SUPPORTING STUDENTS TO STRENGTHEN SKILLS ON THE AK STAR ASSESSMENT

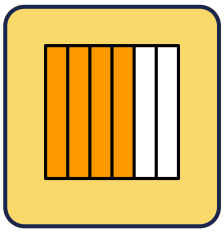
AK STAR ALASKA SYSTEM OF ACADEMIC READINESS

MATH GRADES 3 - 5

Background

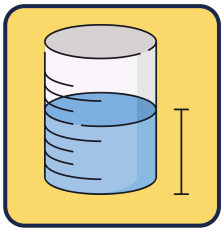
In 2026, at the request of DEED, NWEA prepared the Student Performance by Content Standard and Item Type report. This report unpacked the most missed standards and item types from the 2025 AK STAR assessment administration. This infographic synthesizes that report.

Areas of Need



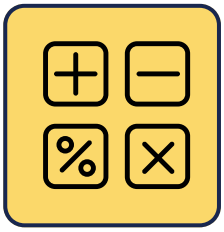
COMPARING FRACTIONS AND DECIMALS

Comparing fractions, identifying and comparing equivalent fractions, and expressing fractions with denominator 10 as an equivalent fraction with denominator of 100 as well as comparing decimals in the hundredths are all areas that teachers should add additional instruction around.
Standards most missed by students on AK STAR include: 3.NF.3a, 4.NF.5, 4.NF.7



GEOMETRY AND MEASUREMENT

Using area models and tiling, finding unknown angles through addition and subtraction, solving problems with volume, and identifying figures subcategories (all rectangles have four right angles and squares are rectangles, so all squares have four right angles).
Standards most missed by students on AK STAR include: 3.MD.9.c, 4.MD.9, 5.MD.7, 5.G.3



MULTI STEP AND WORD PROBLEMS

Assessing students' accuracy and fluency for dividing with four-digit dividends and two-digit divisors as well as increasing their capacity to solve two step problems with all four operations when given equations with a symbol standing in for an unknown quantity.
Standards most missed by students on AK STAR include: 5.NBT.6, 3.OA.8

Resources

Standards and Vocabulary Alignment

- Ensuring district chosen curriculum is aligned with **Assessment blueprint**
- Reviewing **Achievement Level Descriptors**
- Use Science of Reading-aligned vocabulary instructional strategies in math classes: **Resource Depot: Vocabulary Instruction and review the mathematics vocabulary lists on the DEED website**

Assessment Support

- Exposing students to the assessment platform through the grade level videos for the **student tutorial** multiple times annually will help be more comfortable with the item types and tools
- Utilizing **AK STAR practice tests** as interventions, formative assessments, or extensions

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SUPPORTING STUDENTS TO STRENGTHEN SKILLS ON THE AK STAR ASSESSMENT

AK STAR ALASKA SYSTEM OF ACADEMIC READINESS

MATH GRADES 6-8

Background

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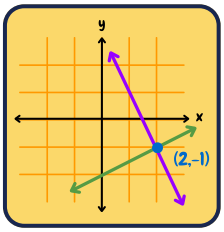
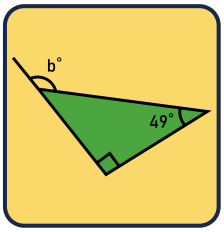
Areas of Need



GRAPHING

Identifying when an equation has infinite, one, or no solutions (especially prior to graphing), understanding how ordered pairs (x,y) have relationships on the coordinate plane (such as reflections), determine the rate of change and initial value of the function from a description of a relationship or from two (x, y) values are all areas of where extra support is needed.
Standards most missed by students on AK STAR include: 6.NS.6.b, 8.EE.7a, 8.F.4



UNDERSTANDING AREA AND ANGLES

Students had difficulty composing and decomposing shapes to find area, determining unknown angles using angle relationships, and solving real-world problems involving area, volume, and surface area.
Standards most missed by students on AK STAR include: 6.G.1, 7.G.5, 7.G.6

MATHEMATICS VOCABULARY

Students need a solid understanding of grade-level mathematics vocabulary, knowing terms such as rational and irrational, to be successful on the AK STAR assessment.
Standards most missed by students on AK STAR include: 8.NS.1

MULTI STEP RATIO PROBLEMS

Using proportional relationships to solve multistep ratio and percent problems (simple interest, tax, gratuities, percent increase) should be an area of instructional focus.
Standards most missed by students on AK STAR include: 7.RP.3

