


Reporting Category	Algebraic Thinking and Data Analysis
Content Connector	MA.4.AT.1.a.1: Solve one- or two-step word problems requiring addition and/or subtraction with sums up to 500.
IAS Standard	MA.4.AT.1: Solve real-world problems involving addition and subtraction of multi-digit whole numbers (e.g., by using drawings and equations with a symbol for the unknown number to represent the problem).
Content Limits	No sums greater than 100. No addends over 50. No differences greater than 30.
Allowable Stimulus Material	N/A
Context	Context required
Recommended Response Mechanisms	Multiple Choice (MC) Equation Response (ER)
Construct-Relevant Vocabulary	difference, in all, all together, “how much more/less”
Cognitive Complexity	4
Evidence Statements	
Evidence Statements	Tier 1 Given a one-step word problem with visual stimulus and no regrouping, student will add or subtract.
	Tier 2 Given a one-step word problem and no regrouping, student will add or subtract.
	Tier 3 Given a two-step word problem, students will add and/or subtract.
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	100s chart; 9x9 multiplication table

Sample Item	
Tier 2	<p>Jennifer has \$25.00. She spends \$15.00 at the store.</p> <p>How much money does Jennifer have now?</p> <p>A. \$10.00 B. \$20.00 C. \$40.00</p>

Reporting Category	Algebraic Thinking and Data Analysis
Content Connector	MA.4.AT.2.a.1: Recognize and apply the relationship between addition and multiplication.
IAS Standard	MA.4.AT.2: Recognize and apply the relationships between addition and multiplication, between subtraction and division, and the inverse relationship between multiplication and division to solve real-world and other mathematical problems.
Content Limits	Limit multiplication factors to 2, 5, or 10 with multipliers up to 10.
Allowable Stimulus Material	N/A
Context	No context
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	identify, addition, multiplication, same, equal
Cognitive Complexity	4
Evidence Statements	
Evidence Statements	<p>Tier 1</p> <p>Given grouped addition visual stimulus, student will match the multiplication fact with factor of 2.</p>
	<p>Tier 2</p> <p>Given grouped addition visual stimulus, student will match the multiplication fact with factor of 10.</p>
	<p>Tier 3</p> <p>Given grouped addition visual stimulus, student will match the multiplication fact with factor of 5.</p>

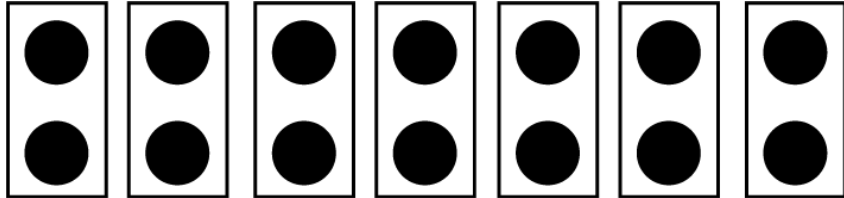
Accessibility and Accommodation Considerations	
Stimulus Graphic Limitations	Stimulus graphics will be limited to clear photos, illustrations, diagrams, tables, and charts that directly relate to the passage topic. Information contained within stimulus graphics is ineligible for assessment unless specifically prescribed by Content Connector and/or evidence statements
Linguistic Complexity	To be determined after IDOE review
Reference Tools	100s chart; 9x9 multiplication table
Sample Item	
Tier 1	<p>Here is a model of an addition statement.</p> <p></p> <p>Which multiplication fact does this model represent?</p> <p>A. $4 + 2 = 6$</p> <p>B. $4 \times 2 = 8$</p> <p>C. $2 \times 6 = 8$</p>

Reporting Category	Algebraic Thinking and Data Analysis
Content Connector	MA.4.AT.3.a.1: Represent verbal statements of multiplicative comparisons as multiplication equations.
IAS Standard	MA.4.AT.3: Interpret a multiplication equation as a comparison (e.g., interpret $35 = 5 \times 7$ as a statement that 35 is 5 times as many as 7, and 7 times as many as 5). Represent verbal statements of multiplicative comparisons as multiplication equations.
Content Limits	Limit multiplication factors to 2, 5, or 10 with multipliers up to 10.
Allowable Stimulus Material	N/A
Context	Context allowable
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	multiplication, comparison, equation, “times as many as”
Cognitive Complexity	4
Evidence Statements	
Evidence Statements	Tier 1 Given a multiplication comparison with factor of 2, student will choose the equation that matches.
	Tier 2 Given a multiplication comparison with factor of 10, student will choose the equation that matches.
	Tier 3 Given a multiplication comparison with factor of 5, student will choose the equation that matches.
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	100s chart; 9x9 multiplication table

Sample Item

Tier 1

The number 14 is 7 times as large as 2.



Which equation matches this comparison?

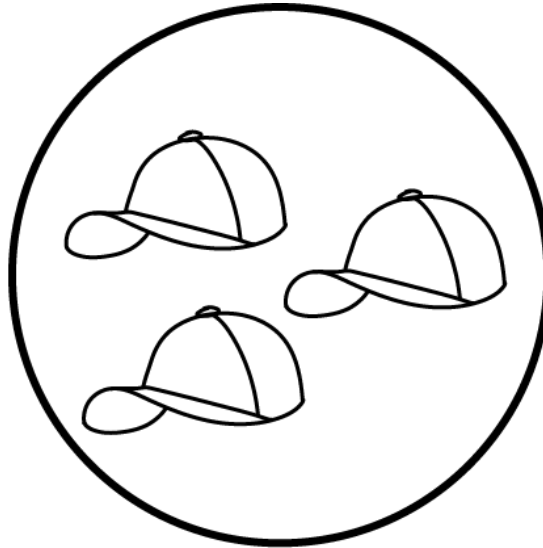
- A. $14 = 7 + 2$
- B. $14 + 7 = 2$
- C. $14 = 2 \times 7$

Reporting Category	Algebraic Thinking and Data Analysis
Content Connector	MA.4.AT.4.a.1: Solve a real-world problem involving multiplicative comparison with product unknown.
IAS Standard	MA.4.AT.4: Solve real-world problems with whole numbers involving multiplicative comparison (e.g., by using drawings and equations with a symbol for the unknown number to represent the problem), distinguishing multiplicative comparison from additive comparison. [In grade 4, division problems should not include a remainder.]
Content Limits	Limit multiplication facts to factors of 2, 5, or 10 with a multiplier up to 10.
Allowable Stimulus Material	N/A
Context	context required
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	multiplication, comparison, “times as many as”
Cognitive Complexity	4
Evidence Statements	
Evidence Statements	Tier 1 Given a multiplication comparison with factor of 2, student will find the product of the equation.
	Tier 2 Given a multiplication comparison with factor of 10, student will find the product of the equation.
	Tier 3 Given a multiplication comparison with factor of 5, student will find the product of the equation.
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	100s chart; 9x9 multiplication table

Sample Item

Tier 1

Johnny has 3 hats. Meg has 2 times as many hats as Johnny.



$\times 2$

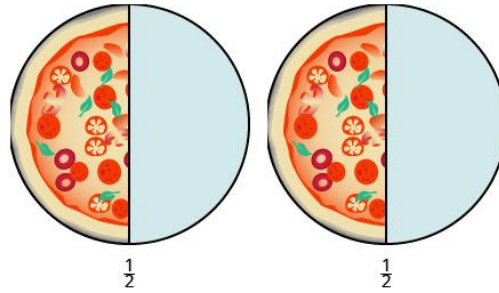
How many hats does Meg have?

