Reporting Category	Algebraic Thinking
Content Connector	**MA.5.AT.1.a.1:** Solve problems or word problems using up to 2-digit multiplication or 3-digit dividend with no remainder.
IAS Standard	**MA.5.AT.1:** Solve real-world problems involving multiplication and division of whole numbers (e.g. by using equations to represent the problem). In division problems that involve a remainder, explain how the remainder affects the solution to the problem.
Content Limits	Present one-step problems only. Use whole numbers only. All two-digit numbers should be limited to multiples of 10.
Allowable Stimulus Material	number models
Context	Context allowable
Recommended Response Mechanisms	Multiple Choice (MC) Equation Response (EQ)
Construct-Relevant Vocabulary	multiply, divide, remainder
Cognitive Complexity	4
Evidence Statements	
Evidence Statements	**Tier 1** Student can solve real-world problems using 1-digit multiplication with graphic representation.
	Tier 2 Student can solve real-world problems using 2-digit multiplication.
	Tier 3 Student can solve real-world problems using dividends up to 100 with no remainder.

Accessibility and Accommodation Considerations	
Stimulus Graphic Limitations	Stimulus graphics will be limited to clear photos, illustrations, diagrams, tables, and charts that directly relate to the passage topic. Information contained within stimulus graphics is ineligible for assessment unless specifically prescribed by Content Connector and/or evidence statements.
Linguistic Complexity	To be determined after IDOE review
Reference Tools	N/A

Sample Item	
Tier 2	Courtney has 10 boxes of pencils. Each box has 30 pencils. How many pencils does Courtney have in all? A. 40 B. 100 **C. 300**

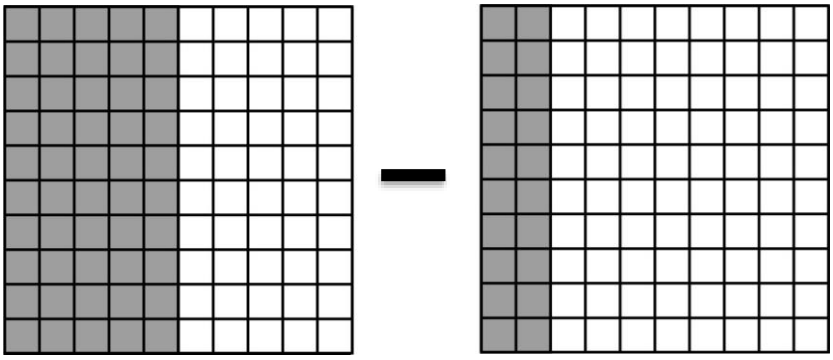
Reporting Category	Algebraic Thinking
Content Connector	**MA.5.AT.2.a.1:** Solve word problems involving the addition and subtraction of fractions with unlike denominators of halves, fourths, fifths, and tenths.
IAS Standard	**MA.5.AT.2:** Solve real-world problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators (e.g., by using visual fraction models and equations to represent the problem). Use benchmark fractions and number sense of fractions to estimate mentally and assess whether the answer is reasonable.
Content Limits	Answers are less than 1 whole.
Allowable Stimulus Material	fraction models
Context	Context required
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	addition, subtraction, fraction, unlike, denominators, halves, fourths, fifths, tenths
Cognitive Complexity	4
Evidence Statements	
Evidence Statements	**Tier 1** Student can solve word problems involving addition or subtraction of fractions with unlike denominators of halves and fourths with graphic representation.
	Tier 2 Student can solve word problems involving addition or subtraction of fractions with unlike denominators of fifths and tenths with graphic representation.
	Tier 3 Student can solve word problems involving addition or subtraction of fractions with unlike denominators of either halves and fourths or fifths and tenths.

Accessibility and Accommodation Considerations	
Stimulus Graphic Limitations	Stimulus graphics will be limited to clear photos, illustrations, diagrams, tables, and charts that directly relate to the passage topic. Information contained within stimulus graphics is ineligible for assessment unless specifically prescribed by Content Connector and/or evidence statements.
Linguistic Complexity	To be determined after IDOE review
Reference Tools	N/A
Sample Item	
Tier 3	Helen completes $\frac{1}{2}$ of her report on Monday and $\frac{1}{4}$ of her report on Tuesday. How much of the report does Helen complete in all? A. $\frac{1}{8}$ B. $\frac{2}{6}$ **C.** $\mathbf{\frac{3}{4}}$

Reporting Category	Algebraic Thinking
Content Connector	**MA.5.AT.4.a.1:** Solve real-world problems involving the division of a whole number by one half to find the total parts.
IAS Standard	**MA.5.AT.4:** Solve real-world problems involving division of unit fractions by non-zero whole numbers, and division of whole numbers by unit fractions (e.g., by using visual fraction models and equations to represent the problem).
Content Limits	Divisor must be one half.
Allowable Stimulus Material	fraction models
Context	Context required
Recommended Response Mechanisms	Multiple Choice (MC) Equation Response (EQ)
Construct-Relevant Vocabulary	division, whole number, half
Cognitive Complexity	4
Evidence Statements	
Evidence Statements	**Tier 1** Student can solve real-world problems using models to divide whole numbers from 1–5 by one half.
	Tier 2 Student can solve real-world problems using models to divide whole numbers from 6–10 by one half.
	Tier 3 Student can solve real-world problems using models to divide whole numbers from 11–15 by one half.
Accessibility and Accommodation Considerations	
Stimulus Graphic Limitations	Stimulus graphics will be limited to clear photos, illustrations, diagrams, tables, and charts that directly relate to the passage topic. Information contained within stimulus graphics is ineligible for assessment unless specifically prescribed by Content Connector and/or evidence statements.
Linguistic Complexity	To be determined after IDOE review
Reference Tools	N/A

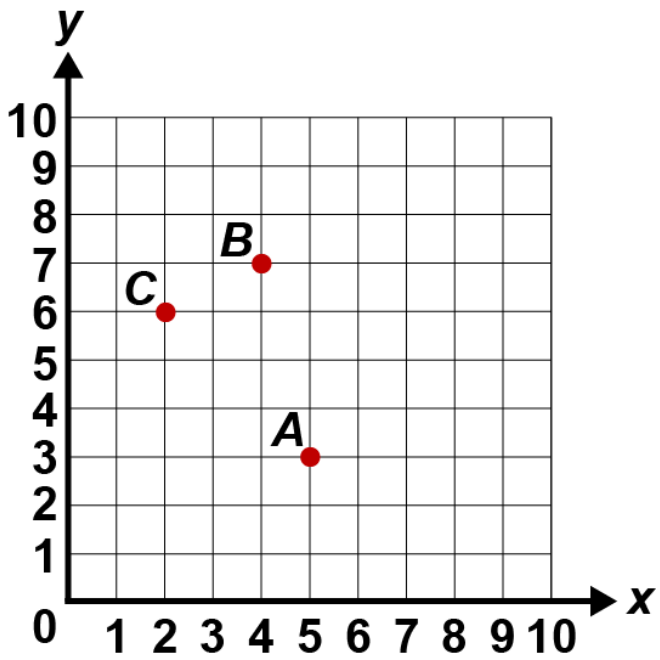
Sample Item	
Tier 1	Rachel has $4. She wants to buy bouncy balls that each cost half of a dollar.  How many bouncy balls can Rachel buy? A. 2 B. 4 **C. 8**

Reporting Category	Algebraic Thinking
Content Connector	**MA.5.AT.5.a.1**: Solve one-step real-world problems involving addition, subtraction, multiplication, and division with decimals to the hundredths place.
IAS Standard	**MA.5.AT.5:** Solve real-world problems involving addition, subtraction, multiplication, and division with decimals to hundredths, including problems that involve money in decimal notation (e.g. by using equations to represent the problem).
Content Limits	Tiers 1 and 2 limit addition and subtraction problems to either both numbers tenths or both numbers hundredths.
Allowable Stimulus Material	number models
Context	Context required
Recommended Response Mechanisms	Multiple Choice (MC) Equation Response (EQ)
Construct-Relevant Vocabulary	add, subtract, multiply, divide, decimal, tenths, hundredths
Cognitive Complexity	4
Evidence Statements	
Evidence Statements	**Tier 1** Student can solve one-step real-world addition or subtraction problems using decimals to the tenths using graphic representation.
	Tier 2 Student can solve one-step real-world addition or subtraction problems using decimals to the hundredths.
	Tier 3 Student can solve one-step real-world multiplication problems using decimals to the tenths and one-digit whole numbers.

