearn Math is designed to deepen the moments of learning between the teacher and students. Each day, teachers lead instruction that engages the entire community of learners and builds deep math understanding for all students. Zearn Math supplies teachers with all of the materials they need to provide students with differentiated, rigorous, and supportive math instruction every day.

As students learn with their teacher and classmates during teacher-led instruction, they experience:

A Classroom Learning Community

A sense of belonging in the math classroom and community is a precursor to engagement and learning. Zearn Math’s commitment to inclusion and emphasis on positive math mindsets helps teachers create learning environments where all students feel welcome and mistakes are viewed as opportunities for reflection and growth. The balance of whole-group and small-group learning built into the Zearn Math classroom model creates numerous opportunities for all students to participate in math discussions, shifting math dialogue from answer-getting to a participatory discussion. Daily Small Group Lessons also provide teachers with opportunities to build a deep understanding of each student and facilitate math discussions where students can bring their own learnings and frames of reference into the classroom. A strong classroom community enhances collective learning possibilities and ensures each and every student is able to engage in meaningful learning.
ZEARN MATH TIP

To access all materials for Teacher-Led Instruction, educators can:

1. Log in to their Zearn Teacher or Administrator Account
2. Navigate to the Curriculum page
3. Select a specific Mission
4. Click Whole Group Word Problems, Whole Group Fluency, and Small Group Lessons to view and download.

Math Discussions

Students share their own thinking aloud and discuss classmates’ problem-solving strategies throughout daily whole-group problem solving and Small Group Lessons. Teachers facilitate thoughtful mathematical discussions between students that allow learners to refer to and build on each others’ ideas. As students share their reasoning, are exposed to other perspectives, and engage in mathematical sense-making, they are able to deepen their own understanding and become more creative and effective problem solvers. Zearn Math’s small-group format, in conjunction with the personalized learning students experience in Independent Digital Lessons, enables daily math discussions to shift from “answer-getting” focused to rich, ongoing conversations.

ZEARN MATH TIP

A full list of required classroom materials is available in the Appendix of this document and on the Zearn Help Center.

Concrete Manipulative Work

As students learn new concepts with Zearn Math, they progress from using concrete materials to pictorial representations to abstract symbols, and they are able to move back and forth between each stage to ensure concepts are deeply understood. During Small Group Lessons, students have opportunities to work with concrete manipulatives. This provides all learners with the opportunity to construct physical models of abstract mathematical ideas and test and confirm their thinking. Visual representations are a powerful way for students to access math concepts.
that may be challenging to understand if presented only in abstract or verbal form. As students work with concrete manipulatives, they are also able to make connections across different representations and describe their math models aloud. All students build a deep and sustainable understanding of math as new and abstract concepts are introduced in tangible and concrete ways.

**Direct Feedback**

During Small Group Lessons, students have opportunities to receive direct feedback from their teacher during moments of misconception. In the small-group format, teachers can assess individual student understanding as students model their math thinking using concrete manipulatives, share their reasoning aloud, and problem solve. Listening to students' thinking during discussions can serve as a formative assessment that can inform teachers' instructional decisions. These moments of feedback also provide all students with valuable, in-the-moment support and remediation from their teacher, allowing students to correct their misconceptions and continue learning.

**Practice and Preparation**

During the daily Whole Group Warm-Up, students have opportunities for fluency and application practice and are able to activate prior learnings in preparation for upcoming work. This time allows students to grapple and develop comfort with grade-level content in an additional instructional format, on top of Small Group Lessons and Independent Digital Lessons. Students can also refresh on content from previous grade levels and get a preview of the content that will be learned later on in that day’s math block.

**Exposure to All Learners**

Zearn Math recommends that student groupings during Small Group Lessons vary over time in order to create opportunities for students to work with classmates with varying levels of progress against grade-level math. This exposure to the whole community of math learners, whether during partner turn-and-talk time or discussions during Small Group Lessons, allows all students to learn from and work with students with different problem-solving and communication approaches.

**INDEPENDENT DIGITAL LESSONS**

Zearn Math Independent Digital Lessons harness the best of technology to provide personalized and engaging learning experiences for students. The innovative software melds a focus on high-quality math instruction with creative and age-appropriate design to create lessons that scaffold, enrich, and motivate learning for all students.
For 1st–5th grade students, each Independent Digital Lesson consists of an adaptive fluency, a lesson-aligned fluency, guided practice, and independent practice. Kindergartners complete developmentally appropriate Digital Activities, which are short, engaging, and designed to build number sense. For K students, each Digital Activity includes fluency work that follows an intentional progression, beginning with Numbers to 5 and building to Numbers to 10, Numbers to 15, and Numbers to 20.

As students learn during Independent Digital Lessons and Digital Activities, they experience:

**An Inclusive Learning Environment**

Zearn Math Independent Digital Lessons and Digital Activities aim to represent the diversity found in classrooms across the country, so all students can see someone similar to themselves doing math and persevering through challenges. Students and teachers of all genders and races, as well as students with disabilities, appear on-screen during software-based learning. Names used throughout all software and paper materials are thoughtfully selected so that no one group is over- or underrepresented or stereotyped within the context of a particular problem. These features of Zearn Math help all students engage in deep learning and feel they are an equal part of the classroom math community.

**Self-Paced Learning**

Students work through Independent Digital Lessons and Digital Activities at their own pace. Self-paced learning boosts students' math mindsets because all students are able to take the amount of time they need to problem solve, review content, or receive scaffolded remediation. This feature of Zearn Math's software-based lessons also fosters students' sense of ownership over their math learning, enabling them to develop into independent and self-directed learners.

**ZEARN MATH TIP**

When students log in to their Zearn account, they are directed to their personal Student Feed, where they can see their currently assigned Independent Digital Lesson. Here, students are shown cards, which display the next activity in the assigned digital lesson. Students can only access the next digital activity in the sequence once they complete their currently assigned activity.
Adaptive Fluency Experiences

Every Independent Digital Lesson and K Digital Activity includes Number Gym, an individually adaptive fluency experience that helps students build foundational number sense. For older students, Number Gym activities are designed to bridge K–2 math foundations, reinforce previously learned skills, and address areas of unfinished learning. Number Gym activities include Make and Break, Next Stop Top, Number Bond Dash, Take From 10, Take from 10: Take Two, Addition Magician, Addition Magician Returns, Form to Form, the Counting Train, Hop Skip Splash!, Sum Snacks, Bundle the Sea, Count the Cosmos, and Polar Place Values.

ZEARN MATH TIP

After students complete each individual activity in the Independent Digital Lesson, they will automatically progress to the next activity. The next activity also appears as a card in their Student Feed.

Lesson-Aligned Fluency Activities

In addition to Number Gym, the adaptive fluency experience, each Independent Digital Lesson includes a fluency activity aligned to the specific lesson the student is working on. These activities support ongoing grade-level learning by developing students’ procedural fluency and preparing them for upcoming content. Students practice prior concepts in lesson-aligned fluency activities such as Sprints, Multiply Mania, Pair Compare, Totally Times, Fraction Action, Mix and Match, and Blasts. While students are timed in some lesson-aligned fluency activities, the timer is not emphasized in the experience. The focus of timed activities is for students to answer as many questions as they can and strengthen their math mindsets by working to top their own personal bests. All software-based fluency work complements teacher-led whole-group fluencies, and the combination strengthens students’ math understanding and learning retention.

A Range of Concept Development Experiences

Students learn new concepts and extend their understanding during the Guided Practice portion of Independent Digital Lessons. Students experience one of four different Guided Practice activities—Story Time, Math Chat, Learning Lab, or Z-Squad. Each activity creates a rich learning environment for students through interactive and multisensory videos featuring real on-screen teachers, digital manipulatives, and paper-and-pencil Student Notes. There are also differences between specific activities intentionally designed to help students develop along additional dimensions. For example, Z-Squad helps students
grow their own understanding of themselves as competent mathematicians by featuring similarly aged and diverse
on-screen students working through problems and encountering and persevering through challenge.

Digital Manipulatives with Precise Feedback

Independent Digital Lessons and Digital Activities contain meticulously designed digital manipulatives that allow students to construct their mathematical thinking using visual models. Zearn Math digital manipulatives also give students opportunities to test and confirm their reasoning, with precise feedback to help them find and correct mistakes. Student use of digital manipulatives during Independent Digital Lessons is balanced with use of concrete manipulatives during Small Group Lessons.

Approach to Problem Solving

Zearn Math teaches students to problem solve by first drawing a picture that represents their understanding of the mathematics as they read a problem. Drawing a picture helps students make meaning of problems and understand the mathematical work required for problem solving. During Independent Digital Lessons and Digital Activities, students view problems with rich animations and construct their own visual models using high-quality digital manipulatives. This approach helps all students build flexible and accurate solving skills that they can apply across different problem contexts.

