Eureka Acceleration Tool: Grade 4
Module 1, Topic F

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:

4.OA.A.3: Solve multi-step word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding. *Example: Twenty-five people are going to the movies. Four people fit in each car. How many cars are needed to get all 25 people to the theater at the same time?*

Topic Overview per the Eureka Curriculum

Module 1 culminates with multi-step addition and subtraction word problems in Topic F (**4.OA.3**). In these lessons, the format for the Concept Development is different from the traditional vignette. Instead of following instruction, the Problem Set facilitates the problems and discussion of the Concept Development.

Throughout the module, tape diagrams are used to model word problems, and students continue to use tape diagrams to solve *additive comparative* word problems. Students also continue using a variable to represent an unknown quantity.

To culminate the module, students are given tape diagrams or equations and are encouraged to use creativity and the mathematics learned during this module to write their own word problems to solve using place value understanding and the algorithms for addition and subtraction. The module facilitates deeper comprehension and supports determining the reasonableness of an answer. Solving multi-step word problems using multiplication and division is addressed in later modules.

Eureka Remediation Tool: Grade 4
Module 1, Topic F

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: 2.OA.A.1

1. Sally has 32 more cubes than Donald. Donald has 55 cubes. How many cubes does Sally have? Use drawings and/or equations to show your thinking.

2. Sydney has 12 cubes. Luke has 39 cubes. How many more cubes does Luke have than Sydney? Use drawings and/or equations to show your thinking.

3. Lacy has 23 fewer cubes than Max. Lucy has 45 cubes. How many cubes does Max have? Use drawings and/or equations to show your thinking.

Part B: 3.OA.D.8

4. Lilla is required to type a 500-word essay. On Monday she types 235 words, and on Tuesday she types another 144 words. How many more words does Lilla have left to type? Use drawings and/or equations to show your thinking.

5. For the school canned food drive, the students collected 225 cans the first week, 141 cans the second week, and the rest of the cans the last week. The total number of cans collected was 768. How many cans were collected in the last week? Use drawings and/or equations to show your thinking.

6. Mrs. Mendiola is allotted 750 copies per month. She used 371 copies during the first half of the month, and a fellow teacher gave Mrs. Mendiola 150 of his unused copies. How many more copies can Mrs. Mendiola use without going over her allotment? Use drawings and/or equations to show your thinking.

Solutions:

1. 87 cubes
2. 27 cubes
3. 22 cubes
4. 121 words
5. 402 cans
6. 529 copies

Acceleration Guidance: Grade 4
Eureka Module 1, Topic F

Part A Focus: 2.OA.A.1. Use addition and subtraction within 100 to solve one- and two-step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.

Why this is important for current grade level work:
In Topic F, students must solve multi-step, additive comparative word problems. To be able to engage with and solve multi-step problems, students should be able to solve one-step word problems. Students are encouraged to use tape diagrams or other pictures to show deep conceptual understanding and equations to represent the problem. The numbers used in each problem are very accessible to keep the focus on students' ability to engage with word problems.

Using the Diagnostic Assessment to identify gaps:

Problem 1	Problem 2	Problem 3
The accuracy of a student's answer is less important for determining readiness than his/her approach to the problem. Look for students who choose the correct operation. Any drawing is accepted, but tape diagrams are used heavily in Module F.	Look for students who use addition instead of subtraction. One reason they may choose addition is the word "more." Requiring them to use a tape diagram (or other drawing) or manipulatives might help them access the problem.	Look for students who subtract the two numbers instead of adding them. Errors may indicate confusion with the word "fewer." Consider using manipulatives to help them understand the problem.

Acceleration Resources for Targeted Instruction:

2nd Grade, Module 4, Topic A, Lesson 5

Use the Concept Development portion of the Lesson and a sampling of problems from the Problem Set.

Part B Focus: 3.OA.D.8. Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.

Why this is important for current grade level work:
In Topic F, students must solve multi-step, additive comparative word problems. Students' ability to engage with and solve multi-step word problems involving addition and subtraction within 1,000 will serve as a clear indicator of readiness for the target Topic. Students are encouraged to use tape diagrams or other pictures to show deep conceptual understanding and equations to represent the problem. The numbers used in each problem are more accessible to keep the focus on students' ability to engage with word problems.

Using the Diagnostic Assessment to identify gaps:

Problem 4
Look for students who use addition only instead of using subtraction to find the remaining number of words. One reason they may choose addition is the word "more." Requiring them to use a tape diagram (or other drawing) or manipulatives might help them access the problem.

Problem 5
Students may add the first two numbers, then subtract from the total, or they may start with the total then subtract each number separately. Both methods should be accepted as a sign of readiness.

Problem 6
Look for students who mishandle the 150 extra copies either by subtracting it from the total or adding to the number of used copies.

Acceleration Resources for Targeted Instruction:

3rd Grade, Module 1, Topic F, Lesson(s) 20 - 21

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