Reporting Category	Algebra and Functions
Content Connector	**MA.6.AF.1.a.1:** Given a real-world problem, evaluate the expressions for specific values of their variables.
IAS Standard	**MA.6.AF.1:** Evaluate expressions for specific values of their variables, including expressions with whole-number exponents and those that arise from formulas used in real-world problems.
Content Limits	Only natural numbers 1–99 can be used. For multiplication, products should not be greater than 3-digits. For division, there should be no remainders.
Allowable Stimulus Material	number models; number lines; graphics; models
Context	Context required
Recommended Response Mechanisms	Multiple Choice (MC) Equation Response (EQ)
Construct-Relevant Vocabulary	evaluate, expression, variable
Cognitive Complexity	5
Evidence Statements	
Evidence Statements	**Tier 1** Given a real-world problem, the student can evaluate an expression with an addition or subtraction operation and 1 variable.
	Tier 2 Given a real-world problem, the student can evaluate an expression with a multiplication or division operation and 1 variable.
	Tier 3 Given a real-world problem, the student can evaluate an expression with 2 operations and 2 variables.

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	calculator
Sample Item	
Tier 2	Rachel lifts x books that weigh 2 pounds each. The total weight she lifts is $2x$. How much weight does Rachel lift if she lifts 3 books? A. 3 pounds B. 5 pounds **C. 6 pounds**

Reporting Category	Algebra and Functions
Content Connector	**MA.6.AF.2.a.1:** Use properties of operations to produce equivalent expressions.
IAS Standard	**MA.6.AF.2:** Apply the properties of operations (e.g., identity, inverse, commutative, associative, distributive properties) to create equivalent linear expressions and to justify whether two linear expressions are equivalent when the two expressions name the same number regardless of which value is substituted into them.
Content Limits	Only use single digit whole numbers. For Tier 1, use addition only.
Allowable Stimulus Material	number models; graphics; models
Context	No context
Recommended Response Mechanisms	Multiple Choice (MC) Equation Response (EQ)
Construct-Relevant Vocabulary	equivalent, expression, operation, property
Cognitive Complexity	3
Evidence Statements	
Evidence Statements	**Tier 1** Given a model, the student can find the missing number using the commutative property.
	Tier 2 Given a model, the student can find the missing number using the associative properties.
	Tier 3 Given a model, the student can find the missing number using the distributive properties.
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	calculator

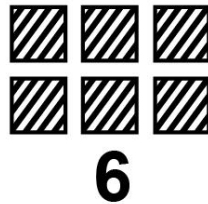| Sample Item	
Tier 1	Here is an equation and a model. $6 + 2 = 2 + \square$ What is the missing number? A. **2** (audio: two) B. **6** **(audio: six)** **KEY** C. **8** (audio: eight)

Reporting Category	Algebra and Functions
Content Connector	**MA.6.AF.3.a.1:** Write and evaluate variable expressions.
IAS Standard	**MA.6.AF.3:** Define and use multiple variables when writing expressions to represent real-world and other mathematical problems and evaluate them for given values.
Content Limits	Use only natural numbers 1–20. For division, there should be no remainders.
Allowable Stimulus Material	number models; graphics; models
Context	No context
Recommended Response Mechanisms	Multiple Choice (MC) Equation Response (EQ)
Construct-Relevant Vocabulary	evaluate, expression, variable
Cognitive Complexity	5
Evidence Statements	
Evidence Statements	**Tier 1** The student can evaluate an expression using addition or subtraction and 1 variable.
	Tier 2 The student can evaluate an expression using multiplication or division and 1 variable.
	Tier 3 The student can evaluate an expression using two or more operations (addition, subtraction, multiplication, and/or division) and 2 variables.
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	calculator

Sample Item	

Tier 2	Here is an expression.
	
	$2y \times 3$
	
	If y=2 what is the value of the expression?
	
	  A. 6
	  B. 7
	  C. 12

Updated: 07/19

Reporting Category	Algebra and Functions
Content Connector	**MA.6.AF.4.a.1:** Use substitution to determine validity of an equation or inequality.
IAS Standard	**MA.6.AF.4:** Understand that solving an equation or inequality is the process of answering the following question: Which values from a specified set, if any, make the equation or inequality true? Use substitution to determine whether a given number in a specified set makes an equation or inequality true.
Content Limits	Use only natural numbers less than 20. For Tier 1, use only addition and subtraction. For Tier 2, use only multiplication and division.
Allowable Stimulus Material	number lines; graphics; models
Context	No context
Recommended Response Mechanisms	Multiple Choice (MC) Equation Response (EQ)
Construct-Relevant Vocabulary	validity, equation, inequality, greater than, less than, equal to
Cognitive Complexity	5
Evidence Statements	
Evidence Statements	**Tier 1** Student will determine if the equation or inequality is true.
	Tier 2 Student can use the symbols greater than, less than or equal to make a true statement.
	Tier 3 Student will determine a value for a variable that makes an equation or inequality true.
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	calculator

Sample Item	
Tier 1	Here is an equation. $x + 3 = 6$ If $x = 2$, is the equation true? A. 2 + 3 = 6 is true B. **2 + 3 = 6 is false** C. 2 + 3 = 6 is sometimes true

Reporting Category	Algebra and Functions
Content Connector	**MA.6.AF.5.a.1:** Solve real-world one-step linear equations.
IAS Standard	**MA.6.AF.5:** Solve equations of the form $x + p = q$, $x - p = q$, $px = q$, and $\frac{x}{p} = q$ fluently for cases in which p, q and x are all nonnegative rational numbers. Represent real world problems using equations of these forms and solve such problems.
Content Limits	Only use natural numbers. For division, there should be no remainders.
Allowable Stimulus Material	graphics; models
Context	Context allowable
Recommended Response Mechanisms	Multiple Choice (MC) Equation Response (EQ)
Construct-Relevant Vocabulary	linear equation
Cognitive Complexity	5
Evidence Statements	
Evidence Statements	**Tier 1** Student can solve one-step linear equations limited to addition.
	Tier 2 Student can solve one-step linear equations limited to subtraction.
	Tier 3 Student can solve one-step linear equations with multiplication or division.
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	Calculator

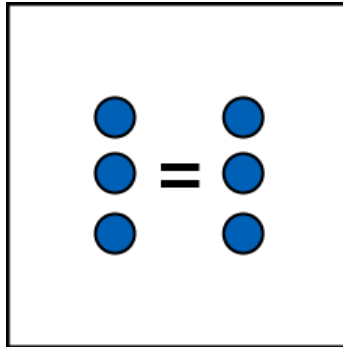| Sample Item	

Tier 2	Charlie sells 15 bags of popcorn. Charlie has 25 bags left. Here is an equation, where p represents the number of bags Charlie starts with.
	
	$p - 15 = 25$
	
	How many bags of popcorn does Charlie start with?
	
	  A. 10 bags of popcorn
	  B. 30 bags of popcorn
	  C. 40 bags of popcorn

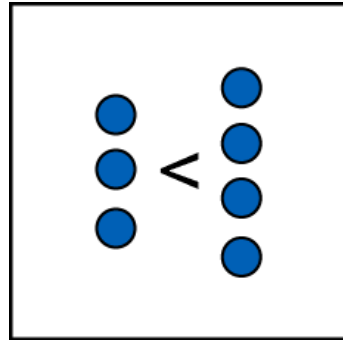| Reporting Category	Algebra and Functions
Content Connector	**MA.6.AF.6.a.1:** Given a real-world problem, write an inequality.
IAS Standard	**MA.6.AF.6:** Write an inequality of the form $x > c$, $x \geq c$, $x < c$, or $x \leq c$, where c is a rational number, to represent a constraint or condition in a real-world or other mathematical problem. Recognize inequalities have infinitely many solutions and represent solutions on a number line diagram.
Content Limits	Only use natural numbers less than 20.
Allowable Stimulus Material	number lines
Context	Context allowable
Recommended Response Mechanisms	Multiple Choice (MC) Equation Response (EQ)
Construct-Relevant Vocabulary	inequality
Cognitive Complexity	5
Evidence Statements	
Evidence Statements	**Tier 1** Student can recognize an inequality using >, <, ≥, or ≤.
	Tier 2 Student can identify a true inequality using >, <, ≥, or ≤.
	Tier 3 Student can identify an inequality using >, <, ≥, or ≤ to represent a constraint in a given real-world situation.
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	calculator

Sample Item	
Tier 1	Which is an inequality? A. 3 = 3 B. 3 < 4 C. 2 + 2

Updated: 07/19

Reporting Category	Algebra and Functions
Content Connector	**MA.6.AF.7.a.1:** Graph a point on a coordinate plane.
IAS Standard	**MA.6.AF.7:** Understand that signs of numbers in ordered pairs indicate the quadrant containing the point; recognize that when two ordered pairs differ only by signs, the locations of the points are related by reflections across one or both axes. Graph points with rational number coordinates on a coordinate plane.
Content Limits	x and y integer values max range from -5 to 5.
Allowable Stimulus Material	coordinate planes
Context	No context
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	coordinate plane, coordinate, ordered pair, point, quadrant
Cognitive Complexity	5
Evidence Statements	
Evidence Statements	**Tier 1** Student can identify a point in quadrant I on a coordinate plane.
	Tier 2 Student can identify a point in quadrant I or II on a coordinate plane.
	Tier 3 Student can graph a point in quadrant I of a coordinate plane.
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	Calculator

Sample Item

Tier 3

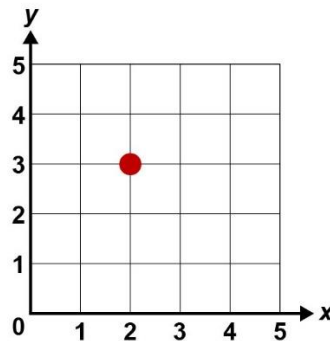Which graph shows the point (2, 3)?

