General description/overview

Early Learning in Mathematics (ELM) provides the foundation for every student to develop conceptual understanding and procedural fluency with critical kindergarten mathematics concepts and skills.

- Core (Tier 1) kindergarten curriculum with 120 comprehensive lessons
- Accelerates student mathematics achievement
- Instructional objectives aligned with the Common Core State Standards in Mathematics (CCSS-M) for kindergarten
- Builds proficiency in mathematical thinking and problem solving

Product information

- Early Learning in Mathematics is a kindergarten core (Tier 1) mathematics curriculum aligned to the Common Core State Standards. ELM, which has been field tested and iteratively revised based on teacher feedback, is designed to develop foundational knowledge and conceptual understanding of mathematical concepts for a full range of learners.
- Each of the 120 ELM lessons includes:
  - 30 minutes of teacher-facilitated instruction.
  - 15 minutes for students to engage in independent Math Practice worksheets.
  - Additional 15 minutes of calendar activities to teach, reinforce, and apply math concepts and skills in the context of “morning circle” time.
- Lessons are composed of 4 to 5 activities and include initial instruction, practice, and review organized into three learning strands: Number and Operations, Geometry, and Measurement.
- Students are introduced to numbers through 100, with the goal of mastery of numbers 1 – 30.
- ELM was developed and evaluated with funding from the Institute of Education Sciences (IES), U.S. Department of Education.
- Available in Spanish as Aprendizaje Temprano de las Matemáticas™

Conceptual Framework

- Development of Conceptual Understanding through engagement with mathematical models including number lines, hundreds chart, ten-frames, finger models, tally marks, and base-ten models.
- Vocabulary and Discourse: Key mathematical vocabulary is identified and explicitly taught and reviewed. Scripted lessons ensure continuity and precise definitions. Students are provided opportunities to use mathematical vocabulary to reason and provide justification.
- Procedural Fluency and Automaticity: Systematic practice and review within and across lessons, with frequent opportunities for students to respond, ensuring mastery, maintenance and generalization.

Instructional Design Components:

- A unique strand design introduces new skills gradually through explicit instruction, and continues practice across lessons.
- Problem-solving activities are the focus of every fifth lesson. Completed as a whole class or in pairs, these activities require students to make sense of problems, model various solution strategies, and justify and communicate their mathematical reasoning using math-related vocabulary and discourse.
- Home-School Connection. Every Math Practice Worksheet includes a “Note Home” in English and Spanish, summarizing math concepts addressed in the daily lesson and providing suggestions for practice at home.
- Kids Are Teachers (KAT). KAT activities allow a student to act as the teacher and lead a variety of math activities.
- Quarterly In-Program Assessments gauge student mastery of objectives. Students engage in math-focused activity centers while the teacher completes student assessments.
Materials

All materials are included in a Teacher Kit, and some materials may be purchased separately. Formats consist of downloadable PDFs for self-printing according to a Distribution License Agreement, or as pre-printed materials that will be shipped to you.

Quarterly Teacher Books
Include:
- Teacher’s Guide
- 120 thirty-minute, teacher-facilitated lessons divided into four books of 30 lessons each
- List of manipulatives and list of Program Support Materials needed for program implementation
- Teacher copy of Math Practice worksheets for each lesson
- Available in the Teacher Kit, and sold separately as a downloadable PDF for self-printing

ELM Calendar Book
- Daily 15-minute lessons (in addition to the 30-minute ELM lessons)
- Monthly objectives include saying the days of the week, identifying what day is yesterday and tomorrow, saying the months and seasons of the year, counting the number of days before an event and identifying patterns on the hundreds chart.
- Available in the Teacher Kit, and sold separately as a downloadable PDF for self-printing

Math Practice worksheets
- Daily 15-minute, written worksheets reinforce objectives for each lesson and include a “Note Home” with tips to practice concepts and skills.
- Available in the Teacher Kit as a class set of 30 copies; single licenses are also sold separately for self-printing; a classroom set of 30 may be ordered pre-printed.