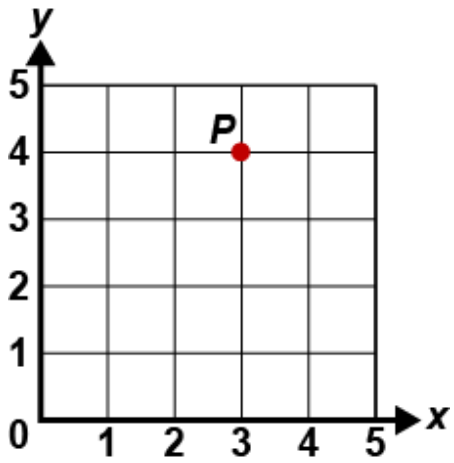
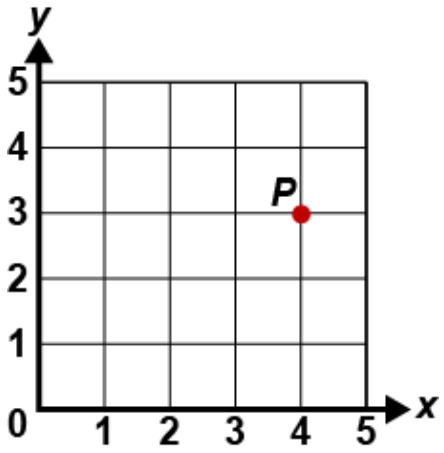
Accessibility and Accommodation Considerations	
Stimulus Graphic Limitations	Stimulus graphics will be limited to clear photos, illustrations, diagrams, tables, and charts that directly relate to the passage topic. Information contained within stimulus graphics is ineligible for assessment unless specifically prescribed by Content Connector and/or evidence statements.
Linguistic Complexity	To be determined after IDOE review
Reference Tools	N/A
Sample Item	
Tier 1	Alesia has 0.5 yards of fabric. She cuts off 0.2 yards to make a flag. How much fabric does she have left over?  A. 0.2 yards **B. 0.3 yards** C. 3.0 yards

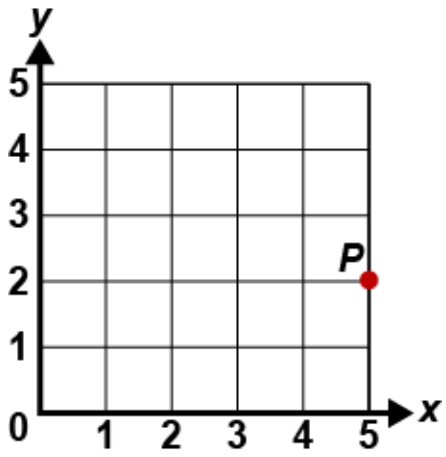
Reporting Category	Algebraic Thinking
Content Connector	**MA.5.AT.6.a.1:** Locate points on a graph and identify the *x*-axis and *y*-axis.
IAS Standard	**MA.5.AT.6:** Graph points with whole number coordinates on a coordinate plane. Explain how the coordinates relate the point as the distance from the origin on each axis, with the convention that the names of the two axes and the coordinates correspond (e.g., *x*-axis and *x*-coordinate, *y*-axis and *y*-coordinate).
Content Limits	Limit to whole numbers only. Limit coordinates to single digits. Label coordinate grid with each whole number. Use only quadrant 1.
Allowable Stimulus Material	coordinate plane.
Context	No context
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	coordinate, axis, ordered pair, point
Cognitive Complexity	3
Evidence Statements	
Evidence Statements	**Tier 1** Student can identify the x-axis and y-axis.
	Tier 2 Student can identify a missing coordinate in an ordered pair based on a given graphic representation.
	Tier 3 Student can locate a point on quadrant 1 on a coordinate plane using a scale of 1.

Accessibility and Accommodation Considerations	
Stimulus Graphic Limitations	Stimulus graphics will be limited to clear photos, illustrations, diagrams, tables, and charts that directly relate to the passage topic. Information contained within stimulus graphics is ineligible for assessment unless specifically prescribed by Content Connector and/or evidence statements.
Linguistic Complexity	To be determined after IDOE review
Reference Tools	N/A

Sample Item	
Tier 3	Here is a coordinate grid.  Which point is located at (5, 3)? **A. point A** B. point B C. point C

Reporting Category	Algebraic Thinking
Content Connector	**MA.5.AT.7.a.1:** Graph ordered pairs in the first quadrant of coordinate plane.
IAS Standard	**MA.5.AT.7:** Represent real-world problems and equations by graphing ordered pairs in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation.
Content Limits	Tier 2: Plane should only represent values 0–5 and each whole number should be labeled. Tier 3: Plane should only represent values 0–6 and each even number should be labeled.
Allowable Stimulus Material	coordinate plane
Context	No context
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	coordinate, coordinate plane, ordered pair, point, graph, plot
Cognitive Complexity	3
Evidence Statements	
Evidence Statements	**Tier 1** Student can recognize an ordered pair on a coordinate plane.
	Tier 2 Student can graph ordered pairs on a coordinate plane values 0–5 with a scale of 1.
	Tier 3 Student can graph ordered pairs on a coordinate plane values 0–6 with a scale of 2.
Accessibility and Accommodation Considerations	
Stimulus Graphic Limitations	Stimulus graphics will be limited to clear photos, illustrations, diagrams, tables, and charts that directly relate to the passage topic. Information contained within stimulus graphics is ineligible for assessment unless specifically prescribed by Content Connector and/or evidence statements.
Linguistic Complexity	To be determined after IDOE review
Reference Tools	N/A

Sample Item	
Tier 1	Which graph shows point *P* at (3, 4)?  **A. (audio: a graph with a point at x is 3, y is 4)**  B. (audio: a graph with a point at x is 4, y is 3)

	 C. (audio: a graph with a point at x is 5, y is 2)

Reporting Category	Algebraic Thinking
Content Connector	**MA.5.AT.8.a.1:** Given a real-world problem, evaluate the expressions for the specific values of up to two variables.
IAS Standard	**MA.5.AT.8:** Define and use up to two variables to write linear expressions that arise from real-world problems, and evaluate them for given values.
Content Limits	Expression should be given. Use single-digit whole numbers only. Answers should be whole numbers. Limit operations to addition, subtraction, multiplication.
Allowable Stimulus Material	number model
Context	Context required
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	evaluate, expression, variable
Cognitive Complexity	4
Evidence Statements	
Evidence Statements	**Tier 1** Student can, given a real-world problem, evaluate the expressions for the specific values of up to 1 variable with one operation.
	Tier 2 Student can, given a real-world problem, evaluate the expressions for the specific values of up to 2 variables with one operation.
	Tier 3 Student can, given a real-world problem, evaluate the expressions for the specific values of up to 2 variables with two operations.

Accessibility and Accommodation Considerations	
Stimulus Graphic Limitations	Stimulus graphics will be limited to clear photos, illustrations, diagrams, tables, and charts that directly relate to the passage topic. Information contained within stimulus graphics is ineligible for assessment unless specifically prescribed by Content Connector and/or evidence statements.
Linguistic Complexity	To be determined after IDOE review
Reference Tools	N/A
Sample Item	
Tier 2	Grace gets some toys from her friends. Her first friend gives her x many toys. Her second friend gives her y many toys. The total toys she receives is $x + y$. How many toys does she receive if $x = 2$ and $y = 3$? A. 3 **B. 5** C. 6

Reporting Category	Computation
Content Connector	**MA.5.C.1.a.1:** Multiply two-digit numbers by two-digit numbers.
IAS Standard	**MA.5.C.1:** Multiply multi-digit whole numbers fluently using a standard algorithmic approach.
Content Limits	Whole numbers only. All two-digit numbers should be multiples of 10.
Allowable Stimulus Material	number model
Context	No context
Recommended Response Mechanisms	Multiple Choice (MC) Equation Response (EQ)
Construct-Relevant Vocabulary	multiply, product
Cognitive Complexity	4
Evidence Statements	
Evidence Statements	**Tier 1** Student can multiply 10 by a two-digit multiple of 10 with a graphical representation.
	Tier 2 Student can multiply a two-digit multiple of 10 by a two-digit multiple of 10 with graphical representation.
	Tier 3 Student can multiply a two-digit multiple of 10 by a two-digit multiple of 10.
Accessibility and Accommodation Considerations	
Stimulus Graphic Limitations	Stimulus graphics will be limited to clear photos, illustrations, diagrams, tables, and charts that directly relate to the passage topic. Information contained within stimulus graphics is ineligible for assessment unless specifically prescribed by Content Connector and/or evidence statements.
Linguistic Complexity	To be determined after IDOE review
Reference Tools	N/A

Sample Item	
Tier 3	Here is a multiplication problem. 50 × 70 What is the answer to the multiplication problem? A. 120 B. 350 **C. 3500**

Reporting Category	Computation
Content Connector	**MA.5.C.2.a.1:** Divide multi-digit whole numbers with dividends up to 100 without remainders.
IAS Standard	**MA.5.C.2:** Find whole-number quotients and remainders with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Describe the strategy and explain the reasoning used.
Content Limits	Use whole numbers only. Answers should have no remainders.
Allowable Stimulus Material	number model
Context	No context
Recommended Response Mechanisms	Multiple Choice (MC) Equation Response (EQ)
Construct-Relevant Vocabulary	divide, whole number, dividends, remainder
Cognitive Complexity	4
Evidence Statements	
Evidence Statements	**Tier 1** Student can divide a number up to 50 by a one-digit divisor with graphic representation.
	Tier 2 Student can divide a number up to 100 by a one-digit divisor with graphic representation.
	Tier 3 Student can divide a number up to 100 by a one-digit divisor.
Accessibility and Accommodation Considerations	
Stimulus Graphic Considerations	Stimulus graphics will be limited to clear photos, illustrations, diagrams, tables, and charts that directly relate to the passage topic. Information contained within stimulus graphics is ineligible for assessment unless specifically prescribed by Content Connector and/or evidence statements.
Linguistic Complexity	To be determined after IDOE review
Reference Tools	N/A