- A. 1
- B. 5
- C. 6**

Reporting Category	Algebraic Thinking and Data Analysis
Content Connector	MA.4.AT.5.a.1: Solve a real-world problem using a model to represent the concept of adding and subtracting fractions (e.g., $\frac{3}{4} = \frac{1}{4} + \frac{1}{4} + \frac{1}{4}$).
IAS Standard	MA.4.AT.5: Solve real-world problems involving addition and subtraction of fractions referring to the same whole and having common denominators (e.g., by using visual fraction models and equations to represent the problem).
Content Limits	Limit to fractions with common denominators. No fractions that need reducing. Fractions less than one whole.
Allowable Stimulus Material	fraction models
Context	Context required
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	fraction, addition, subtraction, in all, all together, difference, how much more
Cognitive Complexity	4
Evidence Statements	
Evidence Statements	Tier 1 Given two-unit fractions (limit to halves), the student will solve real-world problems (limited to addition).
	Tier 2 Given two fractions, (limit to halves and fourths), the student will solve real-world problems.
	Tier 3 Given fractions, the student will solve real-world problems.
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	100s chart; 9x9 multiplication table

Sample Item

Max eats $\frac{1}{2}$ of a pizza. Mia also eats $\frac{1}{2}$ of a pizza.



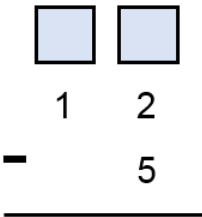
Tier 1

How much pizza did Max and Mia eat in all?

- A. $\frac{0}{2}$
- B. $\frac{1}{2}$
- C. $\frac{2}{2}$

Reporting Category	Algebraic Thinking and Data Analysis
Content Connector	MA.4.AT.6.a.1: Understand that a variable in an equation is representing a number.
IAS Standard	MA.4.AT.6: Understand that an equation, such as $y = 3x + 5$, is a rule to describe a relationship between two variables and can be used to find a second number when a first number is given. Generate a number pattern that follows a given rule.
Content Limits	Limit to one variable. Limit equation to addition and subtraction. Limit to single-digit numbers.
Allowable Stimulus Material	equation model
Context	No context
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	variable, equation
Cognitive Complexity	4
Evidence Statements	
Evidence Statements	Tier 1 Given a visual stimulus for an addition equation, the student will find the value of the variable.
	Tier 2 Given a visual stimulus for a subtraction equation, the student will find the value of the variable.
	Tier 3 Given an addition or subtraction equation, the student will find the value of the variable.
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	100s chart; 9x9 multiplication table

Sample Item	
Tier 3	<p>Here is an equation.</p> $10 - x = 2$ <p>What is x equal to in this equation?</p> <p>A. 12 B. 5 C. 8</p>

Reporting Category	Computation
Content Connector	MA.4.C.1.a.1: Add and subtract multi-digit whole numbers with sums up to 500.
IAS Standard	MA.4.C.1: Add and subtract multi-digit whole numbers fluently using a standard algorithmic approach.
Content Limits	Limit to whole numbers below 100. No regrouping.
Allowable Stimulus Material	Number line For Tier 3, two empty squares (located above ones and tens place) for borrowing and carrying numbers. For example: 
Context	no context
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	add, subtract
Cognitive Complexity	4
Evidence Statements	
Evidence Statements	Tier 1 Given two numbers up to two-digits, the students will add without regrouping.
	Tier 2 Given two two-digit numbers, the students will add without regrouping.
	Tier 3 Given two two-digit numbers, the students will add and subtract with regrouping.

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	100s chart; 9x9 multiplication table.
Sample Item	
Tier 2	<p>What is $12 + 20$?</p> <p>A. 8 B. 14 C. 32</p>

Reporting Category	Computation
Content Connector	MA.4.C.2.a.1: Multiply two-digit numbers by one-digit numbers.
IAS Standard	MA.4.C.2: Multiply a whole number of up to four digits by a one-digit whole number and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Describe the strategy and explain the reasoning.
Content Limits	Limit to two-digit numbers below 50, ending in 2, 5, or 0. Limit to one-digit numbers below 5. Equations must be vertical not horizontal.
Allowable Stimulus Material	N/A
Context	No context
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	multiply
Cognitive Complexity	4
Evidence Statements	
Evidence Statements	Tier 1 Given two one-digit numbers, the student will find the product.
	Tier 2 Given a multiple of 10 and a single-digit number, the student will find the product.
	Tier 3 Given any number below 50 and a single-digit number, the student will find the product.
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	100s chart; 9x9 multiplication table

Sample Item	
Tier 1	<p>What is $\frac{2}{\underline{x3}}$?</p> <p>A. 1 B. 5 C. 6</p>

Reporting Category	Computation
Content Connector	MA.4.C.3.a.1: Represent division by sorting up to 50 objects into groups without remainders.
IAS Standard	MA.4.C.3: Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Describe the strategy and explain the reasoning.
Content Limits	Numbers less than 30.
Allowable Stimulus Material	number models
Context	Context allowable
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	divide, sort
Cognitive Complexity	4
Evidence Statements	
Evidence Statements	Tier 1 Given even numbers below 10, the student will identify two equal groups.
	Tier 2 Given a number below 20, the student will identify equal groups of two or three.
	Tier 3 Given numbers below 30, the student will identify equal groups.
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	100s chart; 9x9 multiplication table

Sample Item

Tier 2

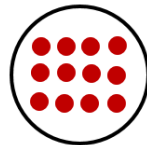
Which picture shows 12 divided into groups of 3?



A.

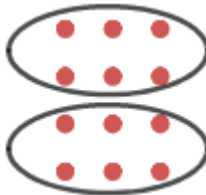
(Audio: Here are 12 dots. There are 4 equal groups of dots.)

KEY



B.

(Audio: Here are 12 dots. There is 1 group of dots.)



C.

(Audio: Here are 12 dots. There are 2 equal groups of dots.)

Reporting Category	Computation
Content Connector	MA.4.C.4.a.1: Multiply single digit numbers fluently.
IAS Standard	MA.4.C.4: Multiply fluently within 100.
Content Limits	Limit to factors of 0-5.
Allowable Stimulus Material	N/A
Context	No context
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	multiply
Cognitive Complexity	3
Evidence Statements	
Evidence Statements	Tier 1 Given factors of 1 or 2, the student will find the product.
	Tier 2 Given a factor of 5, the student will find the product.
	Tier 3 Given factors of 0-5, the student will find the product.
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	100s chart; 9x9 multiplication table

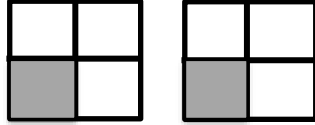
Sample Item	
Tier 1	What is 2×4 ? A. 2 B. 6 C. 8

Reporting Category	Computation
Content Connector	MA.4.C.5.a.1: Using a model, represent the concept of adding and subtracting fractions (e.g., $\frac{3}{4} = \frac{1}{4} + \frac{1}{4} + \frac{1}{4}$).
IAS Standard	MA.4.C.5: Add and subtract fractions with common denominators. Decompose a fraction into a sum of fractions with common denominators. Understand addition and subtraction of fractions as combining and separating parts referring to the same whole.
Content Limits	Limit to fractions with common denominators. No mixed fractions. No regrouping.
Allowable Stimulus Material	fraction models
Context	No context
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	fraction, addition, subtraction
Cognitive Complexity	4
Evidence Statements	
Evidence Statements	Tier 1 Given two-unit fractions with a common denominator, the student will add.
	Tier 2 Given two fractions with a common denominator, the student will add.
	Tier 3 Given two fractions with a common denominator, the student will subtract.
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	100s chart; 9x9 multiplication table

