



Grade 7

Maryland College and Career Ready Standards for Mathematics

Companion Guide

Mathematics Branch

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Purpose and Document Structure

PURPOSE OF COMPANION GUIDE

This document is designed to support a shared understanding of what each mathematics standard means, how it connects to other content, and how it can be authentically enacted in classrooms. It does not replace your high-quality instructional materials (HQIM), but instead works alongside them so that educators have a common interpretation of the mathematical expectations we set for students. Regardless of the HQIM in use, these documents provide clarity about the essence and intentions of the standards and illustrate how those expectations can be realized through instruction.

DOCUMENT STRUCTURE

Each domain begins with a set of cluster connections to the Numeracy Development Framework (NDF). These connections identify the ways in which individual clusters either:

- **Contribute to milestones:** The cluster builds prerequisite knowledge, skills, or ways of reasoning that *support progress toward* a milestone in the NDF, even if the milestone itself is not fully realized at this stage.
- **Directly contribute to milestones:** The cluster includes content and practices that are *explicitly named within* an NDF milestone, meaning student proficiency with this cluster demonstrates attainment of that milestone.

For each standard, the companion document provides:

- **Content Progression:** A description of the content that comes before and after that standard to highlight how it fits within a coherent learning trajectory.
- **Examples and Clarifications:** Explanations and expansions of the standard language that provide additional details about its intent. These may include illustrative examples, as well as common missteps to avoid that can narrow or distort the mathematical authenticity of the standard.
- **Student Opportunities for Mathematical Experience:** Statements describing the kinds of reasoning, modeling, problem solving, and sense-making students should have the chance to engage in as part of learning the content of the standard. Where relevant, these are connected to the Standards for Mathematical Practice (SMPs). Not every SMP is explicitly called out, but all can be present in any standard depending on how instruction is designed. What is included are non-exhaustive examples. This section also includes the following features:
 - For standards that directly represent a key milestone in the NDF, a **bold** statement reminds educators that students need multiple opportunities and varied ways to demonstrate proficiency with the concept(s).

- Opportunities to connect with financial literacy are flagged with a \$ symbol. These indicators point to natural entry points for integration, but they should not limit educators from making additional meaningful connections to financial literacy where appropriate.

Standards for Mathematical Practice

“The Standards for Mathematical Practice (SMPs) describe varieties of expertise that mathematics educators at all levels should seek to develop in their students” ([Common Core State Standards Initiative](#)). The SMPs develop along a continuum as students progress mathematically, with each grade’s content providing distinct opportunities for students to engage in and demonstrate the practices at an appropriate level of sophistication.

The SMPs should be integrated with content and not taught separately. As students participate in these practices on a regular basis, they become part of the mathematically productive habits of mind that support deep understanding. Intentionally incorporating opportunities to develop the SMPs enhances instruction and enriches students’ mathematical engagement. Students who learn to use these eight mathematical practices as they engage with mathematical concepts and skills have a greater chance of developing conceptual understanding (Van de Walle, et al, 2014).

The table below highlights opportunities to develop the SMPs in general across the given grade band, while the companion guides for individual standards provide more specific connections to the content of each grade. Educators should utilize this resource to assist in planning for opportunities when the SMPs can be emphasized in daily instructional practice. To facilitate the incorporation of SMPs within instruction, notations have been made in the Companion Guide to indicate when a specific SMP may be applicable for a particular standard. These examples should not limit educators from making additional meaningful connections to SMPs where appropriate.

Standard for Mathematical Practice	What does it look like for middle school students?	How can middle school teachers support this practice?
Make sense of problems and persevere in solving them (SMP 1)	Students make sense of complex problems involving proportional relationships, expressions, geometry, or data. They identify relevant information and decide how to begin (e.g., creating a ratio table, writing an equation, or producing a sketch). As they work, they monitor progress and adjust strategies (e.g., revising an equation or trying a different proportional approach). They increasingly use reasonableness checks such as estimation or order of magnitude and remain engaged even when early attempts are unsuccessful. Identity shifts toward “I can work through this if I stay with it.”	Teachers introduce non-routine tasks and meaningful contexts that require students to make strategic decisions rather than follow prescribed steps. They use mid-problem reflection prompts such as, “Is this helping you move forward?” or “Does this make sense so far?” Teachers expect productive struggle and resist stepping in too quickly, and reinforce perseverance and strategic thinking over speed. They intentionally recognize persistence and thoughtful effort, and support students’ developing sense of themselves as capable problem solvers.
Reason abstractly and quantitatively (SMP 2)	Students analyze increasingly complex quantitative relationships (e.g., ratios, rates, expressions, variables, and change over time) and use symbolic representations to reason about those relationships. They attend to what quantities and variables represent before and after manipulation and revise their work when the results don’t match what the quantities represent. Students show growing awareness that symbolic reasoning reveals relationships among quantities while remaining connected to the context or situation.	Teachers present problems that require selecting appropriate representations (e.g., equations, tables, graphs) and prompt students to clarify meaning (“What does x represent here?”). They emphasize that abstraction is a way to reason about quantities and relationships, and they support students in using mathematics to make sense of those relationships rather than focusing only on executing procedures or producing answers.

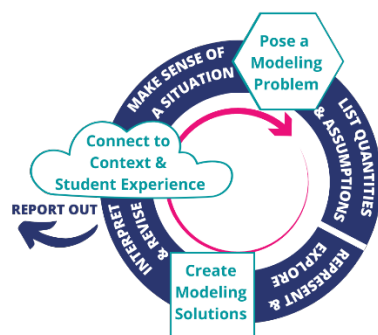
Standard for Mathematical Practice	What does it look like for middle school students?	How can middle school teachers support this practice?
Construct viable arguments and critique the reasoning of others (SMP 3)	Students use definitions, properties, and logical relationships to justify why a method or conclusion is valid (e.g., “Because these ratios are equivalent...” or “The angles must add to 180° ...”). They question and compare others’ reasoning to clarify understanding and identify when a claim lacks justification. Revising reasoning in response to evidence or critique becomes part of improving mathematical understanding.	Teachers provide opportunities for students to present their reasoning to classmates and support conclusions using visual or symbolic evidence. They intentionally facilitate exchanges among peers to deepen collective understanding and emphasize that strong arguments are grounded in evidence and logic. Students are encouraged to refine or strengthen their reasoning in response to questions or feedback, rather than simply maintain an initial claim.
Model with mathematics (SMP 4)	Students pose relational or “what if...?” questions (“What happens if the rate changes?”, “When will they be equal?”, “How long until...?”). They define explicit quantities (e.g., rate, unit rate, percent change, variables, or scale factor) and select representations (equations, inequalities, tables, graphs, geometric relationships) that fit the situation’s structure. They analyze the model to test scenarios or examine how quantities co-vary, interpret results in context, and refine or replace the model when assumptions shift or results don’t make sense. Their cycle becomes more deliberate: define relational quantities → represent → analyze → interpret → refine.	Teachers provide contexts where developing a model helps investigate a meaningful question (e.g., proportional situations, rate problems, geometric measurement, linear/nonlinear patterns). They guide students to define relevant quantities, choose representations that match the situation’s structure, and justify why a selected representation is appropriate. As students test scenarios or encounter new information, teachers prompt them to revise or replace their models and discuss how changes affect interpretations. Model comparison focuses on which representation provides deeper insight into the situation, not simply on showing multiple forms.

Standard for Mathematical Practice	What does it look like for middle school students?	How can middle school teachers support this practice?
Use appropriate tools strategically (SMP 5)	Students make deliberate choices among tools (e.g., coordinate graphs, dynamic geometry software, spreadsheets, ratio tables, algebra tiles, calculators) based on the demands of the task. They use tools to examine relationships, test ideas, or make predictions, and compare how different tools reveal different features of a situation (e.g., “The graph shows the intersection more clearly than the table”). Tool use becomes integrated into how they plan, investigate, and refine their mathematical thinking.	Teachers design tasks where multiple tools could be helpful and prompt students to articulate why one tool might be preferable (“What does the graph show that the equation doesn’t?”). They guide students to evaluate efficiency, clarity, and appropriateness of tools, and they model how powerful digital tools (e.g., spreadsheets, graphing technology) support exploration, visualization, and insight.
Attend to precision (SMP 6)	Students use precise mathematical language (e.g., ratio, rate, variable, expression, mean, median, distribution), notation, symbols, and units appropriate to the situation. They specify and interpret quantities within equations, graphs, and data displays, and they check for accuracy and consistency. Students recognize when imprecision (e.g., unclear labels, inconsistent notation, or incorrect vocabulary) leads to misunderstanding or errors, and they revise accordingly.	Teachers model accurate vocabulary, notation, and units, particularly when variables, proportional reasoning, geometric measures, or statistical measures are involved. They prompt students to clarify expressions (“What exactly does x represent here?”), distinguish between similar ideas, and revise work when imprecision obscures meaning. Precision becomes part of evaluating mathematical and statistical claims.

Standard for Mathematical Practice	What does it look like for middle school students?	How can middle school teachers support this practice?
Look for and make use of structure (SMP 7)	Students identify structure in expressions, equations, proportional relationships, geometric relationships, and data displays. They rewrite expressions by recognizing their form (e.g., seeing $3(x + 4)$ as a product or noticing the distributive structure in $4x + 20$). They analyze proportional situations through the constant ratio or constant rate structure, see slope as a defining feature of linear relationships, and examine how quantities covary. Students use structural understanding to choose efficient strategies ("This is in the form $y = mx + b$, so I can see the rate and starting value") and to generalize or justify relationships.	Teachers make explicit the structure embedded in expressions, equations, proportional relationships, and geometric configurations. They invite students to identify structure before calculating and to describe how that structure supports a strategy ("What does this form tell you right away?"). Teachers emphasize how recognizing structure (e.g., constant rate, equal ratios, or the form of an expression) helps students reason more efficiently and connect ideas across representations.
Look for and express regularity in repeated reasoning (SMP 8)	Students identify regularity in repeated reasoning across proportional, algebraic, and geometric situations. They observe how equivalent ratios maintain the same multiplicative relationship between quantities, how a constant rate of change produces predictable patterns in tables and graphs, and how repeated algebraic moves yield consistent results across different expressions. Students use these predictable behaviors to anticipate outcomes, choose efficient strategies, and begin forming conjectures about general rules (e.g., "It looks like this will increase by 3 every time x increases by 1"). They move from noticing regularity in examples to expressing generalized relationships.	Teachers design tasks where repeated calculations or representations reveal predictable behavior (e.g., tables of proportional relationships, sequences generated by constant differences, or algebraic reasoning that appears across multiple expressions). They prompt students to describe what stays the same and what changes in a consistent way, and to consider whether these observations might apply more generally ("Does this always happen? How do you know?"). Teachers support students in testing or refining emerging conjectures based on repeated reasoning and highlight when a general method or rule becomes evident through these patterns.