Embedded Remediation

As students work through Independent Digital Lessons or Digital Activities, embedded remediation provides just the right amount of support to help them stay engaged and continue learning independently. For students struggling with a concept, these remediation supports can include more scaffolded manipulatives or additional interactive videos that break down the question in a different way. In the Tower of Power, the independent practice portion of an Independent Digital Lesson, this embedded remediation is called a Boost.

Students demonstrate their understanding of the content of an Independent Digital Lesson and unlock the next one by completing all problems correctly in the Tower of Power. If students make a mistake in a Tower of Power problem, a Boost breaks down the question into smaller steps with more supportive manipulatives to allow students to understand and correct their mistakes. Students then have a chance to demonstrate their learning with a new problem. If students continue to struggle in the Tower of Power after multiple remediation paths, their teacher receives an alert in the Tower Alerts Report, enabling them to provide differentiated support for that student. Boosts, like all embedded support in Independent Digital Lessons, precisely address misconceptions in real time and give all students opportunities to visualize problems in multiple ways and try again.
**ZEARN MATH TIP**

After students complete a Tower of Power, they earn a Badge to mark their hard work and progress. Badges are always visible within each student’s My Stuff feed. Students then automatically progress to the next lesson in the curriculum and are assigned to the appropriate Number Gym activity.

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**Paper-and-Pencil Transfer**

During the Guided Practice portion of Independent Digital Lessons, students are prompted to complete problems in their paper Student Notes to transfer their software-based learning and strengthen knowledge retention. After solving an un-scaffolded problem in their notes, students are also prompted to check and correct their work. These Student Notes serve as a reference that students can use throughout the remainder of the Independent Digital Lesson and during future learning.

After finishing the Tower of Power, students must also complete a paper-and-pencil Exit Ticket as the last step of an Independent Digital Lesson. Exit Tickets are un-scaffolded practice problems that allow students to transfer their learning to paper and demonstrate their understanding of the content of the lesson. Teachers can use Exit Tickets as formative assessments to identify students who may need extra help with a particular concept and provide appropriate support.

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**ZEARN MATH TIP**

Paper-and-pencil Student Notes and Exit Tickets are available in Zearn Student Workbooks. To access these materials online, educators can:

1. Log in to their Zearn Teacher or Administrator Account
2. Navigate to the Curriculum page
3. Select a specific Mission
4. Select Student Notes and Exit Tickets to view and download for printing

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**Pausing and Rewinding**

The video player in Independent Digital Lessons and Digital Activities can be paused or rewound at any time. This feature allows students to rewatch specific content or entire lessons in a low-risk independent learning setting.
ROTATIONAL CLASSROOM MODEL & WEEKLY SCHEDULE

The Zearn Math classroom model supports engagement and multimodality learning for all students. Each part of the model provides students with opportunities to strengthen their math understanding; when the model is implemented fully, conceptual understanding, procedural skill and fluency, and application are all explored with equal intensity. The model also ensures students are able to complete grade-level content within the academic year and builds in weekly time for differentiated learning opportunities. Features of the Zearn Math classroom model include:

**Daily Mix of Whole-Group, Small-Group, and Independent Learning**

Each day with Zearn Math, students experience a balance of learning across multiple formats as they participate in a Whole Class Warm-Up and then learn new content in a small group with their teacher and peers and at their own pace in an Independent Digital Lesson. The rotational model provides all students with daily opportunities to learn, practice, and reflect on their learning in a variety of instructional settings with a variety of different learners. This flexible daily environment also supports the expression of students’ natural curiosity and encourages students to become independent and self-directed learners.

**Weekly Schedule with Core Instructional Time and Flexible Time**

The Zearn Math weekly schedule consists of four “Core Days” when students learn grade-level content and one “Flex Day” that can be tailored to meet students’ needs. This schedule ensures students have sufficient time each week to work through grade-level content and includes built-in weekly time educators can use to differentiate instruction to meet student needs. Zearn Math also highlights the lessons that are optional or can be omitted during core instructional time to support completion of all grade-level content during the academic year.

**ZEARN MATH TIP**

Full lists of Optional Small Group Lessons and Omitted Digital Lessons are available in the Appendix of this document.

**Flexible, Safe Learning Environments**

The Zearn Math rotational classroom model provides students with multiple ways to engage in safe and supported learning. During Independent Digital Lessons, students learn independently while wearing headphones with opportunities to replay lessons, access closed captioning or have text read aloud, and problem solve with supportive remediation and chances to try again. While learning during whole-group and small-group time, students have varied ways to learn and interact with their teacher and classmates. The small-group format also ensures students have more frequent opportunities to participate in rich math discussions.

Zearn Math provides a G1–5 Recommended Schedule and a K Recommended Schedule teachers can use to put the classroom model into action. These schedules can be accessed through the “Resources” tab in all educator Zearn accounts.
### G1–5 Zearn Math Recommended Schedule

#### Core Days (M–W)

<table>
<thead>
<tr>
<th>Activity</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whole Group Fluency &amp; Word Problems</td>
<td>10 min</td>
</tr>
<tr>
<td>Independent Digital Lessons</td>
<td>30–45 min</td>
</tr>
<tr>
<td>Small Group Lessons</td>
<td>10 min</td>
</tr>
<tr>
<td>Flexible Stations</td>
<td>10 min</td>
</tr>
</tbody>
</table>

#### Flex Day (F)

<table>
<thead>
<tr>
<th>Activity</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whole Group Fluency &amp; Word Problems</td>
<td>10 min</td>
</tr>
<tr>
<td>Independent Digital Lessons</td>
<td>30–45 min</td>
</tr>
<tr>
<td>Small Group Lessons</td>
<td>10 min</td>
</tr>
<tr>
<td>Flexible Stations</td>
<td>10 min</td>
</tr>
</tbody>
</table>

#### TWO STATIONS

**Independent Digital Lessons**
- Each student completes four Independent Digital Lessons weekly, students practice math concepts through self-paced, interactive digital activities.

**Small Group Lessons**
- Teachers facilitate Small Group Lessons weekly, students work in small groups to explore new math concepts, and teachers assess understanding.

#### FLEXIBLE STATIONS

**Station 1:** Teacher-led Instruction
- Teachers lead small group instruction, students practice new math concepts in small groups.

**Station 2:** Independent Practice
- Students practice new math concepts independently using digital activities and practice problems.

### Kindergarten Zearn Math Recommended Schedule

#### Monday - Friday

<table>
<thead>
<tr>
<th>Activity</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily Teacher-Led Instruction</td>
<td>as needed</td>
</tr>
<tr>
<td>Fluency 5-10 min</td>
<td>Word Problems 5-10 min</td>
</tr>
</tbody>
</table>

#### TWO STATIONS

**Digital Activities**
- Each student works through Digital Activities that help students practice and master math concepts through engaging, interactive activities.

**Problem Sets**
- Each student works through the Paper Problem Set, which helps students practice and master math concepts through engaging, interactive activities.

### INSTRUCTIONAL MODEL • ZEARN MATH APPROACH TO TEACHING & LEARNING • 16
COMPREHENSIVE PROFESSIONAL DEVELOPMENT

Zearn Math provides schools with all the PD resources needed to inspire teacher learning communities and engage teachers in ongoing, collaborative study of grade-level math content. All professional development is based on the Zearn Math curriculum and classroom model, ensuring educators are supported with learning that is directly relevant to teachers’ daily instruction. The two types of Zearn Math PD are:

Classroom Implementation PD

Classroom Implementation PD supports teachers in using Zearn Math in their classrooms. This three-session professional development series provides training on the curricular resources and reports available for instruction, the rotational classroom model, and classroom routines and systems that support independent learning. It also includes specific guidance on how and when teachers can support productive struggle that allows students to persevere through challenges and receive the remediation they need to be successful. This PD helps teachers prepare to meet the needs of all learners in their classroom.

Curriculum Study PD

Curriculum Study PD is year-long professional learning that builds deep pedagogical content expertise for teachers on the Zearn Math curriculum. This professional development includes forty one-hour sessions, one for each Mission of every grade, and supports teachers in understanding multiple means of engaging students in learning for each concept and the range of ways students can demonstrate their learning. In grade-level teams each month, teachers collaboratively explore the fluency, application, and conceptual content of each Mission, the student work they should expect to see, and the specific instructional materials they will use in the classroom. Each session dives into key teaching activities, such as modeling how teachers can use scaffolded questioning during word-problem work to help students make meaning of math texts and draw visual representations of problems. Curriculum Study PD helps teachers plan their daily instruction and ensure all students have opportunities to learn, grow, and share their math knowledge over the course of the school year.
ZEARN MATH TIP

To access facilitation materials for Zearn Math PD, educators can:

1. Log in to their PD-enabled Zearn Teacher or Administrator Account
2. Navigate to PD
3. Select the specific PD session
4. Select Facilitator Guide and Participant Notes to view and download

Zearn Math provides a recommended calendar that school leaders and teachers can use to schedule upfront Zearn Math PD before the school year begins and the forty grade-level sessions throughout the year that support daily instruction.