Sample Item	
Tier 3	What is $9\overline{)72}$? A. 6 B. 7 **C. 8**

Updated: 07/19

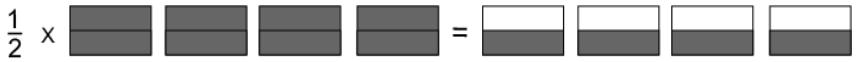
Reporting Category	Computation
Content Connector	**MA.5.C.4.a.1:** Add and subtract fractions with unlike denominators, limiting denominators to halves, fourths, fifths, and tenths.
IAS Standard	**MA.5.C.4:** Add and subtract fractions with unlike denominators, including mixed numbers.
Content Limits	Pair the halves with the fourths. Pair the fifths and tenths. Answers must be less than 1.
Allowable Stimulus Material	fraction models
Context	No context
Recommended Response Mechanisms	Multiple Choice (MC) Equation Response (EQ)
Construct-Relevant Vocabulary	add, subtract, fraction, unlike, numerator, denominator, halves, fourths, fifths, tenths
Cognitive Complexity	4
Evidence Statements	
Evidence Statements	**Tier 1** Student can add and subtract fractions with unlike denominators, limiting denominators to halves and fourths with graphic representation.
	Tier 2 Student can add and subtract fractions with unlike denominators, limiting denominators to fifths and tenths with graphic representation.
	Tier 3 Student can add and subtract fractions with unlike denominators, limiting denominators to halves, fourths, fifths and tenths.
Accessibility and Accommodation Considerations	
Stimulus Graphic Limitations	Stimulus graphics will be limited to clear photos, illustrations, diagrams, tables, and charts that directly relate to the passage topic. Information contained within stimulus graphics is ineligible for assessment unless specifically prescribed by Content Connector and/or evidence statements.
Linguistic Complexity	To be determined after IDOE review
Reference Tools	N/A

Sample Item	
Tier 3	What is $\frac{3}{5} + \frac{1}{10}$? A. $\frac{4}{10}$ B. $\frac{4}{15}$ **C.** $\mathbf{\frac{7}{10}}$

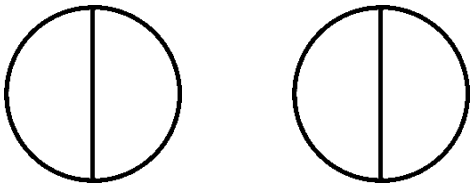
Reporting Category	Computation
Content Connector	**MA.5.C.5.a.1:** Use models to multiply a fraction by a whole number.
IAS Standard	**MA.5.C.5:** Use visual fraction models and numbers to multiply a fraction by a fraction or a whole number.
Content Limits	Answer choices must have a model and either a whole number, an improper fraction or a mixed number.
Allowable Stimulus Material	fraction models
Context	No context
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	multiply, fraction, whole number
Cognitive Complexity	5
Evidence Statements	
Evidence Statements	**Tier 1** Student can use models to multiply a unit fraction by a one-digit whole number that results in a whole number.
	Tier 2 Student can use models to multiply a non-unit fraction by a one-digit whole number that results in a whole number.
	Tier 3 Student can use models to multiply a fraction by a one-digit whole number.
Accessibility and Accommodation Considerations	
Stimulus Graphic Limitations	Stimulus graphics will be limited to clear photos, illustrations, diagrams, tables, and charts that directly relate to the passage topic. Information contained within stimulus graphics is ineligible for assessment unless specifically prescribed by Content Connector and/or evidence statements.
Linguistic Complexity	To be determined after IDOE review
Reference Tools	N/A

Sample Item	
Tier 2	Here is a model of $\frac{2}{3} \times 3$.  What is $\frac{2}{3} \times 3$? A. $\frac{2}{9}$ B. $\frac{6}{9}$ **C. 2**

Reporting Category	Computation
Content Connector	**MA.5.C.6.a.1**: Determine whether the product will increase or decrease based on the multiplier.
IAS Standard	**MA.5.C.6:** Explain why multiplying a positive number by a fraction greater than 1 results in a product greater than the given number. Explain why multiplying a positive number by a fraction less than 1 results in a product smaller than the given number. Relate the principle of fraction equivalence, $a/b = (n \times a)/(n \times b)$, to the effect of multiplying a/b by 1.
Content Limits	One factor must be a whole number from 2–9.
Allowable Stimulus Material	number models fraction models
Context	No context
Recommended Response Mechanisms	Multiple Choice (MC) Table Matching (TM) Multiple Select (MS)
Construct-Relevant Vocabulary	multiply, factor, product, increase, decrease
Cognitive Complexity	4
Evidence Statements	
Evidence Statements	**Tier 1** Student can recognize that the product will increase based on a multiplier greater than one with a graphic representation.
	Tier 2 Student can recognize that the product will decrease based on a multiplier less than one with a graphic representation.
	Tier 3 Student can determine whether the product will increase or decrease based on the multiplier.
Accessibility and Accommodation Considerations	
Stimulus Graphic Limitations	Stimulus graphics will be limited to clear photos, illustrations, diagrams, tables, and charts that directly relate to the passage topic. Information contained within stimulus graphics is ineligible for assessment unless specifically prescribed by Content Connector and/or evidence statements.
Linguistic Complexity	To be determined after IDOE review
Reference Tools	N/A

Sample Item	
Tier 2	Here is a model of $4 \times \frac{1}{2}$.  Which is the correct comparison between $4 \times \frac{1}{2}$ and 4? A. $4 \times \frac{1}{2}$ is larger than 4 **B. $4 \times \frac{1}{2}$ is smaller than 4** C. $4 \times \frac{1}{2}$ is equal to 4

Reporting Category	Computation
Content Connector	**MA.5.C.7.a.1: Use models to divide whole numbers by one half to solve for total number of parts.**
IAS Standard	**MA.5.C.7:** Use visual fraction models and numbers to divide a unit fraction by a non-zero whole number and to divide a whole number by a unit fraction.
Content Limits	Divisor must be one half.
Allowable Stimulus Material	number models fraction models
Context	No Context
Recommended Response Mechanisms	Multiple Choice (MC) Equation Response (EQ)
Construct-Relevant Vocabulary	divide, whole numbers, half, total, part
Cognitive Complexity	4
Evidence Statements	
Evidence Statements	**Tier 1** Student can use models to divide whole numbers from 1–5 by one half.
	Tier 2 Student can use models to divide whole numbers from 6–10 by one half.
	Tier 3 Student can use models to divide whole number from 11–15 by one half.
Accessibility and Accommodation Considerations	
Stimulus Graphic Limitations	Stimulus graphics will be limited to clear photos, illustrations, diagrams, tables, and charts that directly relate to the passage topic. Information contained within stimulus graphics is ineligible for assessment unless specifically prescribed by Content Connector and/or evidence statements.
Linguistic Complexity	To be determined after IDOE review
Reference Tools	N/A

Sample Item	
Tier 1	Here is a model of $2 \div \frac{1}{2}$.  What is $2 \div \frac{1}{2}$? A. $\frac{1}{4}$ B. 1 **C. 4**

Reporting Category	Computation
Content Connector	**MA.5.C.8.a.1:** Solve one-step problems using decimals.
IAS Standard	**MA.5.C.8:** Add, subtract, multiply, and divide decimals to hundredths, using models or drawings and strategies based on place value or the properties of operations. Describe the strategy and explain the reasoning.
Content Limits	For Tier 1 and Tier 2, problems should be displayed vertically and aligned by place value. For Tier 1 and Tier 2: Limit addition/subtraction problems to either both numbers tenths or both numbers hundredths.
Allowable Stimulus Material	number models
Context	No context
Recommended Response Mechanisms	Multiple Choice (MC) Equation Response (EQ)
Construct-Relevant Vocabulary	solve, decimals
Cognitive Complexity	4
Evidence Statements	
Evidence Statements	**Tier 1** Student can solve one-step addition or subtraction problems using decimals to the tenths with graphic representation.
	Tier 2 Student can solve one-step addition or subtraction problems using decimals to the hundredths.
	Tier 3 Student can solve one-step multiplication problems using decimals to the tenths and a one-digit whole number.
Accessibility and Accommodation Considerations	
Stimulus Graphic Limitations	Stimulus graphics will be limited to clear photos, illustrations, diagrams, tables, and charts that directly relate to the passage topic. Information contained within stimulus graphics is ineligible for assessment unless specifically prescribed by Content Connector and/or evidence statements.
Linguistic Complexity	To be determined after IDOE review
Reference Tools	N/A

Sample Item	
Tier 2	Here is an addition problem. 0.08 + 0.25 What is the answer to the addition problem? A. 0.033 B. 0.23 **C. 0.33**

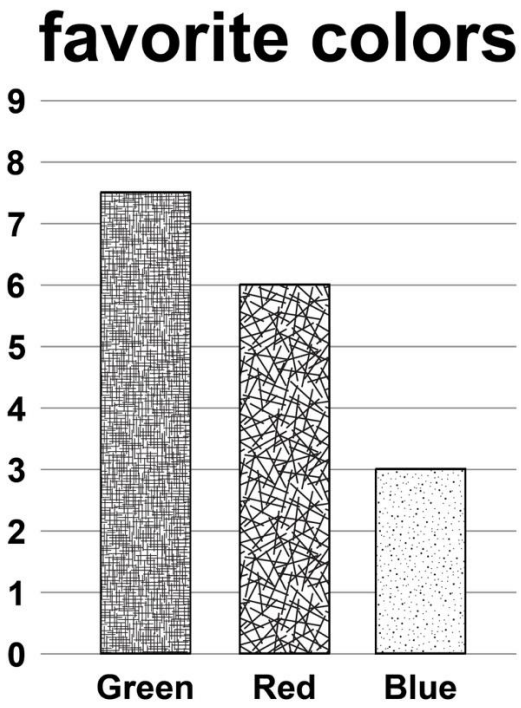
Reporting Category	Computation
Content Connector	**MA.5.C.9.a.1**: Evaluate an expression with one set of parentheses.
IAS Standard	**MA.5.C.9:** Evaluate expressions with parentheses or brackets involving whole numbers using the commutative properties of addition and multiplication, associative properties of addition and multiplication, and distributive property.
Content Limits	Limit all numbers to a single-digit whole number. For Tier 3, limit operations to just addition, subtraction, and multiplication.
Allowable Stimulus Material	N/A
Context	No context
Recommended Response Mechanisms	Multiple Choice (MC) Equation Response (EQ)
Construct-Relevant Vocabulary	evaluate, expression
Cognitive Complexity	4
Evidence Statements	
Evidence Statements	**Tier 1** Student can evaluate an expression that has one-digit subtraction within the parentheses and one-digit addition outside the parentheses.
	Tier 2 Student can evaluate an expression using the distributive property using multiplication outside the parentheses and addition within the parentheses.
	Tier 3 Student can evaluate an expression that uses an operation before the parentheses, an operation within the parentheses, and an operation outside the parentheses.