Modeling

Mathematical modeling is the process of using mathematics to interpret and make sense of the world. Developing and engaging with the modeling cycle is a critical part of building students' mathematical proficiency. As students progress through the grades, they take on greater responsibility in all aspects of the modeling cycle. They more independently formulate questions, define constraints, and distinguish between assumptions that can be made and facts that must be verified. They are provided growing opportunities to choose models and tools that help them explore a situation and uncover the underlying mathematics. They also become more adept at evaluating the validity of their solutions and revisiting earlier stages of the cycle when initial assumptions prove invalid or incomplete. Participation in the mathematical modeling cycle nurtures mathematical creativity, fosters productive discourse, encourages persistence when solutions are not straightforward, and supports the development of positive mathematics identity.



Mathematical modeling is a significant aspect of MCAP Grades 3-8. Modeling is assessed in alignment to grade-level content. Modeling items are both machine scored and constructed response. The constructed response items are scored using [MCAP Mathematics Modeling Holistic Rubric](#). A calculator will be available for all modeling assessment items.

Opportunities to connect modeling with content standards are identified within the Companion Guide. These opportunities are entry points for integration, but they should not limit educators from making additional meaningful connections to modeling where appropriate.

Modeling Evidence Statements	What does this look like for middle school students?
M.1 Formulate a question about a particular context that can be answered using mathematics.	Students explore contexts and develop questions that can be answered with mathematics. As situations become more complex or less clearly defined, students learn to refine broad, informal questions into precise mathematical ones by identifying measurable quantities and relationships. For example, in a discussion about distracted driving, a vague question like “Is texting while driving dangerous?” can be reframed as “How far does a car travel in the time it takes to send a text?” or “How quickly can you stop at different speeds?” Through this process, students learn to pose mathematical questions that meaningfully guide investigation and analysis.
M.2 Determine the information needed and what assumptions must be made to answer a mathematical question about a context.	Students identify the information needed to answer a mathematical question and distinguish between assumptions they make and conditions imposed by the context. They consider what data is available, what quantities must be estimated or measured, and what constraints affect the situation, revisiting these decisions as their models evolve. For example, in a distracted driving context, students may ask, “How fast is the car going?” or “How long does it take to send a text?” They might assume a constant speed or average texting time in order to proceed, while recognizing that these assumptions affect the accuracy of their conclusions. By explicitly stating and revising assumptions, students learn how choices about information shape both the model and its limitations.
M.3 Represent a context mathematically by selecting and applying appropriate concepts, tools, and representations to define variables, model relationships, and/or identify constraints.	Students represent contexts by identifying relevant variables, constraints, and relationships, and by selecting mathematical representations that make those relationships visible. They move flexibly among verbal descriptions, tables, equations, graphs, and digital tools as needed to clarify how quantities are related and to support further analysis. For example, when exploring distracted driving, students might define variables for time and speed, represent the relationship with an equation, and use a graph to compare how stopping distance changes at different speeds.
M.4 Use a mathematical model to perform computations, make predictions, or answer the question posed about a context.	Students use their mathematical models to carry out calculations, test scenarios, and make predictions related to the original question. They analyze outputs from tables, graphs, or equations to identify patterns, compare cases, and evaluate how changes in inputs affect results. For example, students may use their model to predict stopping distances under varying conditions or compare outcomes when reaction time increases.
M.5 Interpret the results or conclusions of a mathematical model in terms of the original context or situation.	Students interpret the outputs of their mathematical models in relation to the original situation. They explain what numerical results, graphs, or relationships represent in context and describe what the model indicates about the scenario being studied. For example, in a distracted driving context, students may explain what a calculated stopping distance represents in real-world terms or describe how a graph shows the relationship between speed and distance traveled during a driver’s reaction time.

Modeling Evidence Statements	What does this look like for middle school students?
M.6 Critique the validity of a mathematical model and its conclusions. Revise assumptions, representations, or mathematical approaches based on the context, new understanding, or additional information.	Students critique the validity of their mathematical models and conclusions. They consider whether assumptions were realistic, whether important factors were omitted, or whether results align with what they know about the situation. Through comparison with alternative models or feedback from peers, students identify limitations and reconsider choices they made in representing the context. For example, in a distracted driving context, students may question an assumption that every text takes exactly five seconds or notice that reaction time was not accounted for. After comparing models or discussing differing results, they may adjust variables, incorporate additional factors, or refine their representations to better reflect the context.

Reasoning

Students who become adept at reasoning in mathematics are better able to transfer their learning to new and novel contexts and build confidence in their mathematical abilities. Reasoning is both a foundational skill for students and a critical focus of instruction for mathematics educators. Opportunities to reason should be embedded throughout all grade levels and students must be invited to justify their solutions, use multiple representations and tools to support conclusions, and engage in meaningful reflection. They should frequently be called upon to evaluate their own reasoning and that of others, decide whether a solution path is valid, identify and correct errors, and strengthen arguments. As outlined below, mathematical reasoning is a cornerstone skill that should be integrated across all grade-level content.

Reasoning is a significant topic in the MCAP assessment. Reasoning is assessed in alignment to grade-level content. Reasoning items are both machine scored and constructed response. The constructed response items are scored using [MCAP Mathematics Reasoning Holistic Rubric](#). A calculator will be available for all Reasoning assessment items.

Opportunities to connect reasoning with content standards are identified within the Companion Guide. These opportunities are entry points for integration, but they should not limit educators from developing reasoning skills where appropriate.

Reasoning Evidence Statements	What does this look like for middle school students?
R.1 Use visual, symbolic, or contextual representations to explain mathematical ideas.	Students use visual, symbolic, and contextual representations to explain and justify mathematical ideas. They increasingly rely on equations, inequalities, graphs, and coordinate-plane representations while maintaining connections to tables, diagrams, and situations described in words. Rather than using representations only to compute, students use them to communicate how and why relationships hold. For example, a student might use a table and a graph to explain why two proportional relationships have the same rate of change or use an equation and a coordinate plane to justify how changing a parameter affects the shape or position of a graph. By explicitly connecting multiple representations, students strengthen their reasoning and clarify their mathematical thinking for themselves and others.
R.2 Identify and critique errors in reasoning, misapplied procedures, or invalid assumptions, and provide a mathematically valid alternative.	Students analyze mathematical arguments and solution paths to identify errors in reasoning and unjustified assumptions. As their work expands to rational numbers, equations, and functional relationships, they examine where reasoning breaks down (e.g., incorrect use of equality, flawed assumptions about relationships, or conclusions that do not follow from given information). For example, students may critique a solution that treats both sides of an equation as equivalent without actually preserving equality, assumes a linear relationship from limited data, or applies a rule in a way that contradicts the original conditions of the problem. They then revise the reasoning by restating assumptions, correcting the structure of the argument, or proposing an alternative explanation that is mathematically valid.

Reasoning Evidence Statements	What does this look like for middle school students?
R.3 Construct coherent chains of reasoning that connect mathematical properties, ideas, and evidence, such as examples or counterexamples, to support or refute mathematical statements or claims.	In Grades 6–8, students construct chains of reasoning by linking properties of operations, representations, and contextual evidence to justify mathematical claims. They explain why steps are valid when solving equations and inequalities, justify equivalence between expressions, and reason about relationships such as proportionality and linearity. Students support their conclusions by referencing concrete evidence (e.g., features of graphs, values in tables, or specific numerical examples) and by testing whether claims hold across multiple cases. When a claim does not hold, they use counterexamples to refine or reject it, ultimately strengthening their ability to reason logically and communicate mathematically sound arguments.
R.4 Identify and extend patterns or regularities to form general rules and justify their validity using mathematical reasoning.	Students identify regularity across numerical, algebraic, and geometric situations and use those patterns to form and justify general rules. In Grade 7, this includes recognizing consistent multiplicative relationships in proportional contexts, explaining why unit rate remains constant, and generalizing formulas such as the relationship between circumference and diameter. In Grade 8, students extend this work by analyzing repeated structure in linear relationships, explaining why slope represents a constant rate of change, and justifying general relationships such as the Pythagorean Theorem across all right triangles. Students support these generalizations by connecting observed patterns to mathematical properties (e.g., equivalence, proportionality, or invariance) and explaining why the rule holds beyond individual examples.

Numeracy Development Framework

Grade 7 is a year when proportional reasoning, first introduced formally in Grade 6, expands into a unifying idea that connects number, algebra, and geometry. Students strengthen fluency with rational numbers, including positive and negative values, and use estimation strategies to judge the reasonableness of results. They also become more flexible in moving among fractions, decimals, and percents, which supports their ability to apply proportional reasoning across diverse contexts.

In **Algebraic Thinking**, proportional reasoning anchors new learning. Students represent contexts with linear equations and inequalities, choose methods of solution based on structure, and explain how a constant multiplicative relationship connects pairs of values. They distinguish proportional from non-proportional situations and use graphs to show proportional relationships, interpreting unit rate graphically. These experiences mark an important step toward functional thinking, where relationships among quantities become central objects of study.