Big Number Book
- Read-aloud poems introduce numbers 1-12.
- Available in the Teacher Kit

Program Support Materials
Includes reproducible materials:
- Quarterly Assessments with directions, student record form, class summary, and student worksheet
- Number Cards (with and without number models of ten-frames, tallies, fingers, base ten models)
- Shape, Vocabulary, Addition and Subtraction Cards
- Place Value Mat
- Quarterly Activity Tables
- KAT (Kids are Teachers) materials
- Family letter in English and Spanish
- Available in the Teacher Kit

Manipulative List
- Manipulatives are required for implementation of ELM and are NOT included with purchase. These manipulatives are commonly available in kindergarten classrooms, or may be purchased from educational retailers.
Research

Our Research to Your Classroom

- At-risk children in ELM classrooms made significantly greater gains from pretest to posttest than their not-at-risk peers in ELM classrooms, a pattern that was not found in control classrooms.
- All effect sizes meet the What Works Clearinghouse standards (WWC, 2013) for showing a “substantively important positive effect.”
- Overall, results would describe ELM as having a “statistically significant positive effect” on student outcomes.

A randomized control trial of ELM was conducted with 64 classrooms. Control classrooms used district-adopted kindergarten curricula, and mathematics instructional time was controlled. We examined intervention effects by testing differences between ELM and control classrooms on changes in primary outcomes from the beginning to the end of kindergarten. Primary outcomes included the Test of Early Mathematics Ability (TEMA), and Early Numeracy-Curriculum Based Measures (EN-CBM). The study sample was comprised of kindergarten students at-risk (66%) or not-at-risk (34%). On the math measures, TEMA ($t = 3.29, p = .0017$) and the EN-CBM ($t = 2.54, p = .0138$), children in ELM classrooms outperformed children in control classrooms. The Hedge’s $g$ effect sizes were .24 on the TEMA and .22 on EN-CBM. Furthermore, at-risk children in ELM classrooms made significantly greater gains from pretest to posttest than their not-at-risk peers in ELM classrooms, a pattern that was not found in control classrooms. All effect sizes meet the What Works Clearinghouse standards (WWC, 2013) for showing a “substantively important positive effect” and overall results would describe ELM as having a “statistically significant positive effect” on student outcomes.

References:


Pricing

Formats consist of downloadable PDFs for self-printing in accordance with a Distribution License Agreement along with printing guidelines, or as pre-printed materials that will be delivered to you.* See https://dibels.uoregon.edu/market/movingup/elm for specific ordering information.

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<tr>
<th>Item</th>
<th>Ordering recommendations</th>
<th>Price for PDF license to print</th>
<th>Price for pre-printed materials</th>
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<tr>
<td><strong>Teacher Kit.</strong> Includes Quarterly Teacher Books and Calendar Book; Math Practice worksheets (30 copies); Big Number Book, and Program Support Materials and manipulative list**</td>
<td>Order one kit for each teacher who will use the ELM curriculum.</td>
<td>$400</td>
<td>$1,751</td>
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<tr>
<td><strong>Math Practice Worksheets.</strong> One worksheet per lesson</td>
<td>Each student should have the worksheets. The Teacher Kit includes worksheets for 30 students. Order additional worksheets for more than 30 students and for subsequent years.</td>
<td>$10 (license to print 1 copy)</td>
<td>$786 (classroom set of 30 copies)</td>
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<td>Quarter 1 Teacher Book</td>
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<td>$100</td>
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<td>Quarter 2 Teacher Book</td>
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<td>Quarter 3 Teacher Book</td>
<td>May be ordered in addition to the Teacher Kit for a teaching assistant, or as a replacement.</td>
<td>$100</td>
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<td>Quarter 4 Teacher Book</td>
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<td>Calendar Book</td>
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**Manipulatives are not included.