ZEARN MATH TIP

A downloadable version of the Zearn Math PD Calendar is available in the “Resources” tab of educators’ PD-enabled School Accounts.
ASSESSMENTS AND REPORTS

Ongoing, Formative Assessments

The Zearn Math curriculum includes a series of formative assessments designed to provide teachers with precise and actionable feedback they can use to inform instruction and respond to the needs of each student. Assessments focus on the big ideas of mathematics and allow students to demonstrate their understanding across multiple modalities through a thoughtful balance of software- and paper-based experiences.

Zearn Math offers daily, lesson-level assessments—the Tower of Power (available for 1st–5th grades) and Exit Tickets—along with Mid- and End-of-Mission assessments that are more comprehensive and administered roughly biweekly. All assessments are designed to fit into the classroom model and enhance, rather than distract from, instruction. Lesson-level assessments are embedded into the curriculum and occur as part of recommended daily core instructional time, not in addition to it. Mission-level assessments take on average 30 minutes to complete and should be administered during a built-in, weekly Flex Day.

To assist teachers in analyzing student work, Zearn Math provides comprehensive Professional Development. Curriculum Study PD is year-long professional learning that builds deep pedagogical content expertise for teachers on the Zearn Math curriculum. This professional development supports teachers in understanding the range of ways students can demonstrate their learning. Teachers collaboratively explore the student work they should expect to see on lesson- and Mission-level assessments.

» DAILY DIGITAL ASSESSMENT

The Tower of Power is a scaffolded assessment, administered automatically at the end of each Independent Digital Lesson. The Tower of Power is focused on the content of a single lesson and allows students to demonstrate their new understanding. If students make a mistake, they receive real-time remediation at the point of misconception, allowing them to correct their understanding and continue through the assessment. All students have a rich learning experience throughout the assessment as they engage with the digital manipulatives and interactive visuals that are part of the Zearn Math software-based student experience.

Each Tower of Power contains two to four stages of problems that increase in complexity and decrease in scaffolding as students progress. The problems in each stage are carefully designed to focus on the big ideas of each lesson, mirroring the progression of learning students have just completed. Students are not permitted to move on to their next Independent Digital lesson without successful completion of the Tower of Power. Since the Tower of Power is software-based, teachers can access a report to determine how well students are progressing through the Tower of Power assessments, enabling them to adjust instruction to support students’ progress.

» DAILY PAPER ASSESSMENT

The Exit Ticket is a paper assessment that is also focused on the content of a single lesson, but it is less scaffolded than the Tower of Power. The Exit Ticket is administered at the completion of each Independent Digital Lesson, providing teachers with a second data point in addition to the Tower of Power that they can use to monitor daily learning. As
the companion to the Tower of Power, the Exit Ticket uses a single problem (or multiple problems where appropriate) to determine if the student transferred the work from the software-based lesson to a less scaffolded, open-response item that requires students to show their thinking and work by drawing models, writing explanations, or both. Exit Ticket problems are designed to highlight the big mathematical idea, or a piece thereof, of each lesson and as such should not be edited for content.

In Kindergarten, most Missions do not include Exit Tickets to allow K students to focus on concrete learning. The last two Missions of the year do include Exit Tickets to help prepare students for 1st grade with Zearn Math.

» MISSION-LEVEL PAPER ASSESSMENTS

Mid-Mission and End-of-Mission assessments are formative assessments administered roughly half way through the Mission and at the conclusion of the Mission respectively. For 1st–5th grades, these paper assessments consist of open response items that require students to show their work or explain their thinking in a variety of ways, including drawing models and writing explanations. In Kindergarten, each paper-based assessment is designed to be administered interview style where teachers record their observations of the student’s work and thinking. The assessment items vary in their focus, ranging from items that highlight a student’s understanding of a big mathematical idea to items that are more focused on students’ procedural fluency.

Zearn Math Tip

To access Mission-level Paper Assessments, educators can:

1. Log in to their Zearn Teacher or Administrator Account
2. Navigate to the Curriculum page
3. Select the specific Mission
4. Select Mission-level Assessments to view and download for printing

In line with Zearn’s commitment to continuous improvement, Zearn Math’s Mission-level paper assessments for the 2019–20 academic year have been revised in several ways:

FOCUS: All questions assess student understanding of content focused only on the specific Mission and do not include questions that extend beyond the scope of learning. For example, the G3M6 End-of-Mission Assessment was edited to remove the need for students to complete a problem that is not an explicit expectation of the target standard, 3.MD.3. The revised assessment redirects the focus to the expectation of the target standard by asking students to create a scaled picture graph and solve a problem using information presented in the graph. Additionally, assessments do not contain any problem-solving contexts that are unrelated to the mathematics focus of the specific Mission. For example, the G2M3 Mid-Mission Assessment is no longer grounded in a money context; rather, it focuses explicitly on place value concepts, making it easier for teachers to determine each student’s level of mastery with the focus content of the mission.
TIMING: Zearn Math Mission-level assessments are designed to take about 30 minutes, and they are intended to be delivered on a Flex Day. The variability of time required per assessment was reduced to provide greater consistency. In many cases the total number of problems per assessment was decreased to enable more standardized assessment timing. For example, the G2M5 Mid-Mission Assessment was reduced from 22 problems to 12 problems, which still allows for rich feedback on student learning for teachers while reducing both time spent assessing and time spent analyzing the assessment.

PROBLEM STRUCTURE: Assessments are built around open response items that require students to show their work or explain their thinking in a variety of ways, including drawing models and writing explanations. Each part of any multi-step problem has a clear objective, is aligned to standards, and allows teachers to identify whether students are struggling with the foundational math concept or the multi-step aspect of the problem. For example, G5M1 Mid-Mission Assessment was revised to create more distinct, independent parts by removing the need to use solutions from earlier work in the assessment and instead giving students a number to use, allowing them to focus on the objective of that individual item.

Zearn Math provides an answer key for each Mission-level assessment that contains the exemplar student response for each item along with specific standards alignment information. Exemplar student responses should not be viewed as the single correct answer or solution method because many of the problems on a Mission-level assessment allow students multiple entry points and acceptable solution paths or strategies. Rather, the exemplar responses should be used—along with Curriculum Study PD—to inform teacher feedback. Given the coherent structure of Zearn Math, if unfinished learning is evident, teachers should move forward with additional supports and address misconceptions during Small Group Lessons and on Flex Days, understanding that the unfinished learning may best be completed by connecting it to new ideas presented in the latter half of a Mission or a subsequent Mission. Students with unfinished learnings should also be supported during flexible math time or other specific intervention time with work on Foundational Missions.

CLASS REPORTS

Zearn Math provides teachers with reports at the classroom level that they can use to differentiate instruction and ensure all students receive the support and enrichment they need. These reports provide real-time data and insights into student pace, progress, and areas of struggle during software-based learning. Zearn recommends teachers check reports at least twice a week to stay up-to-date on students’ learning and be able to use the insights to inform instruction. Class Reports include four individual types of reports:

ZEARN MATH TIP

Step-by-step video tutorials on using each Class Report are available through Zearn Teacher or Administrator Accounts and in the Zearn Help Center.
» PROGRESS REPORT

The Progress Report shows teachers where each student is in the digital sequence of all grade-level content. Teachers can view the percentage of Independent Digital Lessons 1st–5th grade students have completed for each Zearn Math Mission. By checking the Progress Report, teachers can understand how far along students are in their grade-level math content and may use that to inform student groups for Small Group Lessons, either by grouping students together who are working on similar content or on different content.

» PACE REPORT

The Pace Report helps teachers keep 1st–5th grade students on track each week to meet the four Independent Digital Lesson completion goal. Teachers can access a real-time view of how many lessons students have completed, the time it took to complete each lesson, and whether or not students have completed any off-grade-level work (e.g., if a student navigated back to work on earlier Independent Digital Lessons). By checking the Pace Report, teachers can identify groups of students who need more digital time to meet weekly learning goals and students who have already met their goal and can begin working on Bonuses for an extra challenge.

