

Elementary, Middle and High School BLUEPRINT

The [Blueprint](#) has dual purposes. It provides targets for test development and information to teachers as they make instructional decisions. Visit the [KDE's Assessment and Accountability Blueprint webpage](#) for more information on the blueprint development and revision process.

Public feedback was gathered on the Mathematics Blueprint and compiled into a [survey report](#). Use the survey report to guide conversations and recommendations for the Blueprint.

For AP and RC members:

Use the blank Mathematics Assessment Blueprint templates below to make suggestions to the target percentages by domain for your specified grade(s) (e.g., no change, higher [indicate new percentage], lower [indicate new percentage]). Please include **justification statements** that connect to the feedback received from the public survey and outline the rationale for suggested changes to the blueprint.

Example justification statements:

- *Public feedback data strongly supported keeping the percentages as-is.*
- *In order to better align with the Mathematics Standards in grades 3-5, public feedback supports changing the percentage of items associated with geometry to 15-20% rather than 10-15% in grade 5.*
- *In response to public feedback, the committee recommends revising the target percent of items measuring functions to 20-25% from 22-27%.*

Grade-Level or Band Feedback

Grades 3-5

Grade	Domain	Target %	Recommendation	Justification Statement
Grade 3	Operations and Algebraic Thinking	30-35%	30-35%	For all: In alignment with the current standards, we believe that the testing target percentages match the grade-level recommendations for instructional priorities.
	Number and Operations in Base Ten	15-20%	15-20%	<i>Public feedback data strongly supported keeping the percentages as-is</i>
	Number and Operations – Fractions	20-25%	20-25%	<i>Public feedback data strongly supported keeping the percentages as-is</i>
	Measurement and Data	15-20%	15-20%	<i>Public feedback data strongly supported keeping the percentages as-is</i>
	Geometry	10-15%	10-15%	<i>Public feedback data strongly supported keeping the percentages as-is.</i>
Grade 4	Operations and Algebraic Thinking	15-20%	15-20%	<i>Public feedback data strongly supported keeping the percentages as-is.</i>
	Number and Operations in Base Ten	25-30%	25-30%	<i>Public feedback data strongly supported keeping the percentages as-is.</i>
	Number and Operations – Fractions	25-30%	25-30%	<i>Public feedback data strongly supported keeping the percentages as-is.</i>
	Measurement and Data	10-15%	10-15%	<i>Public feedback data strongly supported keeping the percentages as-is.</i>
	Geometry	10-15%	10-15%	<i>Public feedback data strongly supported keeping the percentages as-is.</i>
Grade 5	Operations and Algebraic Thinking	15-20%	15-20%	<i>Public feedback data strongly supported keeping the percentages as-is.</i>

	Number and Operations in Base Ten	25-30%	25-30%	<i>Public feedback data strongly supported keeping the percentages as-is.</i>
	Number and Operations – Fractions	25-30%	25-30%	<i>Public feedback data strongly supported keeping the percentages as-is.</i>
	Measurement and Data	10-15%	10-15%	<i>Public feedback data strongly supported keeping the percentages as-is.</i>
	Geometry	10-15%	10-15%	<i>Public feedback data strongly supported keeping the percentages as-is.</i>

Non-Calculator Items

Based on public feedback, provide a recommendation on the following statement for Grades 3-5 (e.g., keep percentage of items that are non-calculator as-is).

Blueprint Statement: *Assessments at Grades 3, 4 and 5 will consist of 60-70% items that are Non-Calculator.*

Recommendation	Justification Statement
No change in percentiles. Change in code to guide multi-step word problems to allow calculators so that students	If the problem requires the students to generalize understanding to novel tasks (i.e. real world problems) we would like a calculator to be available. The cognitive load associated with making sense of a word problem, solving the problem, and writing a line of reasoning is not in alignment with the purpose of the standard. We believe this use of the calculator would be most appropriate; whereas, many of the foundational problems associated with elementary math are recall or procedural in nature. (WORD PROBLEMS + MULTI-STEP WORD PROBLEMS→CODE THESE AS CALCULATOR)

Grades 6-7

Grade	Domain	Target %	Recommendation	Justification Statement
Grade 6	Ratios and Proportional Relationships	10-15%	Increase to 20-25%	Public feedback encouraged the review of this domain. In 6th grade, students begin to transition from thinking multiplicatively to thinking proportionally, so in order to prepare students for success in future courses, an increased focus on this domain is necessary. Additionally, the proposed revised standards bring percentages back into the 6th grade, so there needs to be an adjustment to implement this revision.
	The Number System	30-35%	Decrease to 20-25%	Decreasing the emphasis on this domain creates a more balanced representation of all mathematical areas. It also allows for greater focus on the skills that most effectively prepare students for algebra and success in future grade levels.
	Expressions and Equations	25-30%		<i>Public feedback data strongly supported keeping the percentages as-is.</i>
	Geometry	15-20%		<i>Public feedback data strongly supported keeping the percentages as-is.</i>
	Statistics and Probability	15-20%		<i>Public feedback data strongly supported keeping the percentages as-is.</i>
Grade 7	Ratios and Proportional Relationships	20-25%		<i>Public feedback data strongly supported keeping the percentages as-is.</i>
	The Number System	15-20%		<i>Public feedback data strongly supported keeping the percentages as-is.</i>
	Expressions and Equations	20-25%		<i>Public feedback data strongly supported keeping the percentages as-is.</i>