Sample Item

Tier 1

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



- A. $\frac{1}{8}$
- B. $\frac{2}{8}$
- C. $\frac{2}{4}$

Reporting Category	Computation
Content Connector	MA.4.C.6.a.1: Using a model, represent the concept of adding and subtracting mixed numbers with common denominators.
IAS Standard	MA.4.C.6: Add and subtract mixed numbers with common denominators (e.g. by replacing each mixed number with an equivalent fraction and/or by using properties of operations and the relationship between addition and subtraction).
Content Limits	Limit to common denominators. Limit to single-digit numerators. Limit whole numbers to 1, 2, or 3. No regrouping of fractions.
Allowable Stimulus Material	fraction models
Context	No context
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	fraction, numerator, denominator, mixed number, addition, subtraction
Cognitive Complexity	4
Evidence Statements	
Evidence Statements	Tier 1 Given two mixed numbers with whole numbers of 1 and unit fractions, the student will add.
	Tier 2 Given two mixed numbers with whole numbers of 1, the student will add.
	Tier 3 Given two mixed numbers with whole numbers of 1, 2, or 3, the student will add or subtract.
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	100s chart; 9x9 multiplication table

Sample Item	
Tier 2	<p>What is $1\frac{1}{3} + 1\frac{1}{3}$?</p> <p>A. $2\frac{1}{3}$</p> <p>B. $2\frac{2}{3}$</p> <p>C. 3</p>

Reporting Category	Computation
Content Connector	MA.4.C.7.a.1: Using models, demonstrate understanding of the commutative property using numbers less than 5.
IAS Standard	MA.4.C.7: Show how the order in which two numbers are multiplied (commutative property) and how numbers are grouped in multiplication (associative property) will not change the product. Use these properties to show that numbers can be multiplied in any order. Understand and use the distributive property.
Content Limits	Limit to commutative property of addition.
Allowable Stimulus Material	number models
Context	No context
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	addition, commutative property
Cognitive Complexity	3
Evidence Statements	
Evidence Statements	Tier 1 Given a model with a plus 1 addition problem, the student will identify the equivalent commutative property expression.
	Tier 2 Given a model with a plus 2 addition problem, the student will identify the equivalent commutative property expression.
	Tier 3 Given a model with a plus 3-5 addition problem, the student will identify the equivalent commutative property expression.
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	100s chart; 9x9 multiplication table

Sample Item

Here is a model of $3 + 1$.



Which model has the same value as $3 + 1$?

Tier 1

A.

(audio: One dot plus three dots)

KEY



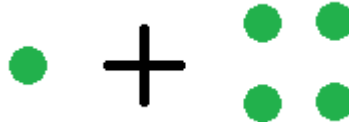
B.

(audio: One dot plus two dots)



C.

(audio: One dot plus four dots)

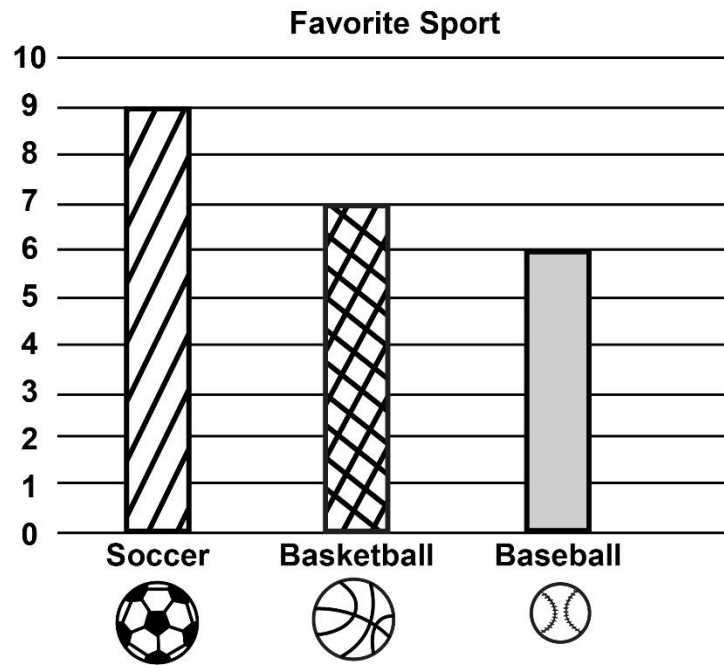


Reporting Category	Algebraic Thinking and Data Analysis
Content Connector	MA.4.DA.1.a.1: Interpret data from a table or bar graph.
IAS Standard	MA.4.DA.1: Formulate questions that can be addressed with data. Use observations, surveys, and experiments to collect, represent, and interpret the data using tables (including frequency tables), line plots, and bar graphs.
Content Limits	Limit to three categories in a table. Limit to three categories in a bar graph.
Allowable Stimulus Material	bar graph; table
Context	Context required
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	bar graph, table, data, interpret, how many more, in all, all together
Cognitive Complexity	4
Evidence Statements	
Evidence Statements	Tier 1 Given a bar graph, the student will identify the value of one bar.
	Tier 2 Given a bar graph, the student will identify the greatest or least category.
	Tier 3 Given a bar graph, the student will compare the values of two categories.
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	100s chart; 9x9 multiplication table

Sample Item

Tier 3

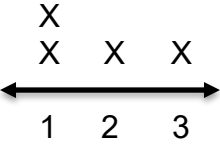
The bar graph models the favorite sports of the students in Mr. Caldwell's class.



How many **MORE** students like soccer than baseball?

- A. 2
- B. 3**
- C. 6

Reporting Category	Algebraic Thinking and Data Analysis
Content Connector	MA.4.DA.2.a.1: Graph provided data on a line plot.
IAS Standard	MA.4.DA.2: Make a line plot to display a data set of measurements in fractions of a unit ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$). Solve problems involving addition and subtraction of fractions by using data displayed in line plots.
Content Limits	Limited to five data points.
Allowable Stimulus Material	line plot
Context	Context allowable
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	line plot
Cognitive Complexity	5
Evidence Statements	
Evidence Statements	Tier 1 Given a line plot, the student will identify the value with the greatest frequency.
	Tier 2 Given a partially completed line plot, the student will identify the value needed to complete a line plot.
	Tier 3 Given data points, the student will identify the matching line 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	100s chart; 9x9 multiplication table

Sample Item	
Tier 1	<p>Here is a line plot.</p>  <p>Which value occurs most often?</p> <p>A. 1 B. 2 C. 3</p>

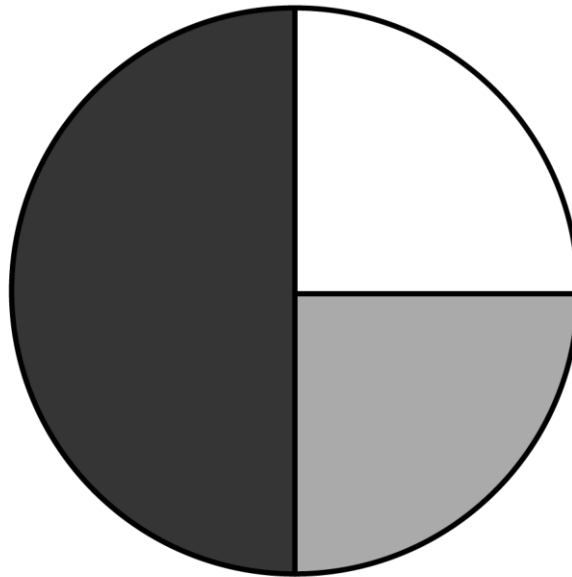
Updated: 07/19

Reporting Category	Algebraic Thinking and Data Analysis
Content Connector	MA.4.DA.3.a.1: Interpret data displayed in a circle graph up to halves and fourths.
IAS Standard	MA.4.DA.3: Interpret data displayed in a circle graph.
Content Limits	Circle graph in halves and/or fourths only.
Allowable Stimulus Material	circle graphs
Context	Context required
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	circle graph, interpret, halves, fourths
Cognitive Complexity	4
Evidence Statements	
Evidence Statements	Tier 1 The student will identify a category that is one-half of a circle.
	Tier 2 The student will identify a category that is one-fourth of a circle.
	Tier 3 Given a circle graph, the student will identify the fraction of a specific category.
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	100s chart; 9x9 multiplication table

Sample Item

Here is a circle graph. The circle graph shows the favorite games of a group of students.

