

# Eureka Acceleration Tool: Grade 5

## Module 1, Topic D

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 Standards:

5.NBT.B.7: Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; justify the reasoning used with a written explanation.

#### Topic Overview per the Eureka Curriculum

Topics D through F mark a shift from the opening topics of Module 1. From this point to the conclusion of the module, students begin to use base ten understanding of adjacent units and whole-number algorithms to reason about and perform decimal fraction operations—addition and subtraction in Topic D, multiplication in Topic E, and division in Topic F (**5.NBT.7**).

In Topic D, unit form provides the connection that allows students to use what they know about general methods for addition and subtraction with whole numbers to reason about decimal addition and subtraction (e.g., 7 tens + 8 tens = 15 tens = 150 is analogous to 7 tenths + 8 tenths = 15 tenths = 1.5). Place value charts and disks (both concrete and pictorial representations) and the relationship between addition and subtraction are used to provide a bridge for relating such understandings to a written method. Real-world contexts provide opportunities for students to apply their knowledge of decimal addition and subtraction as well in Topic D.

# Eureka Acceleration Tool: Grade 5 Module 1, Topic D

## 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.

## Diagnostic Assessment: Grade 5

### Eureka Module 1, Topic D

#### Part A: 4.NBT.A.2

1. Write the following number in expanded form: 67,942
2. Write the following number in expanded form: 903,071
3. Write the following number in standard (with base-ten numerals) form: seventy-four thousand, three hundred seven

#### Part B: 4.NBT.B.4 - Addition

4. Find the sum using the standard algorithm.  
 $45,732 + 2,165$
5. Find the sum using the standard algorithm.  
 $12,346 + 9,125$
6. Find the sum using the standard algorithm.  
 $65,493 + 36,241$

#### Part C: 4.NBT.B.4 - Subtraction

7. Find the difference using the standard algorithm.  
 $1,476 - 352$
8. Find the difference using the standard algorithm.  
 $23,740 - 1,641$
9. Find the difference using the standard algorithm.  
 $16,042 - 9,467$

## Diagnostic Assessment Key: Grade 5

### Eureka Module 1, Topic B

Solutions:

1.  $(6 \times 10,000) + (7 \times 1,000) + (9 \times 100) + (4 \times 10) + (2 \times 1)$  or  $60,000 + 7,000 + 900 + 40 + 2$ ; both answers show an understanding of the value of digits in a given place
2.  $(9 \times 100,000) + (3 \times 1,000) + (7 \times 10) + (1 \times 1)$  or  $900,000 + 3,000 + 70 + 1$ ; both answers show an understanding of the value of digits in a given place
3. 74, 307
4. 47,897
5. 21,471
6. 101,734
7. 1,124
8. 22,099
9. 6,575

## Acceleration Guidance: Grade 5 Eureka Module 1, Topic D

**Part A Focus:** 4.NBT.A.2 Read and write multi-digit whole numbers less than or equal to 1,000,000 using base-ten numerals, number names, and expanded form. Compare two multi-digit numbers based on meanings of the digits in each place, using  $>$ ,  $=$ , and  $<$  symbols to record the results of comparisons.

<p><b>Why this is important for current grade level work:</b></p> <p>Since students will be adding and subtracting decimals in the fifth grade, having a complete understanding of place value is key. Being able to write multi-digit whole numbers in multiple forms, such as using base-ten numerals and expanded form, confirms proficiency in place value understanding. Without the understanding that the place of a number changes its value, students may have a hard time decomposing and recomposing numbers. The most important look-fors here are the accuracy of the student's answer.</p>			<p><b>Acceleration Resources for Targeted Instruction:</b></p> <p><u>4th Grade, Module 1, Topic A, Lesson(s) 3 - 4</u></p> <p>Use the Concept Development portion of each Lesson and a sampling of problems from the Problem Set that focus on conceptual understanding.</p>		
<p><b>Using the Diagnostic Assessment to identify gaps:</b></p> <table><tr><td><p><b>Problem 1</b></p><p>Look for students who answer this question incorrectly by simply separating the digits with plus signs. For example, an answer such as <math>6 + 7 + 9 + 4 + 2</math> shows a lack in place value understanding.</p></td><td><p><b>Problem 1</b></p><p>Look for students who misrepresent the zero ten-thousands and/or zero hundreds when expressing the number in expanded form. Students may use <math>0 \times 100</math> in their expanded form or leave out the hundreds place altogether. Either case should be accepted as a sign of readiness for the target standard.</p></td><td><p><b>Problem 3</b></p><p>An accurate answer for this problem shows a firm grasp of place value. Having flexibility with different number forms shows the student is ready for the target standard.</p></td></tr></table>				<p><b>Problem 1</b></p> <p>Look for students who answer this question incorrectly by simply separating the digits with plus signs. For example, an answer such as <math>6 + 7 + 9 + 4 + 2</math> shows a lack in place value understanding.</p>	<p><b>Problem 1</b></p> <p>Look for students who misrepresent the zero ten-thousands and/or zero hundreds when expressing the number in expanded form. Students may use <math>0 \times 100</math> in their expanded form or leave out the hundreds place altogether. Either case should be accepted as a sign of readiness for the target standard.</p>
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## Acceleration Guidance: Grade 5 Eureka Module 1, Topic D

