Eureka Acceleration Tool: Grade 4
Module 1, Topic E

To become mathematically proficient, students must access on-grade-level content. This document aims to help teachers who use the Eureka curriculum to ensure readiness for students before and during on-grade-level work, creating opportunities for timely support directly connected to the new learning.

About this Topic

Focus Standard:
4.NBT.B.4: Fluently add and subtract multi-digit whole numbers with sums less than or equal to 1,000,000, using the standard algorithm.

Note to Louisiana Teachers: The **Grade 2 and Grade 3 Louisiana Guides to Implementing Eureka** encourage 2nd and 3rd grade teachers to only teach the lessons regarding the standard algorithm of subtraction as enrichment as time allows. The Louisiana Student Standards for Mathematics do not require that students be introduced to the standard algorithm for subtraction until 4th grade. Therefore, most students entering 4th grade will not have been exposed to the algorithm and will need instruction to connect the algorithm to previously learned models.

Topic Overview per the Eureka Curriculum

Following the introduction of the standard algorithm for addition in Topic D, the standard algorithm for subtraction replaces special strategies for subtraction in Topic E. Moving slowly from smaller to larger minuends, students practice decomposing larger units into smaller units. First, only one decomposition is introduced, where one zero may appear in the minuend. As in Grades 2 and 3, students continue to decompose all necessary digits before performing the algorithm, allowing subtraction from left to right, or, as taught in the lessons, from right to left. Students use the algorithm to subtract numbers from 1 million allowing for multiple decompositions (**4.NBT.4**). The topic concludes with practicing the standard algorithm for subtraction in the context of two-step word problems where students have to assess the reasonableness of their answers by rounding (**4.OA.3**). When using tape diagrams to model word problems, students use a variable to represent the unknown quantity.

Eureka Remediation Tool: Grade 4
Module 1, Topic E

Overview

Eureka Acceleration Tools include:

1. a diagnostic assessment to help teachers determine the misunderstandings or gaps in mathematical knowledge related to a specific Topic in the Eureka curriculum
2. guidance for teachers to analyze student work on the diagnostic assessment
3. suggested materials for targeted remedial instruction

Note: The use of this guidance is not intended to delay students' engagement with on-grade-level learning. On-grade-level learning should be the focus of instructional time and be treated as an opportunity for students to "finish" learning previous skills and deepen conceptual understanding.

Diagnostic Assessment

The diagnostic assessment is designed to be administered to targeted students prior to beginning instruction on the given Topic. When appropriate, it is broken into parts (Part A, Part B, and so on); each part addresses a different prerequisite standard and contains three problems. If a student correctly answers at least 2 out of the 3 problems, it can be assumed that he/she is ready to engage with the new content of the Topic with little to no support needed prior to engaging with the Topic. The diagnostic assessment is designed in this way so that teachers can determine the "entry point" to remedial instruction and/or opportunities for unfinished learning within the context of the new learning. The entry points and opportunities for unfinished learning will vary between students.

Guidance for Acceleration

The Acceleration Guidance is designed for teacher use. It is also broken into parts (Part A, Part B, and so on) and correlates to the parts on the diagnostic assessment. Each part contains the following:

1. **The focus standard**: The focus standards are strategically chosen to address prerequisite skills and are purposefully arranged in the order that students typically master the skills and knowledge.
2. **Why this is important for current grade level work**: This section describes how the work of the prerequisite standard relates to the standard(s) addressed in the Topic of instruction.
3. **Using the diagnostic assessment to identify gaps**: This section identifies common errors students make on the diagnostic assessment items.
4. **Acceleration Resources for Targeted Instruction**: The resources pinpoint specific Eureka lessons and parts of lessons for teachers to use to address gaps in mathematical knowledge. Using Eureka materials to address acceleration ensures alignment to the standards, consistency in approach to learning, and similarities in strategies for solving problems.

Part A: 3.NBT.A.2 (Subtraction)

1. What is the difference of 178 – 26? Show your work or explain your answer.

2. What is the difference of 283 – 167? Show your work or explain your answer.

3. What is the difference of 536 – 348? Show your work or explain your answer.

Solutions:

1. 152
2. 116
3. 188

Acceleration Guidance: Grade 4
Eureka Module 1, Topic E

Part A Focus: 3.NBT.A.2 Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.

<table>
<tr><td colspan="3">Why this is important for current grade level work:
For students to be successful with multi-digit subtraction beyond 1000 with the standard algorithm, they need to be able to fluently add and subtract within 1000 using multiple strategies that demonstrate conceptual understanding.</td><td rowspan="2">Acceleration Resources for Targeted Instruction:

<u>3rd Grade, Module 2, Topic E, Lesson(s) 18 - 19</u>

Use the Concept Development portion of each Lesson and a sampling of problems from the Problem Set focused on conceptual understanding.</td></tr>
<tr><td colspan="3">Using the Diagnostic Assessment to identify gaps:</td></tr>
<tr><td>Problem 1
Students should not be required to rewrite the problem vertically. The focus is that students are subtracting ones from ones and tens from tens.</td><td>Problem 2
Look for students who mistakenly subtract 7 – 3 to get 4 in the ones place. Students must decompose a ten to subtract the ones. No decomposing of hundreds is needed.</td><td>Problem 3
Decomposing of both the tens and hundreds is needed in this problem. Alternate strategies other than the standard algorithm should be accepted and encouraged.</td><td></td></tr>
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