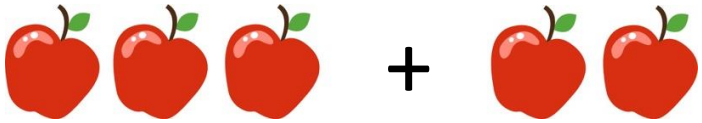
Reporting Category	Algebraic Thinking and Data Analysis
Content Connector	**MA.3.AT.1.a.1:** Use pictures and/or manipulatives to solve real-world addition and subtraction word problems with sums up to 100.
IAS Standard	**MA.3.AT.1:** Solve real-world problems involving addition and subtraction of whole numbers within 1000 (e.g., by using drawings and equations with a symbol for the unknown number).
Content Limits	For pictures and/or manipulatives, no addends above 20. One-step questions. No variables. No sum greater than 40. No difference greater than 10. Only information and details needed to answer question; no distractions or extraneous information.
Allowable Stimulus Material	Number line
Context	Context required
Recommended Response Mechanisms	Multiple Choice (MC) Equation Response (EQ)
Construct-Relevant Vocabulary	sum, difference, total, in all, altogether, addition, subtraction, answer, solve, plus, take away
Cognitive Complexity	4
Evidence Statements	
Evidence Statements	**Tier 1** Student can determine operation and solve a story problem.
	Tier 2 Student can select a correct model to represent a story problem.
	Tier 3 Student can select and solve an equation to solve a story 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 2	Susie has 3 apples. Bill gives her 2 more apples.  How many apples does Susie have now? A. (Audio: one apple) B. (Audio: three apples) **C.** **(AUDIO: five apples)** **KEY**

Reporting Category	Algebraic Thinking and Data Analysis
Content Connector	**MA.3.AT.2.a.1:** Use pictures, manipulatives, and/or arrays to solve real world one step multiplication and division word problems within 100.
IAS Standard	**MA.3.AT.2:** Solve real-world problems involving whole number multiplication and division within 100 in situations involving equal groups, arrays, and measurement quantities (e.g., by using drawings and equations with a symbol for the unknown number to represent the problem).
Content Limits	Product and quotient not to exceed 81. Whole numbers only. Only information and details needed to answer question; no distractions or extraneous information.
Allowable Stimulus Material	Pictures Arrays
Context	Context required
Recommended Response Mechanisms	Multiple Choice (MC) Equation Response (EQ)
Construct-Relevant Vocabulary	array, solve, multiplication, division, times, product, quotient, separate, group
Cognitive Complexity	4
Evidence Statements	
Evidence Statements	**Tier 1** Student can determine operation and solve a story problem.
	Tier 2 Student can create and solve an equation to solve a story problem.
	Tier 3 Student can create a model to represent a story 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 1	Mr. Dolan has a sheet of star stickers. There are 3 rows of stars with 4 stars in each row. How many star stickers does Mr. Dolan have in all? A. 1 star sticker B. 7 star stickers **C. 12 star stickers**

Reporting Category	Algebraic Thinking and Data Analysis
Content Connector	**MA.3.AT.2.a.1:** Use pictures, manipulatives, and/or arrays to solve real world one step multiplication and division word problems within 100.
IAS Standard	**MA.3.AT.2:** Solve real-world problems involving whole number multiplication and division within 100 in situations involving equal groups, arrays, and measurement quantities (e.g., by using drawings and equations with a symbol for the unknown number to represent the problem).
Content Limits	Product and quotient not to exceed 81. Whole numbers only. Only information and details needed to answer question; no distractions or extraneous information.
Allowable Stimulus Material	Pictures Arrays
Context	Context required
Recommended Response Mechanisms	Multiple Choice (MC) Equation Response (EQ)
Construct-Relevant Vocabulary	array, solve, multiplication, division, times, product, quotient, separate, group
Cognitive Complexity	4
Evidence Statements	
Evidence Statements	**Tier 1** Student can determine operation and solve a story problem.
	Tier 2 Student can select and solve an equation to solve a story problem.
	Tier 3 Student can select a model to represent a story 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 1	Mr. Dolan has a sheet of star stickers. There are 3 rows of stars with 4 stars in each row. How many star stickers does Mr. Dolan have in all? A. 1 star sticker B. 7 star stickers **C. 12 star stickers**

Updated: 07/19

Reporting Category	Algebraic Thinking and Data Analysis
Content Connector	**MA.3.AT.3.a.1:** Use pictures, manipulatives, and/or tables to solve real-world two-step addition and subtraction word problems up to 100.
IAS Standard	**MA.3.AT.3:** Solve two-step, real-world problems using the four operations of addition, subtraction, multiplication and division (e.g., by using drawings and equations with a symbol for the unknown number to represent the problem).
Content Limits	For pictures and/or manipulatives, there should be no addends above 20. Both steps should involve the same operation. No variables are permitted. No sum should be greater than 50. No difference should be greater than 20. Only provide information and details needed to answer question; no distractions or extraneous information should be given.
Allowable Stimulus Material	number line, graphics
Context	Context required
Recommended Response Mechanisms	Multiple Choice (MC) Equation Response (EQ)
Construct-Relevant Vocabulary	sum, difference, total, in all, altogether, addition, subtraction, answer, solve, plus, take away
Cognitive Complexity	5
Evidence Statements	
Evidence Statements	**Tier 1** N/A
	Tier 2 Student can select the correct operation to solve a two-step story problem.
	Tier 3 Student can solve both equations to solve a two-step story 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	A book store has 10 books. On the first day, the bookstore sold 5 books. On the second day, the bookstore sold 2 books. How many books does the bookstore have left? **A. 3 books** B. 7 books C. 18 books

Reporting Category	Algebraic Thinking and Data Analysis
Content Connector	**MA.3.AT.4.a.1:** Create a model to represent a multiplication problem.
IAS Standard	**MA.3.AT.4:** Interpret a multiplication equation as equal groups (e.g., interpret 5 × 7 as the total number of objects in 5 groups of 7 objects each). Represent verbal statements of equal groups as multiplication equations.
Content Limits	Products should not exceed 25. Only whole numbers should be used.
Allowable Stimulus Material	graphics
Context	Context allowable
Recommended Response Mechanisms	Multiple Choice (MC) Multiple Select (MS) Equation Response (EQ)
Construct-Relevant Vocabulary	multiplication, array, model, create, represent, show
Cognitive Complexity	3
Evidence Statements	
Evidence Statements	**Tier 1** Student will select the model that represents the math equation through multiplication.
	Tier 2 Student will create a multiplication problem that describes a given arrangement.
	Tier 3 Student will select multiple pairs of factors to represent a given arrangement.
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 model shows 2 x 4? A. (Audio: a model with two rows of circles. Each row has one circle.) B. (Audio: a model with two rows of circles. Each row has three circles.) **C.** **(Audio: a model with two rows of circles. Each row has four circles.)** **KEY**

Reporting Category	Algebraic Thinking and Data Analysis
Content Connector	**MA.3.AT.4.a.1:** Create a model to represent a multiplication problem.
IAS Standard	**MA.3.AT.4:** Interpret a multiplication equation as equal groups (e.g., interpret 5 × 7 as the total number of objects in 5 groups of 7 objects each). Represent verbal statements of equal groups as multiplication equations.
Content Limits	Products should not exceed 25. Only whole numbers should be used.
Allowable Stimulus Material	graphics
Context	Context allowable
Recommended Response Mechanisms	Multiple Choice (MC) Multiple Select (MS) Equation Response (EQ)
Construct-Relevant Vocabulary	multiplication, array, model, create, represent, show
Cognitive Complexity	3
Evidence Statements	
Evidence Statements	**Tier 1** Student will select the model that represents the math equation through multiplication.
	Tier 2 Student will select a multiplication problem that describes a given arrangement.
	Tier 3 Student will identify a factor pair to represent a given arrangement.
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 model shows 2 x 4? A. (Audio: a model with two rows of circles. Each row has one circle.) B. (Audio: a model with two rows of circles. Each row has three circles.) **C.** **(Audio: a model with two rows of circles. Each row has four circles.)** **KEY**

Updated: 07/19

Reporting Category	Algebraic Thinking and Data Analysis
Content Connector	**MA.3.AT.5.a.1:** Apply properties of operations as strategies to multiplication or division.
IAS Standard	**MA.3.AT.5:** Determine the unknown whole number in a multiplication or division equation relating three whole numbers.
Content Limits	The product or dividend should be a number from 0–20. Only whole numbers should be used. The equation must be given, not created.
Allowable Stimulus Material	graphics, models
Context	No context
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	operation, multiplication, division
Cognitive Complexity	4
Evidence Statements	
Evidence Statements	**Tier 1** Student will use manipulatives to create fact families.
	Tier 2 Student will use manipulatives to create fact families.
	Tier 3 Student will determine the value of the unknown number for multiplication and 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	N/A

Sample Item	
Tier 3	Here is an equation. $10 \times \square = 20$ What is the missing number? **A. 2** B. 10 C. 20

Reporting Category	Algebraic Thinking and Data Analysis
Content Connector	**MA.3.AT.5.a.1:** Apply properties of operations as strategies to multiplication or division.
IAS Standard	**MA.3.AT.5:** Determine the unknown whole number in a multiplication or division equation relating three whole numbers.
Content Limits	The product or dividend should be a number from 0–20. Only whole numbers should be used. The equation must be given, not created.
Allowable Stimulus Material	graphics, models
Context	No context
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	operation, multiplication, division
Cognitive Complexity	4
Evidence Statements	
Evidence Statements	**Tier 1** Student will identify fact families represented with manipulatives.
	Tier 2 Student will identify fact families represented with manipulatives.
	Tier 3 Student will determine the value of the unknown number for multiplication and 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	N/A