Accessibility and Accommodation Considerations	
Stimulus Graphic Limitations	Stimulus graphics will be limited to clear photos, illustrations, diagrams, tables, and charts that directly relate to the passage topic. Information contained within stimulus graphics is ineligible for assessment unless specifically prescribed by Content Connector and/or evidence statements.
Linguistic Complexity	To be determined after IDOE review
Reference Tools	N/A

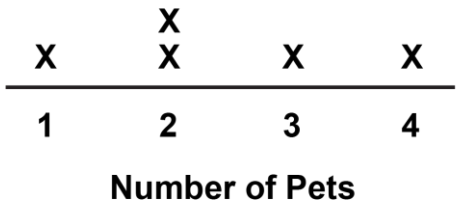
Sample Item	
Tier 1	What is $(9 - 4) + 4$? A. 1 **B. 9** C. 17

Reporting Category	Geometry and Measurement, Data Analysis, and Statistics
Content Connector	**MA.5.DS.1.a.1:** Use data (from a bar graph) to determine questions that could be answered with the graph, or answer a simple question about the graph (e.g., average height among three classrooms, number of boys and girls).
IAS Standard	**MA.5.DS.1:** Formulate questions that can be addressed with data and make predictions about the data. Use observations, surveys, and experiments to collect, represent, and interpret the data using tables (including frequency tables), line plots, bar graphs, and line graphs. Recognize the differences in representing categorical and numerical data.
Content Limits	Limit scale on bar graph to 1, with every whole number labeled. Number of data points should not exceed 10.
Allowable Stimulus Material	bar graph
Context	Context required
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	bar graph, data
Cognitive Complexity	5
Evidence Statements	
Evidence Statements	**Tier 1** Student can use data from a bar graph to answer a simple question about the graph that requires no computation.
	Tier 2 Student can use data from a bar graph to answer a simple question about the graph that requires one operation.
	Tier 3 Student can use data from a bar graph to identify a question that can be answered using the graph.

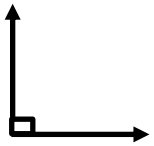
Accessibility and Accommodation Considerations	
Stimulus Graphic Limitations	Stimulus graphics will be limited to clear photos, illustrations, diagrams, tables, and charts that directly relate to the passage topic. Information contained within stimulus graphics is ineligible for assessment unless specifically prescribed by Content Connector and/or evidence statements.
Linguistic Complexity	To be determined after IDOE review
Reference Tools	N/A

Sample Item	
Tier 3	Mr. Mallison asks his students which color they prefer out of green, red, and blue. He puts the results in a graph.  Which question can Mr. Mallison answer by looking at the graph? **A. How many students prefer the color red?** B. Who is the tallest student in the class? C. How many students like the color orange?

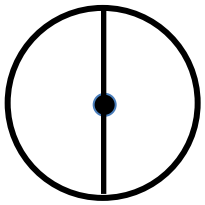
Reporting Category	Geometry and Measurement, Data Analysis, and Statistics
Content Connector	**MA.5.DS.2.a.1:** Use a completed line plot to find mode and median.
IAS Standard	**MA.5.DS.2:** Understand and use measures of center (mean and median) and frequency (mode) to describe a data set.
Content Limits	Data should include only odd sets of numbers, with no more than 9 total values. Limit data values to 1–20, with whole numbers only. Data should be limited to a single mode. Label each value on the line plot.
Allowable Stimulus Material	line plot
Context	Context allowable
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	line plot, mode, median
Cognitive Complexity	5
Evidence Statements	
Evidence Statements	**Tier 1** Student can use a completed line plot to find mode.
	Tier 2 Student can use a completed line plot to find median.
	Tier 3 Student can use a completed line plot to find both median and mode.
Accessibility and Accommodation Considerations	
Stimulus Graphic Limitations	Stimulus graphics will be limited to clear photos, illustrations, diagrams, tables, and charts that directly relate to the passage topic. Information contained within stimulus graphics is ineligible for assessment unless specifically prescribed by Content Connector and/or evidence statements.
Linguistic Complexity	To be determined after IDOE review
Reference Tools	N/A

Sample Item	
Tier 2	Here is a line plot of the number of pets students have in a class.  What is the median number of pets for this class? A. 1 **B. 2** C. 3

Reporting Category	Geometry and Measurement, Data Analysis, and Statistics
Content Connector	**MA.5.G.1.a.1:** Categorize angles as right, acute, or obtuse.
IAS Standard	**MA.5.G.1:** Identify, describe, and draw triangles (right, acute, obtuse) and circles using appropriate tools (e.g., ruler or straightedge, compass and technology). Understand the relationship between radius and diameter.
Content Limits	One ray (arm) of each angle must be oriented such that it is horizontal and parallel to the bottom of the screen/paper. Right angles should be identified with the right angle symbol (square).
Allowable Stimulus Material	images of geometric figures
Context	No context
Recommended Response Mechanisms	Multiple Select (MS) Table Matching (TM) Multiple Choice (MC)
Construct-Relevant Vocabulary	acute, obtuse, right, angle
Cognitive Complexity	2
Evidence Statements	
Evidence Statements	**Tier 1** Student can categorize angles as right (90 degrees) or not.
	Tier 2 Student can categorize angles as either acute or obtuse.
	Tier 3 Student can categorize angles as right, acute, or obtuse.
Accessibility and Accommodation Considerations	
Stimulus Graphic Limitations	Stimulus graphics will be limited to clear photos, illustrations, diagrams, tables, and charts that directly relate to the passage topic. Information contained within stimulus graphics is ineligible for assessment unless specifically prescribed by Content Connector and/or evidence statements.
Linguistic Complexity	To be determined after IDOE review
Reference Tools	N/A

Sample Item	
Tier 1	Here is an angle.  What type of angle is the angle? A. acute **B. right** C. obtuse

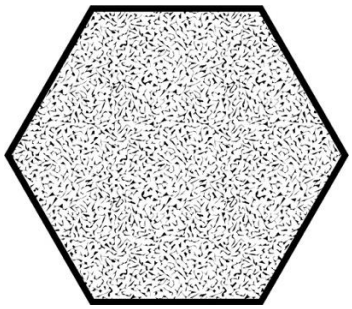
Reporting Category	Geometry and Measurement, Data Analysis, and Statistics
Content Connector	**MA.5.G.1.a.2:** Identify the diameter and radius of a circle.
IAS Standard	**MA.5.G.1:** Identify, describe, and draw triangles (right, acute, obtuse) and circles using appropriate tools (e.g., ruler or straightedge, compass and technology). Understand the relationship between radius and diameter.
Content Limits	Pictures should not include labels.
Allowable Stimulus Material	images of circles
Context	No context
Recommended Response Mechanisms	Table Match (TM) Multiple Choice (MC) Multiple Select (MS)
Construct-Relevant Vocabulary	diameter, radius, circle
Cognitive Complexity	2
Evidence Statements	
Evidence Statements	**Tier 1** Student can identify the radius within a picture of a circle.
	Tier 2 Student can identify the diameter within a picture of a circle.
	Tier 3 Student can classify pictures of circles as depicting either the diameter or radius of a circle.
Accessibility and Accommodation Considerations	
Stimulus Graphic Limitations	Stimulus graphics will be limited to clear photos, illustrations, diagrams, tables, and charts that directly relate to the passage topic. Information contained within stimulus graphics is ineligible for assessment unless specifically prescribed by Content Connector and/or evidence statements.
Linguistic Complexity	To be determined after IDOE review
Reference Tools	N/A

Sample Item	
Tier 2	Here is a circle.  What is the line within the circle? A. the radius **B. the diameter** C. the center point

Reporting Category	Geometry and Measurement, Data Analysis, and Statistics
Content Connector	**MA.5.G.2.a.1:** Recognize properties of simple plane figures by counting the number of sides.
IAS Standard	**MA.5.G.2:** Identify and classify polygons including quadrilaterals, pentagons, hexagons, and triangles (equilateral, isosceles, scalene, right, acute and obtuse) based on angle measures and sides. Classify polygons in a hierarchy based on properties.
Content Limits	Shapes must be regular (equilateral and equiangular).
Allowable Stimulus Material	images of geometric figures
Context	No context
Recommended Response Mechanisms	Table Match (TM) Multiple Choice (MC)
Construct-Relevant Vocabulary	figure, shape, sides, triangle, quadrilateral, square, pentagon, hexagon
Cognitive Complexity	3
Evidence Statements	
Evidence Statements	**Tier 1** Student can, given a picture and name of a triangle or square, count the number of sides.
	Tier 2 Student can, given a picture and name of a pentagon or hexagon, count the number of sides.
	Tier 3 Student can, given the name of a polygon (triangle, square, pentagon, or hexagon), determine the number of sides.
Accessibility and Accommodation Considerations	
Stimulus Graphic Limitations	Stimulus graphics will be limited to clear photos, illustrations, diagrams, tables, and charts that directly relate to the passage topic. Information contained within stimulus graphics is ineligible for assessment unless specifically prescribed by Content Connector and/or evidence statements.
Linguistic Complexity	To be determined after IDOE review
Reference Tools	N/A

Sample Item	
Tier 1	Here is a triangle.  How many sides does a triangle have? A. 2 **B. 3** C. 4

Reporting Category	Geometry and Measurement, Data Analysis, and Statistics
Content Connector	**MA.5.G.2.a.2:** Distinguish plane figures by the name of the shape and number of sides.
IAS Standard	**MA.5.G.2:** Identify and classify polygons including quadrilaterals, pentagons, hexagons, and triangles (equilateral, isosceles, scalene, right, acute and obtuse) based on angle measures and sides. Classify polygons in a hierarchy based on properties.
Content Limits	Tier 1 and Tier 2: Pentagons and hexagons should be a regular shape (equilateral and equiangular). Names of polygons should be limited to only "triangle," "quadrilateral," "pentagon," and "hexagon."
Allowable Stimulus Material	images of geometric figures
Context	No context
Recommended Response Mechanisms	Multiple Select (MS) Multiple Choice (MC) Table Match (TM)
Construct-Relevant Vocabulary	quadrilateral, triangle, hexagon, pentagon, polygon
Cognitive Complexity	4
Evidence Statements	
Evidence Statements	**Tier 1** Student can, given a picture of a triangle or quadrilateral, identify the name. OR Given the name of a triangle or quadrilateral, student can identify the picture.
	Tier 2 Student can, given a picture of a pentagon or a hexagon, identify the name. OR Given the name of a pentagon or hexagon, student can identify the picture.
	Tier 3 Student can, given a picture of an irregular polygon, identify as a triangle, quadrilateral, pentagon, or hexagon. OR Given the name of a triangle, quadrilateral, pentagon, or hexagon, student can identify the picture.

