Implementing the Common Core…

**Common Core Standards**
The standards call for greater focus in mathematics. Rather than “touching” on many pieces of content in a “mile-wide, inch-deep” curriculum, Common Core narrows the amount of content at a grade. This increases the time for a “deeper dive” and genuine emphasis, or focus, on the content.

In Common Core, standards with a common focus are grouped into clusters. Major clusters get the most emphasis. Supporting clusters support the major work. Additional clusters complete the grade-level content.

**enVision**math 2.0
The program is organized to help students focus on clusters of Common Core standards within a grade. Each Common Core cluster is the focus of one or more topics to promote in-depth development.

Within a topic, the Topic Essential Question identifies a focus for the whole topic, and Essential Understandings are often the focus for groups of related lessons.

Highly effective teachers focus students’ attention on, and make explicit, the important ideas students need to understand in a lesson. Many elements of the lessons are resources that teachers can use to achieve this focus.

**Focus Within a Grade**
• **Focus on Common Core Clusters** One or more topics focus on each Common Core cluster. For example, the cluster wheel below shows that Topics 2 and 3 focus on Major Cluster 1.OA.C, which is about adding and subtracting within 20. (Also see p. 62.)
Focus Within a Topic

- **The Focus of a Topic** At the start of a topic, one or more Essential Questions help students focus on key ideas in the topic. Essential Questions are revisited at the end of the topic.

- **The Focus of a Group of Lessons** An Essential Understanding is stated in the Teacher’s Edition for each lesson. Often the same Essential Understanding is given for a group of consecutive lessons. As students focus on an Essential Understanding over multiple days, they develop deeper conceptual understanding.

**Essential Understanding**

Addition and subtraction have an inverse relationship. The inverse relationship between addition and subtraction can be used to find subtraction facts; every subtraction fact has at least one related addition fact.

- **4-4** Fact Families
- **4-5** Use Addition to Subtract
- **4-6** Continue to Use Addition to Subtract
- **4-7** Explain Subtraction Strategies

Focus Within a Lesson

- **The Focus of a Lesson** Some of the elements of a lesson that help teachers focus students’ attention on important lesson ideas include the Lesson Essential Question, the Visual Learning Bridge and its digital counterpart, the Visual Learning Animation Plus, as well as Do You Understand? Show Me! (Grades K–2) or Convince Me! (Grades 3–6).
Implementing the Common Core…

Common Core Standards
The standards identify coherence as the developmental progression of mathematics across grades and the links between related mathematics within a grade. One of these links is the way supporting clusters reinforce the content taught in major clusters.

Coherence Across Grades

• Look Back Connections to content taught in previous grades are highlighted in the Coherence part of Cluster Overview pages in the Teacher’s Edition. Shown below is a Look Back from Topic 4. (Also see p. 63.)

• Look Ahead Connections to content in the next grade are also highlighted in the Coherence part of Cluster Overview pages in the Teacher’s Edition. Shown below is a Look Ahead from Topic 4. (Also see p. 63.)
Coherence Across Topics, Clusters, and Domains

- **Supporting Clusters** Topics that focus on supporting clusters provide support for topics that focus on major clusters. The Teacher’s Edition identifies that support in the Coherence part of the Cluster Overview pages.

- **Connections Across Topics, Clusters, and Domains** The Teacher’s Edition notes for lessons point out opportunities to highlight connections across topics, clusters, and domains.

Coherence Across Lessons and Standards

- **Connections to Prior Knowledge in Problem-Based Learning** The Solve and Share in every lesson supports coherence. It engages learners by connecting prior knowledge to new ideas through a problem-solving experience.

- **Connections Across Lessons in a Topic** The Focus and Coherence part of Math Background in the Teacher’s Edition for each lesson describes connections between lessons in the topic and some connections to other topics.

Coherence
In the Visual Learning Bridge, students learn best when ideas are connected in a coherent curriculum. This coherence is achieved through various types of connections including connections within clusters and connections across clusters, across domains, and across grades.

**Supporting Cluster**
Supporting Cluster 1.MD.C supports Major Cluster 1.OA.A. The Topic 6 data problems that involve how many more or how many less apply the work with addition and subtraction word problems in Topic 1.

**Connections Across Topics, Clusters, and Domains**

- Do You Understand?
  - What is one strategy you can use to solve subtraction facts?
  - What numbers are the fewest you could use to make 10?