Geometric Reasoning and Measurement provides opportunities to apply proportional thinking in spatial contexts. Students determine area and circumference of circles, calculate surface area and volume of solids, and explore cross-sections of three-dimensional figures. Through these tasks, they reason about scaling, similarity (informally), and the structural properties of shapes.

In **Data, Statistics, and Probability**, students deepen their understanding of variability and chance. They generate random samples to represent populations, use measures of center and variability to compare groups, and estimate probabilities through theoretical reasoning and simulations. Tools such as lists, tables, and visual models help them represent sample spaces systematically. Within this, they also have opportunities to reinforce proportional reasoning as they compare frequencies and likelihoods.

The developmental milestones of Grade 7 show how proportional reasoning grows from its Grade 6 introduction into a unifying lens across domains. This companion document highlights how the Numeracy Development Framework connects these milestones to the Grade 7 standards, pointing to the ideas most critical for students' continued growth.

Number and Operation Sense (NOS)

Number and Operation Sense (NOS) Clusters	Connections to the Numeracy Development Framework
7.NOS.A Use structure and representations to reason with rational numbers.	Standards within this cluster directly contribute* to the Grade 7 Number and Operation Sense milestones within the Operations and Estimation strands of the Numeracy Development Framework.

***Directly contribute to milestones:** The cluster includes content and practices that are *explicitly named within* an NDF milestone, meaning student proficiency with this cluster demonstrates attainment of that milestone.

****Contribute to milestones:** The cluster builds prerequisite knowledge, skills, or ways of reasoning that *support progress toward* a milestone in the NDF, even if the milestone itself is not fully realized at this stage.

7.NOS.A USE STRUCTURE AND REPRESENTATIONS TO REASON WITH RATIONAL NUMBERS.**7.NOS.A.1: Add and subtract rational numbers using multiple strategies and representations.**

- Describe situations in which opposite quantities combine to make 0.
- Model the addition of rational numbers as movement along a number line, where the direction and distance depend on the sign and magnitude of the addend. Show that a number and its opposite have a sum of 0 (are additive inverses).
- Rewrite subtraction as addition using the additive inverse ($p - q = p + (-q)$). Use strategies such as number lines and applying absolute value of the difference to determine the distance between two rational numbers and solve problems in context.
- Model and solve multistep contextual problems involving addition and subtraction of rational numbers, using efficient and flexible strategies.

Content Progression	Examples and Clarifications	Students should have the opportunity to...
Where are students coming from? Represent and interpret positive and negative rational numbers (6.NOS.C.5; 6.NOS.C.6). Interpret absolute value as distance from 0 and magnitude in context (6.NOS.C.8). Where are students going? Solve linear equations and inequalities in one variable, including those with rational number coefficients (8.AT.B.3; 8.AT.B.4).	- Focus on integer operations before extending to fractions and decimals; students need a solid foundation for understanding addition and subtraction with negatives as consistent with the structure of the number system. 7.NOS.A.1a: Owing \$10 and then depositing \$10 results in a balance of \$0. Avoid overgeneralizing to “any opposite numbers cancel,” which can create confusion later with multiplication/division. 7.NOS.A.1b: $-2 + (-3) = -5$ is modeled as starting at -2 and moving 3 units left.  7.NOS.A.1c: Rewriting subtraction as addition of the opposite helps students see that subtraction works consistently for all rational numbers, not just positives. Connecting this to the idea of distance on the number line ($a - b$) helps students interpret subtraction both as a structured operation and as a measure of “how far apart” two values are. - Avoid presenting absolute value of the difference as a separate, unrelated strategy instead of connecting it to the number line and the coherence of subtraction.	Connect models, symbolic notation, and contextual reasoning to see addition and subtraction of rational numbers as consistent, coherent operations. Formulate and represent their own real-world contexts for additive inverses (e.g., elevation, bank accounts, temperature changes), and explain why the quantities sum to zero (SMP 2). Compare and reflect on different strategies for solving problems (e.g., number line vs. equation) to build flexible reasoning (SMP 5). Compare different interpretations of subtraction (e.g., take away, comparison, distance on a number line), and justify how each interpretation supports subtraction with rational numbers. Formulate questions in context (e.g., “How much warmer is it now than yesterday if the temperature rose from -4 to 6 degrees?”), determine assumptions needed, and represent the situation mathematically using number lines, equations, or diagrams (SMP 4).

7.NOS.A.2: Multiply and divide rational numbers using multiple strategies and representations.

- Model multiplication of rational numbers using number lines, arrays, or area models to show how properties of operations (e.g., the distributive property) lead to rules for signed number multiplication, including $(-1) \times (-1) = 1$.
- Interpret quotients of rational numbers in context and represent division of signed numbers in different forms, such as $-\frac{p}{q} = \frac{-p}{q} = \frac{p}{-q}$ when the divisor is not zero.
- Use properties of operations to multiply and divide rational numbers flexibly and efficiently.
- Analyze the decimal representation of a quotient resulting from dividing rational numbers to determine whether it terminates or repeats and use this pattern to explain why all rational numbers have decimal forms that either terminate or repeat.
- Model and solve multistep contextual problems involving multiplication and division of rational numbers, using efficient and flexible strategies.

Content Progression	Examples and Clarifications	Students should have the opportunity to...
Where are students coming from? Fluently multiply and divide multi-digit whole numbers (6.NOS.B.2). Represent and interpret positive and negative rational numbers (6.NOS.C.5; C.6). Where are students going? Solve linear equations and inequalities in one variable, including those with rational number coefficients (8.AT.B.3; 8.AT.B.4).	- Focus on integer operations before extending to fractions and decimals; students need a solid foundation for how sign rules emerge from structure. 7.NOS.A.2a: Conceptually understanding $-1 \times -3 = 3$. <i>Pattern:</i> Start with multiples of -3: $(3 \times -3 = -9)$; $(2 \times -3 = -6)$; $(1 \times -3 = -3)$; $(0 \times -3 = 0)$: Notice the products increase by 3 each time as the first factor decreases by 1. To continue: $(-1 \times -3 = 3)$. <i>Distributive Property:</i> Start with something students know: $0 = 3 + (-3)$. Multiply both sides by -1: $(-1) \times 0 = (-1) \times (3 + (-3))$ Simplify the left side: $0 = (-1) \times (3 + (-3))$ Use the distributive property: $0 = (-3) + (-1) \times (-3)$ For this to be true, $(-1) \times (-3)$ must equal +3 Avoid presenting “rules” for multiplying signed numbers (e.g., “two negatives make a positive”) without grounding them in patterns or properties.	Develop and test conjectures about how signs work in multiplication and division by examining patterns and testing cases (SMP 3, SMP 8). Engage in error analysis by diagnosing common mistakes (e.g., assuming “two negatives make a negative”), explaining the flaw, and repairing it with structural reasoning (SMP 3, SMP 6). Apply the modeling cycle in multi-step contexts; justify assumptions and check whether results make sense in the situation (SMP 1, SMP 4).

Content Progression	Examples and Clarifications	Students should have the opportunity to...
	7.NOS.A.2b: Working with $-\frac{6}{3}$. As $-\frac{6}{3}$: This means “the opposite of $6 \div 3$.” Since $6 \div 3 = 2$, the opposite is -2. As $\frac{-6}{3}$: This asks: “How many groups of 3 are in -6?” On a number line, groups of 3 move to the left from 0. It takes 2 groups of 3 to the left to reach -6, so the answer is -2. As $\frac{6}{-3}$: This asks: “How many groups of -3 are in 6?” A group of -3 means moving to the left. To reach +6, you would need -2 such groups. 7.NOS.A.2d: Students should investigate quotients to see that rational numbers always produce decimals that either terminate or repeat. Through examples, they notice patterns and then connect to structure: Terminate when the denominator in simplest form has only factors of 2 and/or 5. Repeat when the denominator includes any other prime factor. Avoid overemphasizing long division procedures. The focus should be on reasoning from examples and noticing patterns, not on step-by-step calculation.	

Previously 7.NS.A.2; 7.NS.A.3

7.NOS.A.3: Solve multistep problems involving positive and negative rational numbers in any form (i.e., fractions, decimals, percents) using all four operations.

- a. Apply properties of operations to efficiently compute with rational numbers and convert between forms when appropriate to support problem solving.
- b. Evaluate the reasonableness of solutions using estimation, mental math, and understanding of the context.

Content Progression	Examples and Clarifications	Students should have the opportunity to...
Where are students coming from? Add, subtract, multiply, and divide rational numbers (7.NOS.A.1; 7.NOS.A.2). Where are students going? Solve linear equations and inequalities in one variable, including those with rational number coefficients (8.AT.B.3; 8.AT.B.4).	- This standard pulls together the earlier work with addition, subtraction, multiplication, and division of rational numbers and emphasizes solving multistep problems that involve fractions, decimals, and percents <i>together</i>. The focus is on working flexibly across these forms and deciding when converting between them supports efficiency, clarity, or accuracy. - A student is shopping for a jacket. The original price is \$48. The store advertises 25% off, plus a 6% sales tax applied after the discount. - Convert 25% off into $-\frac{1}{4}$. Compute the discount: $-\frac{1}{4} \times 48 = -12$. - Apply that discount: $48 + (-12) = 36$. - Convert 6% into a decimal: 0.06. Compute the tax: $36 \times 0.06 = 2.16$. - Add tax: $36 + 2.16 = 38.16$ - Reasonableness check: Discounts reduce the price and tax increases it, so the final cost must be less than the original (\$48) but more than the discounted price (\$36).	Compare different solution paths, such as leaving numbers in fraction form versus converting to decimals and justify which method is more efficient or communicates meaning more clearly (SMP 3, SMP 7). Engage in rewriting multi-step problems in equivalent forms to reflect on how structure and order of operations interact (SMP 7). Construct and communicate reasoning in both written and verbal forms, using context to support why the solution makes sense and critiquing the reasoning of peers (SMP3, SMP6). Students must have multiple opportunities and varied ways to demonstrate mastery, as this standard constitutes key Grade 7 Number & Operation Sense milestones in the Operations and Estimation strands of the Numeracy Development Framework.