A.

(Audio: Here is a graph with an x- and y- axis range of zero to five. From the origin there is a point at x is 3, y is 2.)
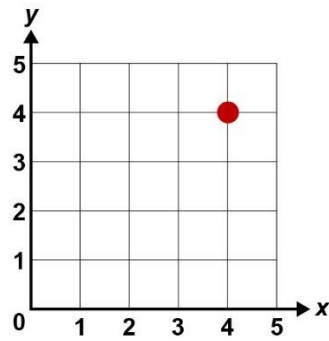
B.

(Audio: Here is a graph with an x- and y- axis range of zero to five. From the origin there is a point at x is 2, y is 3.)
KEY

C.

(Audio: Here is a graph with an x- and y- axis range of zero to five. From the origin there is a point at x is 4, y is 4)

Reporting Category	Algebra and Functions
Content Connector	**MA.6.AF.8.a.1:** Given a coordinate plane, plot and find the distance between two points with the same first coordinate or the same second coordinate.
IAS Standard	**MA.6.AF.8:** Solve real-world and other mathematical problems by graphing points with rational number coordinates on a coordinate plane. Include the use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate.
Content Limits	x and y integer values max range from -5 to 5.
Allowable Stimulus Material	number line; coordinate plane
Context	No context
Recommended Response Mechanisms	Multiple Choice (MC) Equation Response (EQ)
Construct-Relevant Vocabulary	coordinate plane, number line, coordinate, point, plot, distance
Cognitive Complexity	5
Evidence Statements	

	Tier 1 Student can find the distance between two points on a number line.
Evidence Statements	**Tier 2** Student can find the distance between two points with the same second coordinate.
	Tier 3 Student can plot and find the distance between two points with the same second coordinate.

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

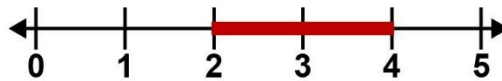| Sample Item	
Tier 1	Which number line has a line segment 4 long? **A.** **(Audio: here is a numberline, the numberline has a line segment that starts at one and ends at five.)** B. (Audio: Here is a numberline, the numberline has a line segment that starts at two and ends at four.) C. (Audio: Here is a numberline, the numberline has a line segment that starts at one and ends at four.)

Reporting Category	Algebra and Functions
Content Connector	**MA.6.AF.9.a.1:** Analyze a table to find missing values of ordered pairs.
IAS Standard	**MA.6.AF.9:** Make tables of equivalent ratios relating quantities with whole-number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane.
Content Limits	For Tier 1, only single digit natural numbers should be used. For Tier 2 and 3, only natural numbers through 20 should be used. For Tier 1 and 2, the rate of change is limited to 2. For Tier 3, the rate of change is limited to 3 or less.
Allowable Stimulus Material	tables
Context	No context
Recommended Response Mechanisms	Multiple Choice (MC) Equation Response (EQ)
Construct-Relevant Vocabulary	analyze, ordered pair, data table
Cognitive Complexity	5
Evidence Statements	
Evidence Statements	**Tier 1** Student will find a missing value when the rule is given.
	Tier 2 Student will find a missing value.
	Tier 3 Student will find a missing ordered pair.
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 table of ordered pairs. 	x	y	 |---|---| 	1	2	 	2	4	 	3		 	4	8	 What is the missing y value? A. 5 **B. 6** C. 7

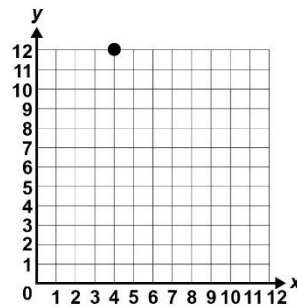| Reporting Category	Algebra and Functions
Content Connector	**MA.6.AF.9.a.2:** Plot pairs of values from a table onto a coordinate plane.
IAS Standard	**MA.6.AF.9:** Make tables of equivalent ratios relating quantities with whole-number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane.
Content Limits	For Tier 1, only single digit natural numbers should be used. For Tier 2 and 3, only natural numbers through 20 should be used. For Tier 1 and 2, the rate of change is limited to 2. For Tier 3, the rate of change is limited to 3.
Allowable Stimulus Material	data tables; coordinate planes
Context	No context
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	plot, point, ordered pairs, coordinate plane
Cognitive Complexity	5
Evidence Statements	
Evidence Statements	**Tier 1** Student will plot an ordered pair on the coordinate plane.
	Tier 2 Student will plot an ordered pair on the coordinate plane.
	Tier 3 Student will plot an ordered pair on the coordinate plane.
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 table with coordinate pairs. The coordinate pairs form a line. |

x	**Y**
1	3
2	6
3	9

Which point belongs on the same line as the coordinate pairs in the table?
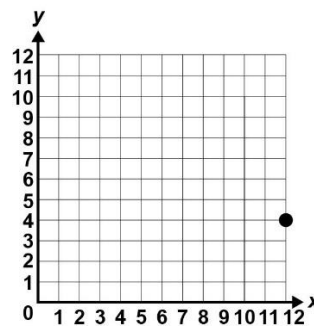
A.

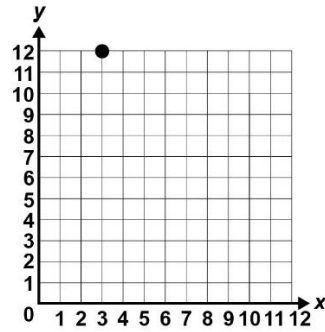**(Audio: here is a graph with a point at x is 4, y is 12)**
KEY

B.

(Audio: here is a graph with a point at x is 12, y is 4)

C.

(Audio: here is a graph with a point at x is 3, y is 12)

Reporting Category	Algebra and Functions
Content Connector	**MA.6.AF.10.a.1:** Given a real-world problem representing a proportional relationship, analyze the relationships between the dependent and independent variables.
IAS Standard	**MA.6.AF.10:** Use variables to represent two quantities in a proportional relationship in a real-world problem; write an equation to express one quantity, the dependent variable, in terms of the other quantity, the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables and relate these to the equation.
Content Limits	Only simplistic graphs/visuals should be used.
Allowable Stimulus Material	line graphs
Context	Context required
Recommended Response Mechanisms	Multiple Choice (MC) Equation Response (EQ)
Construct-Relevant Vocabulary	proportional relationship, dependent, independent, variable, increase, decrease
Cognitive Complexity	2
Evidence Statements	
Evidence Statements	**Tier 1** Student can identify if the proportional relationship is increasing or decreasing.
	Tier 2 Student can identify if the proportional relationship is increasing or decreasing.
	Tier 3 Student can identify if the proportional relationship is increasing or decreasing.

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	Carrie is working on her homework. Each hour she works, she finishes 2 pages of homework. What is the relationships between the amount of time Carrie works, and the amount of homework she finishes? **A. increasing** B. decreasing C. constant

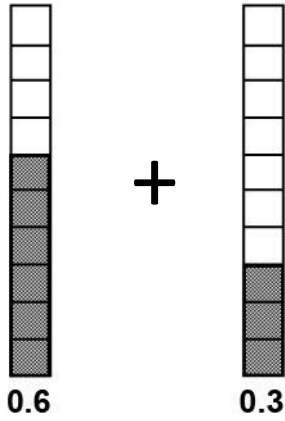| Reporting Category	Computation
Content Connector	**MA.6.C.1.a.1:** Divide multi-digit whole numbers.
IAS Standard	**MA.6.C.1:** Divide multi-digit whole numbers fluently using a standard algorithmic approach.
Content Limits	For Tier 1, there should be no remainders.
Allowable Stimulus Material	N/A
Context	Context required
Recommended Response Mechanisms	Multiple Choice (MC) Equation Response (EQ)
Construct-Relevant Vocabulary	divide, quotient, remainder
Cognitive Complexity	5
Evidence Statements	
Evidence Statements	**Tier 1** Student can identify a quotient using numbers 0–9.
	Tier 2 Student can identify a quotient by dividing two-digit numbers by one-digit numbers.
	Tier 3 Student can identify a quotient by dividing two-digit numbers by two-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	calculator

Sample Item	
Tier 2	Rachel has 32 marbles. She divides them into 4 equal groups. How many marbles are in each group? **A. 8** B. 9 C. 28