» TOWER ALERTS REPORT

If a 1st–5th grade student struggles in the Tower of Power, the independent practice portion of an Independent Digital Lesson, the student receives a Boost, scaffolded remediation at the precise moment of misconception. If a student struggles multiple times, their teacher receives a Tower Alert. The Tower Alert Report allows teachers to identify the part of the lesson where the student struggled and whether or not the student was able to complete the Tower and move on to the next Independent Digital Lesson. Teachers can use the report to identify which students need additional support on specific concepts and plan targeted Flex Day mini-lessons to meet those students’ needs. By checking the report at least twice each week, teachers can also ensure no students are struggling and “stuck” on a Tower for long periods of time without being able to move on to the next lesson and continue learning.
**SPRINT ALERTS REPORT**

Sprints are lesson-aligned fluency activities that appear in some Independent Digital Lessons to help 1st–5th grade students build and strengthen core math foundations. Students are timed during Sprints; however, the timer is not emphasized in the student experience. If students answer fewer than 10 questions correctly in a Sprint, their teacher receives a Sprint Alert. The Sprint Alerts Report allows teachers to see which students are struggling with Sprints and may need additional support during Flex Day.

**ACTIVITY TRACKER**

The Activity Tracker shows teachers how far along K students are in the sequence of Digital Activities. Teachers can view the percentage of activities students have completed as Kindergartners follow an intentional progress of fluency work from Numbers to 5, Numbers to 10, Numbers to 15, and Numbers to 20.

**ADMIN REPORTS**

Zearn Math offers Admin Reports to help school and district administrators monitor progress through the Zearn Math curriculum and identify classrooms that need additional support. These reports provide real-time data and insights into student learning at the school, grade, and classroom level. Admin Reports are available as part of a paid Zearn Math School Account and include three individual types of reports:

**ZEARN MATH TIP**

Step-by-step video tutorials on using each Admin Report are available through Zearn Administrator Accounts and in the Zearn Help Center.

**COMPLETION TRACKING REPORT**

The Completion Tracking Report helps school leaders ensure all students stay on track throughout the school year to complete all grade-level math content. Administrators can access a real-time view of the percentage of students who have completed each Zearn Math Mission and filter the report by school, grade, and classroom. This report allows administrators to identify classrooms early on that may be falling behind on completing grade-level work and provide additional support.
» **SCHOOL GOALS REPORT**

The School Goals Report provides school leaders with detailed information they can use to understand classroom-level Zearn Math implementation, celebrate goal achievement, and identify and share best practices. Administrators can access a real-time view of the last teacher sign-in date, percentage of students actively logging in to their accounts, average weekly lessons completed, average weekly digital usage minutes, and average number of Tower Alerts per lesson. The report helps administrators create a dialogue with teachers and students about what is going well and what can be improved on in teaching and learning with Zearn Math.

» **STUDENT EXPORTS**

Student Exports allows school leaders to download all data from their Zearn Math reports. Administrators can use this to create custom analytics on progress, pace, and Mission completion.

» **STUDENT REPORTS**

Zearn Math provides Student Reports with real-time data and insights into student pace, progress, and areas of struggle during software-based learning. Teachers can use these reports along with other formative assessment data to determine each student’s specific intervention assignments. Student Reports are available as part of a paid Zearn Math School Account.
Reaching All Learners

COMMITMENT TO ACCESSIBILITY

Zearn strives to be accessible for all students, in line with its mission to ensure all students love learning math. The Zearn Math student experience reflects intentional decisions meant to support a diverse range of learners, and Zearn is working to conform with accessibility standards, including the Web Content Accessibility Guidelines (WCAG 2.0). Zearn views its commitment to accessibility as ongoing and will continue to make updates to ensure curricular materials are usable for all students, including those with disabilities.

Accessibility features of the Zearn Math student experience include:

A Classroom Learning Community

A sense of belonging in the math classroom and community is a precursor to engagement and learning. Zearn Math’s commitment to inclusion and emphasis on positive math mindsets helps teachers create learning environments where all students feel welcome and mistakes are viewed as opportunities for reflection and growth. The balance of whole-group and small-group learning built into the Zearn Math classroom model creates numerous opportunities for all students to participate in math discussions, shifting math dialogue from answer-getting to a participatory discussion. Daily Small Group Lessons also provide teachers with opportunities to build a deep understanding of each student and facilitate math discussions where students can bring their own learnings and frames of reference into the classroom. A strong classroom community enhances collective learning possibilities and ensures each and every student is able to engage in meaningful learning.

An Inclusive Learning Environment

Zearn Math Independent Digital Lessons aim to represent the diversity found in classrooms across the country, so all students can see someone similar to themselves doing math and persevering through challenges. Students and teachers of all genders and races, as well as students with disabilities, appear on-screen during Independent Digital Lessons. Names used throughout all software and paper materials are thoughtfully selected so that no one group is over or underrepresented or stereotyped within the context of a particular problem. These features of Zearn Math help all students engage in deep learning and feel they are an equal part of the classroom math community.
Closed Captioning

Closed captioning for all interactive student videos is available for all Missions for all grades. Closed captioning allows students to turn on an English text transcription of all dialogue and other relevant audio information in the Zearn Math video player. This accessibility feature is particularly important for deaf and hard-of-hearing students, as well as English Learners.

Audio Support

All instructional prompts students see in Independent Digital Lessons have audio support through either recorded audio or Zearn Math’s text-to-speech feature. Students can click on the audio button next to text questions or prompts to hear the words spoken aloud. All math expressions in Zearn Math software-based lessons are read correctly with Zearn Math’s text-to-speech tool. Additional audio support, if needed, can be accessed using supported browser text-to-speech tools. These accessibility features are particularly important for students with cognitive impairments, students with learning differences, young students, and English Learners.

Visual Clarity

Independent Digital Lessons are intended to meet web standards and make all content visually clear and understandable. These accessibility features are particularly important for students with color blindness or any visual impairments.

» USE OF COLOR

Throughout Zearn Math Independent Digital Lessons, color is never used as the only visual means of conveying information. When a student receives precise feedback on an answer during Independent Digital Lessons, that feedback is provided in multiple ways—with color, with clear iconography, and through specific messages such as “Nice!”, “Try again,” or “Check the answer.” Additionally, where color is used to draw attention to a specific piece of information, Zearn Math also uses prompts to convey the same information.

» COLOR CONTRAST

Zearn Math aims to conform to minimum color contrast requirements. Software-based lessons use larger fonts that meet a minimum contrast ratio of 3:1. Font smaller than 18pt or 14pt bold meet a contrast ratio of 4.5:1. Where specific elements of Independent Digital Lessons do not meet contrast standards today, Zearn is making improvements.
» **FONT READABILITY**

Throughout software-based lessons, Zearn Math avoids using fonts smaller than 10pt, with most text using at least 16pt fonts. Font types are simple, clear, and have limited variation in order to ensure all text is readable.

» **ZOOMABILITY**

Students may resize digital pages up to 200% through browser settings to view images or text closer up without losing any content.

**Screen Reader and Braille Translation Options**

All instructional prompts and directions that students see in the Zearn Math digital program can be accessed and read by screen reading software. Additionally, all student-facing PDFs are screen-reader accessible. Screen readers enable blind students to read the text that is displayed on the computer screen with a speech synthesizer or braille display. Blind students will need teacher or caregiver assistance in understanding Zearn Math’s dynamic digital manipulatives within the [Guided Practice](#), given the nature of how they are built.

All core student-facing G1-G5 paper-based instructional materials are available in various accessible formats, including large print, Braille, and tactile, from [APH.org (American Printing House)](https://www.aph.org). Educators can search their catalog, called Louis, for Zearn and place orders for the materials they need. These materials are also on file with the [National Instructional Materials Accessibility Center (NIMAC)](https://www.nimac.org). Our non-core student materials (optional Homework and Problem Sets) are derived from Eureka Math, who offers braille and large print for these materials. Educators can search the same APH catalog for Eureka Math. Zearn’s Kindergarten and G6-G8 paper-based materials are in the process of being completed and will also be on file with NIMAC. Educators can find the aligned Illustrative Math versions of G6-G8 student-facing paper-based materials in accessible formats from the APH.

**Keyboard Accessibility**

While Zearn Math requires the use of a mouse, trackpad, or touchscreen device today, Zearn has made keyboard accessibility a priority. Zearn will be adding new Zearn Math features to ensure that all interactive elements in Independent Digital Lessons are keyboard accessible for students. This accessibility feature is particularly important for students with impaired mobility or dexterity or students with low vision.

**On-Screen Keypad**

As students work through Independent Digital Lessons, they have the option to use an on-screen keypad, rather than a computer keyboard, to type and submit answers. This accessibility feature is particularly important for tablet users and young students who may not know how to use a computer keyboard.
**Volume Consistency**

In order to provide a consistent and non-disruptive audio experience for students, there are no significant volume changes between video audio and other sound effects during Independent Digital Lessons. Outside of Zearn Math’s video content, there is no audio that plays automatically for more than 3 seconds. This accessibility feature is particularly important for students who are sensitive to changes in volume, students who have difficulty focusing on visual content (including text) when audio is playing, students on the autism spectrum, or students with hearing impairments.