Sample Item	
Tier 3	Here is an equation. $10 \times \square = 20$ What is the missing number? **A. 2** B. 10 C. 20

Updated: 0719

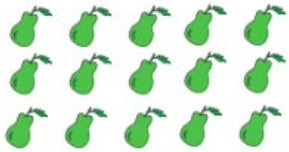
Reporting Category	Algebraic Thinking and Data Analysis
Content Connector	**MA.3.AT.6.a.1:** Identify number patterns using multiplication within 100.
IAS Standard	**MA.3.AT.6:** Create, extend, and give an appropriate rule for number patterns using multiplication within 1000.
Content Limits	Limit adding and subtracting whole numbers up to 40. Multiply whole numbers by 2s or 10s, up to 40. Only present number patterns using 2s and 10s.
Allowable Stimulus Material	graphics, models
Context	No context
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	pattern, multiplication
Cognitive Complexity	3
Evidence Statements	
Evidence Statements	**Tier 1** Student will extend the pattern.
	Tier 2 Student will identify unknown numbers in pattern.
	Tier 3 Student will identify unknown numbers in 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, ☐, 8, 10 What number is missing from the pattern? **A. 6** B. 7 C. 8

Reporting Category	Computation
Content Connector	**MA.3.C.1.a.1:** Add and subtract whole numbers with sums up to 100.
IAS Standard	**MA.3.C.1:** Add and subtract whole numbers fluently within 1000.
Content Limits	All numbers in addition and subtraction should be less than 20. Only whole numbers should be used. Equations must be vertical, not horizontal. No regrouping/borrowing is permitted.
Allowable Stimulus Material	number line, vertical equations, graphics, models
Context	No context
Recommended Response Mechanisms	Multiple Choice (MC) Equation Response (EQ)
Construct-Relevant Vocabulary	add, subtract, solve, answer
Cognitive Complexity	4
Evidence Statements	
Evidence Statements	**Tier 1** Student will add and subtract one-digit numbers.
	Tier 2 Student will add two-digit numbers with no carrying.
	Tier 3 Student will subtract two-digit numbers with no borrowing.
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

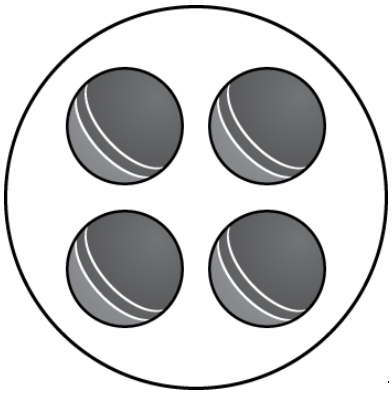
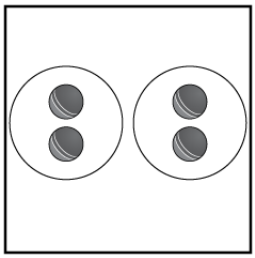
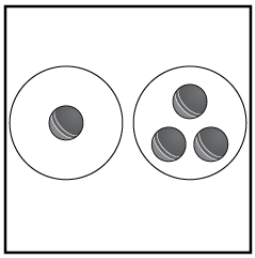
Sample Item	
Tier 3	Here is a subtraction problem. 13 – 12 What is the answer to the subtraction problem? **A. 1** B. 11 C. 25

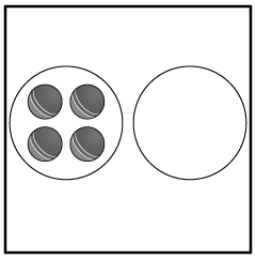
Reporting Category	Computation
Content Connector	**MA.3.C.2.a.1:** Represent the concept of multiplication with manipulatives and arrays with numbers 1, 5, and 10.
IAS Standard	**MA.3.C.2:** Represent the concept of multiplication of whole numbers with the following models: equal-sized groups, arrays, area models, and equal "jumps" on a number line. Understand the properties of 0 and 1 in multiplication.
Content Limits	Only whole numbers should be used. Limit to two factors. For the array of 1, answer should be less than 10. For the array of 5, answer should be less than 25. For the array of 10, answer should be less than 40. Equations must be vertical, not horizontal.
Allowable Stimulus Material	array, vertical equations, graphics, models
Context	Context allowable
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	multiplication, array
Cognitive Complexity	3
Evidence Statements	
Evidence Statements	**Tier 1** Given the equation, student will match the corresponding model.
	Tier 2 Given the model, student will identify the equation.
	Tier 3 Given a context, student will identify a matching equation or model.
Accessibility and Accommodation Considerations	
Stimulus Graphic Limitations	Stimulus graphics will be limited to clear photos, illustrations, diagrams, tables, and charts that directly relate to the passage topic. Information contained within stimulus graphics is ineligible for assessment unless specifically prescribed by Content Connector and/or evidence statements.
Linguistic Complexity	To be determined after IDOE review
Reference Tools	N/A

Sample Item	
Tier 2	Sam is selling pears at the market. He makes three rows of pears with five pears in each row.  Which equation shows the number of pears Sam is selling? A. $5 - 3 = 2$ B. $3 + 5 = 8$ **C. $3 \times 5 = 15$**

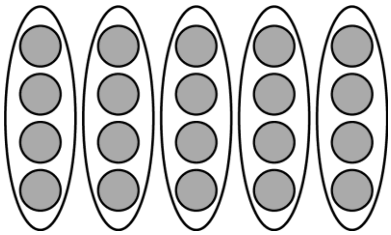
Updated: 07/19

Reporting Category	Computation
Content Connector	**MA.3.C.3.a.1:** Represent division by sorting a set number of objects into a set number of groups. Up to 20 objects into up to 5 groups.
IAS Standard	**MA.3.C.3:** Represent the concept of division of whole numbers with the following models: partitioning, sharing, and an inverse of multiplication. Understand the properties of 0 and 1 in division.
Content Limits	Only whole numbers should be used. Items should not assess the division property of 0. Calculating the quotient is not required. Dividends should be within 20. Divisor and quotient maximum is 5.
Allowable Stimulus Material	division model, horizontal images, graphics, models
Context	Context required
Recommended Response Mechanisms	Multiple Choice (MC) Grid Interaction (GI)
Construct-Relevant Vocabulary	groups, equal, sort, divide
Cognitive Complexity	3
Evidence Statements	
Evidence Statements	**Tier 1** Student will identify which one shows equal groups.
	Tier 2 Student will group objects into equal groups (up to 3 groups).
	Tier 3 Students will group objects into equal groups (up to 5 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	N/A

Sample Item	
Tier 1	Here are 4 balls.  Which shows the balls divided into equal groups? A.  **(Audio: Four balls divided into a group of two balls and a group of two balls.)** **KEY** B.  (Audio: Four balls divided into a group of one ball and a group of three balls.)

	C.  (Audio: Four balls divided into a group of four balls and a group of zero balls)

Reporting Category	Computation
Content Connector	**MA.3.C.4.a.1:** Use representations of division (by sorting a set number of objects into a set number of groups) to find how many in one group. Up to 20 objects into up to 5 groups.
IAS Standard	**MA.3.C.4:** Interpret whole-number quotients of whole numbers (e.g., interpret 56 ÷ 8 as the number of objects in each share when 56 objects are partitioned equally into 8 shares, or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each).
Content Limits	Only whole numbers should be used. Items should not assess the division property of 0. Dividends should be within 20. The divisor and quotient maximum is 5.
Allowable Stimulus Material	division model, horizontal images, graphics, models
Context	Context allowable
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	division
Cognitive Complexity	3
Evidence Statements	
Evidence Statements	**Tier 1** Student will identify which one shows equal groups.
	Tier 2 Student will determine how many items are in each group (up to 3 total groups).
	Tier 3 Student will determine how many items are in each group (up to 5 total 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	N/A

Sample Item	
Tier 3	Here are 20 circles. The circles are divided into 5 groups.  How many circles are in **<u>each</u>** group? A. 3 circles **B. 4 circles** C. 5 circles

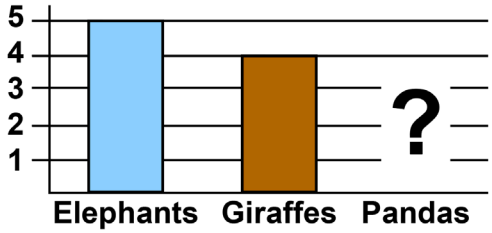
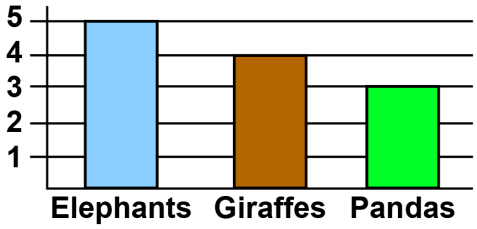
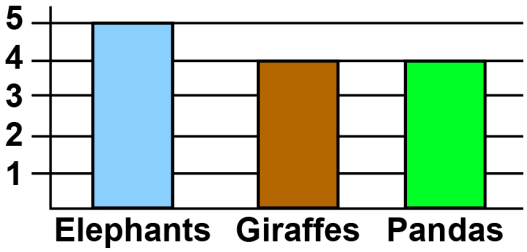
Reporting Category	Computation
Content Connector	**MA.3.C.5.a.1:** Apply strategies of multiplication, including zero property of multiplication and identity property multiplication.
IAS Standard	**MA.3.C.5:** Multiply and divide within 100 using strategies, such as the relationship between multiplication and division (e.g., knowing that 8 x 5 = 40, one knows 40 ÷ 5 = 8), or properties of operations.
Content Limits	Only whole numbers should be used. The product must be 10 or less.
Allowable Stimulus Material	graphics, models
Context	No context
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	multiplication, zero property, identity property
Cognitive Complexity	4
Evidence Statements	
Evidence Statements	**Tier 1** N/A
	Tier 2 An equation is shown, and student will find the missing value.
	Tier 3 An equation is shown, and student will find the missing value.
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