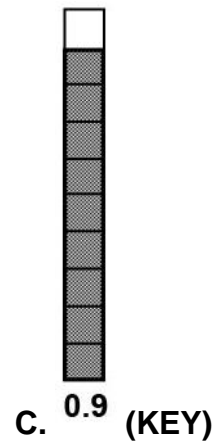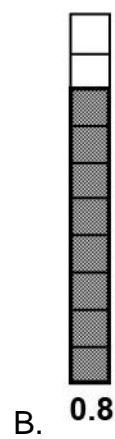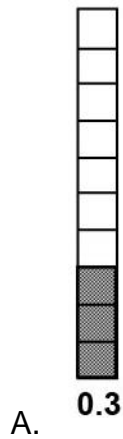| Reporting Category	Computation
Content Connector	**MA.6.C.2.a.1:** Solve one-step addition or subtraction problems with decimals.
IAS Standard	**MA.6.C.2:** Compute with positive fractions and positive decimals fluently using a standard algorithmic approach.
Content Limits	No borrowing or regrouping is permitted. For Tier 1 and 2, numbers are limited to tenths place. For Tier 3, numbers are limited to hundredths place.
Allowable Stimulus Material	decimal models
Context	Context allowable
Recommended Response Mechanisms	Multiple Choice (MC) Equation Response (EQ)
Construct-Relevant Vocabulary	decimals, addition, subtraction
Cognitive Complexity	5
Evidence Statements	
Evidence Statements	**Tier 1** Student can solve an addition problem involving decimals to tenths place.
	Tier 2 Student will solve a subtraction problem involving decimals to tenths place.
	Tier 3 Student will solve an addition or subtraction problem involving decimals to hundredths place.
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	calculator

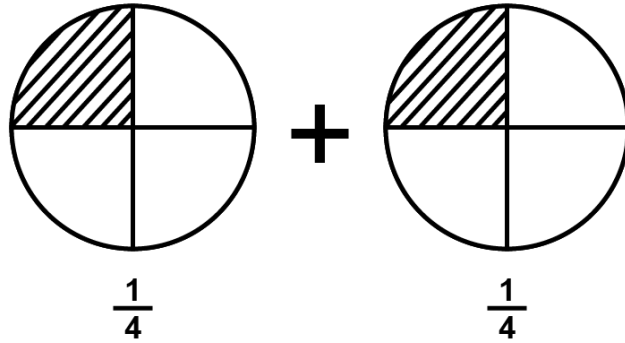| Sample Item	
Tier 1	Here are two decimals. 0.6 + 0.3 What is $0.6 + 0.3$? A. 0.3 B. 0.8 C. 0.9 **(KEY)**

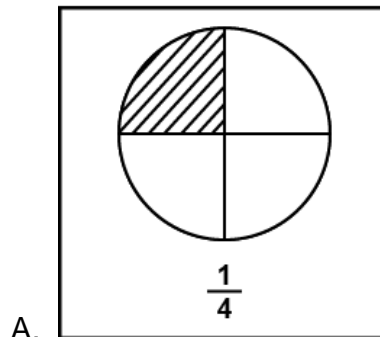| Reporting Category	Computation
Content Connector	**MA.6.C.2.a.2:** Solve one-step addition or subtraction problems with fractions.
IAS Standard	**MA.6.C.2:** Compute with positive fractions and positive decimals fluently using a standard algorithmic approach.
Content Limits	No borrowing or regrouping. For Tier 1 and 2, limit to halves, fourths and fifths. For Tier 3, limit to halves, thirds, fourths, fifths, and tenths.
Allowable Stimulus Material	fraction models
Context	Context allowable
Recommended Response Mechanisms	Multiple Choice (MC) Equation Response (EQ)
Construct-Relevant Vocabulary	fraction, addition, subtraction
Cognitive Complexity	5
Evidence Statements	
Evidence Statements	**Tier 1** Student can solve an addition problem involving fractions with like denominators.
	Tier 2 Student will solve a subtraction problem involving fractions with like denominators.
	Tier 3 Student will solve an addition and/or subtraction problem involving fractions with unlike denominators.
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	Calculator

Sample Item

<table>
<tr><td rowspan="2">

Tier 1

</td><td>

Here is a model of two fractions.

$\frac{1}{4}$ + $\frac{1}{4}$

What is $\frac{1}{4} + \frac{1}{4}$?

$\frac{1}{4}$

A.

[1/4]
(Audio: one-fourth)

$\frac{2}{4}$

B.

[2/4]
(Audio: two-fourths)
KEY

</td></tr>
</table>

C.

$\frac{3}{4}$

[3/4]
(Audio: three-fourths)

Reporting Category	Computation
Content Connector	**MA.6.C.3.a.1:** Solve one-step real-world addition or subtraction problems with decimals or fractions.
IAS Standard	**MA.6.C.3:** Solve real-world problems with positive fractions and decimals by using one or two operations.
Content Limits	No borrowing or regrouping. For Tier 1 and 2, limit to tenths place. For Tier 3, limit to hundredths place.
Allowable Stimulus Material	decimal models; fraction models
Context	Context required
Recommended Response Mechanisms	Multiple Choice (MC) Equation Response (EQ)
Construct-Relevant Vocabulary	decimal, fraction, addition, subtraction
Cognitive Complexity	5
Evidence Statements	
Evidence Statements	**Tier 1** Student can solve an addition problem involving decimals to tenths.
	Tier 2 Student can solve a subtraction problem involving decimals to tenths.
	Tier 3 Student can solve an addition or subtraction problem involving decimals to hundredths or fractions.
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	Molly has $6.50. She buys a pencil case for $4.00.
	
	How much money does Molly have left?
	
	   A. $1.50
	   B. $2.00
	   C. $2.50

Reporting Category	Computation
Content Connector	**MA.6.C.4.a.1:** Solve one-step division problems with fractions.
IAS Standard	**MA.6.C.4:** Compute quotients of positive fractions and solve real-world problems involving division of fractions by fractions. Use a visual fraction model and/or equation to represent these calculations.
Content Limits	For Tier 1 and 2, limit denominators to 2, 3, 4, and 10. For Tier 3, limit denominators to 2, 3, 4, 5, 8, and 10.
Allowable Stimulus Material	fraction models
Context	No context
Recommended Response Mechanisms	Multiple Choice (MC) Equation Response (EQ)
Construct-Relevant Vocabulary	fractions, division
Cognitive Complexity	5
Evidence Statements	
Evidence Statements	**Tier 1** Student can solve a division problem with dividing a fraction by a whole number.
	Tier 2 Student can solve a division problem with dividing a fraction by a unit fraction.
	Tier 3 Student can solve a division problem with dividing a fraction by a non-unit fraction.
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	What is $\frac{3}{4} \div \frac{1}{4}$? A. $\frac{2}{4}$ B. $\frac{3}{4}$ **C. 3**

Reporting Category	Computation
Content Connector	**MA.6.C.5.a.1:** Demonstrate what an exponent represents (e.g., $8^3 = 8 \times 8 \times 8$) and evaluate.
IAS Standard	**MA.6.C.5:** Evaluate positive rational numbers with whole number exponents.
Content Limits	Exponents can be only squares and cubes. Only single digit base numbers should be used.
Allowable Stimulus Material	N/A
Context	No context
Recommended Response Mechanisms	Multiple Choice (MC) Equation Response (EQ)
Construct-Relevant Vocabulary	exponent, represent, evaluate
Cognitive Complexity	5
Evidence Statements	
Evidence Statements	**Tier 1** Student can recognize an exponent is the same as repeated multiplication.
	Tier 2 Student can match an exponent to its repeated multiplication.
	Tier 3 Student can evaluate the power.
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	Calculator

Sample Item

Tier 2	Which expression is equal to 5^3? A. $5 + 5 + 5$ B. $3 + 3 + 3 + 3 + 3$ **C. $5 \times 5 \times 5$**

Reporting Category	Computation
Content Connector	**MA.6.C.6.a.1:** Apply the order of operations.
IAS Standard	**MA.6.C.6:** Apply order of operations and properties of operations (identity, inverse, commutative properties of addition and multiplication, associative properties of addition and multiplication, and distributive property) to evaluate numerical expressions with nonnegative rational numbers, including those using grouping symbols, such as parentheses, and involving whole number exponents. Justify each step in the process.
Content Limits	Maximum number of 2 operations should be used. Only whole numbers 1–10 should be used.
Allowable Stimulus Material	N/A
Context	No context
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	order of operation, parenthesis
Cognitive Complexity	5
Evidence Statements	
Evidence Statements	**Tier 1** Student can use order of operations to evaluate an expression in the order of multiplication followed by addition or subtraction.
	Tier 2 Student can use the order of operations to evaluate an expression of addition followed by multiplication in parenthesis.
	Tier 3 Student can apply the order of operations to evaluate an expression of addition followed by multiplication without parenthesis.

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 expression.
	
	$3 \times (4 + 2)$
	
	What does the expression equal?
	