Favorite Game



Tier 1

Football Checkers Go Fish

What is the group of students' favorite game?

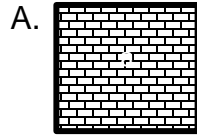
- A. Football
- B. Checkers
- C. Go Fish**

Reporting Category	Geometry and Measurement
Content Connector	MA.4.G.1.a.1: Using models and representations, identify the following shapes: parallelograms, rhombuses, and trapezoids.
IAS Standard	MA.4.G.1: Identify, describe, and draw parallelograms, rhombuses, and trapezoids using appropriate tools (e.g., ruler, straightedge and technology).
Content Limits	Limit parallelogram to squares and rectangles.
Allowable Stimulus Material	images of geometric figures
Context	No context
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	parallelogram, square, rectangle, rhombus, trapezoid
Cognitive Complexity	2
Evidence Statements	
Evidence Statements	Tier 1 The student will identify a square or a rectangle.
	Tier 2 The student will identify a trapezoid.
	Tier 3 The student will identify a rhombus.
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	100s chart; 9x9 multiplication table

Sample Item

Tier 1

Which shape is a square?

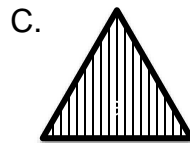


(Audio: A shape with four equal sides, and four equal angles.)

KEY



(Audio: A shape with no sides and no angles.)



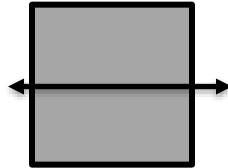
(Audio: A shape with three equal sides, and three equal angles.)

Reporting Category	Geometry and Measurement
Content Connector	MA.4.G.2.a.1: Recognize a line of symmetry in a figure.
IAS Standard	MA.4.G.2: Recognize and draw lines of symmetry in two-dimensional figures. Identify figures that have lines of symmetry.
Content Limits	Limit to figures with only one line of symmetry given.
Allowable Stimulus Material	images of geometric figures
Context	No context
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	symmetrical, line of symmetry
Cognitive Complexity	2
Evidence Statements	
Evidence Statements	Tier 1 The student will recognize a vertical line of symmetry in a figure.
	Tier 2 The student will recognize a horizontal line of symmetry in a figure.
	Tier 3 The student will recognize a diagonal line of symmetry in a figure.
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	100s chart; 9x9 multiplication table

Sample Item

Which image has a line of symmetry?

A.

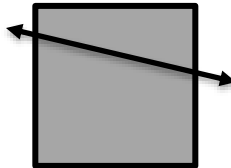


(Audio: A square divided into two equal parts by a line.)

KEY

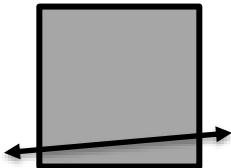
Tier 2

B.



(Audio: A square divided into two unequal parts by a line.)

C.



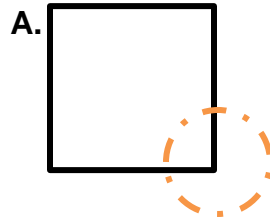
(Audio: A square divided into two unequal parts by a line.)

Reporting Category	Geometry and Measurement
Content Connector	MA.4.G.3.a.1: Recognize an angle in two-dimensional shapes.
IAS Standard	MA.4.G.3: Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint.
Content Limits	Limit to quadrilaterals.
Allowable Stimulus Material	images of geometric figures
Context	No context
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	angle, shape
Cognitive Complexity	2
Evidence Statements	
Evidence Statements	Tier 1 The student will identify an angle in a square or rectangle.
	Tier 2 The student will identify an angle in a trapezoid.
	Tier 3 The student will identify an angle in a rhombus.
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	100s chart; 9x9 multiplication table

Sample Item

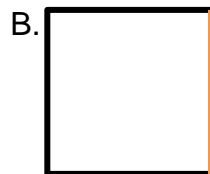
Tier 1

Which of these is an angle?

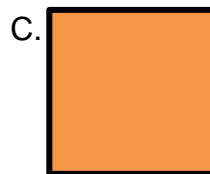


(Audio: This one.)

KEY



(Audio: This one.)



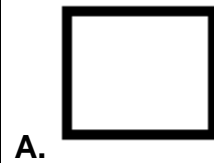
(Audio: This one.)

Reporting Category	Geometry and Measurement
Content Connector	MA.4.G.4.a.1: Identify parallel and perpendicular lines.
IAS Standard	MA.4.G.4: Identify, describe, and draw rays, angles (right, acute, obtuse), and perpendicular and parallel lines using appropriate tools (e.g., ruler, straightedge and technology). Identify these in two-dimensional figures.
Content Limits	N/A
Allowable Stimulus Material	images of geometric figures
Context	No context
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	parallel, perpendicular, square, rectangle, line
Cognitive Complexity	2
Evidence Statements	
Evidence Statements	Tier 1 The student will identify a shape that has parallel lines.
	Tier 2 The student will identify lines that are parallel.
	Tier 3 The student will identify lines that are perpendicular.
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	100s chart; 9x9 multiplication table

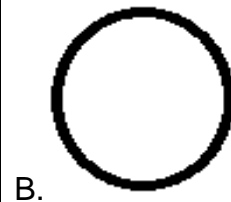
Sample Item

Tier 1

Which shape has parallel lines?



KEY



Reporting Category	Geometry and Measurement
Content Connector	MA.4.G.5.a.1: Classify shapes based on attributes (angles, parallel and perpendicular lines).
IAS Standard	MA.4.G.5: Classify triangles and quadrilaterals based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles (right, acute, obtuse).
Content Limits	Limit to triangles, squares, and rectangles.
Allowable Stimulus Material	images of geometric figures
Context	No context
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	classify, shape, triangle, square, rectangle, angle, parallel, perpendicular, line
Cognitive Complexity	2
Evidence Statements	
Evidence Statements	Tier 1 The student will identify shapes based on the number of angles.
	Tier 2 The student will identify shapes based on parallel sides.
	Tier 3 The student will identify shapes based on perpendicular sides.
Accessibility and Accommodation Considerations	
Stimulus Graphic Limitations	Stimulus graphics will be limited to clear photos, illustrations, diagrams, tables, and charts that directly relate to the passage topic. Information contained within stimulus graphics is ineligible for assessment unless specifically prescribed by Content Connector and/or evidence statements.
Linguistic Complexity	To be determined after IDOE review
Reference Tools	100s chart; 9x9 multiplication table

Sample Item	
Tier 3	<p>Which shape has perpendicular sides?</p> <ul style="list-style-type: none">A. a squareB. an ovalC. a circle

Reporting Category	Geometry and Measurement
Content Connector	MA.4.M.1.a.1: Measure length to nearest quarter-inch.
IAS Standard	MA.4.M.1: Measure length to the nearest quarter-inch, eighth-inch, and millimeter.
Content Limits	Limit rulers to a quarter-inch.
Allowable Stimulus Material	images of rulers; images of objects
Context	Context allowable
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	measure, length, ruler, quarter-inch
Cognitive Complexity	3
Evidence Statements	
Evidence Statements	Tier 1 The student will measure to the nearest whole inch.
	Tier 2 The student will measure to the nearest half inch.
	Tier 3 The student will measure to nearest quarter inch.
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	100s chart; 9x9 multiplication table

Sample Item

Tier 2

Here is a toy car measured in inches.



How long is the toy car?