Resources

Standards and Vocabulary Alignment

- Ensuring district chosen curriculum is aligned with **Assessment blueprint**
- Reviewing **Achievement Level Descriptors**
- Use Science of Reading-aligned vocabulary instructional strategies in math classes: **Resource Depot: Vocabulary Instruction** and review the **mathematics vocabulary lists on the DEED website**

Assessment Support

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SUPPORTING STUDENTS TO STRENGTHEN SKILLS ON THE AK STAR ASSESSMENT

AK STAR ALASKA SYSTEM OF ACADEMIC READINESS

MATH GRADE 9

Background

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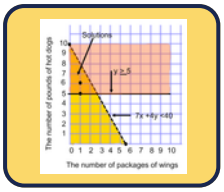
Areas of Need

$$\sqrt[b]{x^a} = x^{\frac{a}{b}}$$

$$x^{-a} = \frac{1}{x^a}$$

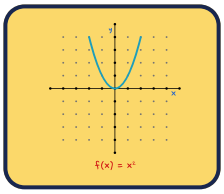
EXPONENTS AND RADICALS

Explain how the definition of the meaning of rational exponents follows from extending the properties of integer exponents to those values, allowing for a notation for radicals in terms of rational exponents. This standard is really about understanding. Students should see that: rational exponents are the logical extension of exponent laws they already know.
Standards most missed by students on AK STAR include: N-RN.1



CREATING EQUATIONS AND INEQUALITIES

Represent constraints by equations or inequalities, and by systems of equations and/or inequalities, and interpret solutions as viable or nonviable options in a modeling context. For example, represent inequalities describing cost constraints in various situations.
Standards most missed by students on AK STAR include: A-CED.3



GRAPHING FUNCTIONS

Graph functions expressed symbolically and show key features of the graph. Graph linear and quadratic functions and show intercepts, maxima, and minima.
Standards most missed by students on AK STAR include: F-IF.7.a

Resources

Standards and Vocabulary Alignment

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Assessment Support

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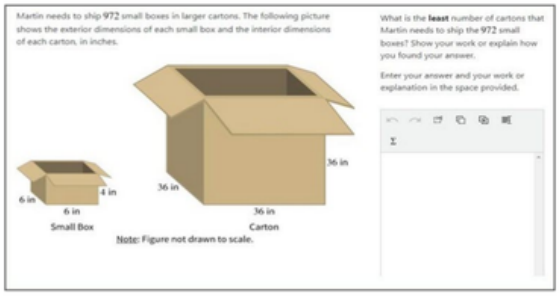
FOCUSING ON THE TYPES OF QUESTIONS WE ASK

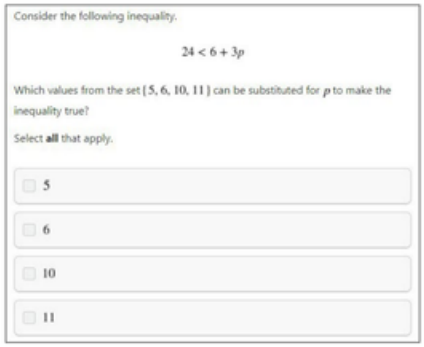
Findings from NWEA on most difficult item types for students on AK STAR

MATH

Areas of Need



Example of constructed response



Example of multi-select question

Constructed response items require students to demonstrate not only computational accuracy but also to provide clear explanations, justified reasoning, and coherent communication of their mathematical thinking. Although students may complete computations correctly, they may lose points if their responses lack a coherent, accurate, and fully developed explanation or justification.

Multiple-choice multi-select items are designed to assess students' ability to identify multiple correct representations, values, expressions, or equations that are equivalent. This item type asks students to pick at least two correct answers from a range of five or more answer choices. Reading the directive closely and paying attention to what is being asked is a crucial step.

For both of these item types, students may benefit from more practice and exposure to similar items.

Supports

- Educators should review item types in the Educator Guide pages 11-16
- Embed constructed response and multiple-choice multi-select item type questions in classroom formative assessments
- Students must have regular opportunities to develop and refine their ability to craft clear, concise, and accurate written explanations that effectively articulate their reasoning processes. Have students justify and explain their mathematics reasoning and choices in expository form. Then evaluate their writing using AKSTAR constructed item response rubric.
- Give students repeated opportunities to practice with the AK STAR student practice test
- Explore and apply the resources and action steps at Resource Depot: AK STAR & MAP Assessments

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NWEA Study