	  A. 9
	  B. 14
	  C. 18

Reporting Category	Geometry and Measurement, Data Analysis, and Statistics
Content Connector	**MA.6.DS.1.a.1:** Identify statistical questions and the data that corresponds.
IAS Standard	**MA.6.DS.1:** Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for the variability in the answers. Understand that a set of data collected to answer a statistical question has a distribution which can be described by its center, spread, and overall shape.
Content Limits	Only whole numbers 1-10 should be used. Provide a graph.
Allowable Stimulus Material	pictographs; bar graphs; line graphs
Context	Context required
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	data, pictograph, bar graph, line graph, statistical, corresponds
Cognitive Complexity	6
Evidence Statements	
Evidence Statements	**Tier 1** Student can identify a statistical question answered by a pictograph.
	Tier 2 Student can identify a statistical question answered by a bar or line graph.
	Tier 3 Student can match a statistical question to a related 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

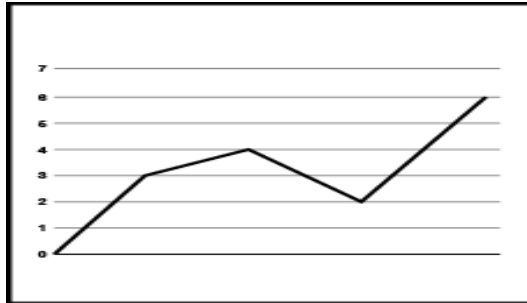| Sample Item	
Tier 1	Justin and his friends make a pictograph of the number of books they have read this month. **Amount of Books Read This Month** | Mark	▨ ▨ ▨
Julia	▨ ▨
Justin	▨ ▨
Ashley	▨ ▨ ▨ ▨ ▨ | Each ▨ = 2 books Which statistical question can this pictograph answer? A. how many books Mark owns B. how many books are in a library this month **C. how many books Justin and his friends read this month**

Reporting Category	Geometry and Measurement, Data Analysis, and Statistics
Content Connector	**MA.6.DS.2.a.1:** Name different graphical representations of data.
IAS Standard	**MA.6.DS.2:** Select, create, and interpret graphical representations of numerical data, including line plots, histograms, and box plots.
Content Limits	Only whole numbers 1–10 should be used. No more than 3 categories should be used.
Allowable Stimulus Material	bar graphs; pictographs; line graphs; line plots; histograms; box plots
Context	No context
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	data display, bar graph, pictograph, line graph, line plot, histogram, box plot
Cognitive Complexity	2
Evidence Statements	
Evidence Statements	**Tier 1** Student can identify a bar or pictograph.
	Tier 2 Student can identify a line graph or line plot.
	Tier 3 Student can identify a histogram and a box plot.
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

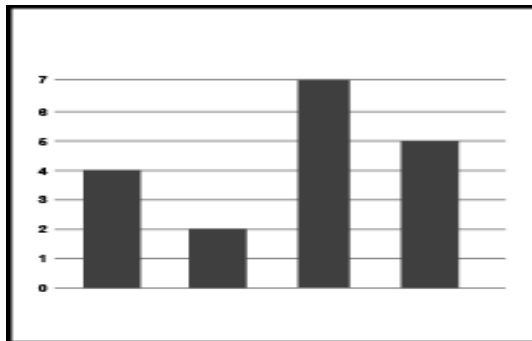**Tier 2**

Which graph is a line graph?

A.

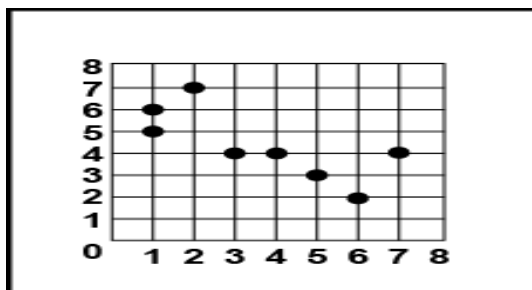**(Audio: here is a graph with lines connecting points)**
KEY

B.

(Audio: here is a graph with four bars)

C.

(Audio: here is a graph with a many different points)

Reporting Category	Geometry and Measurement, Data Analysis, and Statistics
Content Connector	**MA.6.DS.3.a.1:** Collect and graph data using bar graphs and line plots.
IAS Standard	**MA.6.DS.3:** Formulate statistical questions; collect and organize the data (e.g., using technology); display and interpret the data with graphical representations (e.g., using technology).
Content Limits	Limit to single digit whole numbers. Limit to 5 data points.
Allowable Stimulus Material	bar graphs or line plots
Context	Context required
Recommended Response Mechanisms	Multiple Choice (MC) Graphing Response (GR)
Construct-Relevant Vocabulary	graph, data, bar graph, line plot
Cognitive Complexity	5
Evidence Statements	
Evidence Statements	**Tier 1** Student can identify a bar graph that models a set of data.
	Tier 2 Student can identify a bar graph that models a set of data.
	Tier 3 Student can identify a line plot that models a set of data.
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

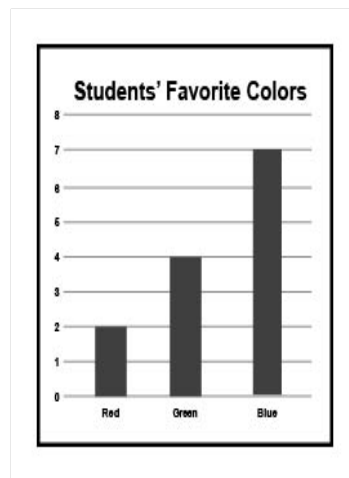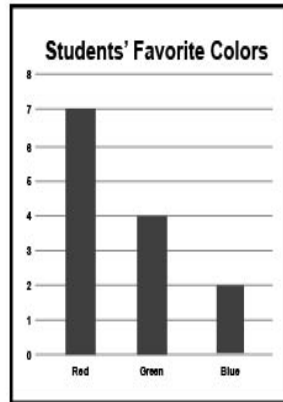|	
Tier 1	Here is a table. The table shows the favorite colors of a group of students. **Students' Favorite Colors**<table><tr><td>Color</td><td>Number of Students</td></tr><tr><td>Red</td><td>4</td></tr><tr><td>Green</td><td>2</td></tr><tr><td>Blue</td><td>7</td></tr></table> Which bar graph shows the data in the table? A. (Audio: here is a bar graph. The graph has three categories; red, green and blue. Red equals two, green equals four, and blue equals seven.)

B.

(Audio: here is a bar graph. The graph has three categories; red, green and blue. Red equals seven, green equals four, and blue equals two.)

C.
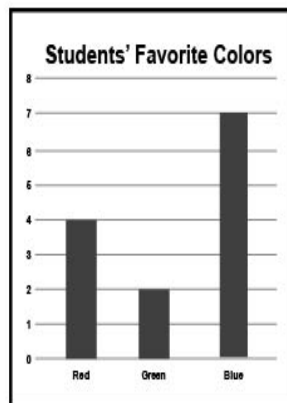
(Audio: here is a bar graph. The graph has three categories; red, green and blue. Red equals four, green equals two, and blue equals seven.)
KEY

Updated: 07/19

Reporting Category	Geometry and Measurement, Data Analysis, and Statistics
Content Connector	**MA.6.DS.4.a.1:** Select a statement that matches mean, mode, and spread of data for 1 measure of central tendency for a given data set.
IAS Standard	**MA.6.DS.4:** Summarize numerical data sets in relation to their context in multiple ways, such as: report the number of observations; describe the nature of the attribute under investigation, including how it was measured and its units of measurement; determine quantitative measures of center (mean and/or median) and spread (range and interquartile range), as well as describe any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered; and relate the choice of measures of center and spread to the shape of the data distribution and the context in which the data were gathered.
Content Limits	Only a minimum of 5 data points and a maximum of 10 should be used. Whole numbers up to 20 should be used. Data set is ordered.
Allowable Stimulus Material	sets of data; bar graphs or line plots
Context	Context allowable
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	mean, mode, central tendency, spread, skew
Cognitive Complexity	4
Evidence Statements	
Evidence Statements	**Tier 1** Student can match data to a statement about mode.
	Tier 2 Student can match data to a statement about the mean.
	Tier 3 Student can match data to a statement about the central tendency.

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 dataset. 8, 8, 9, 10, 11 What is the mode of the dataset? **A. 8** B. 9 C. 11

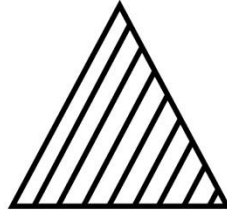| Reporting Category	Geometry and Measurement, Data Analysis, and Statistics
Content Connector	**MA.6.GM.1.a.1:** Convert between English and metric measurement systems.
IAS Standard	**MA.6.GM.1:** Convert between measurement systems (English to metric and metric to English) given conversion factors and use these conversions in solving real-world problems.
Content Limits	Formula must be provided. Amount being measured should not be more than 10 "units" in English. Amount being measured should not be more than 100 "units" in metric.
Allowable Stimulus Material	N/A
Context	Context allowable
Recommended Response Mechanisms	Multiple Choice (MC) Equation Response (EQ)
Construct-Relevant Vocabulary	measurement, convert, length, volume, inches, feet, yards, miles, millimeters, centimeters, meters, kilometers, cups, pints, quarts, gallons, milliliters, liters
Cognitive Complexity	5
Evidence Statements	
Evidence Statements	**Tier 1** Student can convert length or volume measurements within the English measurement system.
	Tier 2 Student can convert length or volume measurements within the metric measurement system.
	Tier 3 Student can convert length or volume measurements between the English and metric measurement system.

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	calculator
Sample Item	

Tier 2	There are 10 millimeters in 1 centimeter.
	
	How many millimeters are there in 2 centimeters?
	