**Part B Focus:** 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.

<b>Why this is important for current grade level work:</b> When students begin to learn about adding decimals, they often try to align the digits instead of the decimals. Mastery of place value and addition of multi-digit whole numbers allows students to grasp the idea of lining up the place values (i.e., lining up the decimal) and transfer that understanding to adding decimals to the hundredths. Even if students are not using a vertical method (i.e., the standard algorithm), understanding that when adding you combine tens with tens and ones with ones will build students' understanding of adding tenths with tenths and hundredths with hundredths. The most important look-fors here are the accuracy of the student's answer. The problems scaffold in difficulty.			<b>Acceleration Resources for Targeted Instruction:</b>  <u>4th Grade, Module 1, Topic D, Lesson 11</u>  Use the Concept Development portion of the Lesson and a sampling of problems from the Problem Set focused on conceptual understanding and/or procedural skill and fluency.		
<b>Using the Diagnostic Assessment to identify gaps:</b> <table><tr><td><b>Problem 4</b> This problem does not call for students to recompose/regroup numbers. Look for students who do not line up the places and calculate a correct answer. This shows a lack in proficiency at using the standard algorithm for addition.</td><td><b>Problem 5</b> Students who do not compose the new 10 and 1,000 may only be looking at the digits in isolation by column instead of looking at each number and the place values in their entirety. This shows a gap in understanding of place value and the standard algorithm for addition.</td><td><b>Problem 6</b> Look for students who do not compose the new 100 and 100,000, which means the student must create a new place. An incorrect answer shows a gap in understanding of place value and the standard algorithm for addition.</td></tr></table>				<b>Problem 4</b> This problem does not call for students to recompose/regroup numbers. Look for students who do not line up the places and calculate a correct answer. This shows a lack in proficiency at using the standard algorithm for addition.	<b>Problem 5</b> Students who do not compose the new 10 and 1,000 may only be looking at the digits in isolation by column instead of looking at each number and the place values in their entirety. This shows a gap in understanding of place value and the standard algorithm for addition.
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## Acceleration Guidance: Grade 5 Eureka Module 1, Topic D

**Part C Focus:** 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.

<p><b>Why this is important for current grade level work:</b></p> <p>When students begin to learn about subtracting decimals, they often try to align the digits instead of the decimals. Mastery of place value and subtraction of multi-digit whole numbers allows students to grasp the idea of lining up the place values (i.e., lining up the decimal) and transfer that understanding to subtracting decimals to the hundredths. Even if students are not using a vertical method (i.e., the standard algorithm), understanding that when subtracting you take tens from tens and ones from ones will build students' understanding of subtracting tenths from tenths and hundredths from hundredths. The most important look-fors here are the accuracy of the student's answer. The problems scaffold in difficulty.</p>			<p><b>Acceleration Resources for Targeted Instruction:</b></p> <p><u>4th Grade, Module 1, Topic E, Lesson(s) 13 - 15</u></p> <p>Use the Concept Development portion of each Lesson and a sampling of problems from the Problem Set focused on conceptual understanding and/or procedural skill and fluency.</p>		
<p><b>Using the Diagnostic Assessment to identify gaps:</b></p> <table><tr><td><p><b>Problem 7</b></p><p>Students should use the standard algorithm efficiently and recognize that all the single-digit differences can be calculated without any regrouping. Look for students who do not correctly line up the places for the standard algorithm.</p></td><td><p><b>Problem 8</b></p><p>When using the standard algorithm, students must regroup twice. Look for students who either do not regroup or regroup incorrectly.</p></td><td><p><b>Problem 9</b></p><p>When using the standard algorithm, students must regroup multiple times. Look for students who either do not regroup or regroup incorrectly.</p></td></tr></table>				<p><b>Problem 7</b></p> <p>Students should use the standard algorithm efficiently and recognize that all the single-digit differences can be calculated without any regrouping. Look for students who do not correctly line up the places for the standard algorithm.</p>	<p><b>Problem 8</b></p> <p>When using the standard algorithm, students must regroup twice. Look for students who either do not regroup or regroup incorrectly.</p>
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