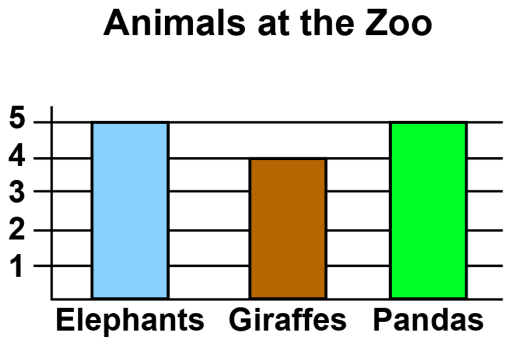
Sample Item	
Tier 2	Here is an equation. $5 \times \square = 5$ What is the missing number? A. 0 **B. 1** C. 5

Reporting Category	Computation
Content Connector	**MA.3.C.6.a.1:** Solve multiplication facts up to 10.
IAS Standard	**MA.3.C.6:** Demonstrate fluency with multiplication facts and corresponding division facts of 0 to 10.
Content Limits	Solve multiplication facts for 2s up to 20; 5s up to 25; and 10s up to 40. Only whole numbers should be used.
Allowable Stimulus Material	graphics, models
Context	No context
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	multiplication, division
Cognitive Complexity	2
Evidence Statements	
Evidence Statements	**Tier 1** Student will solve multiplication facts for 10s.
	Tier 2 Student will solve multiplication facts for 2s.
	Tier 3 Student will solve multiplication facts for 5s.
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 2×8? A. 10 B. 14 **C. 16**

Reporting Category	Algebraic Thinking and Data Analysis
Content Connector	**MA.3.DA.1.a.1:** Organize given data into a graph.
IAS Standard	**MA.3.DA.1:** Create scaled picture graphs, scaled bar graphs, and frequency tables to represent a data set—including data collected through observations, surveys, and experiments—with several categories. Solve one- and two-step "how many more" and "how many less" problems regarding the data and make predictions based on the data.
Content Limits	Graphs should only include pictographs representing only one object and bar graphs. Graphs should only include up to three categories.
Allowable Stimulus Material	graph or data set, graphics, models
Context	Context required
Recommended Response Mechanisms	Multiple Choice (MC) Grid Interaction (GI)
Construct-Relevant Vocabulary	data, graph
Cognitive Complexity	4
Evidence Statements	
Evidence Statements	**Tier 1** Student will select the graph that correctly completes one missing category.
	Tier 2 Student will select the graph that correctly completes two missing categories.
	Tier 3 Student will select the graph that correctly completes three missing 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	N/A

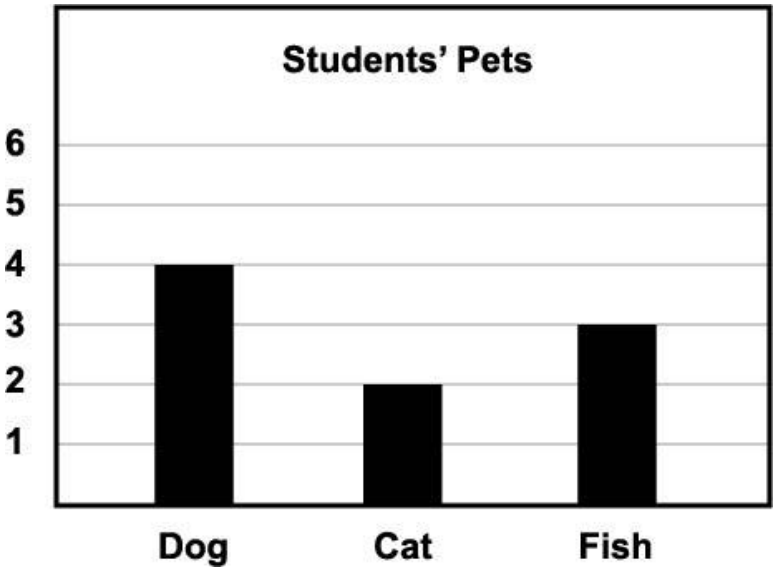
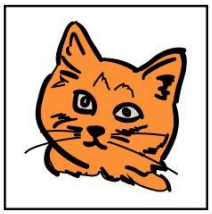
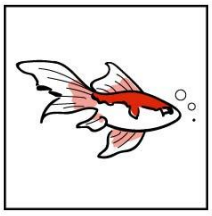
Sample Item	
Tier 1	Here is a graph. The graph shows how many animals a zoo has. **Animals at the Zoo**  A zookeeper counts that there are 3 pandas. Which completed graph shows how many animals the zoo has? A. **Animals at the Zoo**  **KEY** B. **Animals at the Zoo** 

Sample Item	
	C. 

Updated: 07/19

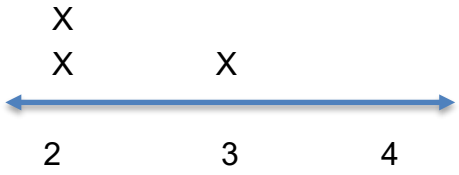
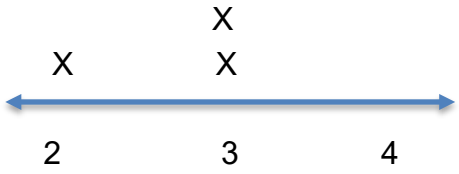
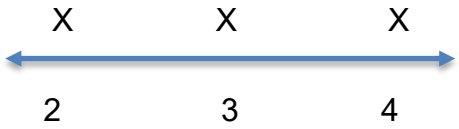
Reporting Category	Algebraic Thinking and Data Analysis
Content Connector	**MA.3.DA.1.a.2:** Select the appropriate statement that describes the data representations based on a given bar graph or picture graph.
IAS Standard	**MA.3.DA.1:** Create scaled picture graphs, scaled bar graphs, and frequency tables to represent a data set—including data collected through observations, surveys, and experiments—with several categories. Solve one- and two-step "how many more" and "how many less" problems regarding the data and make predictions based on the data.
Content Limits	Graphs should only include picture graph representing only one object and bar graphs. Graphs should only include up to three categories. Use "picture graph" not "pictograph". All images have text labels (e.g., picture of dog has the label "dog").
Allowable Stimulus Material	bar graph, picture graph, data set, graphics, realistic images, models
Context	Context required
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	bar graph, picture graph, most, least, less, more, choose
Cognitive Complexity	4
Evidence Statements	
Evidence Statements	**Tier 1** Student will choose the correct image to identify which group has the most.
	Tier 2 Student will choose the correct image to describe which group has the least.
	Tier 3 Student will choose the correct statement to describe how many more and/or how many less each group has.

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 bar graph. The bar graph shows which pets a group of students has.  Which pet do the **most** students have? A.  (Audio: cats) B.  (Audio: fish)

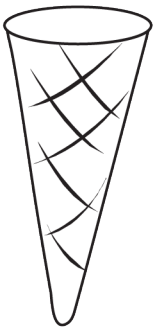
	C. **(Audio: dogs) KEY**

Reporting Category	Algebraic Thinking and Data Analysis
Content Connector	**MA.3.DA.2.a.1:** Organize measurement data into a line plot.
IAS Standard	**MA.3.DA.2:** Generate measurement data by measuring lengths with rulers to the nearest quarter of an inch. Display the data by making a line plot, where the horizontal scale is marked off in appropriate units, such as whole numbers, halves, or quarters.
Content Limits	Line plot should only include whole numbers less than or equal to10. Limit to 3-5 data points
Allowable Stimulus Material	line plot, graphics, models
Context	Context allowable
Recommended Response Mechanisms	Multiple Choice (MC) Graphic Response (GR)
Construct-Relevant Vocabulary	measure, line plot
Cognitive Complexity	4
Evidence Statements	
Evidence Statements	**Tier 1** Student will select the line plot that correctly displays three data points.
	Tier 2 Student will select the line plot that correctly displays four data points.
	Tier 3 Student will select the line plot that correctly displays five data points.
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 set of data. 2, 3, 3 Which line plot displays the set of data? A.  **B**.  **KEY** C. 