	Geometry	20-25%		<i>Public feedback data strongly supported keeping the percentages as-is.</i>
	Statistics and Probability	20-25%		<i>Public feedback data strongly supported keeping the percentages as-is.</i>

Non-Calculator Items

Based on public feedback, provide a recommendation on the following statement for Grades 6-7 (e.g., keep percentage of items that are non-calculator as-is).

Blueprint Statement: *Assessments at Grades 6 and 7 will consist of 30-35% items that are Non-Calculator.*

Recommendation	Justification Statement
Change: Reduce the number of non-calculator assessed items in 6th grade to 20-25%	Public feedback data encourages lowering the percentage of Non-calculator items for Grades 6-7. This percentage change will still allow the fluency standards (6.NS.2, 6.NS.3, 6.EE.2, 7.NS.1, and 7.NS.2) to be assessed appropriately.
Reduce the number of non-calculator assessed items in 7th grade to 15-20%	6th-grade number systems currently consists of 30%-35% of the KAS, but we have proposed a change of 20%-25%, increasing Ratios and proportional relationships to 20%-25%, reducing the amount of procedural fluency questions, and increasing the conceptual understanding questions; the percent of non-calculator assessment items should correlate. 7th-grade number systems consist of 15-20% of the KAS moving toward more high-level problem solving and reasoning with number sense toward the application of expressions, equations, and inequalities. Lowering the non-calculator assessment items ensures that we accurately assess the critical areas. While students should be assessed on the fluency standards, it should not consume $\frac{1}{3}$ of the total assessment.

Grade 8

Domain	Target %	Recommendation	Justification Statement
Expressions & Equations	25-30%		<i>Public feedback data strongly supported keeping the percentages as-is.</i>
Functions	25-30%		<i>Public feedback data strongly supported keeping the percentages as-is.</i>
The Number System	10-15%		<i>Public feedback data strongly supported keeping the percentages as-is.</i>
Geometry	25-30%	Lower to 20-25%	Public feedback prompted a review of this domain. Because Algebra is the next course students take in high school, and Geometry remains a separate required course for graduation, reducing the percentage of Geometry assessment items would allow for a stronger focus on preparing students for Algebra.
Statistics and Probability	10-15%		<i>Public feedback data strongly supported keeping the percentages as-is.</i>

Non-Calculator Items

Based on public feedback, provide a recommendation on the following statement for Grade 8 (e.g., keep percentage of items that are non-calculator as-is).

Blueprint Statement: *The assessment at Grade 8 will consist of 20-25% items that are Non-Calculator.*

Recommendation	Justification Statement
Reduce items that are non-calculator to 10%-15%	Public feedback requests 0% to 15% non-calculator assessment items based on the KSA fluency standards, moving beyond number sense to EE.7, Solving linear equations in one variable at this grade level. Assessing a student's number sense negates assessing their ability to solve higher-level math problems and the standards at this grade level.

Grade 10

Domain	Target %	Recommendation	Justification Statement
Algebra	22-27%	Keep as is	Public feedback supported keeping percentage as is.
Functions	22-27%	Keep as is	Public feedback supported keeping percentage as is.
Number and Quantity	10-15%	Keep as is	Public feedback supported keeping percentage as is.
Geometry	25-30%	Keep as is	Although only 88% of public feedback supported keeping geometry as is, the percentage aligns with the KDE course matrix consisting of Algebra 1 and Geometry standards. Also, the SAT that is now required has a similar percentage of Geometry.
Statistics and Probability	10-15%	Keep as is	89% of feedback supported keeping this standard as is and suggestions for higher or lower are not supported by the percentage of probability and stats standards covered in the Algebra 1 and Geometry matrix. Also, the SAT that is now required has a similar percentage of probability and statistics.

Non-Calculator Items

Based on public feedback, provide a recommendation on the following statement for Grades 3-5 (e.g., keep percentage of items that are non-calculator as-is).

Blueprint Statement: *The assessment at Grade 10 will consist of 20-25% items that are Non-Calculator.*

Recommendation	Justification Statement
Keep as is	With how the standards require procedural processes the amount of non-calculator items would need to stay the same. 85% of the public agreed to keep the non-calculator portion as is.

