Common Core State Standards
Transition & Accelerated Mathematics Pathway Update

EVERGREEN SCHOOL DISTRICT
NOVEMBER 13, 2014
Mathematics Rigor

Rigor refers to deep, authentic command of mathematical concepts, not making math harder or introducing topics at earlier grades. To help students meet the standards, educators will need to pursue, with equal intensity, three aspects of rigor in the major work of each grade: conceptual understanding, procedural skills and fluency, and application.

http://www.corestandards.org/other-resources/key-shifts-in-mathematics/
Outcomes

- To provide an update regarding Common Core Units of Study, materials, and professional development

- To expand upon Evergreen School District’s Common Core math accelerated pathway for middle school students
Mathematics Unit Design

- We believe that we have the internal capacity and ability to problem solve, design instruction, and tailor outcomes and experiences that lead to student success.
  - CTA recognizes, “they [Common Core Standards] put teachers back in control of crafting and tailoring the education of their students.”
    - California Teachers Association
  - States and local school districts must place teachers at the center of efforts to develop aligned curriculum, assessments, and professional development that are relevant to their students and local communities.
    - National Education Association

- Units contain:
  - Learning objectives
  - Criteria for success
  - Essential and relevant questions
  - Assessment
Let's Look at A Unit…

Introduction

Unit Overview

Table of Contents

Scope and Sequence

Learning Objectives
Let’s Look at A Unit…

Essential Questions & Chaptering

Chapter 2 of 3: Addition & Subtraction within 1,000

PREVIOUS UNIT LEARNING (SKILLS)

We are building on what students previously learned about adding and subtracting two-digit numbers and the strategies used to solve addition and subtraction word problems.

ENDURING UNDERSTANDING

When students solve two-digit addition and subtraction word problems, they will use effective estimation strategies to solve addition and subtraction word problems.

ESSENTIAL QUESTION

How do you use effective estimation strategies to solve addition and subtraction word problems?

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LEARNING OBJECTIVES

Students will:
- Use estimation strategies to solve addition and subtraction word problems.
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CRITERIA FOR SUCCESS

Students demonstrate that they have:
- Used estimation strategies to solve addition and subtraction word problems.
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VOCABULARY

- Estimation
- Addend
- Sum
- Difference
- Algorithm
- Error

APPLICATIONS

Students use estimation strategies to solve addition and subtraction word problems in various real-world contexts, such as budgeting, measuring ingredients, and calculating distances.

STANDARDS

- CCSS.Math.Content.2.NBT.B.7 Add and subtract within 1000, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.
- CCSS.Math.Content.2.NBT.B.8 Mentally add 10 or 100 to a given number 100-900, and mentally subtract 10 or 100 from a given number 100-900.
- CCSS.Math.Content.2.NBT.B.9 Explain why addition and subtraction strategies work, using place value and the properties of operations (2.OA.4).
Let’s Look at A Unit…

Assessment

A Mixed-Up School

Unit 1 - Number and Operations in Base 10 Performance Task

Lakeside Elementary School is all mixed-up. Can you help them fix the problems at their school?

1. Mrs. Taft came into her classroom this morning and saw that someone had knocked over her class’s marble jar. There were 147 marbles in the jar, but she could only find 129 marbles on the floor. How many marbles are still missing? _______________
   Show your work.

2. Mrs. Taft also noticed that parts of the math problems she had written on the board had been erased. Can you help her put the missing numbers back into the problems?

   \[
   \begin{align*}
   243 + 52 & \quad 764 + 75 \\
   378 - 202 & \quad 635 - 350 \\
   \end{align*}
   \]

   \[
   \begin{align*}
   429 + 892 & \quad 743 - 175 \\
   \end{align*}
   \]

   \[
   \begin{align*}
   568 - 219 & \\
   \end{align*}
   \]

Rubric

<table>
<thead>
<tr>
<th>Points</th>
<th>Section Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 pt. each</td>
<td>1 pt. each</td>
</tr>
</tbody>
</table>

3. Corrects math problems as follows: (1 pt. for each problem, 1 pt. for each explanation)
   1. \[429 + 892\]
      Gives explanation such as: "Tam forgot to carry the one."
   2. \[743 - 175\]
      Gives explanation such as: "Tam didn’t regroup."
   3. \[568 - 219\]
      Gives explanation such as: "Yes, because Janelle might have a number of stickers that is less than 48 but still rounds up to 50." (45, 46, or 47 stickers)
   4. \[429 + 892\]
      Gives explanation such as: "Yes, because Ryan might have a number of baseball cards that is more than 72 but still rounds down to 70." (74 or 73 baseball cards)