**No Visual Flashes**

Independent Digital Lessons do not contain any visuals that flash more than three times in any one-second period. This accessibility feature is particularly important for students prone to seizures because flashing content can trigger seizures.

*Note: A student’s Individualized Education Plan (IEP) should be the first resource teachers use as they look to differentiate instruction for a student with a disability. While Zearn Math’s accessibility features aim to ensure that all students can learn core content in two ways—Independent Digital Lessons and Small Group Lessons—Zearn realizes that not all children will learn best through software-based lessons. For example, due to the visual nature of Zearn Math’s digital manipulatives, students with severe visual impairments may be better served working with physical manipulatives. Students not able to access software-based materials should participate in Whole Group Fluencies and Word Problems with the full class and Small Group Lessons with their teacher and classmates. Rather than complete the Independent Digital Lesson, students should complete lesson-aligned paper components including Student Notes, Problem Sets, Homework, and Exit Tickets as determined and directed by the teacher.*

**ZEARN MATH FOR INTERVENTION**

Zearn Math for Intervention helps teachers support students with accessing grade-level math with comprehensive materials, guidance and visibility that can be used across interventions.

**GRADE-LEVEL LESSONS WITH BUILT-IN FOUNDATIONAL SUPPORT**

Each Zearn Math grade-level digital lesson includes built-in support on concepts from previous topics and grades, so that students can strengthen foundational understanding while learning grade-level concepts. This approach to intervention emphasizes the big ideas in mathematics and strengthens conceptual and procedural knowledge to address unfinished learnings so that students can move smoothly to and make connections with other mathematics. At the beginning of each new mission of instruction, teachers should assign students to the first digital lesson of the mission.
ZEARN MATH TIP
Teachers who are part of a Zearn Math School Account can set students to specific digital lessons to directly align to their daily instruction. Our Help Center offers step-by-step instructions on setting students to specific lessons.

REPORTS WITH VISIBILITY INTO STUDENT PROGRESS
As students learn with grade-level digital lessons aligned to core instruction, Zearn Math offers visibility into student learning and struggle. Specifically, the Student Report provides teachers with visibility into precisely which topics a student may be excelling in and which topics a student may be struggling with and how deep the struggle is. The information in the Student Reports empowers teachers to assess struggle side-by-side with other information - such as productivity of the struggle, where in the scope and sequence struggle is occurring, and other formative assessment data - so that teachers are empowered with the full information they need to choose deeper interventions when necessary. Should teachers decide that students need intervention beyond the foundational support built into grade-level lessons, Zearn Math provides teachers with Foundational Lesson Guidance.

FOUNDATIONAL CONTENT FOR DEEPER INTERVENTIONS
Foundational content acts as targeted intervention content that can be initiated at the appropriate point of struggle and helps students strengthen understanding so they can access grade-level content. The goal of foundational content is to provide targeted support so students get back to grade-level content as soon as possible. Students can engage with foundational content in two ways, outlined below.

» DIRECTING TO MY STUFF MATH LIBRARY
Teachers can direct students to complete Foundational Content in the My Stuff Math Library. The My Stuff Math Library is a content bank that includes guided and independent practice activities for every topic of K-5 math. After students complete foundational content in My Stuff, they can return to the Student Feed to complete grade-level content. Teachers have visibility into My Stuff content completed in the Student Report.
ZEARN MATH TIP

Accessing the complete content bank through My Stuff Math Library is a feature of a paid School Account. Teachers should direct students to:

1. Click My Stuff on the student homepage
2. Use the arrows to navigate to specific foundational content
3. Click the badge of the lesson to start the activity

ASSIGNING FOUNDATIONAL CONTENT

For students that need a deeper intervention, teachers can re-assign students to foundational content. In addition to guided and independent practice, this option provides students with additional adaptive and lesson-aligned fluency work to build automaticity and deepen number sense. Teachers should monitor the Student Report to assess the intervention and diagnose when students should return to grade-level learning.

To further support students with foundational content, teachers can review earlier concepts through Curriculum Study Professional Development. From a PD-enabled Zearn Math School Account, teachers can access an overview of the content to review the visual representations and strategies students may use to access the big idea of the mission.

RECOMMENDED STUDENT AND TEACHER USAGE

Zearn Math for Intervention is designed so that teachers can use the materials in a range of interventions. To achieve maximum impact, students should complete Digital Lessons for every objective of elementary grade level content. Research shows students achieve strongest results when Zearn Math is used as a core instructional intervention to learn and practice all grade-level lessons.

Students should spend at least 60 minutes each week learning with Zearn Math Independent Digital Lessons as a core mathematics intervention. Research shows that completing at least 60 lessons over an academic year corresponds to increases in both student achievement and engagement. This corresponds to about 2 lessons each week, or about 60 minutes weekly.

Teachers should check-in on students’ assignments and monitor Student Reports to choose deeper interventions when necessary. When teachers move to new units of instruction, teachers should assign students to the first digital lesson of the new mission.

REMEDICATION AND ENRICHMENT

Zearn Math builds on-ramps to grade-level content, remediation support, and enrichments opportunities into all parts of students’ core instructional learning. The classroom model also incorporates a weekly Flex Day that creates dedicated time teachers can use to further differentiate instruction and meet student needs as well as administer paper-based assessments at the midpoint and end of each Mission.
During Flex Day or other flexible math block time (e.g., WIN, RTI), students should work on content directly related to their core grade-level learning. This type of strategic support, unlike disconnected off grade-level work, is the most effective way to help all students access and extend their grade-level math learning. Zearn Math provides teachers with Class Reports that can inform Flex Day planning and curricular materials that teachers can draw from to support and enrich student learning.

Zearn Math recommends the following remediation and enrichment options for Flex Day or any other flexible math block time (e.g., WIN, RTI).

**Additional Independent Digital Lesson Time**

Students need to complete four Independent Digital Lessons each week in order to finish all grade-level content during the academic year. Some students may need longer than the recommended minimum 120 minutes of digital time during core instruction to meet this goal. These students can use time on Flex Day to work on their software-based lessons and continue learning grade-level content at their own pace, supported by on-ramps and embedded remediation. These supports include Number Gym, individually adaptive fluency experiences that help students strengthen foundational number sense, and Boosts, personalized remediation paths that precisely address student misconceptions as they problem solve. To identify which students need additional digital time to meet learning goals, teachers should check the Pace Report to see how many lessons students have completed each week.

**ZEARN MATH TIP**

Step-by-step video tutorials for using each Class Report are available through Zearn Math Teacher and Administrator Accounts and in the Zearn Help Center.

**Additional Small-Group Instruction Time**

Flex Days provide teachers with time they can use to lead targeted mini-lessons addressing specific grade-level areas where students need extra support. During these mini-lessons, students can re-engage with the content they are learning during core instructional time, with opportunities to explore new problems, model their thinking with concrete manipulatives, discuss strategies with classmates, and receive direct feedback from their teacher. Zearn Math materials for Small Group Lessons highlight extra problems, tied directly to students’ grade-level learning, that teachers can use during this flexible time. These problems are denoted by a green apple in the teacher materials and marked “Optional for Flex Day.” To identify which students may benefit from extra practice with a specific math idea, teachers should check the Tower Alerts Report each week.
Learning Extensions

If students are demonstrating mastery in assessments and completing four Independent Digital Lessons each week, teachers can use Flex Day to provide opportunities for additional challenge and growth. Zearn Math provides teachers with curricular materials for extending learning that are aligned to students’ current grade-level work.

» Digital Bonuses

Digital Bonuses are challenging problems students can work on after they complete an Independent Digital Lesson. Teachers can assign students to work on bonuses during weekly flex time to enrich and extend learning. Digital Bonuses do not appear automatically in the Student Feed, so teachers should direct students to navigate to them from their My Stuff page.

ZEARN MATH TIP

To navigate to Bonuses, students can:
1. Click My Stuff on the student homepage
2. Click on a Lesson Badge or use the arrows to navigate to previous grades, Missions, and Lessons
3. In the Lesson pop-up, click the Beat It button

» Optional Enrichment Problems

Teacher materials for Small Group Lessons highlight extra, above-grade-level problems that teachers can assign to students during Flex Day for enrichment. These problems are denoted by a green apple in the teacher materials and marked “Optional for Flex Day: Enrichment.”

Foundational Missions for Areas of Unfinished Learning

Zearn Math recommends students with significant areas of unfinished learning spend flexible math time or other specific intervention time working on earlier content that is directly tied to core grade-level learning. For each Mission of the curriculum, Zearn Math highlights Foundational Missions that point teachers to the specific earlier content areas where grade-level concepts are introduced and developed. Zearn Math does not offer a diagnostic test to identify specific intervention areas for students; rather, students should work on the Foundational Mission tied to their current grade-level work. For students with areas of unfinished learning from prior grades, Foundational Missions can provide essential bridges to the content students are learning during core instructional time.
As students work on Foundational Missions during flex time or intervention time, teachers or intervention specialists should continue to implement the Zearn Math model fully. This includes:

» **ENSURING CONTENT ALIGNMENT BETWEEN CORE INSTRUCTION AND INTERVENTION INSTRUCTION**

Teachers can support students in accessing current and upcoming grade-level content by focusing student work on the relevant Foundational Mission. Teachers can access Foundational Missions directly from the Mission page of their Teacher Account.