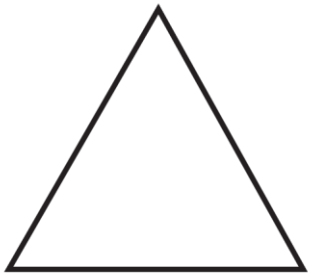
Updated: 07/19

Reporting Category	Geometry and Measurement
Content Connector	**MA.3.G.1.a.1:** Identify the following: cube, sphere, cylinder, and cone.
IAS Standard	**MA.3.G.1:** Identify and describe the following: cube, sphere, prism, pyramid, cone, and cylinder.
Content Limits	Use real-world familiar objects. Limit choices to 3.
Allowable Stimulus Material	Images of geometric images
Context	Context allowable
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	cube, sphere, cylinder, cone
Cognitive Complexity	2
Evidence Statements	
Evidence Statements	**Tier 1** Student will identify a real-world shape by name.
	Tier 2 Student will identify the name of a real-world shape.
	Tier 3 N/A
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

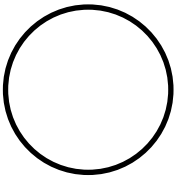
Sample Item	
Tier 1	Here is a shape.  What is the name of this shape? **A. Cone** B. Cube C. Cylinder

Updated: 07/19

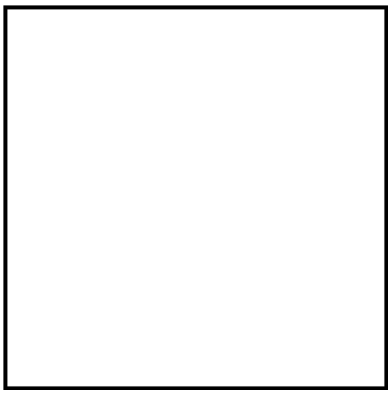
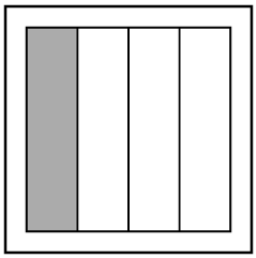
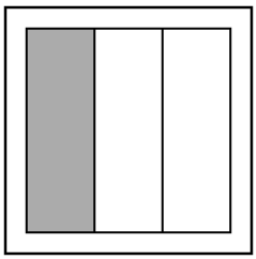
Reporting Category	Geometry and Measurement
Content Connector	**MA.3.G.2.a.1:** Identify shared attributes of shapes based on the models provided.
IAS Standard	**MA.3.G.2:** Understand that shapes (e.g., rhombuses, rectangles, and others) may share attributes (e.g., having four sides), and that the shared attributes can define a larger category (e.g., quadrilaterals). Recognize and draw rhombuses, rectangles, and squares as examples of quadrilaterals. Recognize and draw examples of quadrilaterals that do not belong to any of these subcategories.
Content Limits	Shapes include two-dimensional shapes and the following shapes in particular: circle, triangle, rectangle, square. Attributes include number of sides, whether the sides are the same length or not, whether the sides are straight lines or not.
Allowable Stimulus Material	Images of circle, triangle, rectangle, square
Context	Context allowable
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	circle, triangle, rectangle, square, shape, model
Cognitive Complexity	2
Evidence Statements	
Evidence Statements	**Tier 1** Student will match a two-dimensional shape to a real-world example.
	Tier 2 Student will identify the number of sides.
	Tier 3 Student will identify similar attributes.
Accessibility and Accommodation Considerations	
Stimulus Graphic Limitations	Stimulus graphics will be limited to clear photos, illustrations, diagrams, tables, and charts that directly relate to the passage topic. Information contained within stimulus graphics is ineligible for assessment unless specifically prescribed by Content Connector and/or evidence statements.
Linguistic Complexity	To be determined after IDOE review
Reference Tools	N/A

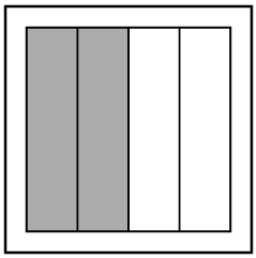
Sample Item	
Tier 1	Here is a triangle.  How many sides does a triangle have? A. 2 sides **B. 3 sides** C. 4 sides

Reporting Category	Geometry and Measurement
Content Connector	**MA.3.G.3.a.1:** Use points to create a straight line with a ruler, straight edge, or technology.
IAS Standard	**MA.3.G.3:** Identify, describe and draw points, lines and line segments using appropriate tools (e.g., ruler, straightedge, and technology), and use these terms when describing two-dimensional shapes.
Content Limits	N/A
Allowable Stimulus Material	N/A
Context	No context
Recommended Response Mechanisms	Grid Interaction (GI) Multiple Choice (MC)
Construct-Relevant Vocabulary	line, point, ruler
Cognitive Complexity	2
Evidence Statements	
Evidence Statements	Tier 1 Recognize a line.
	Tier 2 Identify a tool used to draw lines.
	Tier 3 Identify line drawn between two given points.
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

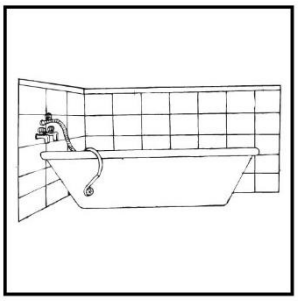
Sample Item	
Tier 3	Which one of these shapes is a line? A. (audio: this one) **B.** **(audio: this one)** **KEY** C.  (audio: this one)

Reporting Category	Geometry and Measurement
Content Connector	**MA.3.G.4.a.1:** Partition shapes into equal parts (halves, thirds, fourths) with equal area.
IAS Standard	**MA.3.G.4:** Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole (1/2, 1/3, 1/4, 1/6, 1/8).
Content Limits	Shapes will be squares. Fractions will include halves and quarters. When identifying halves and quarters, the keys for Tier 2 and 3 should have equal partitions.
Allowable Stimulus Material	Image of square
Context	No context
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	partition, divide, equal, area, square, shape, halves, quarters
Cognitive Complexity	3
Evidence Statements	
Evidence Statements	**Tier 1** Student will identify which one is separated into equal parts.
	Tier 2 Student will identify halves.
	Tier 3 Student will identify quarters.
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 whole.  Which shows a fourth? **A.**  **(Audio: A fraction model divided into four equal parts. One part is shaded, three parts are not shaded.)** **KEY** B.  (Audio: A fraction model divided into three equal parts. One part is shaded, two parts are not shaded.)

	C.  (Audio: A fraction model divided into four equal parts. two parts are shaded, two parts are not shaded.)

Reporting Category	Geometry and Measurement
Content Connector	**MA.3.M.1.a.1:** Measure volume using gallons, quarts, and liters.
IAS Standard	**MA.3.M.1:** Estimate and measure the mass of objects in grams (g) and kilograms (kg) and the volume of objects in quarts (qt), gallons (gal), and liters (l). Add, subtract, multiply, or divide to solve one-step real-world problems involving masses or volumes that are given in the same units (e.g., by using drawings, such as a beaker with a measurement scale, to represent the problem).
Content Limits	Whole numbers only. Real-world examples. Answer amounts up to 5. Graphic has to have labels with units.
Allowable Stimulus Material	Image of object being measured
Context	Context required
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	measure, volume, gallons, quarts, liters
Cognitive Complexity	2
Evidence Statements	
Evidence Statements	**Tier 1** Given a graphic, student will identify the quantity
	Tier 2 Given the quantity, student will identify the graphic
	Tier 3 N/A
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 bathtub.  Which unit would **best** fill the bathtub? **A. Gallon** B. Quart C. liter

Reporting Category	Geometry and Measurement
Content Connector	**MA.3.M.2.a.1:** Select appropriate tool for measuring length, weight, and temperature.
IAS Standard	**MA.3.M.2:** Choose and use appropriate units and tools to estimate and measure length, weight, and temperature. Estimate and measure length to a quarter-inch, weight in pounds, and temperature in degrees Celsius and Fahrenheit.
Content Limits	Weight is only in pounds. Length is only in inches. Temperature is only in Fahrenheit. Use ruler, thermometer, digital scale for measurement.
Allowable Stimulus Material	Image of object or tool
Context	Context required
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	appropriate, tool, measure, length, weight temperature
Cognitive Complexity	3
Evidence Statements	
Evidence Statements	**Tier 1** Given graphics, student will select the appropriate tool for measuring length, weight, and temperature.
	Tier 2 Given graphics, student will select the appropriate tool for measuring length, weight, and temperature.
	Tier 3 Student will select the appropriate tool for measuring length, weight, and temperature using real-world examples.
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	Jane has some fruit. Which tool can Jane use to measure the weight of her fruit? **A. a scale** B. a thermometer C. a ruler

Reporting Category	Geometry and Measurement
Content Connector	**MA.3.M.3.a.1:** Tell and write time to the nearest quarter hour. Solve real-world word problems involving the addition and subtraction of time intervals to whole hours or within an hour (e.g., whole hours: 5:00 to 8:00, within hours: 7:15 to 7:45) using manipulatives or pictures of a clock.
IAS Standard	**MA.3.M.3:** Tell and write time to the nearest minute from analog clocks, using a.m. and p.m., and measure time intervals in minutes. Solve real-world problems involving addition and subtraction of time intervals in minutes.
Content Limits	Tell and write time to half and whole hours. Addition of time intervals to whole hours only and within two consecutive hours. Clear visuals. No counting backwards in time. Either all in A.M. or all in P.M.
Allowable Stimulus Material	Image of clock
Context	Context allowable
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	half, hour
Cognitive Complexity	4
Evidence Statements	
Evidence Statements	**Tier 1** Student will identify time on a given clock, to the half and whole hour intervals.
	Tier 2 Student will match a clock to a given time, to the half and whole hour intervals.
	Tier 3 Student will add whole hour intervals within two consecutive hours.