Previously 7.EE.B.3

Algebraic Thinking (AT)

Algebraic Thinking (AT) Clusters	Connections to the Numeracy Development Framework
7.AT.A Represent and reason about proportional relationships to solve problems.	Standards within this cluster directly contribute* to the Grade 7 Algebraic Thinking milestones within the Proportional Reasoning and Functional Reasoning strands of the Numeracy Development Framework.
7.AT.B Look for and make use of structure to rewrite expressions in equivalent forms and reason about their properties.	Standards within this cluster contribute** to the Grade 7 Algebraic Thinking milestones within Solving Equations & Inequalities strand of the Numeracy Development Framework.
7.AT.C Model with and solve equations and inequalities.	Standards within this cluster directly contribute* to the Grade 7 Algebraic Thinking milestones within Writing Equations & Inequalities and Solving Equations & Inequalities strands of the Numeracy Development Framework

***Directly contribute to milestones:** The cluster includes content and practices that are *explicitly named within* an NDF milestone, meaning student proficiency with this cluster demonstrates attainment of that milestone.

****Contribute to milestones:** The cluster builds prerequisite knowledge, skills, or ways of reasoning that *support progress toward* a milestone in the NDF, even if the milestone itself is not fully realized at this stage.

7.AT.A REPRESENT AND REASON ABOUT PROPORTIONAL RELATIONSHIPS TO SOLVE PROBLEMS.

7.AT.A.1 Compute unit rates associated with ratios of fractions, including ratios of lengths, areas, and other quantities measured in like or different units.

Content Progression	Examples and Clarifications	Students should have the opportunity to...
Where are students coming from? Represent and use unit rates (6.AT.A.2). Where are students going? Identify the constant of proportionality within proportional relationships (7.AT.A.2).	- This extends unit rate work to cases where the quantities are fractions, leading to complex fractions. These can be computed through division, but the emphasis is on interpreting them as proportional relationships. If a person walks $\frac{1}{2}$ mile in each $\frac{1}{4}$ hour, compute the unit rate as the complex fraction $\frac{\frac{1}{2}}{\frac{1}{4}}$ miles per hour, or equivalently 2 miles per hour. $\frac{1}{2} \div \frac{1}{4} = 2$ because in one hour, the person would cover 4 quarter hours and also 4 half miles, or 2 miles. - Students should use both natural language (“for every”) and mathematical language (“per”) to describe unit rates. - Avoid focusing only on procedural fraction division without connecting the result to the proportional relationship it represents—the constant of proportionality in context.	Use multiple strategies and representations (e.g., dividing fractions directly or scaling ratios to “per 1” with ratio tables, tape diagrams, or double number lines) and justify their choice of method for efficiency and clarity (SMP 5, SMP 7). Connect division of fractions to proportional reasoning explicitly by interpreting a complex fraction as finding the unit rate (e.g., “how many of this are in that.”) rather than applying a rule. They should discuss <i>why</i> dividing two fractions produces a unit rate and link that back to earlier fraction work (SMP 2, SMP 7). Reason with units to check results (SMP 2, SMP 6). Construct and critique chains of reasoning that justify or refute claims about unit rates in discourse and writing (SMP 3).

Previously 7.RP.A.1

7.AT.A.2 Identify proportional relationships between quantities.

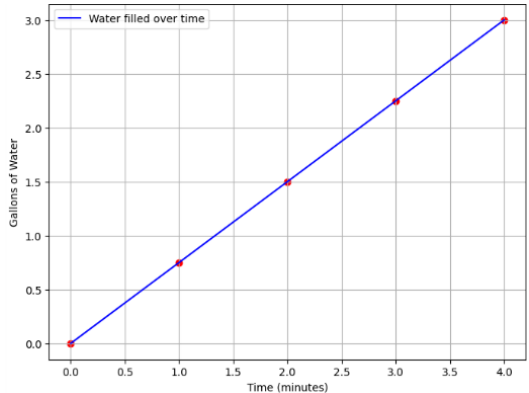
- Determine whether two quantities are in a proportional relationship, for example, by testing for equivalent ratios in a table or by graphing on a coordinate plane and observing whether the graph is a straight line through the origin.**
- Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and narrative descriptions of proportional relationships.**

Content Progression	Examples and Clarifications	Students should have the opportunity to...										
Where are students coming from? Represent, use, and compute unit rates (6.AT.A.2; 7.AT.A.1). Where are students going? Use proportional reasoning to identify slope and represent linear relationships (8.AT.A.2).	- The table below shows the number of hours worked and the amount of money earned. Is the relationship between hours worked and money earned proportional? Explain your reasoning. <table><tr><th>Hours worked</th><th>Money Earned (\$)</th></tr><tr><td>2</td><td>30</td></tr><tr><td>4</td><td>60</td></tr><tr><td>6</td><td>90</td></tr><tr><td>7</td><td>105</td></tr></table> - Terry said that the constant of proportionality for the information in the table is 30. What error did Terry likely make? Explain your reasoning. Rewrite the table so that the constant of proportionality is 30.	Hours worked	Money Earned (\$)	2	30	4	60	6	90	7	105	Compare representations of the same proportional relationship (tables, graphs, equations, diagrams, narratives) to identify the constant of proportionality and explain how it appears consistent across forms (SMP 7, SMP 8). Compare constants of proportionality across different proportional relationships, represented in different ways (e.g., one given in a table, another in a graph), and interpret which relationship represents larger or smaller rate in context (SMP 2, SMP 7, SMP 8). Examine both proportional and non-proportional relationships and explain why only multiplicative relationships are proportional (SMP 2, SMP 3). Construct explanations in context by describing what the constant of proportionality means (e.g., 15 dollars per hour) and why it models the situation accurately (SMP 1, SMP 6). Students must have multiple opportunities and varied ways to demonstrate mastery, as this standard constitutes key Grade 7 Algebraic Thinking milestones in the Proportional Reasoning strand of the Numeracy Development Framework.
Hours worked	Money Earned (\$)											
2	30											
4	60											
6	90											
7	105											

Previously 7.RP.A.2

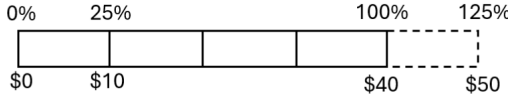
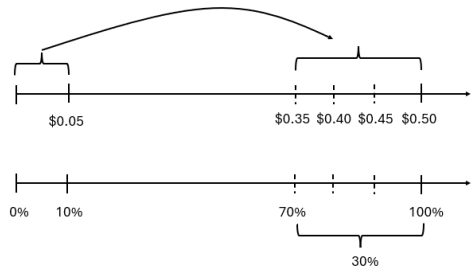
7.AT.A.3 Represent proportional relationships between quantities.

- Represent proportional relationships using equations.**
- Explain what a point (x, y) on the graph of a proportional relationship represents in terms of the context, with special attention to the points $(0, 0)$ and $(1, r)$, where r is the unit rate.**

Content Progression	Examples and Clarifications	Students should have the opportunity to...
Where are students coming from? Use variables to represent two related quantities, write equations, and analyze relationships with tables and graphs (6.AT.D.11). Where are students going? Extend proportional reasoning to slope: graph and compare proportional relationships, then represent all linear relationships with equations of the form $y=mx$ and $y=mx+b$ (8.AT.A.1; 8.AT.A.2).	- The focus is on seeing the proportional relationships as consistent across equations and graphs and making connections between these representations in ways that highlight the multiplicative structure and constant of proportionality. - The following graph represents a bucket being filled with water over 4 minutes.  Find the unit rate and explain its meaning in the context. Explain how you determined the unit rate, then write an equation that represents the relationship between gallons of water in the bucket and the time (in minutes) it has been filling.	Make connections between tables, equations, and graphs as they explore proportionality (SMP 7). Use their equations to make predictions about a proportional relationship, then check those predictions against a graph. Consider whether all values of x make sense in the context. Analyze and repair common errors or misconceptions, such as assuming any straight line is proportional, reversing variables in equations, or overlooking units when interpreting the constant of proportionality. Students must have multiple opportunities and varied ways to demonstrate mastery, as this standard constitutes key Grade 7 Algebraic Thinking milestones in the Functional Reasoning strand of the Numeracy Development Framework.

Previously 7.RP.A.2

7.AT.A.4 Solve ratio and percent problems in context (e.g., simple interest, tax, markups and markdowns, tips, commissions, fees, percent increase or decrease, and percent error) by applying proportional reasoning.

Content Progression	Examples and Clarifications	Students should have the opportunity to...
Where are students coming from? Use ratio and rate reasoning with multiple representations to solve problems (6.AT.A.3). Find a percent of a quantity, or the whole given a part and percent (6.AT.A.4). Where are students going? Develop and use probability models to find probabilities of events (7.DS.C.6). Identify contexts with constant percent change as exponential and model them with functions (IA1.AT.D.15).	- The focus is on solving ratio and percent problems through proportional reasoning. Students should use their understanding of percent as a rate per 100 and ratios as a comparison of quantities, along with models to solve problems. - A store buys a backpack for \$40 and marks it up by 25% to sell to customers. How much do they sell the backpack for?  - A library reduced its late fee from \$0.50 per day to \$0.35 per day. What is the percent decrease in the daily late fee? 	Use percents as scaling factors to model situations, and connect this multiplicative idea to conceptual representations such as double number lines, strip diagrams, or equations (SMP 2, SMP 4, SMP 5). Estimate and reason with benchmarks (e.g., 10%, 25%, 50%) to test the reasonableness of solutions (SMP 1, SMP 6). Connect ratio and percent reasoning by showing that percents are ratios “out of 100.” Students should represent percents and ratios with the same tools to see percent as a special case of ratio reasoning (SMP 2, SMP 7). Analyze and explain common errors in percent reasoning, such as assuming that a percent increase followed by the same percent decrease returns a quantity to its original value, or confusing percent of a quantity with percent change. Students explain how these errors arise from changing or misidentifying the reference quantity, and they justify their reasoning using precise language and representations (SMP 3, SMP 6).