Accessibility and Accommodation Considerations	
Stimulus Graphic Limitations	Stimulus graphics will be limited to clear photos, illustrations, diagrams, tables, and charts that directly relate to the passage topic. Information contained within stimulus graphics is ineligible for assessment unless specifically prescribed by Content Connector and/or evidence statements.
Linguistic Complexity	To be determined after IDOE review
Reference Tools	N/A
Sample Item	
Tier 2	Here is a shape.  What is the name of this shape? **A. hexagon** B. octagon C. pentagon

Reporting Category	Geometry and Measurement, Data Analysis, and Statistics
Content Connector	**MA.5.M.1.a.1:** Convert measurements of time (days in a week, hours in a day, months in a year, minutes in an hour, seconds in a minute).
IAS Standard	**MA.5.M.1:** Convert among different-sized standard measurement units within a given measurement system, and use these conversions in solving multi-step real-world problems.
Content Limits	Conversions should move from bigger unit to smaller unit (for example, convert 3 weeks to days). Given unit must be single-digit whole number.
Allowable Stimulus Material	conversion chart
Context	Context allowable
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	measure, second, minute, hour, day, week, month, year
Cognitive Complexity	4
Evidence Statements	
Evidence Statements	**Tier 1** Student can convert weeks to days.
	Tier 2 Student can convert hours to minutes or minutes to seconds.
	Tier 3 Student can convert days to hours or years to months.
Accessibility and Accommodation Considerations	
Stimulus Graphic Limitations	Stimulus graphics will be limited to clear photos, illustrations, diagrams, tables, and charts that directly relate to the passage topic. Information contained within stimulus graphics is ineligible for assessment unless specifically prescribed by Content Connector and/or evidence statements.
Linguistic Complexity	To be determined after IDOE review
Reference Tools	N/A

Sample Item	
Tier 1	Michael is going on a trip for 3 weeks. 1 week = 7 days How many days is Michael's trip? A. 7 days **B. 21 days** C. 31 days

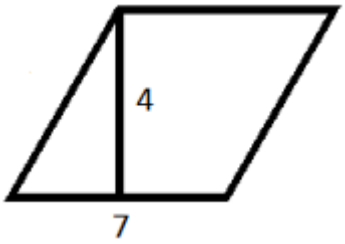
Reporting Category	Geometry and Measurement, Data Analysis, and Statistics
Content Connector	**MA.5.M.1.a.2:** Solve problems involving time lapse.
IAS Standard	**MA.5.M.1:** Convert among different-sized standard measurement units within a given measurement system, and use these conversions in solving multi-step real-world problems.
Content Limits	Find end time or elapsed time only. Stay within a 24-hour period.
Allowable Stimulus Material	images of clocks images related to context
Context	Context allowable
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	clock, time, elapsed, hour, minute, o'clock, a.m., p.m.
Cognitive Complexity	4
Evidence Statements	
Evidence Statements	**Tier 1** Student can solve problems involving time lapse in increments of half hour.
	Tier 2 Student can solve problems involving time lapse of increments of quarter hour.
	Tier 3 Student can solve problems involving time lapse in increments of 5 minutes.
Accessibility and Accommodation Considerations	
Stimulus Graphic Limitations	Stimulus graphics will be limited to clear photos, illustrations, diagrams, tables, and charts that directly relate to the passage topic. Information contained within stimulus graphics is ineligible for assessment unless specifically prescribed by Content Connector and/or evidence statements.
Linguistic Complexity	To be determined after IDOE review
Reference Tools	N/A

Sample Item	
Tier 1	Jeff starts working on his homework at 5:30 pm. He finishes his homework at 8:00 pm. How long does Jeff take to do his homework? **A. 2 hours and 30 minutes** B. 3 hours and 0 minutes C. 3 hours and 30 minutes

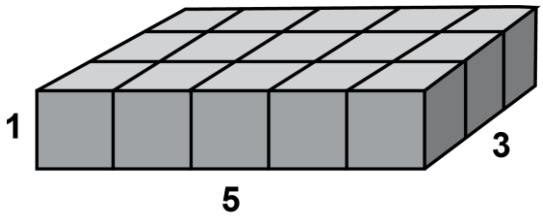
Reporting Category	Geometry and Measurement, Data Analysis, and Statistics
Content Connector	**MA.5.M.2.a.1**: Multiply whole numbers to find the area of a rectangle.
IAS Standard	**MA.5.M.2:** Find the area of a rectangle with fractional side lengths by modeling with unit squares of the appropriate unit fraction side lengths, and show that the area is the same as would be found by multiplying the side lengths. Multiply fractional side lengths to find areas of rectangles, and represent fraction products as rectangular areas.
Content Limits	Limit side lengths to single-digit or two-digit multiples of 10.
Allowable Stimulus Material	formula for area of a rectangle images of rectangles
Context	Context is allowable for Tier 3 only.
Recommended Response Mechanisms	Equation Response (EQ) Multiple Choice (MC)
Construct-Relevant Vocabulary	area, rectangle, length, width, square unit
Cognitive Complexity	4
Evidence Statements	
Evidence Statements	**Tier 1** Student can find the area of a rectangle with single-digit side lengths with graphical representation.
	Tier 2 Student can find the area of a rectangle with a single-digit side length and one side a multiple of 10 with graphical representation.
	Tier 3 Student can find the area of a rectangle with both sides a multiple of 10.
Accessibility and Accommodation Considerations	
Stimulus Graphic Limitations	Stimulus graphics will be limited to clear photos, illustrations, diagrams, tables, and charts that directly relate to the passage topic. Information contained within stimulus graphics is ineligible for assessment unless specifically prescribed by Content Connector and/or evidence statements.
Linguistic Complexity	To be determined after IDOE review
Reference Tools	N/A

Sample Item	
Tier 3	Here is a rectangle. 20 feet  40 feet The area of a rectangle equals the length multiplied by the width. $A = l \times w$ What is the area of the rectangle? A. 60 square feet **B. 800 square feet** C. 1000 square feet

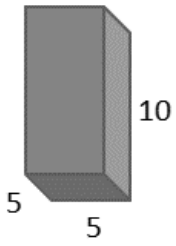
Reporting Category	Geometry and Measurement, Data Analysis, and Statistics
Content Connector	**MA.5.M.3.a.1:** Provided the formula, students will insert the correct numbers into the correct location of the formula.
IAS Standard	**MA.5.M.3:** Develop and use formulas for the area of triangles, parallelograms, and trapezoids. Solve real-world and other mathematical problems that involve perimeter and area of triangles, parallelograms, and trapezoids, using appropriate units for measures.
Content Limits	All problems should provide a picture of the polygon with the appropriate parts labeled with the measurements (base[s] and height). Problems should be based on whole numbers. No distractors should be used (no side lengths labeled; base[s] and height only).
Allowable Stimulus Material	images of geometric figures corresponding area formulas
Context	No context
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	area, formula, base, height, triangle, parallelogram, trapezoid
Cognitive Complexity	4
Evidence Statements	
Evidence Statements	**Tier 1** Provided the formula for the area of a triangle, student will insert the correct numbers into the correct location of the formula.
	Tier 2 Provided the formula for the area of a parallelogram, student will insert the correct numbers into the correct location of the formula.
	Tier 3 Provided the formula for the area of a trapezoid, student will insert the correct number into the correct location of the formula for height only.