**Math Background**
Focus and Coherence
This lesson pulls together the subtraction strategies throughout the Topic—counting, making 10, and thinking addition. Students use these—or a strategy of their own—to explain how they solve subtraction problems. Students similarly explained addition strategies they used in Lesson 3.8.
Implementing the Common Core...

Common Core Standards
The standards identify three aspects of a rigorous program that should be balanced with equal intensity: conceptual understanding, procedural skills and fluency, and applications.

enVisionmath2.0
The program has a core instructional model that facilitates conceptual understanding. To begin, concepts emerge as students solve a problem in which new concepts are embedded (problem-based learning). Then, those concepts are made explicit through direct instruction (visual learning) that is supported by high-level, question-driven classroom conversations.

Procedural skills are taught with understanding using concrete and pictorial representations, place-value concepts, and properties. Resources are provided to help all students achieve fluency.

Applications include rich, cognitively demanding tasks and a variety of problem situations, as well as infused instruction and reinforcement of the Standards for Mathematical Practice.

Conceptual Understanding

• Problem-Based Learning In Step 1 of the instructional model (problem-based learning), the Solve and Share problem at the start of a lesson helps students connect what they know to new ideas embedded in the problem. When students make these connections, conceptual understanding emerges. (Also see pp. 44–45.)

• Visual Learning In Step 2 of the instructional model (visual learning), teachers use the Visual Learning Bridge and/or Visual Learning Animation Plus to make important lesson concepts explicit by connecting them to students’ thinking and solutions from Step 1. (Also see pp. 46–47.)
Procedural Skills and Fluency

• Teaching Procedural Skills with Understanding
  Students perform better on procedural skills when the procedures make sense to them. So procedural skills are developed with conceptual understanding through careful learning progressions.

• Steps to Fluency Success
  A wealth of resources is provided to ensure all students achieve fluency on the Common Core standards at each of Grades K–6. (Also see pp. 70–71.)

Applications

• Math Practices and Problem Solving
  Rich, real-world problems are provided throughout the lessons, including the Math Practices and Problem Solving lessons which focus on developing the kind of thinking needed to be a good problem solver. (Also see pp. 56–57.)

• Bar Diagrams
  Lessons include a variety of problem situations involving operations. Bar diagrams are included to help students understand and represent the relationship between quantities in a problem, as well as decide what operation to use to solve the problem. (Also see pp. 58–61.)
Implementing the Common Core …

**Common Core Standards**
The Common Core identifies eight Standards for Mathematical Practice that are the same at all grades. These math practices are to be connected to the Standards for Mathematical Content. The math practices are assessed on high-stakes test items that also assess content standards.

**enVision math 2.0**
The program infuses math practices during instruction, practice, and assessment and provides opportunities to focus on specific math practices. Math practices are habits of mind, processes, and dispositions that enable a learner to understand mathematics and to use mathematics with understanding. The program identifies thinking habits questions for each math practice. Math practices are infused and discussed on a daily basis starting from Day 1. But special Math Practices and Problem Solving lessons are also provided as opportunities to focus on specific math practices. Specially flagged comments and problems in all lessons focus on specific math practices. Math practices are assessed with the content standards, and rubrics are provided for assessing students’ overall proficiency with each math practice.

**Math Practices Instruction to Use Anytime**
- **Math Practices and Problem Solving Handbook**
  This handbook at the front of the Student’s Edition provides instruction on math practices and problem solving. Refer students to appropriate parts of it anytime during a teachable moment. The Teacher’s Edition provides support for developing, connecting, and assessing each math practice. (Also see pp. 54–55.)

- **Math Practices Posters and Animations**
  There is a poster and animation for each math practice. They can be used anytime throughout core instruction as an aid to support discussion of a specific math practice.
Math Practices in Lesson Instruction

• Core Instruction Driven by a Marriage of Content and Math Practices: Math practices are infused and explicitly highlighted in lesson instruction. First, comments related to math practices are given during problem-based learning. Then the thinking involved in math practices is modeled during direct instruction.

- Math Practices and Problem Solving Lessons: These lessons are opportunities to stop and focus on a specific math practice. To enhance proficiency with a math practice, the lesson instruction offers thinking habits questions for that math practice and models thinking related to that math practice when solving a rich problem. (Also see pp. 56–57.)