Previously 7.RP.A.3

7.AT.B LOOK FOR AND MAKE USE OF STRUCTURE TO REWRITE EXPRESSIONS IN EQUIVALENT FORMS AND REASON ABOUT THEIR PROPERTIES.**7.AT.B.5 Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.**

Content Progression	Examples and Clarifications	Students should have the opportunity to...
Where are students coming from? - Apply the properties of operations to generate equivalent expressions and identify when two expressions are equivalent (6.AT.B.7). Where are students going? - Rewrite an expression in different forms to shed light on the represented context and how the quantities in it are related (7.AT.B.6). - Rewrite linear and exponential expressions in different equivalent forms to highlight and explain properties of the relationship (IA1.AT.A.1).	- The emphasis is not on simplification for its own sake, but on recognizing and using structure to prepare for solving equations, comparing expressions, or modeling contextual relationships. Students should develop flexibility in how they manipulate expressions and understand that different forms can reveal different aspects of a relationship. - Given the equation $0.5x + 2 = 0.5(x + 4)$, students apply the distributive property to the right-hand side to check if both sides are, in fact, equivalent: $0.5x + 2 = 0.5x + 2$ Recognizing this structure helps students see that the two expressions are equivalent and that the equation is true for all values of x.	Name the distributive, commutative, and associative properties when rewriting expressions, and explain how these properties justify the process (SMP 6, SMP 3). Make strategic choices about whether to factor or expand an expression based on the context or goal (e.g., making terms easier to compare) (SMP 1). Work with expressions that include rational coefficients, including fractions and negatives, to build fluency with operations and confidence in manipulating algebraic terms (SMP 6).

Previously 7.EE.A.1

7.AT.B.6 Rewrite an expression in different forms to shed light on the represented context and how the quantities in it are related. For example, $a + 0.05 \cdot a = 1.05a$ means that an "increase by 5%" is the same as "multiply by 1.05."

Content Progression	Examples and Clarifications	Students should have the opportunity to...
Where are students coming from? - Apply the properties of operations to generate equivalent expressions and identify when two expressions are equivalent (6.AT.B.7). - Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients (7.AT.B.5). Where are students going? - Rewrite linear and exponential expressions in different equivalent forms to highlight and explain properties of the relationship (IA1.AT.A.1).	- This standard emphasizes using equivalent expressions to make sense of relationships in context. When students rewrite expressions, they are doing so to reveal meaning. - Avoid asking students to only “simplify” or “combine terms” without discussing what each form reveals about the situation. - A jacket originally costs p dollars and is on sale for 30% off. A student writes the expression for the sale prices as: $p - 0.3p$. They rewrite it as $0.7p$ and explain that this shows a 30% discount is the same as paying 70% of the original price. The rewritten form reveals a multiplicative relationship that may be easier to use when calculating or comparing sales prices.	- Connect additive and multiplicative forms of the same relationship to reason about percent change and proportional relationships (SMP 4). - Compare equivalent expressions and justify which form better supports calculating, estimating, or explaining the relationship between quantities (SMP 6, SMP 5).

Previously 7.EE.A.2

7.AT.C MODEL WITH AND SOLVE EQUATIONS AND INEQUALITIES

7.AT.C.7 Analyze contextual situations to determine whether an equation or inequality best represents the relationship between quantities. Justify the choice based on the context.

Content Progression	Examples and Clarifications	Students should have the opportunity to...
Where are students coming from? - Write inequalities to represent a constraint or condition in context (6.AT.C.9). - Solve modeling problems by writing equations and interpreting solutions (6.AT.C.8). Where are students going? - Write and solve inequalities to model and reason about constraints and conditions in context (7.AT.C.9). - Create linear inequalities in two variables to represent constraints in context (IA1.AT.B.6).	- This standard focuses on interpreting situations involving a variable quantity and deciding whether an equation (exact value) or inequality (range or constraint) best models the relationship. Students justify their choice based on what the context implies about the relationship between quantities. - Avoid teaching to choose based solely on keywords (e.g., “at least” means $\geq$, “total” means $=$) without engaging students in reasoning about the context. Students should learn to interpret the meaning of relationships, not just match phrases to symbols. <i>Context:</i> A concert venue holds up to 1,500 people. Let x represent the number of tickets that can be sold. <i>Model:</i> $x \leq 1500$ <i>Justification:</i> The venue does not need to sell exactly 1,500 tickets; it can sell fewer. An inequality represents this range of allowable values while preventing values greater than the capacity.	Explore a variety of contexts and scenarios, including those with subtle differences in language or conditions (SMP 2, SMP 4). Discuss and justify their choice of an equation or inequality based on context with their peers (SMP 3). Revise or refine initial models after peer discussion or deeper analysis of the context (SMP 3, SMP 4). Create their own contextual situations and write either an equation or inequality to represent the relationship (SMP 1).

Adopted 2025

7.AT.C.8 Use variables to represent quantities and write and solve equations to model and reason about relationships in context.

- Write equations of the form $px + q = r$ and $p(x + q) = r$ where p, q, and r are specific rational numbers.**
- Solve equations of these forms flexibly and efficiently. Explain the solution process and how it connects to the original statement of equality.**
- Solve word problems leading to equations of these forms and interpret the solution in terms of the context.**

Content Progression	Examples and Clarifications	Students should have the opportunity to...
Where are students coming from? - Use variables to represent unknowns and write and solve one-step equations involving the four operations (6.AT.C.8). Where are students going? - Write and solve linear equations in one variable (8.AT.B.3). - Solve systems of two linear equations using substitution (8.AT.B.5).	7.AT.C.8a: A student is asked to represent the following statement with an equation: "When 5 is added to a number and the result is multiplied by 2, the total is 18." They write: $2(x + 5) = 18$. Alternatively, a student hears: "Triple a number, then subtract 4 to get 11," and writes: $3x - 4 = 11$. 7.AT.C.8b: Students should be able to recognize the structure of an equation and choose a method that fits it best, not just follow a fixed sequence of steps. Students are expected to explain their reasoning and show how their process maintains equality and how their method connects to the original equation's structure. Avoid teaching one fixed procedure for solving all equations of a certain structure. Solve: $\frac{2}{5}(x + 3) = 6$ A student considers whether they want to distribute first or divide first and recognizes that distributing first will create more fractions. They decide to divide first and get $x + 3 = 6 \div \frac{2}{5}$ or $x + 3 = 15$. They complete the problem by subtracting 3 from both sides and check	Connect the structure of an equation to the situation it represents by recognizing how different components (e.g., grouping, constants, coefficients) reflect relationships in the context. (SMP 2, SMP 4). Compare equations of different structures (i.e., $px + q = r$ and $p(x + q) = r$) to reflect on when one structure may be more appropriate or efficient for modeling or solving a problem. Represent and justify their solution strategies in multiple ways (e.g., verbal explanations, diagrams, symbolic reasoning) and participate in mathematical discourse by sharing their reasoning, critiquing peer strategies, and refining their own reasoning based on feedback (SMP 3). Students must have multiple opportunities and varied ways to demonstrate mastery, as this standard constitutes key Grade 7 Algebraic Thinking milestones in the Creating Equations & Inequalities and Solving Equations & Inequalities strands of the Numeracy Development Framework.

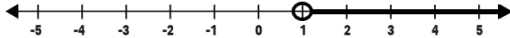
Content Progression	Examples and Clarifications	Students should have the opportunity to...
	their solution, $x=12$, by substituting that value into the original equation. • 7.AT.C.8c: Students should be able to identify quantities, represent them with variables, write an appropriate equation, and solve it (building on parts a & b). But just as important, they must interpret what the solution means in the context of the problem. That includes checking that the solution makes sense, using appropriate units, and connecting the structure of the equation to the relationships described in the situation. A group of friends went to the state fair. Each person bought a rides wristband and also spent \$5 on snacks. If 4 people spent a total of \$68, how much did each wristband cost? Let x represent the cost of one wristband. Each person paid $x + 5$ dollars, and there were 4 people: $4(x + 5) = 68$ Each wristband costs \$12, and the equation reflects the structure of repeated identical purchases per person.	

Previously 7.EE.B.4

7.AT.C.9 Use variables to represent quantities and write and solve inequalities to model and reason about constraints and conditions in context.

- Write inequalities of the form $px + q > r$ or $px + q < r$, where p , q , and r are specific rational numbers.**
- Solve inequalities of these forms and graph the solution set on a number line.**
- Interpret the solution set in terms of the context by describing what values are possible or reasonable in the given situation.**

Content Progression	Examples and Clarifications	Students should have the opportunity to...
Where are students coming from? - Write simple inequalities to represent a constraint or condition in context (6.AT.C.9). - Write and solve one-step inequalities involving the four operations (6.AT.C.10). Where are students going? - Solve linear multi-step inequalities in one variable (8.AT.B.3).	7.AT.C.9a: Emphasis is on understanding how the language of the context (e.g., greater than, less than, no more than) relates to inequality symbols and structure. Note: Inequalities can involve $<$, $>$, $\leq$, $\geq$ A group is renting bicycles. Each bike rental is \$25.99, and there's a \$15 booking fee for the group. They want the cost to be no more than \$200. Let x represent the number of bikes rented. Model: $25.99x + 15 \leq 200$ 7.AT.C.9b: The focus is on solving two-step inequalities using the same principles of maintaining balance on both sides as is used with solving equations with the added understanding that solving an inequality results in a range of solutions. Students also must understand and reason about how multiplying or dividing by a negative number changes the direction of the inequality symbol. Avoid presenting inequalities as just "equations with a different symbol." Students need to reason about solution sets (many solutions, not one). Solve and graph: $-3x + 5 < 2$ $-3x < -3$	Consider what it means for a quantity to be "allowed", "reasonable", or "not possible" in a given context before any symbolic representation is introduced (SMP 1, SMP 4). - Test values, visualize solution sets on a number line, and explain why boundary values may or may not be included, attending to the meaning of inequality symbols in context (SMP 2, SMP 5, SMP 6, SMP 8). - Move flexibly among context, representation, and symbols to check for coherence, using the situation to interpret the mathematics and the mathematics to refine their understanding of the situation (SMP 4, SMP 7). Students must have multiple opportunities and varied ways to demonstrate mastery, as this standard constitutes key Grade 7 Algebraic Thinking milestones in the Creating Equations & Inequalities and Solving Equations & Inequalities strands of the Numeracy Development Framework.