Accessibility and Accommodation Considerations	
Stimulus Graphic Limitations	Stimulus graphics will be limited to clear photos, illustrations, diagrams, tables, and charts that directly relate to the passage topic. Information contained within stimulus graphics is ineligible for assessment unless specifically prescribed by Content Connector and/or evidence statements.
Linguistic Complexity	To be determined after IDOE review
Reference Tools	N/A
Sample Item	
Tier 2	Here is a parallelogram.  The area of a parallelogram equals the base multiplied by the height. $A = b \times h$ Which equation represents the area of the parallelogram? **A. $A = 7 \times 4$** B. $A = 7 \times 5$ C. $A = 5 \times 4$

Reporting Category	Geometry and Measurement, Data Analysis, and Statistics
Content Connector	**MA.5.M.4.a.1**: Model volume by counting the number of cubic units that fit into a rectangular prism**.**
IAS Standard	**MA.5.M.4:** Find the volume of a right rectangular prism with whole-number side lengths by packing it with unit cubes, and show that the volume is the same as would be found by multiplying the edge lengths or multiplying the height by the area of the base.
Content Limits	All rectangular prisms pictured must consist of one layer (one dimension must equal 1).
Allowable Stimulus Material	images of rectangular prisms constructed from cubes
Context	No context
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	volume, rectangular prism, cubes, cubic units
Cognitive Complexity	3
Evidence Statements	
Evidence Statements	**Tier 1** Student can, given a picture of a right rectangular prism with measurements of 1–4, find the volume by counting the number of cubic units.
	Tier 2 Student can, given a picture of a right rectangular prism with measurements of 1–8, find the volume by counting the number of cubic units.
	Tier 3 Student can, given a picture of a right rectangular prism with measurements of 1–12, find the volume by counting the number of cubic units.
Accessibility and Accommodation Considerations	
Stimulus Graphic Limitations	Stimulus graphics will be limited to clear photos, illustrations, diagrams, tables, and charts that directly relate to the passage topic. Information contained within stimulus graphics is ineligible for assessment unless specifically prescribed by Content Connector and/or evidence statements.
Linguistic Complexity	To be determined after IDOE review
Reference Tools	N/A

Sample Item	
Tier 2	Here is a rectangular prism.  The volume of a rectangular prism equals the length multiplied by the width, multiplied by the height. $V = l \times w \times h$ What is the volume of the rectangular prism? A. 8 unit cubes B. 9 unit cubes **C. 15 unit cubes**

Reporting Category	Geometry and Measurement, Data Analysis, and Statistics
Content Connector	**MA.5.M.5.a.1:** Provided the formula, students will insert the correct numbers into the correct location of the formula.
IAS Standard	**MA.5.M.5:**: Apply the formulas V = l × w × h and V = B × h for right rectangular prisms to find volumes of right rectangular prisms with whole-number edge lengths to solve real-world problems and other mathematical problems involving shapes.
Content Limits	Always provide a graphical representation of the right rectangular prism with labeled length, width, and height measurements. *Note:* When using the formula V = B × h, the base should be labeled instead of the length and width. Use whole numbers only. Missing numbers should be limited to base, length, width, or height (not volume).
Allowable Stimulus Material	images of rectangular prisms corresponding volume formula
Context	No context
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	volume, length, width, height, formula, rectangular prism
Cognitive Complexity	4
Evidence Statements	
Evidence Statements	**Tier 1** Given the formula V = l × w × h, student will insert one missing number into the correct location within the formula.
	Tier 2 Given the formula V = B × h, student will insert one missing number into the correct location within the formula.
	Tier 3 Given either formula V = l × w × h or V = B × h, student will insert the missing numbers into the correct location within the formula.

Accessibility and Accommodation Considerations	
Stimulus Graphic Limitations	Stimulus graphics will be limited to clear photos, illustrations, diagrams, tables, and charts that directly relate to the passage topic. Information contained within stimulus graphics is ineligible for assessment unless specifically prescribed by Content Connector and/or evidence statements.
Linguistic Complexity	To be determined after IDOE review
Reference Tools	N/A
Sample Item	
Tier 3	Here is a rectangular prism.  The volume of a rectangular prism equals the length multiplied by the width, multiplied by the height. $V = l \times w \times h$ Which equation represents the volume of the above box? **A. $V = 5 \times 5 \times 10$** B. $V = 5 \times 10 \times 10$ C. $V = 10 \times 10 \times 10$

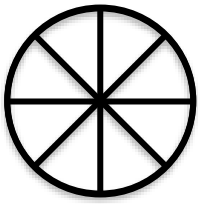
Reporting Category	Number Sense
Content Connector	**MA.5.NS.1.a.1:** Compare two fractions using <, >, and = symbols and vocabulary.
IAS Standard	**MA.5.NS.1:** Use a number line to compare and order fractions, mixed numbers, and decimals to thousandths. Write the results using >, =, and < symbols.
Content Limits	Proper fractions should be used. No mixed numbers should be used. Denominators ten or less should be used.
Allowable Stimulus Material	number lines fraction models
Context	Context allowable
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	compare, fraction, numerator, denominator, greater than, less than, equal to
Cognitive Complexity	4
Evidence Statements	
Evidence Statements	**Tier 1** Student can compare two fractions with like denominators using symbols or words with graphical representations.
	Tier 2 Student can compare two fractions with unlike denominators using symbols or words with graphical representations.
	Tier 3 Student can compare two fractions with unlike denominators using symbols or words.
Accessibility and Accommodation Considerations	
Stimulus Graphic Limitations	Stimulus graphics will be limited to clear photos, illustrations, diagrams, tables, and charts that directly relate to the passage topic. Information contained within stimulus graphics is ineligible for assessment unless specifically prescribed by Content Connector and/or evidence statements.
Linguistic Complexity	To be determined after IDOE review
Reference Tools	N/A

Sample Item	
Tier 3	Here are two fractions. $\frac{1}{4}, \quad \frac{1}{2}$ Which is a true comparison of the two fractions? **A.** $\frac{1}{4} < \frac{1}{2}$ B. $\frac{1}{4} > \frac{1}{2}$ C. $\frac{1}{4} = \frac{1}{2}$

Reporting Category	Number Sense
Content Connector	**MA.5.NS.1.a.2:** Compare two decimals to the hundredths place with a value of less than 1 using symbols <, >, and = symbols and vocabulary.
IAS Standard	**MA.5.NS.1:** Use a number line to compare and order fractions, mixed numbers, and decimals to thousandths. Write the results using >, =, and < symbols.
Content Limits	Only compare tenths to tenths or hundredths to hundredths.
Allowable Stimulus Material	number models
Context	No context
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	decimals, tenths, hundredths, compare, inequality, greater than, less than, equal to
Cognitive Complexity	4
Evidence Statements	
Evidence Statements	**Tier 1** Student can compare two decimals to the tenths place with symbols and words with graphic representation.
	Tier 2 Student can compare two decimals to the hundredths place with symbols and words with graphic representation.
	Tier 3 Student can compare two decimals to the hundredths place with symbols and words.
Accessibility and Accommodation Considerations	
Stimulus Graphic Limitations	Stimulus graphics will be limited to clear photos, illustrations, diagrams, tables, and charts that directly relate to the passage topic. Information contained within stimulus graphics is ineligible for assessment unless specifically prescribed by Content Connector and/or evidence statements.
Linguistic Complexity	To be determined after IDOE review
Reference Tools	N/A

Sample Item	
Tier 3	Here are two decimals. 0.25, 0.41 Which is a true comparison of the two decimals? **A. $\mathbf{0.25 < 0.41}$** B. $0.25 > 0.41$ C. $0.25 = 0.41$

Reporting Category	Number Sense
Content Connector	**MA.5.NS.2.a.1:** Represent fractions as part of a set, whole, or division of whole numbers.
IAS Standard	**MA.5.NS.2:** Explain different interpretations of fractions, including: as parts of a whole, parts of a set, and division of whole numbers by whole numbers.
Content Limits	Limit denominators to 10 or less. Use proper fractions only. No simplifying.
Allowable Stimulus Material	fraction models
Context	Context allowable
Recommended Response Mechanisms	Equation Response (EQ) Multiple Choice (MC)
Construct-Relevant Vocabulary	fraction, numerator, denominator, part, whole, division
Cognitive Complexity	3
Evidence Statements	
Evidence Statements	**Tier 1** Student can represent fractions as part of a whole with graphical representation.
	Tier 2 Student can represent fractions as part of a set with graphical representation.
	Tier 3 Student can represent fractions as division of whole numbers.
Accessibility and Accommodation Considerations	
Stimulus Graphic Limitations	Stimulus graphics will be limited to clear photos, illustrations, diagrams, tables, and charts that directly relate to the passage topic. Information contained within stimulus graphics is ineligible for assessment unless specifically prescribed by Content Connector and/or evidence statements.
Linguistic Complexity	To be determined after IDOE review
Reference Tools	N/A

Sample Item	
Tier 1	A group of friends divide a pizza into 8 slices.  What fraction is each slice? A. $\frac{1}{1}$ **B.** $\frac{\mathbf{1}}{\mathbf{8}}$ C. $\frac{8}{1}$

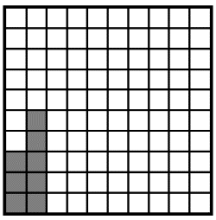
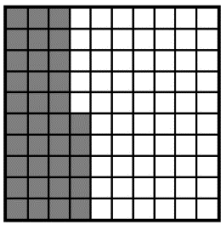
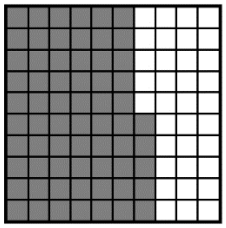
Reporting Category	Number Sense
Content Connector	**MA.5.NS.3.a.1:** Compare the value of a digit when it is represented in different place values of 2 three-digit numbers.
IAS Standard	**MA.5.NS.3:** Recognize the relationship that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right, and inversely, a digit in one place represents 1/10 of what it represents in the place to its left.
Content Limits	Use whole numbers only in questions and answers.
Allowable Stimulus Material	number models
Context	No context
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	values, place value, digit, compare
Cognitive Complexity	4
Evidence Statements	
Evidence Statements	**Tier 1** Student can compare the value of a digit when it is represented in different place values of 2 two-digit numbers with graphical representation.
	Tier 2 Student can compare the value of a digit when it is represented in different place values of 2 three-digit numbers with graphical representation.
	Tier 3 Student can compare the value of a digit when it is represented in different place values of 2 three-digit numbers
Accessibility and Accommodation Considerations	
Stimulus Graphic Limitations	Stimulus graphics will be limited to clear photos, illustrations, diagrams, tables, and charts that directly relate to the passage topic. Information contained within stimulus graphics is ineligible for assessment unless specifically prescribed by Content Connector and/or evidence statements.
Linguistic Complexity	To be determined after IDOE review
Reference Tools	N/A