4. The numbers are circled as follows: (1 pt. each)
   1. \[145, 244, 276, 238, 150\]
   2. \[132, 129, 128, 127\]

5. Gives correct answer as: (1 pt. each)
   1. 20 more pencils
   2. 902
   3. 122

Total points: 25
Unit Support Materials

- Support teacher developed units of study
- Embedded approaches and universal access to meet the needs of differentiated populations including those in special education and/or those identified as “at-risk”
- Professional development opportunities for staff

Pearson Investigations Grades K-5 Investigations in Number, Data, and Space

College Preparatory Mathematics, Core Connections
Driving Question: “How can we support teachers as they implement common core standards utilizing units of study and accompanying support materials?"

Ideas expressed involved:

- vision for common core implementation
- the idea of teachers as “curriculum developers”
- the need for “foundational materials”
- time
Next Steps

Driving Question: “How can we support teachers as they implement common core standards utilizing units of study and accompanying support materials?"

- K-5 Mathematics Instructional Materials Pilot
- Grades K-5 Investigations Professional Development
- K-8 Comprehensive Unit Review & Material Flexibility
- Grades 6-8 Mathematics CPM Instructional Support Materials
# Shifts in Mathematics

<table>
<thead>
<tr>
<th></th>
<th>Focus</th>
<th>Teachers significantly narrow and deepen the scope of how time and energy are spent in the math classroom. They focus deeply on only the concepts that are a priority in the standards.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Coherence</td>
<td>Principals and teachers carefully connect the learning within and across grades so that students can build new understanding onto foundations built in previous years.</td>
</tr>
<tr>
<td>3</td>
<td>Fluency</td>
<td>Students are expected to have speed and accuracy with simple calculations; teachers structure class time and/or homework time for students to memorize, through repetition, core functions.</td>
</tr>
<tr>
<td>4</td>
<td>Deep Understanding</td>
<td>Students deeply understand and can operate easily within a math concept before moving on. They learn more than the trick to get the answer right. They learn the math.</td>
</tr>
<tr>
<td>5</td>
<td>Application</td>
<td>Students are expected to use math and choose the appropriate concept for application even when they are not prompted to do so.</td>
</tr>
<tr>
<td>6</td>
<td>Dual Intensity</td>
<td>Students are practicing and understanding. There is more than a balance between two things in the classroom - both are occurring with intensity.</td>
</tr>
</tbody>
</table>
Questions
Mathematics Accelerated Pathway
East Side Union High School District

Common Core Math Pathways Implementation

<table>
<thead>
<tr>
<th>GRADE 8</th>
<th>GRADE 9</th>
<th>GRADE 10</th>
<th>GRADE 11</th>
<th>GRADE 12</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOMETRY</td>
<td>ALGEBRA 2</td>
<td>MATH ANALYSIS AP STATISTICS</td>
<td>AP CALCULUS AB AP STATISTICS</td>
<td>AP CALCULUS BC AP STATISTICS</td>
</tr>
<tr>
<td>CCSS 8 OR OTHER 8TH GRADE COURSES</td>
<td>COMMON CORE MATH 1</td>
<td>COMMON CORE MATH 2</td>
<td>COMMON CORE MATH 3</td>
<td>MATH ANALYSIS AP CALCULUS AB* AP STATISTICS</td>
</tr>
</tbody>
</table>
2014-15 Accelerated Pathway For 8th Graders

2013-14
7th Grade Algebra

2014-15
8th Grade Geometry

2015-16
9th Grade Algebra 2
Evergreen School District

Revised Accelerated Pathway
7th Graders

2014-15

7th Grade Common Core

2015-16

8th Grade Common Core

9th Grade H.S. CCSS Math I

Traditional Pathway

Accelerated Pathway*

* Acceleration Criteria:
  • Score on 5th grade CST
  • Score on 6th grade Math Diagnostic Testing Project Assessment
  • Score on 7th grade diagnostic assessment
Evergreen School District

Math Pathways for 2015-16 & Beyond

6th Grade
- Traditional Pathway
- 6th Grade Common Core Math 6

7th Grade
- 7th Grade Common Core Math 7

8th Grade
- 8th Grade Common Core Math 8
- 9th Grade H.S. CCSS Math 1

*Acceleration Criteria:
- 6th Grade Smarter Balanced (CAASPP) Assessment
- Math Diagnostic Placement Exam
- Course Diagnostic Exam
Questions