Content Progression	Examples and Clarifications	Students should have the opportunity to...
	Dividing by -3: to keep the inequality true, the symbol flips because multiplying or dividing by a negative reverses the order of values on the number line. $x > 1$  • 7.AT.C.9c: Interpretation may include checking if fractional or negative solutions make sense, applying units, or explaining why certain values are excluded. A theater sells tickets for \$6.50 each and has already received \$50 in donations. They need to raise more than \$200 in total. The inequality is: $6.5x + 50 > 200$ From solving (part b), the solution set is $x > 23.08$. Interpretation: Since they can't sell part of a ticket, the theater must sell at least 24 tickets to meet the goal.	

Previously 7.EE.B.4

Geometric Reasoning and Measurement (GR)

Geometric Reasoning Clusters	Connections to the Numeracy Development Framework
7.GR.A Use structure and representation to analyze geometric figures.	Standards within this cluster directly contribute* to the Grade 7 Geometric Reasoning & Measurement milestones within the Spatial Reasoning strand of the Numeracy Development Framework.
7.GR.B Reason with and about geometric formulas to solve problems and justify solutions in context.	Standards within this cluster directly contribute* to the Grade 7 Geometric Reasoning & Measurement milestones within the Reasoning with Geometric Structure strand of the Numeracy Development Framework.

***Directly contribute to milestones:** The cluster includes content and practices that are *explicitly named within* an NDF milestone, meaning student proficiency with this cluster demonstrates attainment of that milestone.

****Contribute to milestones:** The cluster builds prerequisite knowledge, skills, or ways of reasoning that *support progress toward* a milestone in the NDF, even if the milestone itself is not fully realized at this stage.

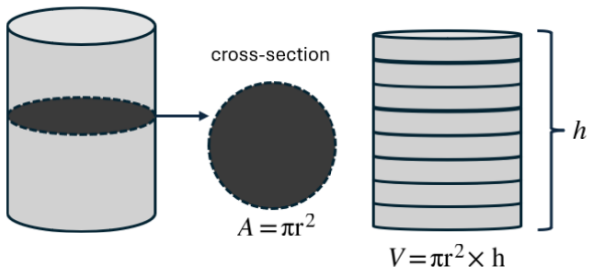
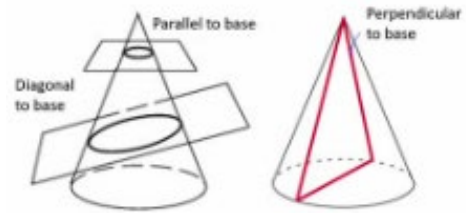
7.GR.A USE STRUCTURE AND REPRESENTATION TO ANALYZE GEOMETRIC FIGURES.

7.GR.A.1: Solve problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale.

Content Progression	Examples and Clarifications	Students should have the opportunity to...
Where are students coming from? Represent proportional relationships between quantities (7.A.T.A.3). Where are students going? Perform and analyze dilations in the coordinate plane (IA2.GR.A.1).	- Students should understand that a scale factor changes all lengths in a figure proportionally and that areas scale by the square of the scale factor, which may not be immediately intuitive. - A map is drawn so that 2 cm on the map represents 7 m in the actual park. On the map, a rectangular picnic area is shown as 4 cm by 3 cm. Find the actual dimensions: Length: $4\text{ cm} \times \frac{7\text{ m}}{2\text{ cm}} = 14\text{ m}$ Width: $3\text{ cm} \times \frac{7\text{ m}}{2\text{ cm}} = 10.5\text{ m}$ Find the actual area: Area of the picnic area: $14\text{ m} \times 10.5\text{ m} = 147\text{ m}^2$ (students note that the scale factor is $\frac{7}{2}$, so area grows by $\left(\frac{7}{2}\right)^2 = 12.25$, $4\text{ m} \times 3\text{ m} = 12\text{ m}^2$, $12\text{ m}^2 \times 12.25 = 147\text{ m}^2$).	Explain that linear dimensions scale by a factor of k, while areas scale by k^2 (SMP 7, SMP 8). Physically create and reproduce scale drawings at different scales using tools such as rules or grid paper to construct accurate figures. This hands-on work deepens understanding of how scaling affects shapes and areas, strengthens proportional reasoning, and builds spatial sense needed for future work with similarity and dilations (SMP 5). Connect scaling to ratio and percent reasoning (e.g., “the drawing is at 150% of the original”), so students link geometric scaling to proportional reasoning. Check the reasonableness of results, for example, by estimating whether scaled measurements and areas make sense given the context or comparing back to the original figure (SMP 2, SMP 7).

Previously 7.G.A.1

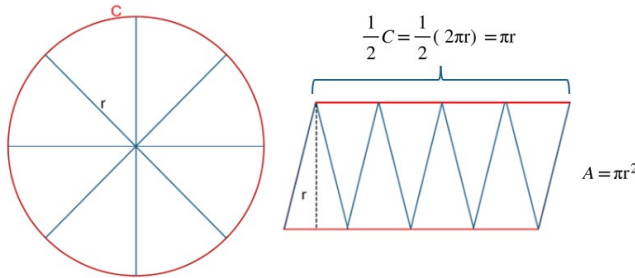
7.GR.A.2: Describe the two-dimensional figures that result from slicing three-dimensional figures (e.g., right rectangular prisms, right cylinders) with a plane. Use the resulting shapes to explain how the structure of the solid connects to volume and surface area.

Content Progression	Examples and Clarifications	Students should have the opportunity to...
Where are students coming from? - Understand the structure on a prism as a base repeatedly stacked through a given height (5.GR.C.5). - Use nets to represent three-dimensional figures and calculate surface area (6.GR.A.4). Where are students going? - Solve problems involving the volume of both polyhedral solids and solids with curved surfaces (7.GR.B.4). - Use geometric solids to model objects and solve design problems (IA2.GR.D.9).	- Describing the two-dimensional cross-sections that result from slicing solids helps students deepen their understanding of the internal structure of solids and how that structure relates to volume (how the shape builds through layers) and surface area (how faces contribute to the outer covering). This reinforces the idea that volume is built by stacking consistent cross-sections and that surface area involves the shapes of the faces or exposed sides. - A student slices a right cylinder horizontally (parallel to the base). The resulting cross-section is a circle, identical to the base. This helps the student see that the volume of a cylinder comes from stacking these circular slices through the height. It also reinforces that the surface area includes both circular bases and the curved surface that wraps around the side. 	Explore slicing three-dimensional solids using a variety of tools (e.g., physical models, digital tools, or diagram) (SMP 5). Explore cross-sections created by slicing solids in different directions, not just parallel to the base, to see how orientation affects the resulting shape and to deepen understanding of a solid's internal structure (SMP 7). For example:  Predict the shape of a cross-section before slicing and justify their reasoning using knowledge of the solid's structure (SMP 1). Students must have multiple opportunities and varied ways to demonstrate mastery, as this standard constitutes key Grade 7 Geometric Reasoning & Measurement milestones in the Spatial Reasoning strand of the Numeracy Development Framework.

Previously 7.G.A.3

7.GR.B REASON WITH AND ABOUT GEOMETRIC FORMULAS TO SOLVE PROBLEMS AND JUSTIFY SOLUTIONS IN CONTEXT.

7.GR.B.3: Apply the formulas for the area and circumference of a circle to solve problems in context. Use informal reasoning and visual models to explain the relationship between the circumference and area of a circle.

Content Progression	Examples and Clarifications	Students should have the opportunity to...
Where are students coming from? - Find areas of polygons by composing into rectangles or decomposing into triangles and quadrilaterals (6.GR.A.1). Where are students going? - Apply similarity to formulas for arc length, radian measure, and sector area (IA2.GR.C.8).	- When reasoning about relationships, the focus should be on understanding that circumference is proportional to diameter (constant of proportionality = π) and that area can be seen as half the circumference multiplied by the radius: Decompose circle sectors and arrange them into a “parallelogram” (approaching a rectangle as the number of sectors increases).  - A circular fountain has a circumference ≈ 28.3 m. Find the area to determine how much surface needs to be treated with water sealant. Since $28.3 \approx 2\pi r$; $r \approx 4.5$ meters. So $A = \pi(4.5)^2 \approx 63.6$ m² you will need enough sealant to cover at least 63.6 square meters. <i>This shows the direct relationship between circumference and area: any given circumference corresponds to one and only one circle, and therefore one unique area.</i>	Explore informal ways to discover the circumference is proportional to diameter and that the area of a circle can be derived from the relationship between circumference and radius. Compare circles of different radii to reason about how doubling the radius doubles the circumference but quadruples the area (SMP 2, SMP 8). Determine the area of a circle given circumference and vice versa, either through a directly related equation or from being able to find the radius (SMP 7). Analyze and explain common errors, such as confusing radius and circumference (SMP 3). Students must have multiple opportunities and varied ways to demonstrate mastery, as this standard constitutes key Grade 7 Geometric Reasoning & Measurement milestones in the Reasoning with Geometric Structure strand of the Numeracy Development Framework.

Previously 7.G.A.3

7.GR.B.4: Solve mathematical problems with and without context involving area, surface area, and volume of two- and three-dimensional objects.

- Solve problems involving area, surface area, and volume of polygonal figures and polyhedral solids, including triangles, quadrilaterals, other polygons, cubes, right prisms, and pyramids—figures defined by edges and flat faces.
- Solve problems involving volume of curved-surface solids, including cones, cylinders, and spheres—figures without edges.
- Interpret and justify solutions in context by comparing different geometric representations, estimating or checking for reasonableness, and explaining how the result applies to the context.