	    A. 10 millimeters
	    B. 20 millimeters
	    C. 30 millimeters

Reporting Category	Geometry and Measurement, Data Analysis, and Statistics
Content Connector	**MA.6.GM.2.a.1:** Given a real-world situation, use the sum of the interior angles of a triangle which totals 180 degrees.
IAS Standard	**MA.6.GM.2:** Know that the sum of the interior angles of any triangle is 180° and that the sum of the interior angles of any quadrilateral is 360°. Use this information to solve real-world and mathematical problems.
Content Limits	Multiples of 10 should be used only for given angles. For Tier 3, provide that total number of degrees add up to 180.
Allowable Stimulus Material	images of triangles
Context	Context required
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	triangle, angle, degrees, acute, obtuse, right angle
Cognitive Complexity	5
Evidence Statements	
Evidence Statements	**Tier 1** Student can identify a right triangle.
	Tier 2 Student can identify an acute or obtuse triangle.
	Tier 3 Student can find a missing angle of a triangle.
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	calculator

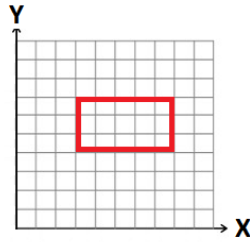| Sample Item	

Tier 2	Emma plants a garden. The garden looks like a triangle.
	
	What type of triangle is Emma's garden shaped like?
	
	    A. right triangle
	    B. acute triangle
	    C. obtuse triangle

Reporting Category	Geometry and Measurement, Data Analysis, and Statistics
Content Connector	**MA.6.GM.3.a.1:** Given a polygon in a coordinate plane, find the length of each side.
IAS Standard	**MA.6.GM.3:** Draw polygons in the coordinate plane given coordinates for the vertices; use coordinates to find the length of a side joining points with the same first coordinate or the same second coordinate; apply these techniques to solve real-world and other mathematical problems.
Content Limits	Shapes limited to; triangles, quadrilaterals, pentagons. Only quadrant I of the coordinate plane. Whole numbers only.
Allowable Stimulus Material	visual representation
Context	No context
Recommended Response Mechanisms	Multiple Choice (MC) Equation Response (EQ)
Construct-Relevant Vocabulary	polygon, coordinate plane, side, length, triangle, rectangle, quadrilateral, pentagon
Cognitive Complexity	3
Evidence Statements
Evidence Statements	**Tier 1** Student can identify a polygon on a coordinate plane.
	Tier 2 Student can find the length of one horizontal or vertical side of a polygon on the coordinate plane.
	Tier 3 Student can find and add all side lengths of a rectangle on a coordinate plane.
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	calculator

Sample Item	

Tier 1	Here is a shape on a graph.
	
	What is the shape?
	
	   A. square
	   B. rectangle
	   C. triangle

Reporting Category	Geometry and Measurement, Data Analysis, and Statistics
Content Connector	**MA.6.GM.4.a.1:** Find area of quadrilaterals.
IAS Standard	**MA.6.GM.4:** Find the area of complex shapes composed of polygons by composing or decomposing into simple shapes; apply this technique to solve real-world and other mathematical problems.
Content Limits	Only relevant dimensions are provided. Tier 2 is limited to rectangles. Tier 3 is limited to squares and parallelograms. Formula for finding area is provided.
Allowable Stimulus Material	area formula
Context	No context
Recommended Response Mechanisms	Multiple Choice (MC) Equation Response (EQ)
Construct-Relevant Vocabulary	area, formula, quadrilateral, parallelogram, rectangle, square, side, length, width, base
Cognitive Complexity	5
Evidence Statements	
Evidence Statements	**Tier 1** Student can identify a quadrilateral.
	Tier 2 Student can find the area of a rectangle.
	Tier 3 Student can find the area of a square and/or parallelogram.
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	calculator

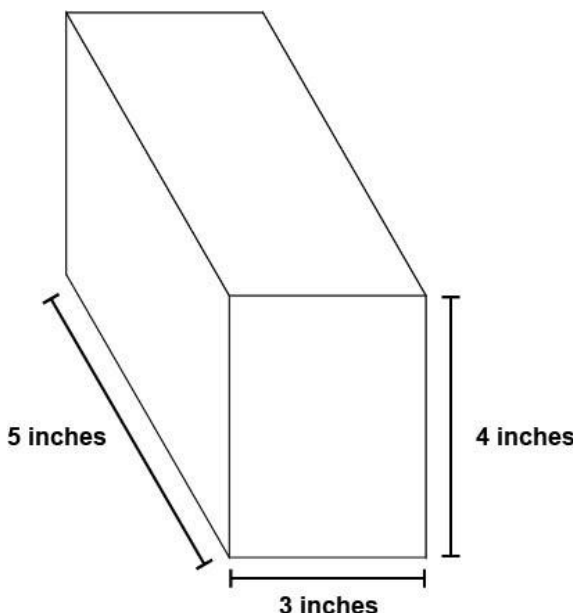|	Sample Item
Tier 3	Here is a square. 9 feet 9 feet The formula for the area of a square is side multiplied by side. $$A = s \times s$$ What is the area of the square? A. 18 square feet B. 36 square feet **C. 81 square feet**

Reporting Category	Geometry and Measurement, Data Analysis, and Statistics
Content Connector	**MA.6.GM.5.a.1:** Find the volume of right rectangular prisms.
IAS Standard	**MA.6.GM.5:** Find the volume of a right rectangular prism with fractional edge lengths using unit cubes of the appropriate unit fraction edge lengths (e.g., using technology or concrete materials) and show that the volume is the same as would be found by multiplying the edge lengths of the prism. Apply the formulas $V = lwh$ and $V = Bh$ to find volumes of right rectangular prisms with fractional edge lengths to solve real-world and other mathematical problems.
Content Limits	Formula for volume must be provided. Whole numbers up to 10 are allowed. Units must be provided in question and answer.
Allowable Stimulus Material	images of rectangular prisms; volume formula
Context	No context
Recommended Response Mechanisms	Multiple Choice (MC) Equation Response (EQ)
Construct-Relevant Vocabulary	volume, right rectangular prism, length, width, height, base
Cognitive Complexity	5
Evidence Statements	

Evidence Statements	**Tier 1** Student will be able to identify a right rectangular prism.
	Tier 2 Student can identify a completed formula for the volume of the right rectangular prism.
	Tier 3 Student can find the volume of the right rectangular prism.

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	calculator

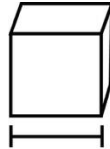| Sample Item	

Tier 3	Here is a right rectangular prism.
	
	The formula for the volume of a right rectangular prism is length multiplied by width, multiplied by height.
	
	$$V = l \times w \times h$$
	
	What is the volume of the right rectangular prism?
	
	    A. 12 inches cubed
	    B. 60 inches cubed
	    C. 75 inches cubed

Reporting Category	Geometry and Measurement, Data Analysis, and Statistics
Content Connector	**MA.6.GM.5.a.2:** Understand the concept of volume and how it fills space.
IAS Standard	**MA.6.GM.5:** Find the volume of a right rectangular prism with fractional edge lengths using unit cubes of the appropriate unit fraction edge lengths (e.g., using technology or concrete materials) and show that the volume is the same as would be found by multiplying the edge lengths of the prism. Apply the formulas $V = lwh$ and $V = Bh$ to find volumes of right rectangular prisms with fractional edge lengths to solve real-world and other mathematical problems.
Content Limits	Limited to whole numbers less than 10. Units must be provided in question and answer.
Allowable Stimulus Material	images of geometric figures
Context	Context allowable
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	volume, space, dimension, increase, decrease
Cognitive Complexity	4
Evidence Statements	
Evidence Statements	**Tier 1** Student can recognize the term volume.
	Tier 2 Student can identify which shape has more volume.
	Tier 3 Student can identify the general effect that increasing or decreasing one dimension has on volume.
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

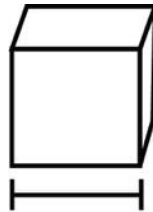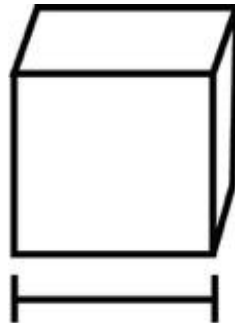| Sample Item	
Tier 2	Which shape has the biggest volume? A. **2 in.** (Audio: a cube with side lengths of two inches) B. **3 in.** (Audio: a cube with side lengths of three inches) C. **4 in.** **(Audio: a cube with side lengths of four inches)** **KEY**

Reporting Category	Geometry and Measurement, Data Analysis, and Statistics
Content Connector	**MA.6.GM.6.a.1:** Identify the net of a three-dimensional shape.
IAS Standard	**MA.6.GM.6:** Construct right prisms from nets and use the nets to compute the surface area of prisms; apply this technique to solve real-world and other mathematical problems.
Content Limits	Tier 2 is limited to cubes. Tier 3 is limited to cylinder and right rectangular prisms.
Allowable Stimulus Material	images of geometric figures
Context	No context
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	net, cubes, rectangular prisms, cylinder
Cognitive Complexity	4
Evidence Statements	
Evidence Statements	**Tier 1** Student can identify a three-dimensional shape.
	Tier 2 Student can identify the net of a cube.
	Tier 3 Student can identify the net of a rectangular prism or cylinder.
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

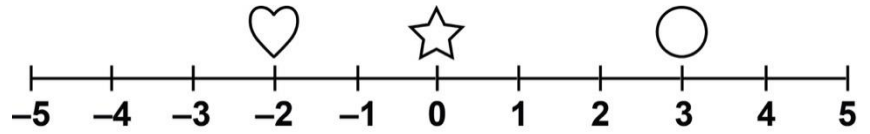| Sample Item	
Tier 1	Which is a three-dimensional shape? A. (Audio: a line) B. (Audio: a square) **C.** **(Audio: a rectangular prism)** **KEY**

Reporting Category	Number Sense
Content Connector	**MA.6.NS.1.a.1:** Understand the difference between a positive or negative number.
IAS Standard	**MA.6.NS.1:** Understand that positive and negative numbers are used to describe quantities having opposite directions or values (e.g., temperature above/below zero, elevation above/below sea level, credits/debits, positive/negative electric charge). Use positive and negative numbers to represent and compare quantities in real-world contexts, explaining the meaning of 0 in each situation.
Content Limits	Limited to integers.
Allowable Stimulus Material	number lines
Context	Context required
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	positive, negative, opposite
Cognitive Complexity	4
Evidence Statements	
Evidence Statements	**Tier 1** Student can compare the difference between negative and positive temperature.
	Tier 2 Student can compare the difference between negative and positive elevation.
	Tier 3 Student can compare the difference in negative and positive money.
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	Susan has $5.00. Anthony owes $5.00.
	