Sample Item	
Tier 3	Here are two numbers. **3**24 61**3** What is a true comparison of the 3 in 324, and the 3 in 613? A. The 3 in 324 is equal to the 3 in 613. B. The 3 in 324 is less than the 3 in 613. **C. The 3 in 324 is greater than the 3 in 613.**

Reporting Category	Number Sense
Content Connector	**MA.5.NS.5.a.1:** Round decimals to the nearest whole number.
IAS Standard	**MA.5.NS.5:** Use place value understanding to round decimal numbers up to thousandths to any given place value.
Content Limits	Limit numbers and answers to less than 10. Limit decimals to tenths or hundredths.
Allowable Stimulus Material	number models
Context	No context
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	decimals, rounding, place value, digit
Cognitive Complexity	4
Evidence Statements	
Evidence Statements	**Tier 1** Student can round decimals in the tenths place to the nearest whole number using graphical representation.
	Tier 2 Student can round decimals in the hundredths place to the nearest whole number using graphical representation.
	Tier 3 Student can round decimals in the tenths or hundredths place to the nearest whole number.
Accessibility and Accommodation Considerations	
Stimulus Graphic Limitations	Stimulus graphics will be limited to clear photos, illustrations, diagrams, tables, and charts that directly relate to the passage topic. Information contained within stimulus graphics is ineligible for assessment unless specifically prescribed by Content Connector and/or evidence statements.
Linguistic Complexity	To be determined after IDOE review
Reference Tools	N/A

Sample Item	
Tier 3	Here is a number. 1.48 What is 1.48 rounded to the nearest whole number? **A. 1** B. 1.5 C. 2

Reporting Category	Number Sense
Content Connector	**MA.5.NS.6.a.1:**: Use a model to represent a percentage as part of 100.
IAS Standard	**MA.5.NS.6:** Understand, interpret, and model percentages as part of a hundred (e.g., by using pictures, diagrams, and other visual models).
Content Limits	Whole numbers and percentages up to 100 may be used. Model should always be out of 100.
Allowable Stimulus Material	decimal models
Context	No context
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	percent, percentage
Cognitive Complexity	2
Evidence Statements	
Evidence Statements	**Tier 1** Student can identify a model that represents a percent that is a multiple of 10.
	Tier 2 Student can identify a model that represents a percent that ends in 5.
	Tier 3 Student can determine the percent that matches a given model.
Accessibility and Accommodation Considerations	
Stimulus Graphic Limitations	Stimulus graphics will be limited to clear photos, illustrations, diagrams, tables, and charts that directly relate to the passage topic. Information contained within stimulus graphics is ineligible for assessment unless specifically prescribed by Content Connector and/or evidence statements.
Linguistic Complexity	To be determined after IDOE review
Reference Tools	N/A

Sample Item	
Tier 2	Which shaded part of the model represents 35%? A.  (Audio: a percentage model. 8 squares are shaded. 92 squares are not shaded.) **B.**  **(Audio: a percentage model. 35 squares are shaded. 65 squares are not shaded.)** **KEY** C.  (Audio: a percentage model. 65 squares are shaded. 35 squares are not shaded.)

Reporting Category	Process Standards (aggregate reporting only)
Content Connector/IAS Process Standard	**PS.1:** Make sense of problems and persevere in solving them. Mathematically proficient students start by explaining to themselves the meaning of a problem and looking for entry points to its solution. They analyze givens, constraints, relationships, and goals. They make conjectures about the form and meaning of the solution and plan a solution pathway, rather than simply jumping into a solution attempt. They consider analogous problems and try special cases and simpler forms of the original problem in order to gain insight into its solution. They monitor and evaluate their progress and change course if necessary. Mathematically proficient students check their answers to problems using a different method, and they continually ask themselves, “Does this make sense?” and "Is my answer reasonable?" They understand the approaches of others to solving complex problems and identify correspondences between different approaches. Mathematically proficient students understand how mathematical ideas interconnect and build on one another to produce a coherent whole.
Content Limits	Equations must be limited to addition and subtraction. Content may not exceed any other Grade 5 Content Connectors.
Allowable Stimulus Material	Material may not exceed any other Grade 5 Content Connectors.
Context	Context required
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	reasonable, sense, solve, persevere
Cognitive Complexity	6

<table>
<tr><th colspan="2">Evidence Statements</th></tr>
<tr><td rowspan="3">Evidence Statements</td><td>Tier 1
Student can, given a visual representation of a real-world simple addition equation, determine if an answer is reasonable.</td></tr>
<tr><td>Tier 2
Student can, given a visual representation of a real-world simple subtraction equation, calculate and determine a reasonable answer.</td></tr>
<tr><td>Tier 3
Student can, given a real-world scenario, calculate a simple addition or subtraction equation and choose a reasonable answer and explanation.</td></tr>
<tr><th colspan="2">Accessibility and Accommodation Considerations</th></tr>
<tr><td>Stimulus Graphic Limitations</td><td>Stimulus graphics will be limited to clear photo, illustrations, diagrams, tables, and charts that directly relate to the passage topic. Information contained within stimulus graphics is ineligible for assessment unless specifically prescribed by Content Connector and/or evidence statements.</td></tr>
<tr><td>Linguistic Complexity</td><td>To be determined after IDOE review</td></tr>
<tr><td>Reference Tools</td><td>N/A</td></tr>
<tr><th colspan="2">Sample Item</th></tr>
<tr><td>Tier 3</td><td>Tom caught 4 fish yesterday. He caught 4 more fish today. How many fish did Tom catch in all?

$4 + 4 = 16$

Is the answer reasonable?

A. Yes, because 4 multiplied by 4 is 16.
B. No, because 8 plus 8 is 16.
C. No, because 4 plus 4 is 8.</td></tr>
</table>

Reporting Category	Process Standards (aggregate reporting only)
Content Connector/IAS Process Standard	**PS.2:** Reason abstractly and quantitatively. Mathematically proficient students make sense of quantities and their relationships in problem situations. They bring two complementary abilities to bear on problems involving quantitative relationships: the ability to decontextualize—to abstract a given situation and represent it symbolically and manipulate the representing symbols as if they have a life of their own, without necessarily attending to their referents—and the ability to contextualize, to pause as needed during the manipulation process in order to probe into the referents for the symbols involved. Quantitative reasoning entails habits of creating a coherent representation of the problem at hand; considering the units involved; attending to the meaning of quantities, not just how to compute them; and knowing and flexibly using different properties of operations and objects.
Content Limits	Real-world scenarios should be limited to addition, subtraction, and multiplication. Numbers should be limited to whole numbers. Content may not exceed any other Grade 5 Content Connectors.
Allowable Stimulus Material	Materials may not exceed any other Grade 5 Content Connectors.
Context	Context required
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	reason, quantity
Cognitive Complexity	5
Evidence Statements	
Evidence Statements	**Tier 1** Student can, given a real-world scenario and a visual, match an equation that is a representation of the problem.
	Tier 2 Student can, given a real-world scenario, match an equation that is a representation of the problem.
	Tier 3 Student can, given a real-world scenario, identify an equation that is a representation of the problem.

Accessibility and Accommodation Considerations	
Stimulus Graphic Limitations	Stimulus graphics will be limited to clear photo, illustrations, diagrams, tables, and charts that directly relate to the passage topic. Information contained within stimulus graphics is ineligible for assessment unless specifically prescribed by Content Connector and/or evidence statements.
Linguistic Complexity	To be determined after IDOE review
Reference Tools	N/A

Sample Item	
Tier 3	George has 7 cards. George's friend gives him x many cards. Now George has 11 cards. Which equation represents this situation? A. $7 = x + 11$ **B. $7 + x = 11$** C. $11 = 7 - x$

Updated: 07/19

Reporting Category	Process Standards (aggregate reporting only)
Content Connector/IAS Process Standard	**PS.3:** Construct viable arguments and critique the reasoning of others. Mathematically proficient students understand and use stated assumptions, definitions, and previously established results in constructing arguments. They make conjectures and build a logical progression of statements to explore the truth of their conjectures. They analyze situations by breaking them into cases and recognize and use counterexamples. They organize their mathematical thinking, justify their conclusions and communicate them to others, and respond to the arguments of others. They reason inductively about data, making plausible arguments that take into account the context from which the data arose. Mathematically proficient students are also able to compare the effectiveness of two plausible arguments, distinguish correct logic or reasoning from that which is flawed, and—if there is a flaw in an argument—explain what it is. They justify whether a given statement is true always, sometimes, or never. Mathematically proficient students participate and collaborate in a mathematics community. They listen to or read the arguments of others, decide whether they make sense, and ask useful questions to clarify or improve the arguments.
Content Limits	Use only whole numbers up to 20. Limit to two operations. Limit to addition, subtraction, and multiplication. Content may not exceed any other Grade 5 Content Connectors.
Allowable Stimulus Material	Materials may not exceed any other Grade 5 Content Connectors.
Context	Context allowable
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	argument, reason, construct
Cognitive Complexity	6

Evidence Statements	
Evidence Statements	**Tier 1** Student can, given a visual representation of a real-world mathematical problem, identify the mistake made.
	Tier 2 Student can, given a real-world mathematical problem, identify the mistake made.
	Tier 3 Student can, given a real-world mathematical problem, identify and correct the mistake made.
Accessibility and Accommodation Considerations	
Stimulus Graphic Limitations	Stimulus graphics will be limited to clear photo, illustrations, diagrams, tables, and charts that directly relate to the passage topic. Information contained within stimulus graphics is ineligible for assessment unless specifically prescribed by Content Connector and/or evidence statements.
Linguistic Complexity	To be determined after IDOE review
Reference Tools	N/A

Sample Item	
Tier 2	Julie has 8 balloons. Julie wants to give an equal number of balloons to her 4 friends. Julie thinks that each friend should get 4 balloons. What is Julie's mistake? **A. Julie subtracted 4, but should have divided by 4.** B. Julie divided by 4, but should have subtracted by 4. C. Julie subtracted by 4, but should have multiplied by 4.