General Feedback and Recommendations

Please provide any additional feedback for the advisory panel and review committee to consider when making decisions about the Mathematics Assessment Blueprint.		
General Feedback Received	Committee Recommendation	Justification Statement
The advisory panel and review committee may want to strengthen the Mathematics Assessment Blueprint by making it more transparent, instructionally useful, and equitable; educators would benefit from clearer explanations of cognitive rigor, annotated sample items, and examples of student work that illustrate proficiency expectations, along with more explicit guidance on how the assessment supports diverse learners and aligns with universal design principles; the blueprint would also be more effective if it clarified the rationale behind item distribution, showed how assessed skills progress across grade levels, and offered high-level direction on appropriate interpretation of assessment data so schools can use results responsibly and avoid narrowing instruction.	We recommend including a link (or links) to KDE Testing Items and Times Chart . No other changes needed.	The other requests fall outside of the scope.
I would like to know how many questions will be short answer (type in the box questions), matrix-type questions, multiple choice. If we are going to have matrix type questions, students should given partial credit for those. For example, if the matrix has 4 problems,	We recommend including a link (or links) to KDE Testing Items and Times Chart . No other changes needed.	The other requests fall outside of the scope.

then 3 out of 4 should be mastery level. I think it is unfair to give students a matrix type question and make it all or nothing in terms of getting it right.		
I believe consideration needs to be given as to the main focus of each grade level. If not, then we continue to go a mile wide and an inch deep. When there is intentional focus to a main big idea for each year, it allows for deeper instruction and understanding to take place. For example, 7th grade is all about proportional reasoning. Everything taught within that year should be able to be tied back to proportional relationships. 5th grade should be all about fractions...introducing these concepts too early leads to an "I can't do fractions" belief among students. The blueprint helps to guide the attention and focus (prioritization) given to each of the standards and should align to the big picture.	No changes recommended.	The request about depth and breadth of standards is beyond the scope of the Mathematics Assessment Blueprint. The requests about the emphasis on proportional reasoning and fractions will be addressed when the committee considers the breakdown of individual grade level assessments.
Years ago scores released to schools were broken down by domain. This was very useful for reflection. I would like to see the data broken down by domain and question type in the future in our score reports.	No changes recommended.	This request is beyond the scope of the Mathematics Assessment Blueprint.
The standards that are assessed on the non-calculator vs calculator section would be beneficial to know.	No changes recommended.	Naming the specific standards for each (non-calculator vs calculator) would restrict the types of questions or the ways the standards could be assessed.

I wish every standard and sub part had example test questions with explanations to provide even further context	No changes recommended.	Clarifications in KAS provide further explanations and details. Additionally, providing example questions would be overly prescriptive.
Provide more information that will allow educators to prepare students for the test. Students get nervous, and 3rd graders especially so as this is the 1st time taking a high-stakes test. Providing more information on the type of question (multiple choice, technology enhanced, cloze, etc) would allow educators to ensure that they have exposed their students to such questions.	We recommend including a link (or links) to KDE Testing Items and Times Chart . No other changes needed.	This information is available outside the Assessment Blueprint.
I think that more sample test questions should be provided to educators. Instead of just a few questions, I think it would be more beneficial to have a PDF full of past released items that are sorted by domain. This not only provides plenty of test prep for educators, but it also can give them a better perspective of how to prepare students for the KSA. My experience with using released items has been that the wording of the question confuses students even though they know the content that is being assessed. As such, a lot of them feel defeated from the beginning and lose confidence in answering the questions accurately. If I had multiple examples of released items, then I could better prepare my students throughout the school year, spacing out test prep instead of	No changes recommended.	Clarifications in KAS provide further explanations and details. Additionally, providing example questions risks being overly prescriptive.

cramming it in at the end because I don't have access to very many examples.		
more specificity regarding standards - not just domains	No changes recommended.	Providing heightened specificity risks being overly prescriptive.
Far too many math reasoning questions. It is a test of reading comprehension and inferencing- not the ability to compute. Many questions need outside background knowledge. The math problems are at a higher level of reading than the grade tested in math. Make the problems short and to the point. The math test is not age-appropriate. Methods of how to solve a multiplication problem i.e.- box method, partial products, etc. should not be assessed- the ability to compute the problem and get the correct answer is what should matter.	No changes recommended.	This request is beyond the scope of the Mathematics Assessment Blueprint.
A parent document to see easily what type of questions will be on the assessment, and clear understanding of how to work out each question. Not done in a way that is just for educators. Parents do not know how to help their students at home because the written answers and keys are written above grade level.	No changes recommended.	Clarifications in KAS provide further explanations and details. Additionally, providing example questions would be overly prescriptive. Additionally, there may be multiple ways to work out the question.