	What is the difference between how much money Susan and Anthony have?
	
	   A. $0.00
	   B. $5.00
	   C. $10.00

Reporting Category	Number Sense
Content Connector	**MA.6.NS.2.a.1:** Locate positive and negative numbers on a number line.
IAS Standard	**MA.6.NS.2:** Understand the integer number system. Recognize opposite signs of numbers as indicating locations on opposite sides of 0 on the number line; recognize that the opposite of the opposite of a number is the number itself (e.g., –(–3) = 3) and that 0 is its own opposite.
Content Limits	Number lines have a range of –5 to 5. Limited to integers.
Allowable Stimulus Material	number line
Context	No context
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	positive, negative, opposite
Cognitive Complexity	3
Evidence Statements	
Evidence Statements	**Tier 1** Student can identify a positive number on a number line.
	Tier 2 Student can identify a negative number on a number line.
	Tier 3 Student can identify the opposite of the number given.
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

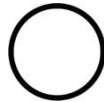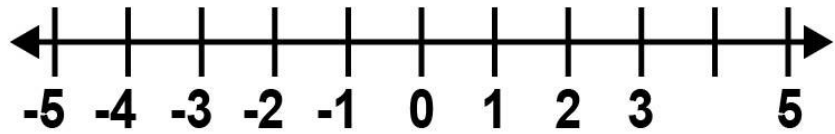| Sample Item	
Tier 2	Here is a number line. (number line showing −5 to 5, with a heart at −2, a star at 0, and a circle at 3) (audio: This number line begins at negative five and ends at five. It reads negative five, negative four, negative three, heart, negative one, star, one, two, circle, four, five.) Which shape represents −2? **A.** (heart) **(Audio: the heart)** **KEY** **B.** (star) (Audio: the star) **C.** (circle) (Audio: the circle)

Reporting Category	Number Sense
Content Connector	**MA.6.NS.3.a.1:** Plot positive and negative integers on a number line.
IAS Standard	**MA.6.NS.3:** Compare and order rational numbers and plot them on a number line. Write, interpret, and explain statements of order for rational numbers in real-world contexts.
Content Limits	Number lines have a range of –5 to 5.
Allowable Stimulus Material	number line
Context	No context required
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	positive, negative, integer
Cognitive Complexity	3
Evidence Statements	
Evidence Statements	**Tier 1** Student can identify one positive missing number.
	Tier 2 Student can identify one negative missing number.
	Tier 3 Student can identify one positive number and one negative 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 1	Here is a number line. ![number line from -5 to 5 with missing value between 3 and 5] -5 -4 -3 -2 -1 0 1 2 3 5 (audio: the number begins at negative five and ends at five. It reads negative five, negative four, negative three, negative two, negative one, zero, one, two, three, a number, five) What is the missing number? A. –4 B. 6 **C. 4**

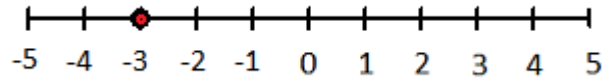|	
Reporting Category	Number Sense
Content Connector	**MA.6.NS.3.a.2:** Compare and order a given set of integers.
IAS Standard	**MA.6.NS.3:** Compare and order rational numbers and plot them on a number line. Write, interpret, and explain statements of order for rational numbers in real-world contexts.
Content Limits	Number lines have a range of –5 to 5.
Allowable Stimulus Material	number lines
Context	No context required
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	positive, negative, integers, compare, order
Cognitive Complexity	4
Evidence Statements	
Evidence Statements	**Tier 1** Student can compare and order 3 positive numbers.
	Tier 2 Student can compare and order 2 positive numbers and 1 negative number.
	Tier 3 Student can compare and order 1 positive number and 2 negative 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 2	Here are three numbers.
	
	1, –3, 2
	
	What are the numbers in order from least to greatest?
	
	  A. 1, –3, 2
	  B. –3, 1, 2
	  C. 1, 2, –3

Reporting Category	Number Sense
Content Connector	**MA.6.NS.4.a.1:** Find the absolute value of a number using the distance from zero on a number line.
IAS Standard	**MA.6.NS.4:** Understand that the absolute value of a number is the distance from zero on a number line. Find the absolute value of real numbers and know that the distance between two numbers on the number line is the absolute value of their difference. Interpret absolute value as magnitude for a positive or negative quantity in a real-world situation.
Content Limits	Number line range from –5 to 5. Limited to integers.
Allowable Stimulus Material	number lines
Context	No context
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	absolute value, positive, negative, distance
Cognitive Complexity	3
Evidence Statements	
Evidence Statements	**Tier 1** Student can identify the absolute value of a positive number.
	Tier 2 Student can identify the absolute value of a negative number.
	Tier 3 Student can identify the absolute value of the distance between two 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 2	Here is the number –3 on a number line.
	
	![number line from -5 to 5 with point at -3]
	
	What is the absolute value of –3?
	
	   A. –3
	   B. 0
	   C. 3

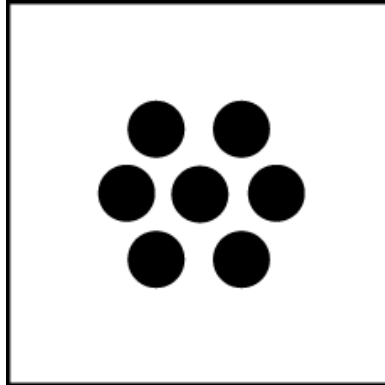| Reporting Category	Number Sense
Content Connector	**MA.6.NS.5.a.1:** Identify the decimal and percent equivalents for halves, fourths, fifths, and tenths.
IAS Standard	**MA.6.NS.5:** Know commonly used fractions (halves, thirds, fourths, fifths, eighths, tenths) and their decimal and percent equivalents. Convert between any two representations (fractions, decimals, percent's) of positive rational numbers without the use of a calculator.
Content Limits	Tier 1 limited to unit fractions. Tier 2 is limited to halves and fourths.
Allowable Stimulus Material	N/A
Context	No context
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	equivalents, decimals, fractions, percent
Cognitive Complexity	4
Evidence Statements	
Evidence Statements	**Tier 1** Student can identify a number as a decimal, percent, or unit fraction.
	Tier 2 Student can identify a decimal or percent equivalent to a given fraction in halves or fourths.
	Tier 3 Student can identify a decimal or percent equivalent to a given fraction in fifths or 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 2	What decimal is equivalent to $\frac{1}{4}$? A. 0.1 **B. 0.25** C. 0.4

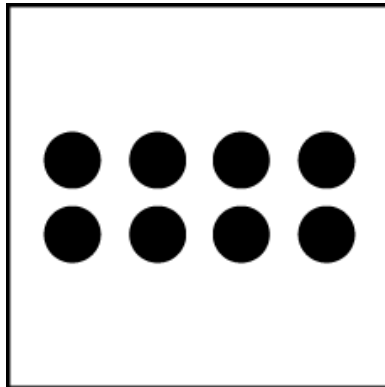| Reporting Category	Number Sense
Content Connector	**MA.6.NS.6.a.1:** Identify a prime and composite number.
IAS Standard	**MA.6.NS.6:** Identify and explain prime and composite numbers.
Content Limits	Tier 1 is limited to prime numbers from 1–10. Tier 2 is limited to composite numbers from 1–20.
Allowable Stimulus Material	N/A
Context	Context allowable
Recommended Response Mechanisms	Multiple Choice (MC) Multiple Select (MS)
Construct-Relevant Vocabulary	prime, composite
Cognitive Complexity	4
Evidence Statements	
Evidence Statements	**Tier 1** Student can identify prime numbers.
	Tier 2 Student can identify composite numbers that are even.
	Tier 3 Student can identify composite numbers that are even or odd.
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 number is a prime number? **A.** 7 B. 8 C. 9

Reporting Category	Number Sense
Content Connector	**MA.6.NS.7.a.1:** Find the least common multiple.
IAS Standard	**MA.6.NS.7:** Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two whole numbers less than or equal to 12. Use the distributive property to express a sum of two whole numbers from 1 to 100, with a common factor as a multiple of a sum of two whole numbers with no common factor.
Content Limits	Tier 1 is limited to natural numbers 1–5. Tier 2 is limited to natural numbers 1–10. Tier 3 is limited to natural numbers 5–12.
Allowable Stimulus Material	number line
Context	No context
Recommended Response Mechanisms	Multiple Choice (MC) Equation Response (EQ)
Construct-Relevant Vocabulary	least common multiple
Cognitive Complexity	5
Evidence Statements	
Evidence Statements	**Tier 1** Student can find the least common multiple for two numbers between 1 and 5.
	Tier 2 Student can find the least common multiple for two numbers between 1 and 10.
	Tier 3 Student can find the least common multiple for two numbers between 5 and 12.
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	calculator