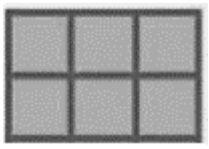
Accessibility and Accommodation Considerations	
Stimulus Graphic Limitations	Stimulus graphics will be limited to clear photos, illustrations, diagrams, tables, and charts that directly relate to the passage topic. Information contained within stimulus graphics is ineligible for assessment unless specifically prescribed by Content Connector and/or evidence statements.
Linguistic Complexity	To be determined after IDOE review
Reference Tools	N/A
Sample Item	
Tier 3	Baseball practice starts at 5:00 p.m. It will end 2 hours later. What time is Baseball practice over? A. 10:00 p.m. **B. 7:00 p.m.** C. 3:00 p.m.

Reporting Category	Geometry and Measurement
Content Connector	**MA.3.M.4.a.1:** Solve real-world problems to determine whether there is enough money to make a purchase using the next dollar strategy (round up to the next whole dollar).
IAS Standard	**MA.3.M.4:** Find the value of any collection of coins and bills. Write amounts less than a dollar using the ¢ symbol and write larger amounts using the $ symbol in the form of dollars and cents (e.g., $4.59). Solve real-world problems to determine whether there is enough money to make a purchase.
Content Limits	Real images of money will be used; images will not be overlapped or stacked. Only dollar bills will be used; no coins. Total money will be up to $10.
Allowable Stimulus Material	Images of dollar bills
Context	Context allowable
Recommended Response Mechanisms	Multiple Choice (MC) Multiple Select (MS) Table Match (TM) Equation Response (EQ)
Construct-Relevant Vocabulary	value, money, dollar
Cognitive Complexity	5
Evidence Statements	
Evidence Statements	**Tier 1** Students will count the money.
	Tier 2 Students will determine if they have enough money up to $5.
	Tier 3 Students will determine if they have enough money up to $10.
Accessibility and Accommodation Considerations	
Stimulus Graphic Limitations	Stimulus graphics will be limited to clear photos, illustrations, diagrams, tables, and charts that directly relate to the passage topic. Information contained within stimulus graphics is ineligible for assessment unless specifically prescribed by Content Connector and/or evidence statements.
Linguistic Complexity	To be determined after IDOE review
Reference Tools	N/A

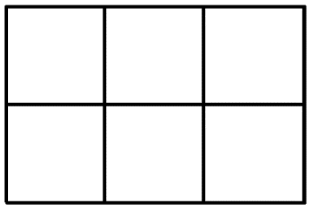
Sample Item	
Tier 1	Here is some money. How much money is there? A. $1.00 **B. $2.00** C. $3.00

Updated: 07/19

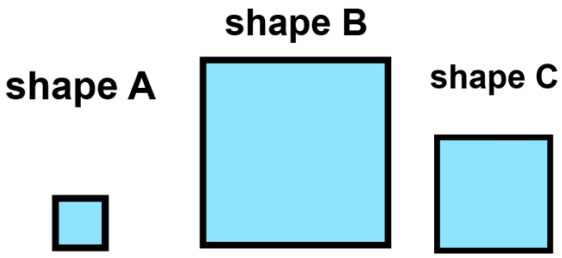
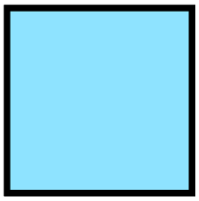
Reporting Category	Geometry and Measurement
Content Connector	**MA.3.M.5.a.1:** Find the area of rectangles by modeling with unit squares.
IAS Standard	**MA.3.M.5:** Find the area of a rectangle with whole-number side lengths by modeling with unit squares, and show that the area is the same as would be found by multiplying the side lengths. Identify and draw rectangles with the same perimeter and different areas or with the same area and different perimeters.
Content Limits	Whole number side lengths only. Area less than 20. Area will be measured by counting the unit squares in the shape (e.g., grid, tiles) and not by calculating with a formula.
Allowable Stimulus Material	Image of rectangle with unit squares
Context	No context
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	area, rectangle, square
Cognitive Complexity	3
Evidence Statements	
Evidence Statements	**Tier 1** Student will determine the area of a rectangle (up to 8).
	Tier 2 Student will determine the area of a rectangle (up to 12).
	Tier 3 Student will determine the area of a rectangle (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 1	Here is a rectangle.  What is the area of the rectangle? A. 5 unit squares B. **6 unit squares** C. 10 unit squares

Reporting Category	Geometry and Measurement
Content Connector	**MA.3.M.6.a.1:** Use tiling and addition to determine area of a rectangle.
IAS Standard	**MA.3.M.6:** Multiply side lengths to find areas of rectangles with whole-number side lengths to solve real-world problems and other mathematical problems involving shapes, and represent whole number products as rectangular areas in mathematical reasoning.
Content Limits	Whole number side lengths only. Area less than 20. Area will be measured by counting the unit squares in the shape (e.g., grid, tiles) and not by calculating with a formula.
Allowable Stimulus Material	Image of rectangle with unit squares
Context	Context allowable
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	tiling, addition, area, rectangle, square
Cognitive Complexity	3
Evidence Statements	
Evidence Statements	**Tier 1** Student will determine the area of a rectangle (up to 8).
	Tier 2 Student will determine the area of a rectangle (up to 12).
	Tier 3 Student will determine the area of a rectangle (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

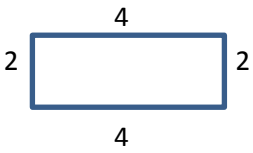
Sample Item	
Tier 1	Here is a rectangle.  What is the area of the rectangle? A. 3 unit squares **B. 6 unit squares** C. 10 unit squares

Reporting Category	Geometry and Measurement
Content Connector	**MA.3.M.7.a.1:** Identify a figure as getting larger or smaller when the dimensions of the figure change.
IAS Standard	**MA.3.M.7:** Find perimeters of polygons given the side lengths or by finding an unknown side length.
Content Limits	Whole number side lengths only. Squares or rectangles only. Perimeter up to 20. Obvious size differences.
Allowable Stimulus Material	Images of squares or rectangles
Context	No context
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	perimeter, dimensions, figure
Cognitive Complexity	3
Evidence Statements	
Evidence Statements	**Tier 1** Student will identify which shape is larger or smaller.
	Tier 2 Given the perimeters of shapes, student will identify which shape is larger or smaller; perimeter 2 – 10.
	Tier 3 Given the perimeters of shapes, student will identify which shape is larger or smaller; perimeter 10 – 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 1	Here are three shapes.  Which shape is the largest? A. shape A B. shape B  KEY C. shape C

Updated: 0719

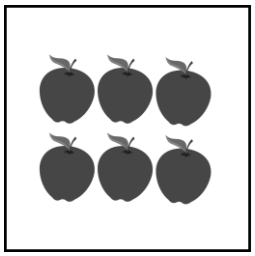
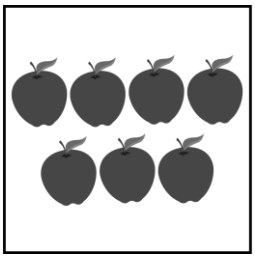
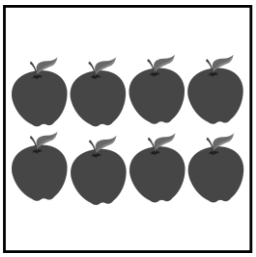
Reporting Category	Geometry and Measurement
Content Connector	**MA.3.M.7.a.2:** Use addition to find the perimeter of a polygon.
IAS Standard	**MA.3.M.7:** Find perimeters of polygons given the side lengths or by finding an unknown side length.
Content Limits	Whole numbers only. No formulas; addition only. All sides of graphic are labeled.
Allowable Stimulus Material	Polygon with labeled sides
Context	No context
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	perimeter, polygon, addition
Cognitive Complexity	5
Evidence Statements	
Evidence Statements	**Tier 1** Given graphic with an equation to solve for the perimeter (with all four dimensions filled in the equation), student will solve for the perimeter (e.g., 2 + 2 + 4 + 4 = ?).
	Tier 2 Given graphic with an equation to solve for the perimeter (with only two dimensions filled in the equation), student will solve for the perimeter (e.g., 2 + 2 + __ + __ = ?).
	Tier 3 Given graphic with an equation to solve for the perimeter (with blanks in the equation; no numbers filled), student will solve for the perimeter (e.g., __ + __ + __ + __ = ?)
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 rectangle.  2 + 2 + 4 + 4 = ☐ What is the perimeter of the rectangle? A. 6 B. 8 **C. 12**

Reporting Category	Number Sense
Content Connector	**MA.3.NS.1.a.1**: Read, demonstrate, and write whole numbers up to 200, in standard and word form.
IAS Standard	**MA.3.NS.1:** Read and write whole numbers up to 10,000. Use words, models, standard form and expanded form to represent and show equivalent forms of whole numbers up to 10,000.
Content Limits	No reversals in options (e.g., 36 and 63)
Allowable Stimulus Material	Number model
Context	No context
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	whole numbers, standard form, word form
Cognitive Complexity	3
Evidence Statements	
Evidence Statements	**Tier 1** Student will identify the number shown, up to 50
	Tier 2 Student will identify the number shown, up to 100
	Tier 3 Student will identify the number shown, up to 200
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