Content Progression	Examples and Clarifications	Students should have the opportunity to...
Where are students coming from? - Find volume of rectangular prisms (6.GR.A.2). - Represent three-dimensional figures using nets (6.GR.A.4). Where are students going? - Represent real-world objects and solve design problems by modeling with geometric figures (IA2.GR.D.10).	- A candle maker packages a cylindrical candle in a small rectangular box. The candle has a radius of 4 cm and a height of 10 cm. The box measures 8 cm x 8 cm x 10 cm. Determine the volume of the candle? $V = \pi(4)^2(10) = 160\pi \approx 502.7 \text{ cm}^3$ Determine the volume of the box containing the candle? $V = 8 \times 8 \times 10 = 640 \text{ cm}^3$ <i>Reasonableness check:</i> The cylinder fits exactly inside the box from side to side and top to bottom, but the curved edges of the cylinder leave empty space in the corners of the box. Because of this, the cylinder should have a volume somewhat less than the rectangular prism, but still pretty close to it. Since 502.7 cubic centimeters is less than 640 cubic centimeters and not drastically smaller, the result is reasonable. - Avoid focusing on memorization of formulas; students should develop understanding of why formulas work and when they apply.	Explore the relationship between volumes of related solids (e.g., sphere vs. cylinder, cylinder vs. cone, sphere vs. cube) to see how structure and proportion connect formulas (SMP 2, SMP 7, SMP 8). Apply knowledge of two-dimensional area in solving three-dimensional problems (e.g., using the area of a circle to find the surface area of a cylinder) (SMP 4, SMP 7). Estimate measures using bounding solids by comparing a figure to simpler shapes that contain or approximate it (SMP 1, SMP 2, SMP 6). Model physical phenomena in their communities and use area, surface area, and volume to explore points of interest (SMP 4). Students must have multiple opportunities and varied ways to demonstrate mastery, as this standard constitutes key Grade 7 Geometric Reasoning & Measurement milestones in the Reasoning with Geometric Structure strand of the Numeracy Development Framework.

Previously 7.G.B.6; 8.G.C.9

Reasoning with Data, Statistics, and Probability (DS)

Reasoning with Data and Statistics Clusters	Connections to the Numeracy Development Framework
7.DS.A Make sense of statistical inquiry.	Standards within this cluster directly contribute* to the Grade 7 Reasoning with Data, Statistics, and Probability milestones within the Collecting & Representing Data strand of the Numeracy Development Framework.
7.DS.B Describe, analyze, and compare data using visual and numerical representations to model situations and draw inferences.	Standards within this cluster directly contribute* to the Grade 7 Reasoning with Data, Statistics, and Probability milestones within the Interpreting & Analyzing Data strand of the Numeracy Development Framework.
7.DS.C Model and analyze probability to interpret chance events, compare models with observed data, and make predictions.	Standards within this cluster directly contribute* to the Grade 7 Reasoning with Data, Statistics, and Probability milestones within the Reasoning about Probability strand of the Numeracy Development Framework.

***Directly contribute to milestones:** The cluster includes content and practices that are *explicitly named within* an NDF milestone, meaning student proficiency with this cluster demonstrates attainment of that milestone.

****Contribute to milestones:** The cluster builds prerequisite knowledge, skills, or ways of reasoning that *support progress toward* a milestone in the NDF, even if the milestone itself is not fully realized at this stage.

7.DS.A MAKE SENSE OF STATISTICAL INQUIRY.**7.DS.A.1: Determine when generalizations about a population are appropriate based on how the sample was selected.**

- a. Decide whether a sample is representative of a population by explaining how it was selected and how that selection affects the accuracy of conclusions.
- b. Explain how a random sample increases the likelihood that the sample represents the population.

Content Progression	Examples and Clarifications	Students should have the opportunity to...
Where are students coming from? - Recognize statistical questions as those that anticipate variability (6.DS.A.1). - Use probability language to describe and predict how likely different outcomes are in data (6.DS.A.2). Where are students going? - Evaluate whether associations in sample data support generalizations, and recognize bias or limitations in data collection (8.DS.A.1).	- The focus is on distinguishing between representative samples (reflecting diversity of the population) and biased samples (over- or under-representing certain groups) and that random sampling increases the likelihood of representativeness because every individual has an equal chance of being chosen. - A town wants to know how residents feel about building a new community center. Sample A: A survey is sent to members of the local gym. Question: Is this sample representative? “No, because not everyone in town is a gym member and gym members may be more likely to favor a community center” Sample B: A computer randomly selects 200 residents from the town’s address list. Question: Is this sample more representative? Why? Yes. Random selection from the address list gives each resident an equal change of being included, making it more likely to reflect the town’s population.	See situations where random sampling was used but the group still wasn’t representative (e.g., a “random” poll limited to one neighborhood or one time of day) and discuss why randomness alone doesn’t guarantee fairness (SMP 2, SMP 7). Analyze how sampling can be misused to create false narratives or reinforce bias and consider the social impact of such practices (SMP 3, SMP4). Design and justify their own sampling methods and explain why their approach would (or would not) produce trustworthy results (SMP 4, SMP 6, SMP 7). Students must have multiple opportunities and varied ways to demonstrate mastery, as this standard constitutes key Grade 7 Reasoning with Data, Statistics, & Probability milestones in the Collecting & Representing Data strand of the Numeracy Development Framework.

Previously 7.SP.A.1

7.DS.A.2: Use data from random samples to make and evaluate estimates or predictions about a population.

- a. Use data from a single random sample to estimate an unknown characteristic of a population.
- b. Generate and compare multiple random samples of the same size and use the variability across samples to assess how reliable an estimate or prediction is.

Content Progression	Examples and Clarifications	Students should have the opportunity to...
Where are students coming from? - Recognize when a sample is representative of a population and explain how random selection affects the validity of generalizations (7.DS.A.1). Where are students going? - In high school statistics, students make formal inferences from random samples and use confidence intervals to describe likely ranges for population means or proportions.	- The focus is on using data from random samples to estimate a population mean or a proportion, and on generating multiple samples to see how results vary. This variability introduces uncertainty in data analysis, and students use informal comparisons across samples to reason about the reliability of their estimates. - A class wants to estimate what fraction of students at their school bring lunch from home. A random sample of 20 students shows that 12 bring lunch from home (60%). A second random sample of 20 students shows that 14 bring lunch from home (70%). A third random sample of 20 students shows that 11 bring lunch from home (55%). <i>Discussion:</i> Each sample gives a different percentage, but all are clustered between 55% and 70%. From this, the class might reasonably estimate that about 60% of students bring lunch from home. The fact that the percentages vary shows that one sample alone may not give the exact population proportion.	Discuss that sample-to-sample variability is natural, not an error and explain why different random samples lead to different estimates (SMP 2, SMP 3). Use technology to generate random samples (SMP 5). Analyze situations where a single sample gives an unusual estimate, and discuss why this may happen (SMP 1, SMP 3). Connect the idea of variability in samples to uncertainty in data analysis, which becomes a foundational concept in later statistical inquiry (SMP 2).

Previously 7.SP.A.2

7.DS.B DESCRIBE, ANALYZE, AND COMPARE DATA USING VISUAL AND NUMERICAL REPRESENTATIONS TO MODEL SITUATIONS AND DRAW INFERENCES.

7.DS.B.3: Compare two numerical data distributions using visual displays and numerical measures to draw inferences about differences between populations.

- Use histograms and other visualizations to describe similarities and differences in the range, shape, and clustering of the data sets.
- Use measures of center (e.g., mean or median) and measures of variability (e.g., range or interquartile range) to describe the size and significance of the difference between the distributions.
- Use both visual and numerical comparisons to describe how different the two groups are and whether the difference is meaningful in the context of the data.

Content Progression	Examples and Clarifications	Students should have the opportunity to...																																		
Where are students coming from? - Summarize and interpret numerical data sets in context using plots and measures of center and variability (6.DS.B.4, 6.DS.B.5). Where are students going? - Formally analyze and compare data sets using visualizations and numerical measures of shape, center, and spread to draw and justify conclusions (IA1.DS.B.5).	- The focus is on comparing two data sets by <i>combining</i> visual and numerical evidence to make informal inferences about similarities and differences in centers, spreads, and overall distributions. - Two basketball teams recorded their points per game across 30 games. Team A: Points per Game <table><caption>Team A: Points per Game Data</caption><thead><tr><th>Points (Bin)</th><th>Frequency</th></tr></thead><tbody><tr><td>55-60</td><td>1</td></tr><tr><td>60-65</td><td>1</td></tr><tr><td>65-70</td><td>3</td></tr><tr><td>70-75</td><td>8</td></tr><tr><td>75-80</td><td>9</td></tr><tr><td>80-85</td><td>4</td></tr><tr><td>85-90</td><td>4</td></tr></tbody></table> Team B: Points per Game <table><caption>Team B: Points per Game Data</caption><thead><tr><th>Points (Bin)</th><th>Frequency</th></tr></thead><tbody><tr><td>65-70</td><td>2</td></tr><tr><td>70-75</td><td>2</td></tr><tr><td>75-80</td><td>3</td></tr><tr><td>80-85</td><td>7</td></tr><tr><td>85-90</td><td>3</td></tr><tr><td>90-95</td><td>4</td></tr><tr><td>95-100</td><td>2</td></tr><tr><td>100-105</td><td>1</td></tr></tbody></table> - Visual Comparisons Team A's histogram shows scores clustered tightly around 65 points. Team B's histogram shows scores centered higher, around 78, with a wider spread of values. <i>Inference:</i> Team B generally scores more points per game, while Team A's scoring is more consistent.	Points (Bin)	Frequency	55-60	1	60-65	1	65-70	3	70-75	8	75-80	9	80-85	4	85-90	4	Points (Bin)	Frequency	65-70	2	70-75	2	75-80	3	80-85	7	85-90	3	90-95	4	95-100	2	100-105	1	Make connections between the visual displays and numerical measures of center, spread, and distribution (SMP 2, SMP 7). Use technology to generate visualizations (histograms, boxplots, dot plots) of large data sets and to calculate measures of center and variability efficiently (SMP 5). Explain why looking at both visual displays and numerical measures gives a more complete picture than relying on one alone (SMP 2, SMP 3). Analyze misleading or incomplete comparisons, such as only reporting means without spreads, or comparing shapes without referencing numbers, and critique the reasoning (SMP 3, SMP 6). Students must have multiple opportunities and varied ways to demonstrate mastery, as this standard constitutes key Grade 7 Reasoning with Data, Statistics, & Probability milestones in the Interpreting & Analyzing Data strand of the Numeracy Development Framework.
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Content Progression	Examples and Clarifications	Students should have the opportunity to...
	- Numerical Measures Team A: Mean $\approx$ 65, Median = 65, IQR $\approx$ 6. Team B: Mean $\approx$ 78, Median = 77, IQR $\approx$ 12. <i>Interpretation:</i> Team B's center is about 12–13 points higher than Team A's, and their scores are nearly twice as variable. - Putting it Together Visually, Team B's distribution is shifted to the right and more spread out. Numerically, Team B has both a higher average and larger IQR. <i>Inference in context:</i> The differences are meaningful. Team B typically outperforms Team A but with less consistency. A coach might infer that while Team B is stronger offensively, their game-to-game scoring is more variable.	