- A. 3 inches
- B. $3\frac{1}{2}$ inches**
- C. 4 inches

Reporting Category	Geometry and Measurement
Content Connector	MA.4.M.2.a.1: Identify the appropriate units of measurement for different purposes in a real life context (e.g., measure a wall using feet, not inches).
IAS Standard	MA.4.M.2: Know relative sizes of measurement units within one system of units, including km, m, cm; kg, g; lb., oz.; l, ml; hr., min, sec. Express measurements in a larger unit in terms of a smaller unit within a single system of measurement. Record measurement equivalents in a two-column table.
Content Limits	Limit to feet, inches, and miles.
Allowable Stimulus Material	images of objects
Context	Context required
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	measure, feet, inches, miles
Cognitive Complexity	4
Evidence Statements	
Evidence Statements	Tier 1 Student will identify something that would be measured in feet.
	Tier 2 Student will identify something that would be measured in inches.
	Tier 3 Student will identify something that would be measured in miles.
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	100s chart; 9x9 multiplication table

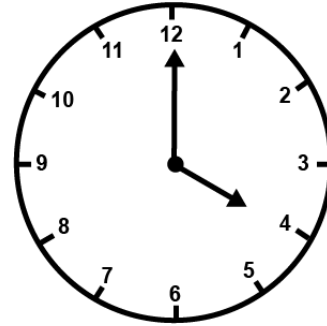
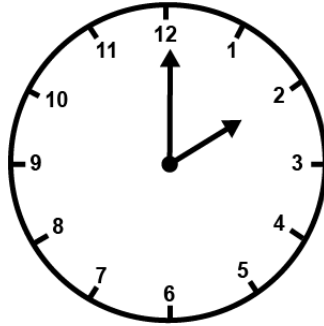
Sample Item	
Tier 2	<p>Which object would be best to measure in inches?</p> <ul style="list-style-type: none">A. the height of a mountainB. the length of a busC. the length of a pencil

Reporting Category	Geometry and Measurement
Content Connector	MA.4.M.3.a.1: Solve real-world problems involving intervals of time to the half-hour.
IAS Standard	MA.4.M.3: Use the four operations (addition, subtraction, multiplication and division) to solve real-world problems involving distances, intervals of time, volumes, masses of objects, and money. Include addition and subtraction problems involving simple fractions and problems that require expressing measurements given in a larger unit in terms of a smaller unit.
Content Limits	Limited to no more than 4 elapsed hours. Limited to day time school hours. No counting backwards time.
Allowable Stimulus Material	images of clocks
Context	Context required
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	time, clock, hour, half hour, o'clock, a.m., p.m.
Cognitive Complexity	4
Evidence Statements	
Evidence Statements	Tier 1 The students will find elapsed time to the nearest hour.
	Tier 2 The students will find elapsed time to the nearest half-hour within two hours.
	Tier 3 The students will find elapsed time to the nearest half-hour within 4 elapsed hours.
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	100s chart; 9x9 multiplication table

Sample Item

Tier 1

Jason goes to the mall at 2:00 p.m. and leaves the mall at 4:00 p.m.



How much time did Jason spend at the mall?

- A. 1 hour
- B. 2 hours**
- C. 5 hours

Reporting Category	Geometry and Measurement
Content Connector	MA.4.M.3.a.2: Solve real-world problems involving money up to the value of five dollars.
IAS Standard	MA.4.M.3: Use the four operations (addition, subtraction, multiplication and division) to solve real-world problems involving distances, intervals of time, volumes, masses of objects, and money. Include addition and subtraction problems involving simple fractions and problems that require expressing measurements given in a larger unit in terms of a smaller unit.
Content Limits	Limit to whole dollar and half dollar amounts.
Allowable Stimulus Material	images of money and coins; graphics of objects
Context	Context required
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	money, dollars, cents
Cognitive Complexity	4
Evidence Statements	
Evidence Statements	Tier 1 The student will add with whole dollar amounts and no coin values.
	Tier 2 The student will subtract with whole dollar amounts and no coin values.
	Tier 3 The student will add and subtract with whole dollar and half dollar amounts.
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	100s chart; 9x9 multiplication table

Sample Item

Tier 3

Gina bought a bottle of water for \$1.50 and a muffin for \$2.00.



How much money did Gina spend in total?

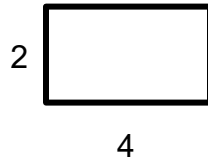
- A. \$0.50
- B. \$1.50
- C. \$3.50**

Reporting Category	Geometry and Measurement
Content Connector	MA.4.M.4.a.1: Solve real-world problems using area.
IAS Standard	MA.4.M.4: Apply the area and perimeter formulas for rectangles to solve real-world problems and other mathematical problems involving shapes. Recognize area as additive and find the area of complex shapes composed of rectangles by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts; apply this technique to solve real-world problems and other mathematical problems involving shapes.
Content Limits	Limit to squares and rectangles. Limit to side lengths under 5 units of measure. Only give one measure for one length and one width. Area formula provided.
Allowable Stimulus Material	images of squares and rectangles; area formula
Context	Context required
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	area, formula, square, rectangle
Cognitive Complexity	4
Evidence Statements	
Evidence Statements	Tier 1 The student will find the area of a square.
	Tier 2 The student will find the area of a rectangle where one side length is 2 units of measure.
	Tier 3 The students will find the area of a rectangle.
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	100s chart; 9x9 multiplication table

Sample Item

Tier 2

Here is a rectangle.



The area of a rectangle is equal to the length multiplied by the width.

$$A = l \times w$$

What is the area of this rectangle?

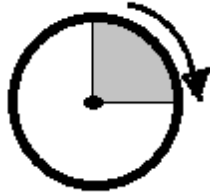
- A. 6
- B. 8**
- C. 12

Reporting Category	Geometry and Measurement
Content Connector	MA.4.M.5.a.1: Find an angle in a circle.
IAS Standard	MA.4.M.5: Understand that an angle is measured with reference to a circle, with its center at the common endpoint of the rays, by considering the fraction of the circular arc between the points where the two rays intersect the circle. Understand an angle that turns through $\frac{1}{360}$ of a circle is called a “one-degree angle,” and can be used to measure other angles. Understand an angle that turns through n one-degree angles is said to have an angle measure of n degrees.
Content Limits	Limit to 90, 180, and 360 degree angles.
Allowable Stimulus Material	images of circles
Context	No context
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	circle, angle, degrees
Cognitive Complexity	2
Evidence Statements	
Evidence Statements	Tier 1 The student will identify a 90 degree angle.
	Tier 2 The student will identify a 180 degree angle.
	Tier 3 The student will identify a 360 degree angle.
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	100s chart; 9x9 multiplication table

Sample Item

Tier 1

Here is an angle inside a circle.



What is the angle?

- A. 90°
- B. 180°
- C. 360°

Reporting Category	Geometry and Measurement
Content Connector	MA.4.M.6.a.1: Select an appropriate tool for measuring angles.
IAS Standard	MA.4.M.6: Measure angles in whole-number degrees using appropriate tools. Sketch angles of specified measure.
Content Limits	N/A
Allowable Stimulus Material	images of geometric figures; pictures in which an angle may be measured
Context	Context allowable
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	measure, angle, degree, appropriate, tool
Cognitive Complexity	2
Evidence Statements	
Evidence Statements	Tier 1 The student will identify the correct tool to measure angles.
	Tier 2 The student will identify the correct tool to measure angles.
	Tier 3 The student will identify the correct tool to measure angles.
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	100s chart; 9x9 multiplication table

Sample Item

Tier 2

Which tool is most useful when measuring angles?



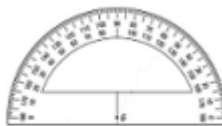
a ruler

A.



a scale

B.



a protractor

C.

