



## KAP Predictive Interim Cluster Map

- The predictive interim assessments provide an estimate of a student's future performance on Kansas summative assessments. The assessments also allow educators to evaluate students' knowledge and skills in a subject and are designed to inform decisions both at the classroom level and beyond (e.g., at the school or district level). To keep the assessment length short, the total number of items that students respond to are limited. The predictive interim assessments do not support any inferences about performance at standard level because measurement best practice would require substantially more items per standard in order to provide an accurate measure of whether the student knows the content of each standard. However, the predictive interim assessments support the inferences made about clusters at the classroom level and beyond because student responses are aggregated and thus more reliable.
- The cluster map resource documents include the clusters embedded in the 2017 Kansas standards and a table mapping each item on the predictive interim assessments to the cluster and item description. In a cluster map resource document, there are two parts: a cluster key table and a cluster mapping table. The cluster key table includes the cluster code and cluster description as well as its domain, and the cluster mapping table links each item with the cluster it is measuring.
- Teachers could use this resource to identify items measuring the same cluster or domain. Combining this resource with information from the school or district report, teacher also could make inferences about school or district performances on clusters or domains. If the whole school performed better than the state average on the majority of items measuring the same cluster or domain, then the teacher could infer that the students in the school likely understood the knowledge and skills of this cluster or domain. If the whole school performed worse than the state average on the majority of items measuring the same cluster or domain, then the teacher might want to spend more instruction time on this cluster or domain.
- Although there are more items measuring one cluster or domain than one standard, the predictive interim assessment still do not support any inferences made about clusters or domains at student level because the number of items per cluster or domain is still not large enough to provide an accurate measure of whether the student understands the content of each cluster or domain.

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## Grade 4 Mathematics Key

Domain	Cluster	Description
Operations & Algebraic Thinking	4.OA.A	Use the four operations with whole numbers to solve problems.
	4.OA.B	Gain familiarity with factors and multiples.
	4.OA.C	Generate and analyze patterns.
Number and Operations in Base Ten	4.NBT.A	Generalize place value understanding for multi-digit whole numbers.
	4.NBT.B	Use place value understanding and properties of operations to perform multi-digit arithmetic.
Number and Operations – Fractions	4.NF.A	Extend understanding of fraction equivalence and ordering.
	4.NF.B	Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.
	4.NF.C	Understand decimal notation for fractions, and compare decimal fractions.
Measurement & Data	4.MD.A	Solve problems involving measurement and conversions of measurements from larger units to smaller units.
	4.MD.B	Represent and interpret data.
Geometry	4.G.A	Draw and identify lines and angles, and classify shapes by properties of their lines and angles.
Strategic Thinking and Reasoning	4.STAR.PSM	Problem solving and modeling.
	4.STAR.CR	Communicating Reasoning.

## Grade 4 Mathematics: Fall

Item Position	Cluster	Item Description
1	4.OA.A	Choose an equation to represent an array
2	4.OA.A	Solve a word problem involving multiples
3	4.OA.A	Choose an array to represent a situation
4	4.OA.A	Solve a word problem involving multiplication and addition
5	4.OA.B	Determine the factor pairs of a given number
6	4.OA.B	Match numbers with their factor pairs
7	4.NBT.A	Use a symbol to compare two multidigit numbers
8	4.NBT.A	Match numbers with their values written in words
9	4.NBT.A	Use place value to describe how to make numbers larger or smaller
10	4.NBT.A	Round a multidigit number to a given place value
11	4.NBT.A	Use place value to relate and compare two numbers
12	4.NBT.A	Use a symbol to compare multidigit numbers expressed in multiple ways
13	4.NBT.B	Divide a four-digit number by a single-digit number, leaving no remainder
14	4.NBT.B	Solve a word problem involving multiplication of 2 two-digit numbers
15	4.NBT.B	Divide a four-digit number by a single-digit number, leaving no remainder
16	4.NBT.B	Solve a word problem involving multiplication of 2 two-digit numbers
17	4.NF.A	Use symbols to compare fractions with unlike numerators and unlike denominators
18	4.NF.A	Use symbols to compare fractions with unlike numerators and unlike denominators
19	4.NF.B	Subtract two fractions with common denominators
20	4.NF.B	Add fractions with common denominators
21	4.NF.B	Add fractions with common denominators
22	4.NF.C	Express as a decimal a fraction with a denominator of 100
23	4.MD.A	Solve a word problem involving money
24	4.MD.B	Use a line plot to solve a problem
25	4.STAR.PSM	Find the difference between two multidigit numbers rounded to different places