Math Practices in Problems and Assessments

• Math Practices in Problems: All math tasks evoke the selection, use, and management of multiple math practices. In the Student’s and Teacher’s Editions, red type is used to highlight problems that lend themselves to a discussion of a specific math practice.

Implementing the Common Core...

**Common Core Standards**

The standards should be assessed in ways that require students to demonstrate the kind of thinking called for in the standards. High-stakes Common Core assessments include a 3/4-year performance-based assessment as well as an end-of-year assessment with a variety of selected response, constructed response, and technology-enhanced items.

**enVisionmath2.0**

The program offers the most important key to success on assessments: daily core instruction that has the same rigor as the assessments. The core instructional model uniquely builds the depth of understanding, fluency, and proficiency with math practices needed for success on high-stakes assessment.

Various types of assessments in the program are hallmarked by the formative assessment integrated into core instruction through high-cognitive-level, question-driven classroom conversations. Many assessments include types of items that prepare students for high-stakes tests.

Online assessment data can be viewed in different ways to facilitate data-driven decision making.

Common Core assessment practice is built into all lessons. An Online Assessment Handbook (Grades 3–6) also helps students become comfortable taking online tests.

**Assessments**

- **Types of Assessments** Diagnostic assessments help you find out what students know. Formative assessments in lessons inform instruction. Various summative assessments include performance-based topic assessments. (See p. 73 for a list of assessments.) Rubrics are provided for assessing math practices. Auto-scored online assessments can be customized.

- **Types of Assessment Items** Assessment items have content and formats that help prepare students for high-stakes Common Core assessments. They include multi-step and multi-part items involving selected-response (single or multiple response), constructed-response (short or extended response; some with symbols palettes), and technology features such as drag and drop, drop-down menus, graphing, and various on-screen tools.
Assessment Data

- **Assessment Reports** Reports generated by online assessments at PearsonRealize.com include individual and class views of the assessment results. You can also see reports on mastery of Common Core Standards for individual students and for the whole class.

- **Using Assessment Data** At PearsonRealize.com, you can edit student information and organize students into groups based on assessment data.

Assessment Practice

- **Common Core Assessment Practice in Lessons** Common Core assessment practice is included in core lesson practice as well as in Homework and Practice. Math Practices and Problem Solving lessons provide practice with the kind of questions that appear in performance-based assessments.

- **Online Assessment Handbook** An Online Assessment Handbook at Grades 3–6 helps students become comfortable responding to the kind of items they’ll encounter in Common Core high-stakes, online assessment environments.
Implementing the Common Core…

**Common Core Standards**

Common Core describes a curriculum with Standards for Mathematical Content and Standards for Mathematical Practice, but does not specify a particular instructional model.

**enVisionmath 2.0**

The program offers a focused, coherent, rigorous curriculum fully aligned to the Common Core Standards. The program also offers an instructional model that is based on a research foundation and has proven efficacy shown by statistically significant advantages in independent, scientific research done with randomized controlled trials.

**Concepts and Problem Solving**

- **Better Conceptual Understanding and Problem Solving** enVisionMATH students outperformed everybody, despite starting at a lower level. Conceptual understanding and problem solving are crucial aspects of the rigorous Common Core Standards.

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**References:**


“enVisionMATH student gains in the second year were even larger than those seen in the first year. The research results indicate that the longer students learned with enVisionMATH, the greater their gains in math concepts and problem solving.”

Dr. Mariam Azin, Planning, Research, & Evaluation Services (PRES) Associates
Computation

- **Better Computation Scores** enVisionMATH students were unsurpassed in computational skills, despite starting out at a lower level. Procedural skills and fluency are crucial aspects of the rigorous Common Core Standards.

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<tr>
<th>Ability Level</th>
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<tr>
<td><strong>Better Results for All Ability Levels</strong> All ability levels increased in mathematical achievement using enVisionMATH. Achieving college and career readiness for all students is a major goal of the Common Core Standards.</td>
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The randomized control study “provides strong evidence of enVisionMATH’s effectiveness.” enVisionMATH had “statistically significant and positive effects” for students as compared to their peers using other programs.

What Works Clearinghouse (WWC)

“...These findings are quite impressive. In all of my years conducting educational program efficacy studies, I have never seen such consistency in results across all different student populations as I saw with the enVisionMATH curriculum.”

Dr. Mariam Azin, Planning, Research, & Evaluation Services (PRES) Associates