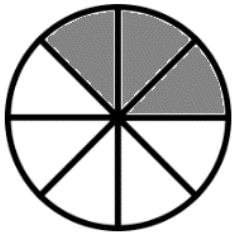
Sample Item	
Tier 2	Here is a number. 54 What is that number in word form? A. five four **B. fifty-four** C. fifty-five

Reporting Category	Number Sense
Content Connector	**MA.3.NS.2.a.1:** Compare two whole numbers up to 200 using >, =, and < symbols and words.
IAS Standard	**MA.3.NS.2:** Compare two whole numbers up to 10,000 using >, =, and < symbols.
Content Limits	If using a table, separate questions into different tables. Use a blank line (not an empty box) to show missing symbol. No reversals in options (e.g., 36 and 63).
Allowable Stimulus Material	N/A
Context	Context allowable
Recommended Response Mechanisms	Multiple Choice (MC) Table Match (TM)
Construct-Relevant Vocabulary	compare, whole number, greater than, less than, equal to
Cognitive Complexity	4
Evidence Statements	
Evidence Statements	**Tier 1** Student will identify the numbers that are equal.
	Tier 2 Student will identify which number is bigger or smaller.
	Tier 3 Student will use the symbols to compare numbers.
Accessibility and Accommodation Considerations	
Stimulus Graphic Limitations	Stimulus graphics will be limited to clear photos, illustrations, diagrams, tables, and charts that directly relate to the passage topic. Information contained within stimulus graphics is ineligible for assessment unless specifically prescribed by Content Connector and/or evidence statements.
Linguistic Complexity	To be determined after IDOE review
Reference Tools	N/A

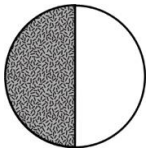
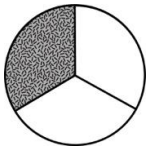
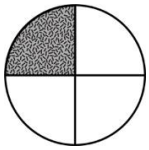
Sample Item	
Tier 1	Here is a number of ducks. Which set of apples is the same number? A.  (Audio: six apples) **B.**  **(Audio: seven apples)** **KEY** C.  (Audio: eight apples)

Reporting Category	Number Sense
Content Connector	**MA.3.NS.3.a.1:** Identify the numerator of a fraction.
IAS Standard	**MA.3.NS.3:** Understand a fraction, 1/b, as the quantity formed by 1 part when a whole is partitioned into b equal parts; understand a fraction, a/b, as the quantity formed by a parts of size 1/b. [In grade 3, limit denominators of fractions to 2, 3, 4, 6, 8.]
Content Limits	Use common objects/real-world problems. Use only circles for shapes within item. Limit denominators to 2, 3, 4, 6, and 8. All options have the same denominators. No simplified fractions. No negative questions (e.g., What part of the circle is not shaded?). Use bold lines to divide circles into parts and for the outside of the circle. Use patterns for "shading", not colors. For Tier 1, whole numbers in distractors should not be a part of the fraction that is the key.
Allowable Stimulus Material	Images of partitioned circles
Context	Context allowable
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	numerator, denominator, fraction, part, whole, circle, half, thirds, fourths, sixths, eighths
Cognitive Complexity	3
Evidence Statements	
Evidence Statements	**Tier 1** Given two whole numbers and a fraction, student will identify the fraction.
	Tier 2 Given a circle broken up to 4 parts, with some parts shaded, student will identify the fraction of what is shaded.
	Tier 3 Given a circle broken up to 8 parts, with some parts shaded, student will identify the fraction of what is shaded.

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 fraction model.  What is the fraction? **A.** $\frac{3}{8}$ B. $\frac{4}{8}$ C. $\frac{3}{5}$

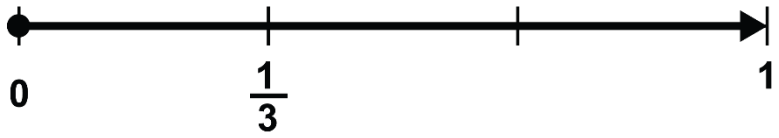
Reporting Category	Number Sense
Content Connector	**MA.3.NS.3.a.2:** Identify the denominator of fractions to halves, thirds, and fourths.
IAS Standard	**MA.3.NS.3**: Understand a fraction, 1/b, as the quantity formed by 1 part when a whole is partitioned into b equal parts; understand a fraction, a/b, as the quantity formed by a parts of size 1/b. [In grade 3, limit denominators of fractions to 2, 3, 4, 6, 8.]
Content Limits	Use common objects/real-world problems. Use only circles for shapes within item. All options have the same numerators. No simplified fractions. No negative questions (e.g., What part of the circle is not shaded?). Use bold lines to divide circles into parts and for the outside of the circle. Use patterns for “shading”, not colors. For Tier 1, whole numbers in distractors should not be a part of the fraction that is the key.
Allowable Stimulus Material	Images of partitioned circles
Context	Context allowable
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	numerator, denominator, fraction, part, whole, circle, half, thirds, fourths
Cognitive Complexity	3
Evidence Statements	
Evidence Statements	**Tier 1** Given two whole numbers and a fraction, student will identify the fraction.
	Tier 2 Given a fraction, student will identify the picture that shows the fraction.
	Tier 3 Given a picture of a circle broken into parts, with some parts shaded, student will identify the fraction that is shaded.

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 fraction. $\frac{1}{3}$ Which model represents the fraction? A.  (Audio: here is a fraction model divided into two parts. One part is shaded. One part is not shaded.) **B.**  **(Audio: here is a fraction model divided into three parts. One part is shaded, two parts are not shaded.)** **KEY** C.  (Audio: here is a fraction model divided into four parts. One part is shaded, three parts are not shaded.)

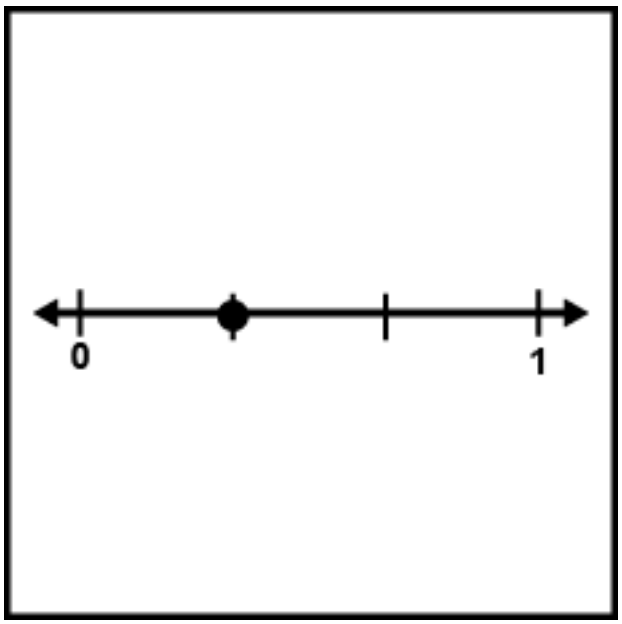
Reporting Category	Number Sense
Content Connector	**MA.3.NS.3.a.3:** Identify halves, thirds, and fourths of a whole.
IAS Standard	**MA.3.NS.3**: Understand a fraction, 1/b, as the quantity formed by 1 part when a whole is partitioned into b equal parts; understand a fraction, a/b, as the quantity formed by a parts of size 1/b. [In grade 3, limit denominators of fractions to 2, 3, 4, 6, 8.]
Content Limits	Use common objects/real-world problems. Use only circles for shapes within item. All options have the same numerators or denominators (depending on what the item is assessing). No simplified fractions. No negative questions (e.g., What part of the circle is not shaded?). Use bold lines to divide circles into parts and for the outside of the circle. Use patterns for “shading”, not colors. For Tier 1, whole numbers in distractors should not be a part of the fraction that is the key.
Allowable Stimulus Material	Images of partitioned circles
Context	Context allowable
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	numerator, denominator, fraction, part, whole, circle, half, thirds, fourths
Cognitive Complexity	3
Evidence Statements	
Evidence Statements	**Tier 1** Given two whole numbers and a fraction, student will identify the fraction (of halves, thirds or fourths).
	Tier 2 Given a fraction, student will identify the picture that shows the fraction.
	Tier 3 Given a picture of a circle broken into parts, with some parts shaded, student will identify the fraction that is shaded.

