

Eureka Acceleration Tool: Grade 5

Module 1, Topic B

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.A.3: Read, write, and compare decimals to thousandths.

- a. Read and write decimals to thousandths using base-ten numerals, number names, and expanded form, e.g., $347.392 = 3 \times 100 + 4 \times 10 + 7 \times 1 + 3 \times (1/10) + 9 \times (1/100) + 2 \times (1/1000)$.
- b. Compare two decimals to thousandths based on meanings of the digits in each place, using $>$, $=$, and $<$ symbols to record the results of comparisons.

Topic Overview per the Eureka Curriculum

Naming decimal fractions in expanded, unit, and word forms in order to compare decimal fractions is the focus of Topic B (**5.NBT.3**). Familiar methods of expressing expanded form are used, but students are also encouraged to apply their knowledge of exponents to expanded forms (e.g., $4,300.01 = 4 \times 10^3 + 3 \times 10^2 + 1 \times 1/100$). Place value charts and disks offer a beginning for comparing decimal fractions to the thousandths but are quickly supplanted by reasoning about the meaning of the digits in each place, noticing differences in the values of like units and expressing those comparisons with symbols ($>$, $<$, and $=$).

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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 B

Part A: 4.NBT.A.2

1. Write the following number in expanded form: 21,354
2. Write the following number in expanded form: 40,769
3. Write the following number in standard form:
 $(2 \times 100,000) + (6 \times 10,000) + (5 \times 100) + (3 \times 10) + (9 \times 1)$

Part B: 4.NF.C.6

4. What is the decimal form of the fraction $\frac{7}{10}$?
5. What is the decimal form of the fraction $\frac{3}{100}$?
6. What is the decimal form of the fraction $\frac{20}{100}$?

Part C: 4.NF.C.7

7. Fill in the blank with $<$, $>$, or $=$ to create a correct comparison.

$$0.6 \underline{\hspace{1cm}} 0.8$$

8. Fill in the blank with $<$, $>$, or $=$ to create a correct comparison.

$$0.32 \underline{\hspace{1cm}} 0.5$$

9. Fill in the blank with $<$, $>$, or $=$ to create a correct comparison.

$$1.2 \underline{\hspace{1cm}} 1.20$$

Diagnostic Assessment Key: Grade 5 Eureka Module 1, Topic B

Solutions:

1. $(2 \times 10,000) + (1 \times 1,000) + (3 \times 100) + (5 \times 10) + (4 \times 1)$
2. $(4 \times 10,000) + (7 \times 100) + (6 \times 10) + (9 \times 1)$
3. 260,539
4. 0.7
5. 0.03
6. 0.20
7. $<$
8. $<$
9. $=$

Acceleration Guidance: Grade 5 Eureka Module 1, Topic B

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.

Why this is important for current grade level work: Since students are naming decimal fractions in expanded, unit, and word forms in order to compare decimal fractions in fifth grade, they must understand the relationship between the standard and expanded forms of numbers. Place value work extends in fifth grade to larger multi-digit whole numbers and decimals. The problems scaffold in difficulty.			Acceleration Resources for Targeted Instruction: <u>4th Grade, Module 1, Topics A - B, Lesson(s) 3 - 6</u> Use the Concept Development portion of each Lesson and a sampling of problems from the Problem Set that focus on conceptual understanding.		
Using the Diagnostic Assessment to identify gaps: <table><tr><td>Problem 1 Students may recognize the pattern for writing numbers in expanded form and write the answer correctly. This shows an understanding of the pattern of expanded form.</td><td>Problem 2 This problem has a zero in the thousands place. Look for students who incorrectly represent the thousands place. This shows a gap in their fundamental understanding of expanded form.</td><td>Problem 3 Look for students who write the answer as 26,539, when the correct answer is 260,539. This shows a gap in their fundamental understanding of place value.</td></tr></table>				Problem 1 Students may recognize the pattern for writing numbers in expanded form and write the answer correctly. This shows an understanding of the pattern of expanded form.	Problem 2 This problem has a zero in the thousands place. Look for students who incorrectly represent the thousands place. This shows a gap in their fundamental understanding of expanded form.
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Acceleration Guidance: Grade 5 Eureka Module 1, Topic B

Part B Focus: 4.NF.C.6 Use decimal notation for fractions with denominators 10 or 100. *For example, rewrite 0.62 as 62/100; describe a length as 0.62 meters; locate 0.62 on a number line diagram; represent 62/100 of a dollar as \$0.62.*

Why this is important for current grade level work:

In fifth grade, students will use familiar methods of expressing numbers in expanded form, but will also extend that learning to include naming decimal fractions to the thousandths place. These questions ask students to represent a fraction as a decimal to the hundredths place. These items ensure students have the necessary understanding of decimal notation for fractions to connect to the target standard.

Using the Diagnostic Assessment to identify gaps:

Problem 4

Look for students who misrepresent $\frac{7}{10}$ as a decimal. This shows a gap in conceptual understanding of place value.

Problem 5

Look for students who accurately represent the fraction as a decimal. This shows understanding of decimal notation for fractions.

Problem 6

Students may represent $\frac{20}{100}$ as .2 or .20. Students representing the fraction correctly as a decimal should be considered ready for the target standard.

Acceleration Resources for Targeted Instruction:

4th Grade, Module 6, Topics A - B, Lesson(s) 1 - 4

Use the Concept Development portion of each Lesson and a sampling of problems from the Problem Set focused on conceptual understanding.

Acceleration Guidance: Grade 5 Eureka Module 1, Topic B

Part C Focus: 4.NF.C.7 Compare two decimals to hundredths by reasoning about their size. Recognize that comparisons are valid only when the two decimals refer to the same whole. Record the results of comparisons with the symbols $>$, $=$, or $<$.

<p>Why this is important for current grade level work:</p> <p>When comparing decimals to the thousandths place, students must first have a concrete understanding of comparing decimals to the hundredths place. Students may use a place value chart or like units to compare. The most important look-fors here are accuracy of the answer. The problems scaffold in difficulty.</p>			<p>Acceleration Resources for Targeted Instruction:</p> <p><u>4th Grade, Module 6, Topic C, Lesson(s) 9 - 11</u></p> <p>Use the Concept Development portion of each Lesson and a sampling of problems from the Problem Set focused on conceptual understanding.</p>		
<p>Using the Diagnostic Assessment to identify gaps:</p> <table><tr><td><p>Problem 7</p><p>Students who have a concrete understanding of comparison of like units (tenths) will answer this question correctly. Look for students who need to use pictorial representations like a place value chart or number line to compare like units. This signals a limited understanding of comparing like units.</p></td><td><p>Problem 8</p><p>Look for students who incorrectly answer that 0.32 is greater than 0.5. This signals a misconception when comparing decimals. Some students may focus on the number of digits to the right of the decimal rather than their value.</p></td><td><p>Problem 9</p><p>Look for students who incorrectly answer that 1.20 is greater than 1.2. This is a common misconception when comparing decimals, and may signal a need to return to concrete materials when comparing decimals.</p></td></tr></table>				<p>Problem 7</p> <p>Students who have a concrete understanding of comparison of like units (tenths) will answer this question correctly. Look for students who need to use pictorial representations like a place value chart or number line to compare like units. This signals a limited understanding of comparing like units.</p>	<p>Problem 8</p> <p>Look for students who incorrectly answer that 0.32 is greater than 0.5. This signals a misconception when comparing decimals. Some students may focus on the number of digits to the right of the decimal rather than their value.</p>
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