» **SUPPORTING LEARNING IN MULTIPLE WAYS**

Zearn Math provides students with a mix of modalities, feedback, and support that is crucial to helping students build deep understanding. As students work on Foundational Missions, they should have opportunities to work independently on software-based lessons, model their math with concrete manipulatives, participate in math discussions, and receive direct feedback from their teacher. To demonstrate understanding and strengthen knowledge retention, students should also complete paper-and-pencil Student Notes and Exit Tickets for each lesson in a Foundational Mission.

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ENGLISH LEARNERS

Language learners of all levels can and should engage with grade-level math content that is scaffolded with the appropriate amount of linguistic support. The Zearn Math approach to teaching and learning fosters the side-by-side development of math understanding and language competence, as students are provided with opportunities to both access mathematics using existing language skills and extend their language development in the context of mathematical sense-making.

Each day with Zearn Math, students learn in a classroom model designed for daily differentiation, experience inclusive environments of social belonging, and receive linguistic support across whole-group, small-group, and individual learning formats. Thoughtfully designed curricular materials and Curriculum Study, Zearn Math’s pedagogical content PD, help teachers build expertise that empowers them to support students’ language development as they learn math and encounter areas of struggle. While these features of Zearn Math support all students in building a deep understanding of grade-level mathematics, they are particularly critical for meeting the needs of English Learners, who are simultaneously learning math and acquiring language.

Features of Zearn Math that support English Learners and foster language development include:

Curriculum Approach

» FLEXIBLE LEARNING ENVIRONMENTS

Zearn Math is built on the Universal Design for Learning (UDL) framework, a set of research-based guidelines designed to create flexible learning environments that accommodate individual learning differences and ensure all students can access and participate in learning opportunities. Zearn Math aligns with UDL principles by providing students with multiple ways to engage in learning, acquire knowledge, and demonstrate understanding. Each day with Zearn Math, students learn independently on software-based lessons and in small groups with their teacher and peers. Across these learning experiences, students have opportunities to engage with the same math content in multiple ways using multiple modalities.

As students work through Independent Digital Lessons, they learn and practice new concepts at their own pace with concrete and digital manipulatives, interactive videos, pictorial representations, paper-and-pencil transfer, and precise digital feedback at the moment of misconception. During Small Group Lessons, students model math with concrete manipulatives, represent their work on paper, discuss their reasoning aloud, and receive direct feedback from their teacher and classmates. All students build a deep understanding of grade-level content through this multimodality learning, as they engage with math ideas through words, texts, pictures, discussions, and concrete examples.

This approach also ensures English Learners have daily development opportunities across all language domains—writing, speaking, listening, and reading—that Zearn Math scaffolds with temporary supports. Students have repeated and supported ways to make meaning of math concepts and articulate them into written and spoken words, sentences, and paragraphs. During software-based lessons, students watch and hear on-screen teachers model math and math language and problem solve using paper-and-pencil notes and digital manipulatives such as word tiles. At each step, students are supported with digital remediation that breaks down complex problems, so
students can make sense of what is being asked of them and organize their thinking. During Small Group Lessons, English Learners have repeated opportunities to talk about their mathematical thinking, negotiate meaning with others, and collaboratively solve problems with direct feedback from their teacher. Zearn Math scaffolds this small group instruction for English Learners with concrete manipulatives that support sense-making and guidance for teachers on how to model math and create structured peer interactions.

» CONCRETE TO PICTORIAL TO ABSTRACT (CPA)

As students learn new concepts with Zearn Math, they progress from using concrete materials to pictorial representations to abstract symbols, and they move back and forth between each stage to ensure concepts are reinforced. Through this approach, all students build a deep and sustainable understanding of math as new, abstract concepts are introduced in tangible and concrete ways. This approach also supports students’ language development, as students make connections across representations and describe their thinking aloud during each phase of math learning.

Zearn Math includes supports that scaffold and foster this language development for students who are learning English. Materials for Small Group Lessons provide teachers with sentence frames they can use to support English Learners as students describe connections across representations during partner talks and small group discussions. For example, the sentence frame, “I partitioned into ____ (fractional unit). I shaded ____ (number of) ____ (fractional unit),” helps students verbalize their thinking as they concretely model their math with fraction strips. Additionally, during Math Chats, the guided practice portion of Independent Digital Lessons, on-screen teachers lead “think alouds” where they point out connections across representations while modeling the math with digital manipulatives and concrete objects.

» APPROACH TO PROBLEM SOLVING

Zearn Math teaches students to problem solve by first drawing a picture that models their understanding of the mathematics after they read a problem. Drawing a picture helps students make meaning of problems and understand which models or operations may or may not work for problem solving. This approach, which emphasizes careful reading and visualization, helps all students build flexible and accurate solving skills that they can apply across different problem contexts. Students are also introduced to the language used in mathematics and exposed to grade-appropriate, complex texts as they problem solve.

Zearn Math supports English Learners as they experience challenging texts by scaffolding problem solving rather than by simplifying language. This approach broadens students’ exposure to English, while simultaneously providing support, so that they can expand their vocabularies, navigate increasingly complex texts, and communicate their thinking orally and in writing. Across each part of the daily Zearn Math student experience, complex language is broken down through scaffolded supports to ensure students can make meaning of the text. For example, during Independent Digital Lessons, students view problems with rich animations and are supported in constructing their own model of the problem using high-quality digital
Elements of Language

Students are exposed to many elements of language during their daily learning with Zearn Math, such as mathematics vocabulary and discourse patterns of spoken language. Zearn Math’s intentional design ensures that students are supported as they develop skills across these different elements.

» ESSENTIAL VOCABULARY

Students are not expected to have prior knowledge of essential math vocabulary, and language critical to student learning is thoughtfully introduced, taught, and repeated frequently. This progression helps all students gain familiarity with new terminology and practice using it as they move through the curriculum.

Zearn Math also provides specific supports that can further scaffold this development for English Learners as they learn new vocabulary in a new language. Teacher materials for small-group instruction highlight the significant terminology introduced in each lesson and include activities and discussion questions that encourage students to reflect as they encounter new vocabulary. For example, in a 2nd grade lesson on measurement, students are prompted to share and discuss new words they have learned—such as “length,” “height,” and “meter”—as their teacher records their responses.

» PATTERNS OF DISCOURSE

As students engage in rich math discussions during whole-group and small-group time, they have opportunities to organize their language in discourse patterns such as “compare and contrast” or “question and answer.” Teachers facilitate these structured conversations through activities like pair shares, which allow students to make claims, provide evidence, make conjectures, communicate thinking, and critique others’ reasoning.

Zearn Math provides scaffolding to support English Learners as they encounter and practice these discourse patterns. Teacher materials for Small Group Lessons include specific notes with conversation starters, sentence frames, or modeling guidance that help enhance discussion quality for all students and ensure English Learners are supported in participating. Examples of conversation starters in Zearn Math materials include, “I noticed that you…,” “I agree/disagree because…,” and “Your solution is different from/the same as mine because…”
Teacher-Led Instruction:
Whole Group Warm-Up and Small Group Instruction

» CLASSROOM LEARNING COMMUNITY

A sense of belonging in the math classroom and community is a precursor to engagement and learning. Zearn Math’s commitment to inclusion and emphasis on positive math mindsets helps teachers create learning environments where all students feel welcome and mistakes are viewed as opportunities for reflection and growth. The balance of whole-group and small-group learning built into the Zearn Math classroom model creates numerous opportunities for all students to participate in math discussions, shifting math dialogue from answer-getting to a participatory discussion. Daily Small Group Lessons also provide teachers with opportunities to build a deep understanding of each student and facilitate math discussions where students can bring their own learnings and frames of reference into the classroom. A strong classroom community enhances collective learning possibilities and ensures each and every student is able to engage in meaningful learning.

» MATH DISCUSSION

Students share their own thinking aloud and discuss classmates’ problem-solving strategies throughout daily whole-group problem solving and Small Group Lessons. Teachers facilitate thoughtful mathematical discussions between students that allow learners to refer to and build on each others’ ideas. As students share their reasoning, are exposed to other perspectives, and engage in mathematical sense-making, they are able to deepen their own understanding and become more creative and effective problem solvers. Zearn Math’s small-group format, in conjunction with the personalized learning students experience in Independent Digital Lessons, enables daily math discussions to shift from “answer-getting” focused to rich, ongoing, conversations.