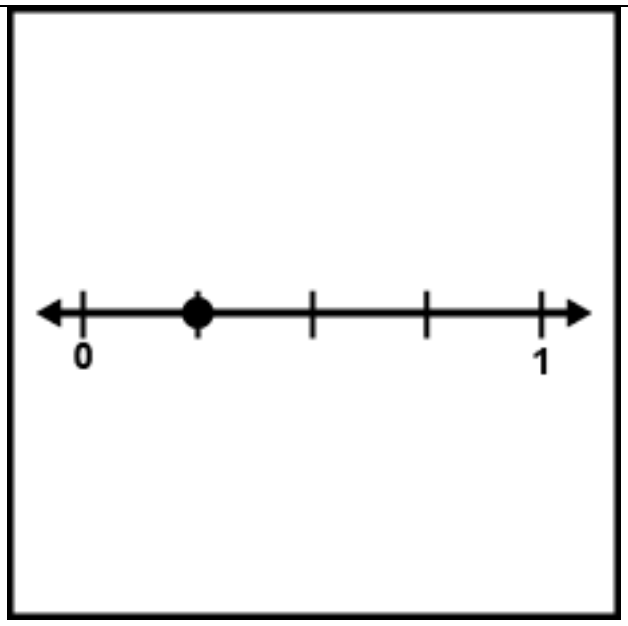
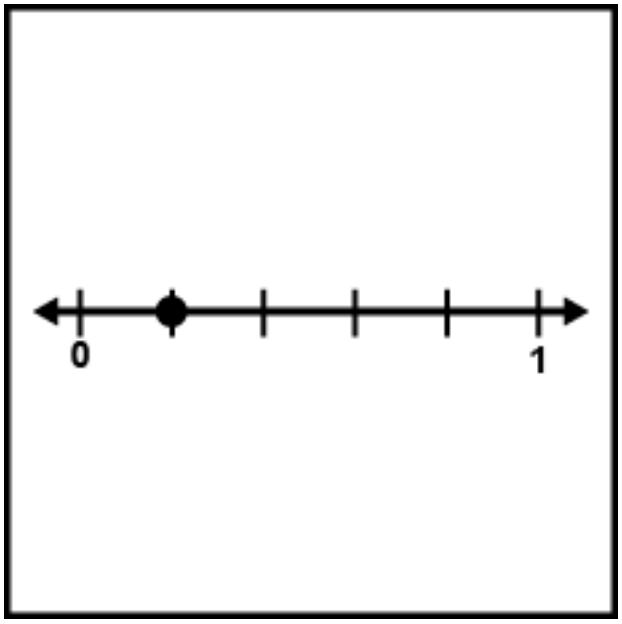
Accessibility and Accommodation Considerations	
Stimulus Graphic Limitations	Stimulus graphics will be limited to clear photos, illustrations, diagrams, tables, and charts that directly relate to the passage topic. Information contained within stimulus graphics is ineligible for assessment unless specifically 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 fraction? **A.** $\frac{1}{4}$ B. 2 C. 3

Reporting Category	Number Sense
Content Connector	**MA.3.NS.4.a.1:** Locate given common unit fractions (i.e., ½, ¼) on a number line that has a value between 0 and 1.
IAS Standard	**MA.3.NS.4**: Represent a fraction, 1/b, on a number line by defining the interval from 0 to 1 as the whole and partitioning it into b equal parts. Recognize that each part has size 1/b and that the endpoint of the part based at 0 locates the number 1/b on the number line.
Content Limits	Number line should only be between 0 and 1; line should not extend past those points Number line should only have tick marks to label ¼, 2/4 and ¾; do not label the graph as ½ (label it as 2/4) On number line, shade from 0 to where the point is; include point with shading. No improper fractions as option choice/distractor (e.g., 5/4 when key is ¼).
Allowable Stimulus Material	Number line
Context	No context
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	unit fraction, number line
Cognitive Complexity	4
Evidence Statements	
Evidence Statements	**Tier 1** N/A
	Tier 2 Given a number line with a fraction shown through shading and a point, student will identify the fraction.
	Tier 3 Given a number line with a fraction shown through shading and a point, student will identify the fraction.

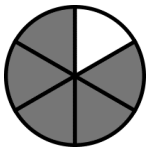
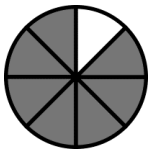
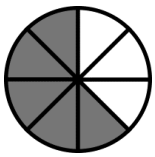
Accessibility and Accommodation Considerations	
Stimulus Graphic Limitations	Stimulus graphics will be limited to clear photos, illustrations, diagrams, tables, and charts that directly relate to the passage topic. Information contained within stimulus graphics is ineligible for assessment unless specifically prescribed by Content Connector and/or evidence statements.
Linguistic Complexity	To be determined after IDOE review
Reference Tools	N/A
Sample Item	
Tier 2	Here is a fraction on a number line.  What is the fraction? A. $\frac{1}{2}$ **B.** $\frac{1}{3}$ C. $\frac{1}{4}$

Reporting Category	Number Sense
Content Connector	**MA.3.NS.5.a.1:** Represent halves and fourths between 0 and 1 on a number line.
IAS Standard	**MA.3.NS.5**: Represent a fraction, a/b, on a number line by marking off lengths 1/b from 0. Recognize that the resulting interval has size a/b, and that its endpoint locates the number a/b on the number line.
Content Limits	Number line should only be between 0 and 1; line should not extend past those points. Number line should only have tick marks to label ¼, 2/4 and ¾; do not label the graph as ½ (label it as 2/4). On number line, shade from 0 to where the point is; include point with shading. One step questions only. Add more space between options so there is distinct differentiation between number lines in options.
Allowable Stimulus Material	Number line
Context	N/A
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	half, fourths, number line
Cognitive Complexity	4
Evidence Statements	
Evidence Statements	**Tier 1** N/A
	Tier 2 Given a fraction, student will identify the number line (with all tick marks labeled) that correctly plots the fraction.
	Tier 3 Given a fraction, student will identify the number line that correctly plots the fraction.

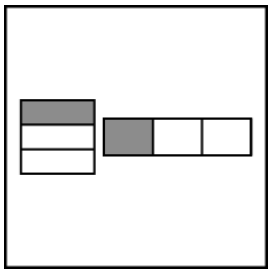
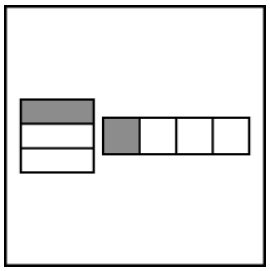
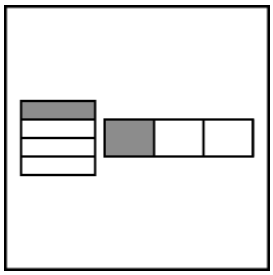
Accessibility and Accommodation Considerations	
Stimulus Graphic Limitations	Stimulus graphics will be limited to clear photos, illustrations, diagrams, tables, and charts that directly relate to the passage topic. Information contained within stimulus graphics is ineligible for assessment unless specifically prescribed by Content Connector and/or evidence statements.
Linguistic Complexity	To be determined after IDOE review
Reference Tools	N/A
Sample Item	
Tier 3	Here is a fraction. $\frac{1}{4}$ Which number line shows the fraction? A.  (Audio: Here is a number line, the number line has a range of zero to one. It is divided into three equal sections. There is a point at the first section.)

	B.  **(Audio: Here is a number line, the number line has a range of zero to one. It is divided into four equal sections. There is a point at the first section.)** **KEY** C.  (Audio: Here is a number line, the number line has a range of zero to one. It is divided into five equal sections. There is a point at the first section.)

Reporting Category	Number Sense
Content Connector	**MA.3.NS.6.a.1:** Understand when two fractions are equivalent (equal).
IAS Standard	**MA.3.NS.6**: Understand two fractions as equivalent (equal) if they are the same size, based on the same whole or the same point on a number line.
Content Limits	Item should use the term “equal” not “equivalent.” No simplified fractions (i.e., item shouldn’t assess if student can match ½ and 2/4); fractions. should have same denominators (i.e., student should be asked to show that 1/4 and 1/4 are equal). Fractions should be halves and fourths. Use bold lines to divide circles into parts and for the outside of the circle. Use patterns for “shading”, not colors.
Allowable Stimulus Material	Image of a partitioned circle
Context	N/A
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	fractions, equal, circle
Cognitive Complexity	4
Evidence Statements	
Evidence Statements	**Tier 1** N/A
	Tier 2 Given a written fraction in the stem, student will identify the equal fraction.
	Tier 3 Given a graphic of a fraction (e.g., a circle broken into parts, with some parts shaded), student will identify the equal graphic.

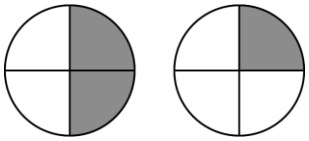
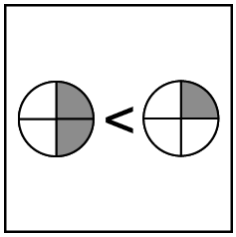
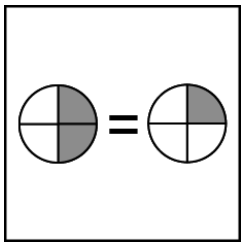
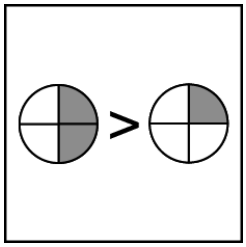
Insert Accessibility and Accommodation Considerations	
Stimulus Graphic Limitations	Stimulus graphics will be limited to clear photos, illustrations, diagrams, tables, and charts that directly relate to the passage topic. Information contained within stimulus graphics is ineligible for assessment unless 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 fraction. $\frac{5}{8}$ Which model shows the fraction? A.  (Audio: Here is a fraction model. The model is divided into six equal parts. Five parts are shaded and one part is not shaded.) B.  (Audio: Here is a fraction model. The model is divided into eight equal parts. Seven parts are shaded, and one part is not shaded.) **C.**  **(Audio: Here is a fraction model. The model is divided into eight equal parts. Five parts are shaded, and three parts are not shaded.)** **KEY**

Reporting Category	Number Sense
Content Connector	**MA.3.NS.7.a.1:** Recognize simple equivalent fractions using models to show equivalence.
IAS Standard	**MA.3.NS.7**: Recognize and generate simple equivalent fractions (e.g., 1/2 = 2/4, 4/6 = 2/3). Explain why the fractions are equivalent (e.g., by using a visual fraction model).
Content Limits	Models to show fractions should be rectangles or squares only. When multiple models are used for comparisons, the shapes as wholes should be the same size. Use bold lines to divide models into parts and for the outside of the model. Use patterns for “shading”, not colors.
Allowable Stimulus Material	Fraction models
Context	No context
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	fraction, equal, model
Cognitive Complexity	4
Evidence Statements	
Evidence Statements	**Tier 1** Given two models in each option, student will pick which pair is equivalent for 1/2 and 1/4.
	Tier 2 Given two models in each option, student will pick which pair is equivalent for 1/2, 1/3, 1/4.
	Tier 3 Given two models in each option, student will pick which pair is equivalent for 1/2, 1/3, 1/4.
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	Which fraction models are equal? **A.**  **(Audio: Here are two fraction models. The first model is divided into three equal parts with one part shaded, and two parts not shaded. The second model is divided into three equal parts with one part shaded, and two parts not shaded.) KEY** B.  (Audio: Here are two fraction models. The first model is divided into three equal parts with one part shaded, and two parts not shaded. The second fraction model is divided into four equal parts with one part shaded, and three parts not shaded.) C.  (Audio: Here are two fraction models. The first model is divided into four equal parts with one part shaded, and three parts not shaded. The second fraction model is divided into three equal parts with one part shaded, and two parts not shaded.)