Reporting Category	Process Standards (aggregate reporting only)
Content Connector/IAS Process Standard	**PS.4:** Model with mathematics. Mathematically proficient students apply the mathematics they know to solve problems arising in everyday life, society, and the workplace using a variety of appropriate strategies. They create and use a variety of representations to solve problems and to organize and communicate mathematical ideas. Mathematically proficient students apply what they know and are comfortable making assumptions and approximations to simplify a complicated situation, realizing that these may need revision later. They are able to identify important quantities in a practical situation and map their relationships using such tools as diagrams, two-way tables, graphs, flowcharts and formulas. They analyze those relationships mathematically to draw conclusions. They routinely interpret their mathematical results in the context of the situation and reflect on whether the results make sense, possibly improving the model if it has not served its purpose.
Content Limits	Content focused on tables. Content may not exceed any other Grade 5 Content Connectors.
Allowable Stimulus Material	Materials may not exceed any other Grade 5 Content Connectors.
Context	Context allowable
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	model
Cognitive Complexity	5
Evidence Statements	
Evidence Statements	**Tier 1** Student can match a visual to a mathematical scenario.
	Tier 2 Student can, given a mathematical scenario, match a related visual.
	Tier 3 Student can, given mathematical data, match the mathematical scenario to a graph.

Accessibility and Accommodation Considerations	
Stimulus Graphic Limitations	Stimulus graphics will be limited to clear photo, illustrations, diagrams, tables, and charts that directly relate to the passage topic. Information contained within stimulus graphics is ineligible for assessment unless specifically prescribed by Content Connector and/or evidence statements.
Linguistic Complexity	To be determined after IDOE review
Reference Tools	N/A
Sample Item	
Tier 1	Which model represents 4×3? A.  (Audio: 2 rows of circles. One row has 4 circles, the second row has 3 circles.) B.  (Audio: 4 rows of circles. 3 rows have 1 circle, 1 row has 3 circles) **C.**  **(Audio: 4 rows of circles. Each row has 3 circles.)**

Reporting Category	Process Standards (aggregate reporting only)
Content Connector	**PS.5:** Use appropriate tools strategically. Mathematically proficient students consider the available tools when solving a mathematical problem. These tools might include pencil and paper, models, a ruler, a protractor, a calculator, a spreadsheet, a computer algebra system, a statistical package, or dynamic geometry software. Mathematically proficient students are sufficiently familiar with tools appropriate for their grade or course to make sound decisions about when each of these tools might be helpful, recognizing both the insight to be gained and their limitations. Mathematically proficient students identify relevant external mathematical resources, such as digital content, and use them to pose or solve problems. They use technological tools to explore and deepen their understanding of concepts and to support the development of learning mathematics. They use technology to contribute to concept development, simulation, representation, reasoning, communication and problem solving.
Content Limits	Content may not exceed any other Grade 5 Content Connectors.
Allowable Stimulus Material	Materials may not exceed any other Grade 5 Content Connectors.
Context	Context required
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	appropriate, tools, strategy
Cognitive Complexity	5
Evidence Statements	
Evidence Statements	**Tier 1** Given a real-world scenario with visuals, student can determine if the appropriate tool is used.
	Tier 2 Given a real-world scenario with visuals, student can determine an appropriate tool to use.
	Tier 3 Given a real-world scenario, student can determine an appropriate tool to use.

Accessibility and Accommodation Considerations	
Stimulus Graphic Limitations	Stimulus graphics will be limited to clear photo, illustrations, diagrams, tables, and charts that directly relate to the passage topic. Information contained within stimulus graphics is ineligible for assessment unless specifically prescribed by Content Connector and/or evidence statements.
Linguistic Complexity	To be determined after IDOE review
Reference Tools	N/A
Sample Item	
Tier 2	Ryan wants to measure how tall he is. Which tool should Ryan use? **A.**  **a tape measure (KEY)**  B. a scale  C. a protractor

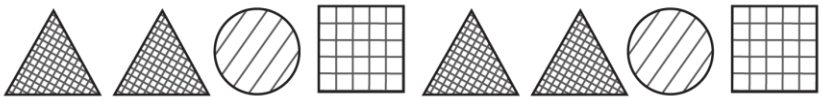
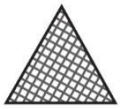
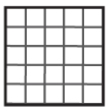
Reporting Category	Process Standards (aggregate reporting only)
Content Connector/IAS Process Standard	**PS.6:** Attend to precision. Mathematically proficient students communicate precisely to others. They use clear definitions, including correct mathematical language, in discussion with others and in their own reasoning. They state the meaning of the symbols they choose, including using the equal sign consistently and appropriately. They express solutions clearly and logically by using the appropriate mathematical terms and notation. They specify units of measure and label axes to clarify the correspondence with quantities in a problem. They calculate accurately and efficiently and check the validity of their results in the context of the problem. They express numerical answers with a degree of precision appropriate for the problem context.
Content Limits	Limit content to addition, subtraction, and multiplication. Limit to whole numbers. Content may not exceed any other Grade 5 Content Connectors.
Allowable Stimulus Material	Materials may not exceed any other Grade 5 Content Connectors.
Context	Context allowable
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	precise
Cognitive Complexity	5
Evidence Statements	
Evidence Statements	**Tier 1** Given a visual representation using terms or symbols, student can determine if the problem was answered accurately.
	Tier 2 Given a visual representation using terms or symbols, student can determine where the mistake was made in the problem.
	Tier 3 Given a real-world scenario, student can determine the correct expression using the mathematical symbols and terms.

Accessibility and Accommodation Considerations	
Stimulus Graphic Limitations	Stimulus graphics will be limited to clear photo, illustrations, diagrams, tables, and charts that directly relate to the passage topic. Information contained within stimulus graphics is ineligible for assessment unless specifically prescribed by Content Connector and/or evidence statements.
Linguistic Complexity	To be determined after IDOE review
Reference Tools	N/A
Sample Item	
Tier 3	Ms. Johnson has 28 pencils. There are 18 students in her class. Ms. Johnson gives each student a pencil. Which expression shows how many pencils Mrs. Johnson has left? A. $28 \div 18$ B. 18×1 **C. $28 - 18$**

Reporting Category	Process Standards (aggregate reporting only)
Content Connector/IAS Process Standard	**PS.7:** Look for and make use of structure. Mathematically proficient students look closely to discern a pattern or structure. They step back for an overview and shift perspective. They recognize and use properties of operations and equality. They organize and classify geometric shapes based on their attributes. They see expressions, equations, and geometric figures as single objects or as being composed of several objects.
Content Limits	Classify polygons including quadrilaterals, pentagons, hexagons, and triangles. Content may not exceed any other Grade 5 Content Connectors.
Allowable Stimulus Material	Materials may not exceed any other Grade 5 Content Connectors.
Context	Context allowable
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	pattern
Cognitive Complexity	5
Evidence Statements	
Evidence Statements	**Tier 1** Given a visual representation, student can classify the shape.
	Tier 2 Given a visual representation, student can determine if the shapes are organized based on the number of sides.
	Tier 3 Given a visual representation, student can determine and organize the shapes based on number of sides.

Accessibility and Accommodation Considerations	
Stimulus Graphic Limitations	Stimulus graphics will be limited to clear photo, illustrations, diagrams, tables, and charts that directly relate to the passage topic. Information contained within stimulus graphics is ineligible for assessment unless specifically prescribed by Content Connector and/or evidence statements.
Linguistic Complexity	To be determined after IDOE review
Reference Tools	N/A
Sample Item	
Tier 1	Here is a shape.  What is the name of this shape? A. triangle **B. rectangle** C. square

Reporting Category	Process Standards (aggregate reporting only)
Content Connector/IAS Process Standard	**PS.8:** Look for and express regularity in repeated reasoning. Mathematically proficient students notice if calculations are repeated and look for general methods and shortcuts. They notice regularity in mathematical problems and their work to create a rule or formula. Mathematically proficient students maintain oversight of the process, while attending to the details as they solve a problem. They continually evaluate the reasonableness of their intermediate results.
Content Limits	Limit shapes to 2-dimensional. Limit to 2-digit whole numbers. Content may not exceed any other Grade 5 Content Connectors.
Allowable Stimulus Material	Materials may not exceed any other Grade 5 Content Connectors.
Context	No context
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	pattern, repeat, reason
Cognitive Complexity	5
Evidence Statements	
Evidence Statements	**Tier 1** Given a visual representation, student can identify if a pattern exists.
	Tier 2 Given a visual representation, student can identify and complete the pattern for one missing item.
	Tier 3 Given a visual representation, student can identify and complete the pattern for no more than three missing items.

Accessibility and Accommodation Considerations	
Stimulus Graphic Limitations	Stimulus graphics will be limited to clear photo, illustrations, diagrams, tables, and charts that directly relate to the passage topic. Information contained within stimulus graphics is ineligible for assessment unless specifically prescribed by Content Connector and/or evidence statements.
Linguistic Complexity	To be determined after IDOE review
Reference Tools	N/A
Sample Item	
Tier 2	Here is a pattern.  What is the next shape in this pattern? **A.**  **(Audio: triangle)** B.  (Audio: square) C.  (Audio: circle)