KEY

Reporting Category	Number Sense
Content Connector	MA.4.NS.1.a.1: Read, demonstrate, and write whole numbers up to 500.
IAS Standard	MA.4.NS.1: Read and write whole numbers up to 1,000,000. Use words, models, standard form and expanded form to represent and show equivalent forms of whole numbers up to 1,000,000.
Content Limits	Do not assess numbers ending with “teen”. No reversed numbers allowed (i.e. 36 and 63).
Allowable Stimulus Material	number models
Context	No context
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	whole numbers, word form, standard form, number form
Cognitive Complexity	3
Evidence Statements	
Evidence Statements	Tier 1 Given a number under 30 in word form, the student will identify the number in numeric form.
	Tier 2 Given a number under 100 in word form, the student will identify the number in numeric form.
	Tier 3 Given a number under 500 in word form, the student will identify the number in numeric form.
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	100s chart; 9x9 multiplication table

Sample Item	
Tier 3	<p>What is “two hundred seventy-six” in number form?</p> <p>A. 206 B. 270 C. 276</p>

Reporting Category	Number Sense
Content Connector	MA.4.NS.2.a.1: Compare two whole numbers up to 500 using $>$, $=$, and $<$ symbols and words.
IAS Standard	MA.4.NS.2: Compare two whole numbers up to 1,000,000 using $>$, $=$, and $<$ symbols.
Content Limits	No reversals in options (e.g., 36 and 63).
Allowable Stimulus Material	number models; number line; use of number line for Tier 1
Context	No context
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	compare, greater than, less than, equal to
Cognitive Complexity	4
Evidence Statements	
Evidence Statements	Tier 1 Given a single digit and double digit under 20, the student will identify $<$, $>$, or $=$.
	Tier 2 Given two, two-digit numbers under 100, the student will identify $<$, $>$, or $=$.
	Tier 3 Given two numbers under 500, the student will identify $<$, $>$, or $=$.
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	100s chart; 9x9 multiplication table

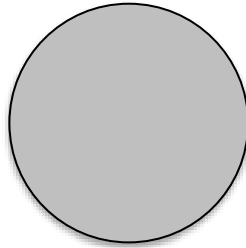
Sample Item	
Tier 2	<p>Here are two numbers.</p> <p>24, 68</p> <p>Compare the two numbers.</p> <p>A. $24 > 68$ (audio: 24 is bigger than 68)</p> <p>B. $24 < 68$ (audio: 24 is smaller than 68)</p> <p>C. $24 = 68$ (audio: 24 is equal to 68)</p>

Reporting Category	Number Sense
Content Connector	MA.4.NS.3.a.1: Express a whole number as a fraction.
IAS Standard	MA.4.NS.3: Express whole numbers as fractions and recognize fractions that are equivalent to whole numbers. Name and write mixed numbers using objects or pictures. Name and write mixed numbers as improper fractions using objects or pictures.
Content Limits	Assess using circular fraction models.
Allowable Stimulus Material	images of partitioned circles
Context	No context
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	whole number, fraction, whole, part
Cognitive Complexity	4
Evidence Statements	
Evidence Statements	Tier 1 Given a fraction model divided into halves with both parts shaded, the student will identify the whole number as 1.
	Tier 2 Given a fraction model divided into fourths with all parts shaded, the student will identify the whole number as 1.
	Tier 3 Given two fraction models divided into halves with all parts shaded, the student will identify the whole number as 2.
Accessibility and Accommodation Considerations	
Stimulus Graphic Limitations	Stimulus graphics will be limited to clear photos, illustrations, diagrams, tables, and charts that directly relate to the passage topic. Information contained within stimulus graphics is ineligible for assessment unless specifically prescribed by Content Connector and/or evidence statements.
Linguistic Complexity	To be determined after IDOE review
Reference Tools	100s chart; 9x9 multiplication table

Sample Item

Tier 1

Here is a fraction model.



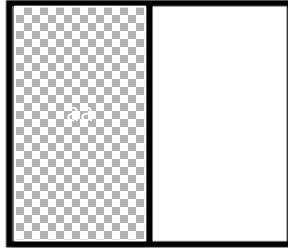
What whole number is equal to the fraction model?

- A. 1**
- B. 2**
- C. 3**

Reporting Category	Number Sense
Content Connector	MA.4.NS.4.a.1: Using a model, show equivalent fractions for fractions up to tenths.
IAS Standard	MA.4.NS.4: Explain why a fraction, a/b , is equivalent to a fraction, $(n \times a)/(n \times b)$, by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use the principle to recognize and generate equivalent fractions. [In grade 4, limit denominators of fractions to 2, 3, 4, 5, 6, 8, 10, 25, 100.]
Content Limits	For fraction models in tenths, use a rectangle.
Allowable Stimulus Material	fraction models
Context	No context
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	fraction, equivalent, halves, fourths, thirds, sixths, fifths, tenths
Cognitive Complexity	4
Evidence Statements	
Evidence Statements	Tier 1 Given halves and fourths fraction models, the student will identify equivalent fractions.
	Tier 2 Given thirds and sixths fraction models, the student will identify equivalent fractions.
	Tier 3 Given fifths and tenths fraction models, the student will identify equivalent 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	100s chart; 9x9 multiplication table

Sample Item

Here is a fraction model.



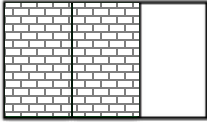

$$\frac{1}{2}$$

Tier 1

Which fraction has the same value as $\frac{1}{2}$?

- A. $\frac{1}{4}$
- B. $\frac{2}{4}$**
- C. $\frac{3}{4}$

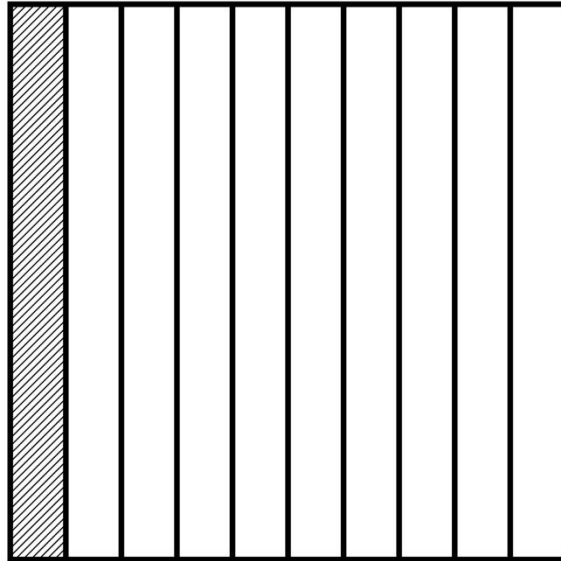
Reporting Category	Number Sense
Content Connector	MA.4.NS.5.a.1: Use symbols =, <, or > and words to compare two fractions (fractions with the different denominator of 10 or less).
IAS Standard	MA.4.NS.5: Compare two fractions with different numerators and different denominators (e.g., by creating common denominators or numerators, or by comparing to a benchmark, such as 0, 1/2, and 1). Recognize comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols >, =, or <, and justify the conclusions (e.g., by using a visual fraction model).
Content Limits	Use fraction models.
Allowable Stimulus Material	fraction models
Context	No context
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	fraction, compare, greater than, less than, equal to
Cognitive Complexity	4
Evidence Statements	
Evidence Statements	Tier 1 Given two halves and fourths fraction models, the student will identify the correct symbol that makes the comparison true.
	Tier 2 Given two thirds and sixths fraction models, the student will identify the correct symbol that makes the comparison true.
	Tier 3 Given two fifths and tenths fraction models, the student will identify the correct symbol that makes the comparison 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	100s chart; 9x9 multiplication table
Sample Item	
Tier 2	<p>Here are 2 fraction models.</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>$\frac{2}{3}$</p> </div> <div style="text-align: center;">  <p>$\frac{2}{6}$</p> </div> </div> <p>Which inequality correctly compares the two fractions?</p> <p>A. $\frac{2}{3} < \frac{2}{6}$</p> <p>B. $\frac{2}{3} > \frac{2}{6}$</p> <p>C. $\frac{2}{3} = \frac{2}{6}$</p>