Sample Item	
Tier 3	What is the least common multiple of 6 and 10? A. 16 **B. 30** C. 60

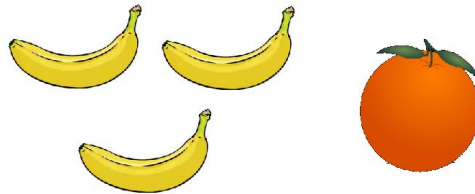| Reporting Category	Number Sense
Content Connector	**MA.6.NS.7.a.2:** Find the greatest common factor of two whole numbers.
IAS Standard	**MA.6.NS.7:** Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two whole numbers less than or equal to 12. Use the distributive property to express a sum of two whole numbers from 1 to 100, with a common factor as a multiple of a sum of two whole numbers with no common factor.
Content Limits	Tier 1 is limited to natural numbers 1–10. Tier 2 is limited to natural numbers 1–20. Tier 3 is limited to natural numbers 1–30.
Allowable Stimulus Material	multiplication chart
Context	No context
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	greatest common factor, factor
Cognitive Complexity	5
Evidence Statements	
Evidence Statements	**Tier 1** Student can find list the factors of a number between 1 and 10.
	Tier 2 Student can find the greatest common factor of two numbers between 1 and 20.
	Tier 3 Student can find the greatest common factor of two numbers between 1 and 30.

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	calculator
Sample Item	
Tier 3	What is the greatest common factor of 15 and 30? A. 5 **B. 15** C. 30

Reporting Category	Number Sense
Content Connector	**MA.6.NS.8.a.1:** Describe the ratio relationship between two quantities.
IAS Standard	**MA.6.NS.8:** Interpret, model, and use ratios to show the relative sizes of two quantities. Describe how a ratio shows the relationship between two quantities. Use the following notations: $\frac{a}{b}$, a to b, a:b.
Content Limits	Limit ratios to *a* to *b* or *a*:*b*. Limited to natural numbers 1–12.
Allowable Stimulus Material	relevant images of objects
Context	Context required
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	ratio, interpret, model, quantities
Cognitive Complexity	4
Evidence Statements	
Evidence Statements	**Tier 1** Student can count to identify one missing number in the ratio.
	Tier 2 Student can match a given ratio to a correct model.
	Tier 3 Student can match a given model to the correct ratio.
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	calculator

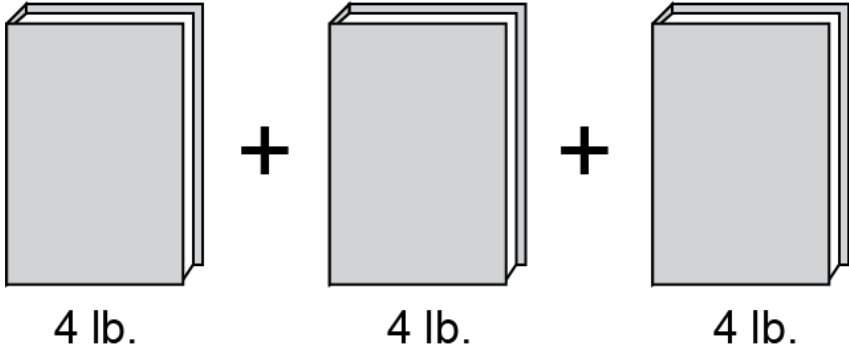| Sample Item	

Tier 3	Megan is buying fruit at the store. Here are the fruits she buys.
	
	What is the ratio of bananas to oranges?
	
	    A. 1:3
	    B. 3:1
	    C. 2:2

Reporting Category	Number Sense
Content Connector	**MA.6.NS.9.a.1:** Understand the concept of a unit rate.
IAS Standard	**MA.6.NS.9:** Understand the concept of a unit rate and use terms related to rate in the context of a ratio relationship.
Content Limits	Limit to natural numbers 1–20.
Allowable Stimulus Material	N/A
Context	Context required
Recommended Response Mechanisms	Multiple Choice (MC) Equation Response (EQ)
Construct-Relevant Vocabulary	unit rate
Cognitive Complexity	5
Evidence Statements	
Evidence Statements	**Tier 1** Student can identify a unit rate.
	Tier 2 Student can compare two unit rates.
	Tier 3 Student can identify a factor to divide a rate by to change it to a unit rate.
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	calculator

Sample Item	
Tier 1	Which of these is a unit rate? A. 10 minutes **B. 15 miles per 1 hour** C. 1 inch squared

Reporting Category	Number Sense
Content Connector	**MA.6.NS.10.a.1:** Solve one-step real-world problems involving unit rates with ratios of whole numbers when given the unit rate (e.g., 3 inches of snow falls per hour, how much in 6 hours).
IAS Standard	**MA.6.NS.10:** Use reasoning involving rates and ratios to model real-world and other mathematical problems (e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations).
Content Limits	Limit to natural numbers 1–20.
Allowable Stimulus Material	N/A
Context	Context required
Recommended Response Mechanisms	Multiple Choice (MC) Equation Response (EQ)
Construct-Relevant Vocabulary	unit rate, ratio
Cognitive Complexity	5
Evidence Statements	
Evidence Statements	**Tier 1** Student can calculate the unit rate with values between 1 and 10.
	Tier 2 Student can calculate the unit rate with values between 5 and 20.
	Tier 3 Student can calculate the unit rate with values between 5 and 30.
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	calculator

Sample Item	
Tier 2	Andrew rides his bike 20 miles in 5 hours. What is Andrew's unit rate of speed? **A. 4 miles per one hour** B. 20 miles per one hour C. 25 miles per one hour

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 are limited to multiplication and division. Content may not exceed any other Grade 6 Content Connectors.
Allowable Stimulus Material	material may not exceed any other Grade 6 Content Connectors
Context	Context required
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	reasonable, sense, solve, persevere
Cognitive Complexity	6
Evidence Statements	
Evidence Statements	**Tier 1** Student can determine if an answer is reasonable.
	Tier 2 Student can calculate and determine a reasonable answer.
	Tier 3 Student can calculate a complex problem involving multiplication and division and explain a reasonable answer.

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	Calculator, 100s chart, 9x9 multiplication table
Sample Item	
Tier 1	Angela carries 3 books to class. Each book weighs 4 pounds. Angela decides that the weight of all her books together is 7 pounds. Bob thinks that the Angela is wrong and the books weigh over 10 pounds. 4 lb. + 4 lb. + 4 lb. What can we say about Angela's answer compared to Bob's answer? A. Angela's answer is more reasonable. **B. Angela's answer is less reasonable.** C. Angela's answer is just as reasonable.

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	Content may not exceed any other Grade 6 Content Connectors.
Allowable Stimulus Material	materials may not exceed any other Grade 6 Content Connectors
Context	Context required
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	reason, quantity, abstract
Cognitive Complexity	6
Evidence Statements	
Evidence Statements	**Tier 1** Student can match an equation that is a representation of the problem.
	Tier 2 Student can match an equation that is a representation of the problem.
	Tier 3 Student can identify an equation that is a representation of the problem.

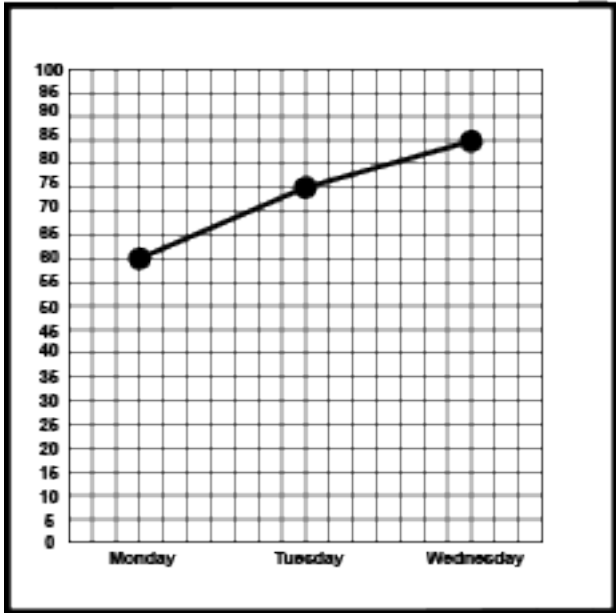| Accessibility and Accommodation Considerations	
Stimulus Graphic Limitations	Stimulus graphics will be limited to clear photos, illustrations, diagrams, tables, and charts that directly relate to the passage topic. Information contained within stimulus graphics is ineligible for assessment unless specifically prescribed by Content Connector and/or evidence statements.
Linguistic Complexity	To be determined after IDOE review
Reference Tools	Calculator,100s chart; 9x9 multiplication table
Sample Item	

Tier 2	It is 75°F outside. The temperature goes down by 20°F.
	
	Which equation can be used to find x, the temperature it is now?
	