Previously 7.SP.B.3; 7.SP.B.4

7.DS.C MODEL AND ANALYZE PROBABILITY TO INTERPRET CHANCE EVENTS, COMPARE MODELS WITH OBSERVED DATA, AND MAKE PREDICTIONS.

7.DS.C.4: Explain that a probability of 0 means the event is impossible, 1 means it is certain, and values closer to 0 or 1 indicate how unlikely or likely the event is. Use this understanding to estimate the probability of chance events based on knowledge about the context, and compare the likelihood of different events.

Content Progression	Examples and Clarifications	Students should have the opportunity to...
Where are students coming from? - Use probability language (likely, unlikely, certain, impossible) to describe and predict outcomes, anticipate variability, and justify predictions (6.DS.A.2). Where are students going? - Develop and use probability models to find probabilities of events (7.DS.C.6).	- Students extend their prior use of probability language by attaching numerical values on the 0–1 scale. This shift allows for more precise discussion of intermediate events, not just those that are certain or impossible. - At a school field day: - Impossible (probability = 0): The 100-meter dash will be run on the moon. - Certain (probability = 1): The 100-meter dash will be held on Earth. - Intermediate events: - It will rain during the 100-meter dash. “Unlikely, maybe around 0.2 given the weather forecast” - At least one runner will wear running shoes. “Very likely, maybe around 0.9” - The fastest runner will set a world record. “Extremely unlikely, really close to 0”	Critique everyday misuse of probability language (e.g., saying “impossible” for an unlikely event) and refine descriptions to be more precise (SMP 3, SMP 6). Investigate intermediate events with similar estimated probabilities (e.g., is this event closer to 0.6 or 0.7?) to highlight limits of intuition and lead into the need for calculating probabilities more precisely (SMP 1, SMP 2, SMP 3).

Previously 7.SP.C.5

7.DS.C.5: Understand and apply long-run relative frequency to approximate probabilities and make predictions about chance events.

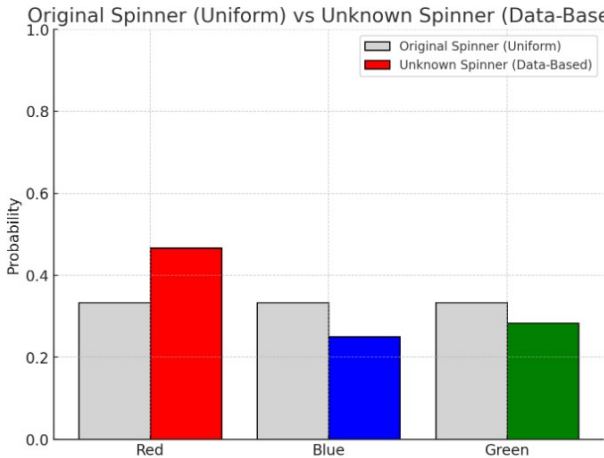
- a. Use data collection or simulation to approximate the probability of a chance event by observing its long-run relative frequency.
- b. Use a known or estimated probability to evaluate whether the number of outcomes in a given number of simulation trials is reasonable.
- c. Use visual representations (e.g., bar graphs, circle graphs) to compare and interpret probabilities.

Content Progression	Examples and Clarifications	Students should have the opportunity to...																		
Where are students coming from? - Use decimal notation for fractions (4.NOS.F.15). - Identify proportional relationships and find the constant of proportionality (7.AT.A.2; 7.AT.A.3). Where are students going? - Find probabilities of compound events by representing or simulating the same space or simulating events (8.DS.C.6).	- The focus is on using simulations or experiments to approximate probabilities when theoretical values are not obvious, or to show that even known probabilities (e.g., a 50-50 coin flip) don't appear perfectly in practice. This highlights the link between probability and data, showing that with more trials, long-run relative frequency approaches the theoretical value and short-run anomalies are reduced. - Student A flips a coin 10 times and gets 7 heads. Student B runs a simulation of 100 flips and gets 54 heads. The relative frequency is calculated: A: Heads 0.70; Tails 0.30 B: Heads 0.54; Tails 0.46. We know that the probability of getting heads should be around 0.5, so Student A's results are not reasonable, but Student B's is close to 0.5 so it is reasonable. More trials = more reasonable. Experiment 1: 10 Flips <table border="1"><thead><tr><th>Outcome</th><th>Count</th><th>Relative Frequency</th></tr></thead><tbody><tr><td>Heads</td><td>3</td><td>0.30</td></tr><tr><td>Tails</td><td>7</td><td>0.70</td></tr></tbody></table> Experiment 2: 100 Flips <table border="1"><thead><tr><th>Outcome</th><th>Count</th><th>Relative Frequency</th></tr></thead><tbody><tr><td>Heads</td><td>59</td><td>0.59</td></tr><tr><td>Tails</td><td>41</td><td>0.41</td></tr></tbody></table>	Outcome	Count	Relative Frequency	Heads	3	0.30	Tails	7	0.70	Outcome	Count	Relative Frequency	Heads	59	0.59	Tails	41	0.41	Conjecture and test how increasing the number of trials affects accuracy of probability estimates, and explain why larger samples reduce anomalies (SMP 1, SMP 2, SMP 8). Use technology to simulate large numbers of trials efficiently, organize the results into data sets, and analyze them with visual displays (SMP 4, SMP 5, SMP 6). Work with familiar, real-world events (e.g., dice, spinners, weather, games) that they can intuitively estimate, then compare their estimates to experimental or simulated results (SMP 2, SMP 3, SMP 4). Design and carry out simulations for contextual events, justifying their design choices and explaining how the simulation models the real situation (SMP4, SMP6). Students must have multiple opportunities and varied ways to demonstrate mastery, as this standard constitutes key Grade 7 Reasoning with Data, Statistics, & Probability milestones in the Reasoning about Probability strand of the Numeracy Development Framework.
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Previously 7.SP.C.6

7.DS.C.6: Develop and use probability models to find probabilities of events and compare them to observed results.

- Create a uniform probability model for situations where outcomes are equally likely and use the model to calculate the probability of an event.
- Create a probability model using observed frequencies and use it to estimate the probability of an event.
- Compare probabilities from a model to observed data and explain possible reasons for any differences.

Content Progression	Examples and Clarifications	Students should have the opportunity to...
Where are students coming from? - Use decimal notation for fractions (4.NOS.F.15). - Identify proportional relationships and find the constant of proportionality (7.AT.A.2; 7.AT.A.3). Where are students going? - Find probabilities of compound events by representing or simulating the same space or simulating events (8.DS.C.6).	A spinner has three equal sections: red, blue, and green. Uniform (theoretical) probability model: $P(\text{red}) = \frac{1}{3} \approx 0.33$; $P(\text{blue}) = \frac{1}{3} \approx 0.33$; $P(\text{green}) = \frac{1}{3} \approx 0.33$. Later, students are given the results of spinning an unknown spinner 60 times: Red = 28; Blue = 15; Green = 17 Empirical model for the new spinner: $P(\text{red}) \approx \frac{28}{60} \approx 0.47$; $P(\text{blue}) \approx \frac{15}{60} = 0.25$; $P(\text{green}) \approx \frac{17}{60} \approx 0.28$. Original Spinner (Uniform) vs Unknown Spinner (Data-Based)  The new spinner clearly favors red. Differences could be due to: random variation in only 60 spins or the new spinner's sections are actually unequal.	Construct both uniform and empirical probability models, and explain the difference between them in their own words (SMP 2, SMP 6). Design experiments or simulations to test their models (SMP 4, SMP 5, SMP 6). Conjecture about how increasing the number of trials affects reliability of models, and test these conjectures with repeated experiments or simulations (SMP 2, SMP 8). Communicate findings to others by creating visual displays (bar graphs, circle graphs) that compare models, data, and interpretations, highlighting where models succeed or fail (SMP 3, SMP 6). Students must have multiple opportunities and varied ways to demonstrate mastery, as this standard constitutes key Grade 7 Reasoning with Data, Statistics, & Probability milestones in the Reasoning about Probability strand of the Numeracy Development Framework.

Previously 7.SP.C.7

Provide Feedback

Your feedback is essential in helping us understand how these resources are being used, their effectiveness in supporting instruction, and how they can be improved to better serve educators, students, and stakeholders across the state. If you are interested in providing feedback, please completed the [Feedback: PreK-8 Mathematics Standards Companion Guide survey](#).

The survey includes general questions about your overall impressions of the companion guides, as well as opportunities to provide grade-level specific feedback. Your responses will inform future revisions and professional learning efforts to ensure the guides are clear, useful, and aligned with the needs of Maryland's diverse learning communities.