Reporting Category	Number Sense
Content Connector	MA.4.NS.6.a.1: Write tenths in decimal and fraction notations.
IAS Standard	MA.4.NS.6: Write tenths and hundredths in decimal and fraction notations. Use words, models, standard form and expanded form to represent decimal numbers to hundredths. Know the fraction and decimal equivalents for halves and fourths (e.g., $\frac{1}{2} = 0.5 = 0.50$, $\frac{7}{4} = 1 \frac{3}{4} = 1.75$).
Content Limits	Use fraction models to assess.
Allowable Stimulus Material	fraction models
Context	No context
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	fraction, decimal
Cognitive Complexity	4
Evidence Statements	
Evidence Statements	Tier 1 Given fraction models and the decimal representing 0.1 or 0.2, the student will identify the equivalent fraction.
	Tier 2 Given fraction models and the decimal representing 0.3 or 0.4, the student will identify the equivalent fraction.
	Tier 3 Given fraction models and the decimal representing 0.5-0.9, the student will identify the equivalent 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	100s chart; 9x9 multiplication table

Sample Item

Here is a model of a fraction and a decimal.



0.1

Which fraction do these represent?

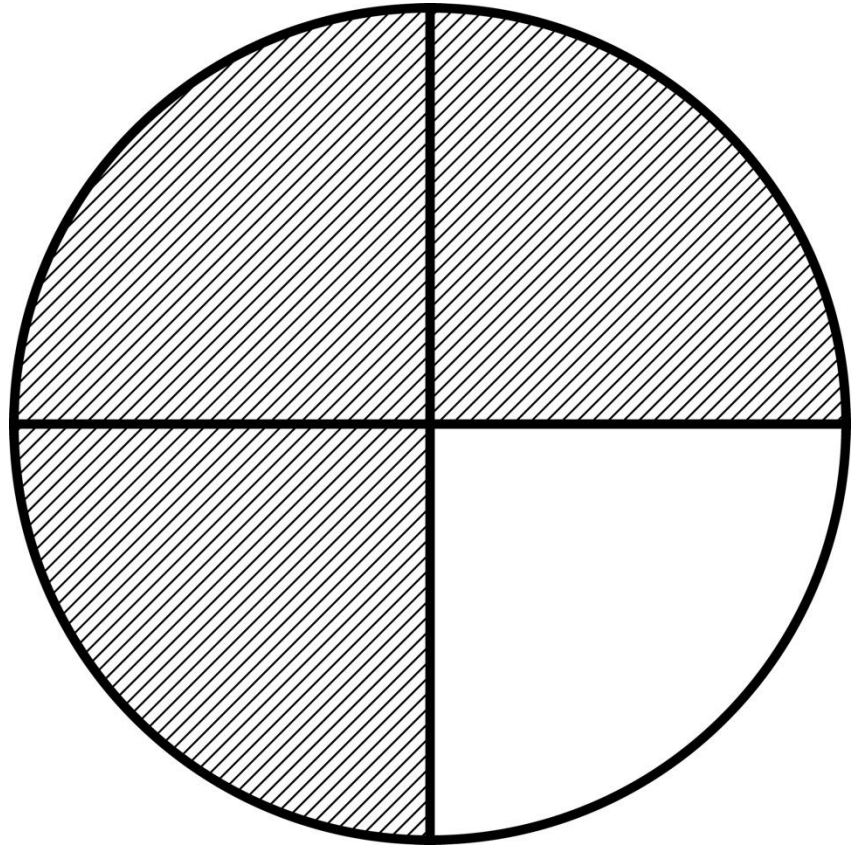
- A. $\frac{1}{10}$
- B. $\frac{0.1}{10}$
- C. $\frac{1}{100}$

Tier 1

Reporting Category	Number Sense
Content Connector	MA.4.NS.6.a.2: Know the fraction and decimal equivalent for halves and fourths up to 1.
IAS Standard	MA.4.NS.6: Write tenths and hundredths in decimal and fraction notations. Use words, models, standard form and expanded form to represent decimal numbers to hundredths. Know the fraction and decimal equivalents for halves and fourths (e.g., $1/2 = 0.5 = 0.50$, $7/4 = 1 \frac{3}{4} = 1.75$).
Content Limits	Use fraction models to assess.
Allowable Stimulus Material	fraction models
Context	No context
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	fraction, decimal, halves, fourths
Cognitive Complexity	4
Evidence Statements	
Evidence Statements	Tier 1 Given fraction models in halves and the decimal, the student will identify the equivalent fraction.
	Tier 2 Given fraction models in fourths and the decimal, the student will identify the equivalent fraction.
	Tier 3 Given fraction models in fourths and the decimal, the student will identify the equivalent 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	100s chart; 9x9 multiplication table

Sample Item

Here is a fraction model and a decimal.



0.75

What fraction do these represent?

- A. $\frac{3}{4}$
- B. $\frac{5}{7}$
- C. $\frac{1}{4}$

Tier 2

Reporting Category	Number Sense
Content Connector	MA.4.NS.7.a.1: Compare two decimals to the tenths place with a value of less than 1.
IAS Standard	MA.4.NS.7: Compare two decimals to hundredths by reasoning about their size based on the same whole. Record the results of comparisons with the symbols $>$, $=$, or $<$, and justify the conclusions (e.g., by using a visual model).
Content Limits	Assess using fraction models. Use $>$, $<$, and $=$ sign to compare.
Allowable Stimulus Material	fraction models
Context	No context
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	fraction, decimal, compare, greater than, less than, equal to
Cognitive Complexity	4
Evidence Statements	
Evidence Statements	Tier 1 Given two fraction models and the decimal representing 0.1 or 0.2, the student will choose the symbol that makes the comparison true.
	Tier 2 Given two fraction models and the decimal representing 0.3 or 0.4, the student will choose the symbol that makes the comparison true.
	Tier 3 Given two fraction models and the decimal representing 0.5-0.9, the student will choose the symbol that makes the comparison 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	100s chart; 9x9 multiplication table

Sample Item

Tier 3

Here are two decimal models.



Which inequality correctly compares the two fractions?

- A. $0.6 < 0.8$
- B. $0.6 > 0.8$
- C. $0.6 = 0.8$

Reporting Category	Number Sense
Content Connector	MA.4.NS.8.a.1: Identify a factor pair for a product up to 50.
IAS Standard	MA.4.NS.8: Find all factor pairs for a whole number in the range 1–100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1–100 is a multiple of a given one-digit number.
Content Limits	Limit to multiples of 2, 5, and 10.
Allowable Stimulus Material	N/A
Context	No context
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	multiply, factor, fact family, product, multiple
Cognitive Complexity	4
Evidence Statements	
Evidence Statements	Tier 1 Given multiples of 2 up to 2×10 , the student will identify a factor pair.
	Tier 2 Given multiples of 10 up to 10×5 , the student will identify a factor pair.
	Tier 3 Given multiples of 5 up to 5×10 , the student will identify a factor 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 3	<p>Here is a number.</p> <p>40</p> <p>Which is a factor pair of the number 40?</p> <p>A. 3 and 8 B. 4 and 8 C. 5 and 8</p>

Reporting Category	Number Sense
Content Connector	MA.4.NS.9.a.1: Use place value to round 3-digit numbers to tens or hundreds.
IAS Standard	MA.4.NS.9: Use place value understanding to round multi-digit whole numbers to any given place value.
Content Limits	Limit to numbers less than 500. Limit to whole numbers.
Allowable Stimulus Material	N/A
Context	No context
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	place value, round, nearest, ones, tens, hundreds
Cognitive Complexity	4
Evidence Statements	
Evidence Statements	Tier 1 Given a number between 100 and 200, the student will round to the nearest hundred.
	Tier 2 Given a number between 100 and 500, the student will round to the nearest hundred.
	Tier 3 Given a number between 100 and 500, the student will round to the nearest ten.
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	100s chart; 9x9 multiplication table

Sample Item

Tier 2

Here is a number.