Daily math discussion is a critical part of the daily math block for English Learners who are developing mathematical language because it provides opportunities for students to simultaneously make meaning and communicate that meaning. Rich back-and-forth math conversations also allow students to hear and respond to how other students express their understandings. Zearn Math teacher materials for whole- and small group instruction provide guidance on instructional routines that foster these math discussions for all students, with additional notes on supporting English Learners. For example, teachers are prompted to facilitate “Turn and Talks” where pairs of students discuss their math thinking and are encouraged in some situations to let students with limited English fluency choose the language they wish to use. English Learners may benefit from using their first language in these discussions because processing math in their first language can create a safe space for deeper thinking.

Additional strategies included in teacher materials that educators can use to support English Learners include sentence frames, choral response, specific concrete manipulatives, and information about cognates between English and other languages (e.g., numerator / numerador). All of these supports help English Learners develop their understanding of the language used in math questions and problems while they participate in discussion with
classmates, actively listen, and make connections between prior learning in their first language and new learning in English.

» DIRECT FEEDBACK

During Small Group Lessons, students have more opportunities to receive direct feedback from their teacher during moments of misconception. In the small-group format, teachers can better assess individual student understanding as students model their math using concrete manipulatives, share their reasoning aloud, and problem-solve. These moments of feedback provide all students with valuable, in-the-moment support and remediation from their teacher, allowing them to correct misconceptions so students can continue learning.

The small-group format also allows teachers to gain a specific understanding of English Learners’ content learning in conjunction with their language use. As students make claims, justify their claims with evidence, communicate their reasoning, and critique the reasoning of others, teachers have continual formative assessment opportunities, which they can use to differentiate instruction for English Learners in order to more effectively develop students’ English skills as they learn math.

» EXPOSURE TO RANGE OF LEARNERS

Zearn Math recommends that student groupings during Whole Group Warm-Ups and Small Group Lessons vary over time in order to create opportunities for students to work with classmates with a range of skill levels in mathematics and English language competence. This exposure to a range of learners, whether during partner turn-and-talk time or discussion during Small Group Lessons, allows all students to learn from and work with students with different problem-solving and communication approaches. For English Learners, mixing groups ensures they have multiple exposures to the key uses of language in mathematics, in varied forms, modeled by different speakers.

Independent Digital Lessons

» INCLUSIVE LEARNING ENVIRONMENT

Zearn Math Independent Digital Lessons aim to represent the diversity found in classrooms across the country, so all students can see someone similar to themselves doing math and persevering through challenges. Students and teachers of all genders and races, as well as students with disabilities, appear on-screen during Independent Digital Lessons. Names used throughout all software and paper materials are thoughtfully selected so that no one group is over- or underrepresented or stereotyped within the context of a particular problem. These features of Zearn Math help all students engage in deep learning and feel they are an equal part of the classroom math community.

» PRECISE, TIMELY, AND SUPPORTIVE REMEDIATION

When students make a mistake in the Tower of Power, they receive remediation support in the form of a Boost. The Boost breaks down the question into smaller steps with different visuals and more supportive
manipulatives. Students then have a chance to demonstrate their understanding with a new problem. This real-time remediation precisely addresses student misconceptions and gives all students opportunities to visualize problems in multiple ways and try again.

This in-the-moment feedback can be particularly helpful for English Learners by providing scaffolding that helps them make meaning of the text and understand what is being asked of them. If students struggle with a problem during a software-based lesson, they receive precise remediation that highlights the relevant part of the word problem, provides additional scaffolding by breaking down the problem further, and allows them to try again.

» CLOSED CAPTIONING

Closed captioning for all interactive student videos is available for all Missions for all grades. Zearn closed captioning allows students to turn on an English text transcription of all dialogue and other relevant audio information in the Zearn video player. This feature allows English Learners to access language in multiple modalities—reading and listening—which helps retention and the development of reading skills in mathematics.

ZEARN MATH TIP

Instructions for enabling closed captioning are available in the Zearn Help Center.

» AUDIO SUPPORT

All instructional prompts students see in Independent Digital Lessons have audio support through either recorded audio or Zearn Math’s text-to-speech feature. Students can click on the audio button next to text questions or prompts to hear the words spoken aloud. All math expressions in Zearn Math software-based lessons are read correctly with Zearn Math’s text-to-speech tool. Additional audio support, if needed, can be accessed using supported browser text-to-speech tools.

ZEARN MATH TIP

Instructions for enabling browser text-to-speech tools are available in the Zearn Help Center.
» **PAUSING AND REWINDING**

Students can pause or rewind the video player at any time during Independent Digital Lessons. This feature creates a low risk setting for all students because students can choose to rewatch specific content or entire lessons while learning independently. It also provides English Learners with repeated opportunities to develop, refine, and extend their understanding of the language used in mathematics over time.

» **PAPER-AND-PENCIL TRANSFER**

During the guided practice portion of Independent Digital Lessons, students are prompted to complete problems in their paper Student Notes. This transfer of software-based learning to paper deepens understanding for all students by strengthening knowledge retention.

Student Notes provide English Learners with safe opportunities to deepen and extend writing skills. Students are exposed to words, expressions, and sentences, not just math symbols and numbers, as they label diagrams, write answer sentences, and explain their solutions. After completing their notes, students are able to view correct and complete versions in the guided practice video and take as much time as needed to correct or update their paper-and-pencil notes. Finally, by checking Student Notes, teachers may be able to provide more targeted feedback when working with English Learners one-on-one or in small-group time.

**Classroom Model**

» **DAILY MIX OF WHOLE-GROUP, SMALL-GROUP, AND INDEPENDENT LEARNING**

Each day with Zearn Math, students experience a balance of learning across multiple formats as they participate in a Whole Class Warm-Up and then learn new content in a Small Group with their teacher and peers and at their own pace in Independent Digital Lessons. This rotational model provides all students with daily opportunities to learn, practice, and reflect on their learning in a variety of instructional settings with a variety of different learners. For English Learners specifically, the daily mix of formats ensures they are exposed to a diverse range of thoughts and have chances to hear their teacher and a variety of classmates, as well as on-screen characters, model the language of math in English.

» **WEEKLY SCHEDULE WITH CORE INSTRUCTIONAL TIME AND FLEXIBLE TIME**

The Zearn Math pacing guide supports a weekly schedule consisting of four “Core Days” when students learn grade-level content and one “Flex Day” that can be tailored to meet students’ needs. This schedule ensures students have sufficient time each week to work through grade-level content and built-in weekly time educators can use to differentiate instruction to meet student needs. During Flex Days, teachers can plan targeted mini-lessons that provide enrichment or support or allocate additional time for students to meet weekly lesson completion goals.

For English Learners, weekly flex time provides important opportunities for targeted instruction with their teacher or other activities that extend language development beyond linguistic remediation. During a Flex Day, students may
participate in structured pair work, where they can share their math thinking aloud and respond to their partner, or undertake writing work that involves explaining their strategies, making a mathematical argument, and providing evidence. Flex Days can provide important weekly time for English Learners to continue to expand their skills at navigating language and writing tasks in the math setting.

**Zearn Professional Development**

» **CURRICULUM STUDY PD**

Curriculum Study PD is year-long professional learning that builds deep pedagogical content expertise for teachers on the Zearn Math curriculum. This professional development includes forty one-hour sessions, one for each Mission of every grade, and supports teachers in understanding multiple means of engaging students in learning for each concept and the range of ways students can demonstrate their learning. In grade-level teams each month, teachers collaboratively explore the fluency, application, and conceptual content of each Mission, the student work they should expect to see, and the specific instructional materials they will use in the classroom. Each session dives into key teaching activities, such as modeling how teachers can use scaffolded questioning during word-problem work to help students make meaning of math texts and draw visual representations of problems. Curriculum Study PD helps teachers plan their daily instruction and ensure all students have opportunities to learn, grow, and share their math knowledge over the course of the school year.

» **CLASSROOM IMPLEMENTATION PD**

Classroom Implementation PD supports teachers in using Zearn Math in their classrooms. This three-session professional development series provides training on the curricular resources and reports available for instruction, the rotational classroom model, and classroom routines and systems that support independent learning. It also includes specific guidance on how and when teachers can support productive struggle that allows students to persevere through challenges and receive the remediation they need to be successful. This PD helps teachers prepare to meet the needs of all students, including English Learners, in their classroom.
Appendix

ZEARN MATH CURRICULUM MAP

The Zearn Math Curriculum Map outlines the scope and sequence of all Missions for each grade, K–G5. The Curriculum Map also includes the number of lessons for each Mission and estimated duration based on students completing four lessons per week. Details on each Mission’s content and the weekly pacing recommendations can be found in Grade Overviews for each grade. The Curriculum Map is accessible through the “Curriculum” tab in all educator Zearn accounts.