Reporting Category	Number Sense
Content Connector	**MA.3.NS.8.a.1:** Use =, <, or > and/or words to compare two fractions with the same denominator using a model.
IAS Standard	**MA.3.NS.8**: Compare two fractions with the same numerator or the same denominator 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 fraction model).
Content Limits	Only halves, thirds, and fourths. All fractions should have same denominators within an item. Models should be circles or squares. Use bold lines to divide models into parts and for the outside of the model. Use patterns for “shading”, not colors.
Allowable Stimulus Material	Images of partitioned circles or squares
Context	N/A
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	fractions, model, greater than, less than, equal to
Cognitive Complexity	4
Evidence Statements	
Evidence Statements	**Tier 1** Given a model broken into parts, with some parts shaded, student will identify the fractions that are equal.
	Tier 2 Given a model broken into parts, with some parts shaded, student will identify which fraction is bigger or smaller.
	Tier 3 Given a model broken into parts, with some parts shaded, student will use the symbols to compare 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	Here are two fraction models.  Which inequality compares the two fraction models? A.  (Audio: two fourths is less than one fourth) B.  (Audio: two fourths is equal to one fourth) **C.**  **(Audio: two fourths is greater than one fourth.)** **KEY**

Reporting Category	Number Sense
Content Connector	**MA.3.NS.9.a.1:** Use place value to round two-digit numbers to the nearest 10.
IAS Standard	**MA.3.NS.9:** Use place value understanding to round 2- and 3-digit whole numbers to the nearest 10 or 100.
Content Limits	Numbers up to 50. Whole numbers only.
Allowable Stimulus Material	N/A
Context	No context
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	place value, round, nearest
Cognitive Complexity	4
Evidence Statements	
Evidence Statements	**Tier 1** Given a number, student will select the correctly rounded option (to the nearest tens place, up to 20).
	Tier 2 Given a number, student will select the correctly rounded option (to the nearest tens place, up to 40).
	Tier 3 Given a number, student will round that number (to the nearest tens place, up to 50).
Accessibility and Accommodation Considerations	
Stimulus Graphic Limitations	Stimulus graphics will be limited to clear photos, illustrations, diagrams, tables, and charts that directly relate to the passage topic. Information contained within stimulus graphics is ineligible for assessment unless specifically prescribed by Content Connector and/or evidence statements.
Linguistic Complexity	To be determined after IDOE review
Reference Tools	N/A

Sample Item	
Tier 3	Here is a number. 43 What is the number rounded to the nearest ten? A. 30 **B. 40** C. 50

Reporting Category	Process Standards
Content Connector / IAS 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	Content may not exceed any other Grade 3 Content Connectors.
Allowable Stimulus Material	Materials may not exceed any other Grade 3 Content Connectors.
Context	Context allowable
Recommended Response Mechanisms	Multiple Choice (MC)
Construct-Relevant Vocabulary	reasonable, sense, solve
Cognitive Complexity	6
Evidence Statements	
Evidence Statements	**Tier 1** Given a yes or no question, student will determine if the answer is reasonable.
	Tier 2 Given a yes or no question, student will determine if the answer is reasonable.
	Tier 3 Given a yes or no question, student will determine if the answer 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 1	Is 10 greater than 12? A. Yes, because 10 ends in 0 and 12 ends in 2. **B. No, because 10 ends in 0 and 12 ends in 2.** C. No, because 10 equals 12.

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	Limited to quantities less than 10 Content may not exceed any other Grade 3 Content Connectors.
Allowable Stimulus Material	Materials may not exceed any other Grade 3 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-world scenario, student will decide if the quantity is reasonable.
	Tier 2 Given a real-world scenario, student will decide if the quantity is reasonable.
	Tier 3 Given a real-world scenario, student will decide if the quantity is reasonable.

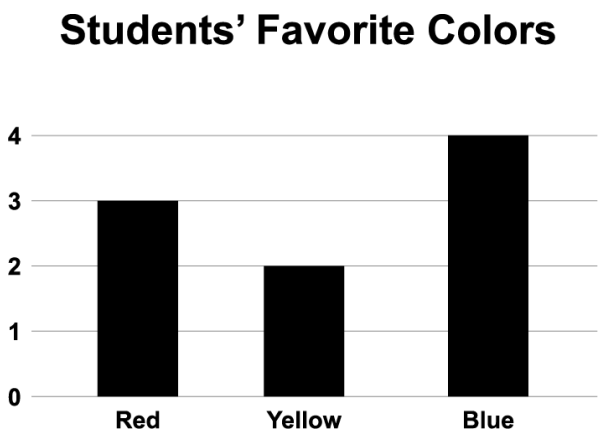
Accessibility and Accommodation Considerations	
Stimulus Graphic Limitations	Stimulus graphics will be limited to clear photos, illustrations, diagrams, tables, and charts that directly relate to the passage topic. Information contained within stimulus graphics is ineligible for assessment unless specifically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

Sample Item	
Tier 2	Lauren has 3 textbooks for school. She thinks they weigh 9 pounds. Is Lauren's estimate reasonable? **A. Yes, because the average textbook weighs 3 pounds.** B. No, because 9 pounds is too light. C. No, because 9 pounds is too heavy.

Reporting Category	Process Standards
Content Connector / IAS 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	Content may not exceed any other Grade 3 Content Connectors.
Allowable Stimulus Material	Materials may not exceed any other Grade 3 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	**Tier 1** Given a statement, student will determine if it is always or never true.
	Tier 2 Given a statement, student will determine if it is always, sometimes, or never true.
	Tier 3 Given a statement, student will determine if it is always, sometimes, or never true with justification.

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 statement. Triangles have three sides. Is this statement always, sometimes, or never true? **A. Always** B. Sometimes C. Never

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 3 Content Connectors.
Allowable Stimulus Material	Materials may not exceed any other Grade 3 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, student will analyze and draw a conclusion.
	Tier 2 Given a mathematical model, student will analyze and draw a conclusion.
	Tier 3 Given a mathematical model, student 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	Here is a model of a group of student's favorite colors.  What color is the students' favorite? A. red B. yellow C. **blue**

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 3 Content Connectors.
Allowable Stimulus Material	Materials may not exceed any other Grade 3 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, student will determine if a tool is reasonable to use.
	Tier 2 Given a real-world situation and graphics, student will determine an appropriate tool to use.
	Tier 3 Given a real-world situation, student will determine if the 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	Dr. Lang wants to measure the weight of a baby. What tool should Dr. Lang use? A. **a scale** B. a ruler C. a thermometer

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	No missing addends. Limited to addition only. Single-digits (whole numbers) only. Content may not exceed any other Grade 3 Content Connectors.
Allowable Stimulus Material	Materials may not exceed any other Grade 3 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, student will determine the missing piece of information to accurately solve the problem.
	Tier 2 Given a partially completed problem, student will determine the missing piece of information to accurately solve the problem.
	Tier 3 Given a partially completed problem, 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 2	Here is a word problem. Henrietta has two pieces of candy. Her friend then gives her more candy. How many pieces of candy does Henrietta have now? What is needed to solve this word problem? A. The name of Henrietta's friend **B. The amount of candy Henrietta's friend gave her** C. The type of candy Henrietta has

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	Patterns should only be AB patterns. Content may not exceed any other Grade 3 Content Connectors.
Allowable Stimulus Material	Materials may not exceed any other Grade 3 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, student will identify what comes next in the pattern.
	Tier 2 Given a pattern, student will identify what comes next in the pattern.
	Tier 3 Given a pattern, student will identify what comes next 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 3	Here is a pattern. A B A B A B What comes next in the pattern? **A. A** B. B C. C

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 3 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	5
Evidence Statements	
Evidence Statements	**Tier 1** Given a numeric pattern, student will determine the missing number (with multiples of 1s, up to 30).
	Tier 2 Given a numeric pattern, student will determine the missing number (with multiples of 10s, up to 50).
	Tier 3 Given a numeric pattern, student will determine the missing number (with multiples of 2s, 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. 10, 12, ☐, 16, 18 What number is missing? A. 10 B. 12 **C. 14**