321

What is 321 rounded to the nearest hundred?

A. 200

B. 300

C. 400

Reporting Category	Process Standards
Content Connector / IAS Standard	<p>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.</p>
Content Limits	Content may not exceed any other Grade 4 Content Connectors.
Allowable Stimulus Material	Materials may not exceed any other Grade 4 Content Connectors.
Context	Context allowable
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	reasonable, sense, solve
Cognitive Complexity	6
Evidence Statements	
Evidence Statements	<p>Tier 1 Given a yes or no question, the students will determine if the answer is reasonable.</p>
	<p>Tier 2 Given a yes or no question, the students will determine if the answer is reasonable.</p>
	<p>Tier 3 Given a yes or no question, the students will determine if the answer is reasonable.</p>

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	<p>Is 30 greater than 22?</p> <p>A. Yes, because 30 has 3 tens, and 22 has 2 tens.</p> <p>B. No, because 30 ends in 0 and 22 ends in 2.</p> <p>C. No, because they are equal.</p>

Reporting Category	Process Standards
Content Connector / IAS 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	Limit to quantities less than 20. Content may not exceed any other Grade 4 Content Connectors.
Allowable Stimulus Material	Materials may not exceed any other Grade 4 Content Connectors.
Context	Context required
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	reason, quantity
Cognitive Complexity	6
Evidence Statements	
Evidence Statements	Tier 1 Given a real-life scenario, the student will decide if the quantity is reasonable.
	Tier 2 Given a real-life scenario, the student will decide if the quantity is reasonable.
	Tier 3 Given a real-life scenario, the student will decide if the quantity is reasonable.

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	<p>A baker needs $\frac{1}{2}$ cup of flour for a recipe. He has the following cups.</p> <p>$\frac{1}{4}$ cup, $\frac{1}{3}$ cup, 1 cup</p> <p>Which measuring cup should the baker use?</p> <p>A. The $\frac{1}{4}$ cup, because $2 \times \frac{1}{4} = \frac{1}{2}$</p> <p>B. The $\frac{1}{3}$ cup, because $\frac{1}{3}$ is closest to $\frac{1}{2}$.</p> <p>C. The 1 cup, because 1 is bigger than $\frac{1}{2}$.</p>

Reporting Category	Process Standards
Content Connector / IAS Standard	<p>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.</p>
Content Limits	Content may not exceed any other Grade 4 Content Connectors.
Allowable Stimulus Material	Materials may not exceed any other Grade 4 Content Connectors.
Context	Context allowable
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	always, sometimes, never, argument, reason
Cognitive Complexity	6

Evidence Statements	
Evidence Statements	<p>Tier 1</p> <p>Given a statement, the student will determine the if the given statement is true, always, or never.</p>
	<p>Tier 2</p> <p>Given a statement, the student will determine the if the given statement is true, always, sometimes or never.</p>
	<p>Tier 3</p> <p>Given a statement, the student will determine the if the given statement is true, always, sometimes or never with justification.</p>
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	<p>Here is a statement.</p> <p>Triangles have 4 sides.</p> <p>Is the statement true?</p> <p>A. Yes, the statement is always true. B. The statement is sometimes true. C. No, the statement is never true.</p>

Reporting Category	Process Standards
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	Content may not exceed any other Grade 4 Content Connectors.
Allowable Stimulus Material	Materials may not exceed any other Grade 4 Content Connectors.
Context	Context allowable
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	model
Cognitive Complexity	5
Evidence Statements	
Evidence Statements	Tier 1 Given a mathematical model, the students will analyze and draw a conclusion.
	Tier 2 Given a mathematical model, the students will analyze and draw a conclusion.
	Tier 3 Given a mathematical model, the students will analyze and draw a conclusion.

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	<p>Max recorded the number of animals he saw at the park.</p> <table border="1"> <caption>Bar Graph Data</caption> <thead> <tr> <th>Animal</th> <th>Count</th> </tr> </thead> <tbody> <tr> <td>snails</td> <td>5</td> </tr> <tr> <td>foxes</td> <td>5</td> </tr> <tr> <td>deer</td> <td>9</td> </tr> </tbody> </table> <p>Which animal did he see the most?</p> <p>A. snail B. fox C. deer</p>	Animal	Count	snails	5	foxes	5	deer	9
Animal	Count								
snails	5								
foxes	5								
deer	9								

Reporting Category	Process Standards
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	Content may not exceed any other Grade 4 Content Connectors.
Allowable Stimulus Material	Materials may not exceed any other Grade 4 Content Connectors.
Context	Context required
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	appropriate, tools
Cognitive Complexity	5
Evidence Statements	
Evidence Statements	Tier 1 Given a real-world situation and graphics, students will determine if the appropriate tool is used.
	Tier 2 Given a real-world situation and graphics, students will determine which tool is reasonable to use.
	Tier 3 Given a real-world situation, students will determine which tool is reasonable 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	N/A
Sample Item	
Tier 3	<p>Mark wants to measure the perimeter of his house with a ruler.</p> <p>Is this a reasonable tool to use?</p> <p>A. No, because a ruler is most useful for shorter distances.</p> <p>B. Yes, because a ruler is most useful for longer distances.</p> <p>C. No, because a ruler is most useful for longer distances.</p>

Reporting Category	Process Standards
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 addition and subtraction. Limit to single-digit numbers. Materials may not exceed any other Grade 4 Content Connectors.
Allowable Stimulus Material	Materials may not exceed any other Grade 4 Content Connectors
Context	Context allowable
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	precise
Cognitive Complexity	5
Evidence Statements	
Evidence Statements	Tier 1 Given a partially completed problem, the student will determine the missing piece of information to accurately solve the problem.
	Tier 2 Given a partially completed problem, the student will determine the missing piece of information to accurately solve the problem.
	Tier 3 Given a partially completed problem, the student will determine the missing piece of information to accurately solve 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	N/A
Sample Item	
Tier 3	<p>Here is an equation with a missing number.</p> $5 + \square = 7$ <p>Which number would make the statement true?</p> <p>A. 2 B. 7 C. 12</p>

Reporting Category	Process Standards
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 multiples of 2, 5, and 10. Limit to ABC pattern. Materials may not exceed any other Grade 4 Content Connectors.
Allowable Stimulus Material	Materials may not exceed any other Grade 4 Content Connectors
Context	Context allowable
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	pattern
Cognitive Complexity	5
Evidence Statements	
Evidence Statements	Tier 1 Given a pattern, the student will determine the next term in the pattern.
	Tier 2 Given a pattern, the student will determine the next term in the pattern.
	Tier 3 Given a pattern, the student will determine the next term in the pattern.
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 pattern.

2, 4, 6, 2, 4, 6

What is the next term in the pattern?

- A. 2
- B. 4
- C. 6

Reporting Category	Process Standards
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	Content may not exceed any other Grade 4 Content Connectors.
Allowable Stimulus Material	Materials may not exceed any other Grade 4 Content Connectors.
Context	No context
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	pattern, repeat, reason
Cognitive Complexity	5
Evidence Statements	
Evidence Statements	Tier 1 Given a numeric pattern, the student determines the missing number (limited to multiples of one).
	Tier 2 Given a numeric pattern, the student determines the missing number (limited to multiples of ten, up to 50).
	Tier 3 Given a numeric pattern, the student determines the missing number (limited to multiples of two, up to 20).
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 pattern.

2, 4, □, 8

What is the missing number?

A. 5

B. 6

C. 8