GRADE OVERVIEWS, K–5

Zearn Math Grade Overviews include pacing guidance, detail on the standards covered, and identification of the Mathematical Practices relevant to the Missions of the grade. Each Grade Overview also provides summaries of the major work of the grade and the learning objectives of each Mission. Grade Overviews are accessible through educator Zearn accounts.

OPTIONAL SMALL GROUP LESSONS

To support the completion of all grade-level content during the academic year, Zearn Math highlights optional Small Group Lessons that teachers may choose to skip. These lessons are noted in all individual Mission Overviews and the Small Group Lesson materials for each Mission. A full list by grade can be found below.
## Optional Small Group Lessons

<table>
<thead>
<tr>
<th>Grade</th>
<th>Mission</th>
<th>Optional Small Group Lessons</th>
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<td>6, 10–12, 16, 24, 25, 32–34</td>
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OMITTED INDEPENDENT DIGITAL LESSONS

With Zearn Math, all 1st–5th grade students learn new content in multiple ways: in Independent Digital Lessons and in Small Group Lessons. Based on field research and input from partner teachers, the Zearn Math curriculum includes certain lessons that are best suited for live instruction in Small Group Lessons. These lessons are noted in all individual Mission Overviews. A full list by grade can be found below.

<table>
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<tr>
<th>Grade</th>
<th>Mission</th>
<th>Omitted Independent Digital Lesson(s)</th>
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**FOUNDATIONAL MISSIONS BY GRADE**

For each Mission of the curriculum, Zearn Math highlights Foundational Missions that point teachers to the specific earlier content areas where grade-level concepts are introduced and developed. Zearn Math recommends that students with significant areas of unfinished learning work on the Foundational Mission tied to their current grade-level work during Flex Day or other flexible math block time.

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**Grade 1**

- **G1M1 Add and Subtract Small Numbers**
  - KM1 Numbers to 10
  - KM4 Number Pairs, Addition and Subtraction to 10
- **G1M2 Meet Place Value**
  - KM4 Number Pairs, Addition and Subtraction to 10
- **G1M3 Measure Length**
  - KM3 Comparison of Length, Weight, Capacity, and Numbers to 10
- **G1M4 Add and Subtract Bigger Numbers**
  - KM5 Numbers 10–20; Count to 100 by Ones and Tens
- **G1M5 Work with Shapes**
  - KM2 Two-Dimensional and Three-Dimensional Shapes
  - KM6 Analyzing, Comparing, and Composing Shapes
- **G1M6 Add and Subtract to 100**
  - KM5 Numbers 10–20; Count to 100 by Ones and Tens

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**Grade 2**

- **G2M1 Add and Subtract Friendly Numbers**
  - G1M1 Add and Subtract Small Numbers
  - G1M2 Meet Place Value
- **G2M2 Explore Length**
  - G1M3 Measure Length
- **G2M3 Counting and Place Value**
  - G1M4 Add and Subtract Bigger Numbers
  - G1M6 Add and Subtract to 100
- **G2M4 Add, Subtract, and Solve**
  - G1M4 Add and Subtract Bigger Numbers
  - G1M6 Add and Subtract to 100
- **G2M5 Add and Subtract Big Numbers**
  - G1M4 Add and Subtract Bigger Numbers
  - G1M6 Add and Subtract to 100
- **G2M6 Equal Groups**
  - G1M1 Add and Subtract Small Numbers
Grade 3

G3M1 Multiply and Divide Friendly Numbers
  » G2M6 Equal Groups
G3M2 Measure It
  » G2M3 Counting and Place Value
  » G2M4 Add, Subtract, and Solve
  » G2M5 Add and Subtract Big Numbers
G3M3 Multiply and Divide Tricky Numbers
  » G2M6 Equal Groups
  » G3M1 Multiply and Divide Friendly Numbers
G3M4 Find the Area
  » G2M6 Equal Groups
  » G3M1 Multiply and Divide Friendly Numbers
  » G3M3 Multiply and Divide Tricky Numbers
G3M5 Fractions as Numbers
  » G2M8 Shapes, Time, and Fractions
G3M6 Display Data
  » G2M7 Length, Money, and Data
G3M7 Shapes and Measurement
  » G2M2 Explore Length
  » G2M7 Length, Money, and Data
  » G2M8 Shapes, Time, and Fractions

Grade 4

G4M1 Add, Subtract, and Round
  » G2M3 Counting and Place Value
  » G2M4 Add, Subtract, and Solve
  » G2M5 Add and Subtract Big Numbers
  » G3M2 Measure It
G4M2 Measure and Solve
  » G2M2 Explore Length
  » G2M3 Counting and Place Value
  » G3M2 Measure It
G4M3 Multiply and Divide Big Numbers
   » G2M6 Equal Groups
   » G3M1 Multiply and Divide Friendly Numbers
   » G3M3 Multiply and Divide Tricky Numbers

G4M4 Construct Lines, Angles, and Shapes
   » G2M8 Shapes, Time, and Fractions
   » G3M7 Shapes and Measurement

G4M5 Equivalent Fractions
   » G2M8 Shapes, Time, and Fractions
   » G3M5 Fractions as Numbers

G4M6 Decimal Fractions
   » G2M8 Shapes, Time, and Fractions
   » G3M5 Fractions as Numbers
   » G4M5 Equivalent Fractions

G4M7 Multiply and Measure
   » G2M2 Explore Length
   » G2M7 Length, Money, and Data
   » G3M2 Measure It
   » G4M2 Measure and Solve

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Grade 5

G5M1 Place Value with Decimal Fractions
   » G4M1 Add, Subtract, and Round
   » G4M6 Decimal Fractions

G5M2 Base Ten Operations
   » G3M1 Multiply and Divide Friendly Numbers
   » G3M3 Multiply and Divide Tricky Numbers
   » G4M3 Multiply and Divide Big Numbers
   » G4M7 Multiply and Measure

G5M3 Add and Subtract Fractions
   » G3M5 Fractions as Numbers
   » G4M5 Equivalent Fractions

G5M4 Multiply and Divide Fractions and Decimals
   » G4M5 Equivalent Fractions

G5M5 Volume, Area, and Shapes
   » G3M4 Find the Area
   » G3M7 Shapes and Measurement

G5M6 The Coordinate Plane
   » G4M7 Multiply and Measure
REQUIRED MATERIALS

Devices and Headphones
» 1 compatible device per every 2 students
» 1 set of headphones per student

Student Paper Materials
» G1-5: 1 set of Student Notes, Exit Tickets, and Mid- and End-of-Mission Assessments per student for all Missions
» K: 1 Exit Ticket per student for Missions 5 and 6

Teacher Paper Materials
» G1–G5: 1 set of materials for Teacher-Led Instruction per teacher for all Missions
» K: 1 set of materials for Teacher-Led Instruction per teacher for all Missions
» 1 set of Teacher Answer Keys per teacher (optional)

Additional Materials
» 1 individual whiteboard per student (or writing paper)
» 1 manipulative set per classroom, outlined below by grade

Kindergarten
» Teddy Bear Counters
» Dot Dice
» 3D Attribute Solids
» Hide Zero® Cards, 12 Basic Student Sets
» Hide Zero® Cards, Demonstration Set
» 5-Group® Cards, Demonstration Set
» Sponge Dice, Dots
» Rocker Scales
» 100 Bead Demonstration Rekenrek
» Unifix Cubes

Grade 1
» 100 Bead Demonstration Rekenrek
» Hide Zero® Cards, 12 Basic Student Sets
» Hide Zero® Cards, Demonstration Set
» 5-Group® Cards, Demonstration Set
» Two Color Counters
» Centimeter Cubes
Grade 2
» 100 Bead Demonstration Rekenrek
» Two Color Counters
» Classroom Money Kit
» Centimeter Cubes
» Whole Number Place Value Cards
» Meter/Yardsticks
» 12-Hour Student Clock
» Color Tiles, Plastic
» Unifix Cubes
» Place Value Disks
» Wood Ruler, Inch and Metric

Grade 3
» Eye Drophers
» Whole Number Place Value Cards
» Digital Scale with Bowl
» Demonstration Clock
» Metric Weight Set
» Centimeter Cubes
» Platform Scale
» Place Value Disks
» Pattern Blocks
» Timers

Grade 4
» Customary Weight Set
» Whole Number Place Value Cards
» Decimal Place Value Cards
» Graduated Cylinder 1000 ml
» 360° Circle Protractors
» Gallon Measurement Set
» Place Value Disks
» Decimal Disks
» 4” Protractors
» Platform Scale
Grade 5

• Two Color Counters
• Whole Number Place Value Cards
• Decimal Place Value Cards
• Centimeter Cubes
• Tape Measures
• Graduated Cylinders 100 ml
• Place Value Disks
• Decimal Disks
• Patty Paper