	   A. $75 + 20 = x$
	   B. $75 - 20 = x$
	   C. $75 + x = 20$
	   D. $75 \div 20 = x$

Updated: 07/19

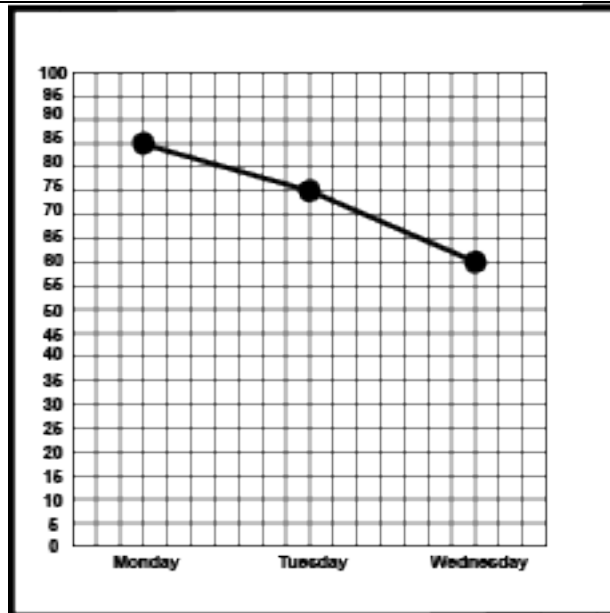| Reporting Category	Process Standards (aggregate reporting only)
Content Connector / IAS Process Standard	**PS.3:** Construct viable arguments and critique the reasoning of others. Mathematically proficient students understand and use stated assumptions, definitions, and previously established results 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	Limit fractions to halves, fourths, fifths and tenths. Limit to two operations for Tier 1 and Tier 2. Limit to three operations for Tier 3. Content may not exceed any other Grade 6 Content Connectors.
Allowable Stimulus Material	materials may not exceed any other Grade 6 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 match the mistake made.	
	Tier 2	
	Student can identify the mistake made.	
	Tier 3	
	Student can identify and correct the mistake made.	
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	Calculator,100s chart; 9x9 multiplication table	
Sample Item		
Tier 3	Morgan sells lemonade for $2 per cup. She says that if she sells 15 cups, she will make $17. Is Morgan correct? A. Yes, because fifteen plus two is seventeen. **B. No, she added fifteen and two, but she should have multiplied fifteen and two.** C. No, she multiplied fifteen and two, but she should have added fifteen and two.	

Reporting Category	Process Standards (aggregate reporting only)
Content Connector / IAS 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	Tier 1 limit to bar and pictographs only. Tier 2 limit to line graphs. Content may not exceed any other Grade 6 Content Connectors.
Allowable Stimulus Material	materials may not exceed any other Grade 6 Content Connectors
Context	Context allowable
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	model
Cognitive Complexity	6
Evidence Statements	

Evidence Statements	**Tier 1** Student can match a visual to a mathematical scenario.
	Tier 2 Student can select best visual representation of data.
	Tier 3 Student can match the mathematical scenario to a 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	Calculator,100s chart; 9x9 multiplication table

Sample Item	
Tier 1	Ryan keeps track of the temperature for three days. Here are the results in a table.

Day	Temperature (°F)
Monday	85
Tuesday	75
Wednesday	60

Which line graph matches the table?

A.

(audio: Here is a line graph. It has the labels "Monday," "Tuesday," and "Wednesday." The line begins at sixty, then goes to seventy-five, and ends at eighty-five.)

B.

(audio: Here is a line graph. It has the labels "Monday," "Tuesday," and "Wednesday." The line begins at eighty-five, then goes to seventy-five, and ends at sixty.)
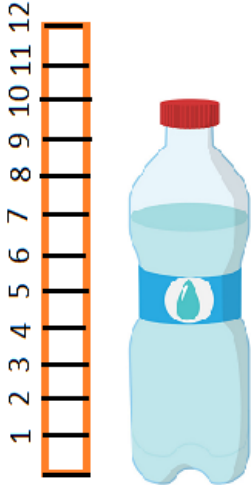
KEY

C.

(audio: Here is a line graph. It has the labels "Monday," "Tuesday," and "Wednesday." The line begins at eighty-five and goes straight across at eighty-five.)

Reporting Category	Process Standards (aggregate reporting only)
Content Connector / IAS Standard	**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	Limit tools to rulers, measuring cups, thermometer, and scale. Content may not exceed any other Grade 3 Content Connectors.
Allowable Stimulus Material	materials may not exceed any other Grade 6 Content Connectors
Context	Context required
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	appropriate, tools, strategy
Cognitive Complexity	6
Evidence Statements	
Evidence Statements	**Tier 1** Student can determine if the appropriate tool is used.
	Tier 2 Student can determine an appropriate tool to use.
	Tier 3 Student can determine an appropriate tool to use.

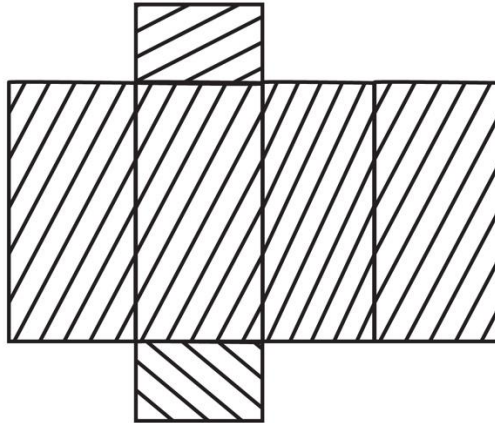| Accessibility and Accommodation Considerations	
Stimulus Graphic Limitations	Stimulus graphics will be limited to clear photos, illustrations, diagrams, tables, and charts that directly relate to the passage topic. Information contained within stimulus graphics is ineligible for assessment unless specifically prescribed by Content Connector and/or evidence statements.
Linguistic Complexity	To be determined after IDOE review
Reference Tools	Calculator,100s chart; 9x9 multiplication table
Sample Item	

Tier 3	Rachel wants to measure how long her finger is.
	
	Which tool is the best tool for Rachel to use?
	
	   A. ruler
	   B. thermometer
	   C. weighing scale

Reporting Category	Process Standards (aggregate reporting only)
Content Connector / IAS 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 to multiplication and division. Content may not exceed any other Grade 6 Content Connectors.
Allowable Stimulus Material	materials may not exceed any other Grade 6 Content Connectors
Context	Context allowable
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	precise
Cognitive Complexity	6
Evidence Statements	
Evidence Statements	**Tier 1** Students can determine if the problem was answered accurately.
	Tier 2 Students can determine where the mistake was made in the problem.
	Tier 3 Students can determine where the mistake was make in the problem.

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	Calculator,100s chart; 9x9 multiplication table
Sample Item	
Tier 1	Jack measures his water bottle with a ruler. Jack says his water bottle is 7 inches tall. Is Jack correct? A. Yes, the bottle is 7 inches tall. **B. No, the bottle is 10 inches tall.** C. No, the bottle is 12 inches tall.

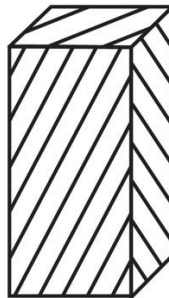| Reporting Category	Process Standards (aggregate reporting only)
Content Connector / IAS Standard	**PS.7:** Look for and make use of structure. Mathematically proficient students look closely to discern a pattern or structure. They step back for an overview and shift perspective. They recognize and 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	Limit to right rectangular prism, pyramid, cylinder, and cubes. Content may not exceed any other Grade 6 Content Connectors.
Allowable Stimulus Material	materials may not exceed any other Grade 6 Content Connectors
Context	Context allowable
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	pattern, net
Cognitive Complexity	6
Evidence Statements	
Evidence Statements	**Tier 1** Student can classify the shape based on the net.
	Tier 2 Student can determine if the shapes are organized based on the net.
	Tier 3 Student can determine and organize the shapes based on the net.
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	Calculator, 100s chart; 9x9 multiplication table

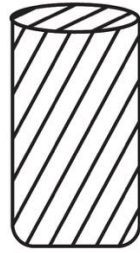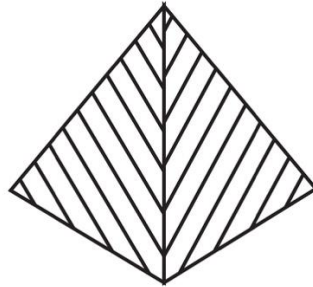| Sample Item	
Tier 1	Here is the net of a shape. Which shape has this type of net? A. **rectangular prism** **(audio: a rectangular prism)** **KEY**

B. **cylinder**
(audio: a cylinder)

C. **pyramid**
(audio: a pyramid)

Reporting Category	Process Standards (aggregate reporting only)
Content Connector / IAS 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 integers from –10 to 10. Content may not exceed any other Grade 6 Content Connectors.
Allowable Stimulus Material	materials may not exceed any other Grade 3 Content Connectors
Context	No context
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	pattern, repeat, reason
Cognitive Complexity	6
Evidence Statements	
Evidence Statements	**Tier 1** Student can identify if a pattern exists.
	Tier 2 Student can identify and complete the pattern for one missing item.
	Tier 3 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 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	Calculator,100s chart; 9x9 multiplication table
Sample Item	

Tier 2	Here is a pattern.
	
	1, 3, ☐, 7, 9
	
	What number is missing from the pattern?
	
	   A. 4
	   B. 5
	   C. 6