*Be cautious about any inferences made about a cluster measured by less than 4 items. In this case, inferences are better suited at the domain level.*

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Number and Operations in Base Ten	4.NBT.A	Generalize place value understanding for multi-digit whole numbers.
	4.NBT.B	Use place value understanding and properties of operations to perform multi-digit arithmetic.
Number and Operations – Fractions	4.NF.A	Extend understanding of fraction equivalence and ordering.
	4.NF.B	Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.
	4.NF.C	Understand decimal notation for fractions, and compare decimal fractions.
Measurement & Data	4.MD.A	Solve problems involving measurement and conversions of measurements from larger units to smaller units.
	4.MD.B	Represent and interpret data.
Geometry	4.G.A	Draw and identify lines and angles, and classify shapes by properties of their lines and angles.
Strategic Thinking and Reasoning	4.STAR.PSM	Problem solving and modeling.
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## Grade 4 Mathematics: Winter

Item Position	Cluster	Item Description
1	4.OA.A	Represent a situation as an equation with an unknown value
2	4.OA.A	Represent a situation with a solution equation
3	4.OA.B	Determine factor pairs of a given number
4	4.OA.B	Match numbers and their multiples
5	4.OA.C	Determine the numbers in a pattern given the description of a situation
6	4.OA.C	Determine the numbers in a pattern given a rule
7	4.NBT.B	Divide a four-digit number by a single-digit number with no remainder
8	4.NBT.B	Write the multiplication of 2 two-digit numbers as an expression
9	4.NBT.B	Write the multiplication of 2 two-digit numbers as an expression
10	4.NF.A	Identify a fraction greater than a given fraction
11	4.NF.B	Subtract two fractions with common denominators
12	4.NF.B	Determine the unit fraction given the multiple and the product
13	4.NF.B	Express a mixed number as a sum
14	4.NF.B	Express a mixed number as a sum
15	4.NF.C	Express a fraction with a denominator of 10 as a fraction with a denominator of 100
16	4.NF.C	Find the sum of fractions with denominators of 10 and 100
17	4.MD.B	Identify the incorrectly graphed point in a dot plot
18	4.MD.B	Use the data in a line plot to determine the difference of two values
19	4.STAR.PSM	Find the difference of two numbers written as number names
20	4.STAR.PSM	Solve a word problem involving division and interpreting a remainder
21	4.STAR.CR	Solve a word problem by finding the dividend given the divisor and the remainder
22	4.STAR.CR	Explain reasoning about a situation involving elapsed time
23	4.STAR.PSM	Solve a word problem involving time and fractions of time
24	4.STAR.CR	Identify the decimal equivalent given a fraction model

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## Grade 4 Mathematics: Spring

Item Position	Cluster	Item Description
1	4.NF.A	Match fractions with unlike numerators and unlike denominators
2	4.NF.A	Determine an equivalent visual fraction model from a given fraction
3	4.NF.C	Use symbols to compare decimals to the hundredths place
4	4.NF.C	Find the sum of fractions with denominators of 10 and 100
5	4.NF.C	Determine the location of a number to the tenths place on a number line
6	4.NF.C	Determine the location of a number to the hundredths place on a number line
7	4.OA.A	Solve a word problem involving division
8	4.G.A	Classify two-dimensional figures based on angles of a specified size
9	4.G.A	Identify the number of pairs of parallel sides of a given shape
10	4.MD.A	Convert a measurement from larger units to smaller units (metric)
11	4.MD.A	Convert a measurement from larger units to smaller units (standard)
12	4.MD.A	Determine the length and width of a rectangle given the perimeter and area
13	4.MD.B	Use a line plot with fractional units to solve a problem
14	4.STAR.CR	Express a fraction in multiple equivalent forms
15	4.STAR.CR	Determine whether numbers in a given range are prime or composite
16	4.STAR.PSM	Solve a word problem involving multiplying a whole number by a fraction
17	4.STAR.PSM	Solve a problem using conversions of length
18	4.STAR.CR	Solve a word problem involving multiplying a whole number by a fraction
19	4.STAR.PSM	Solve a word problem involving fractions of time and conversions of time
20	4.STAR.PSM	Solve a word problem using operations with fractions

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