

**NEBRASKA STATE
ACCOUNTABILITY**



**2016 NeSA-ALTERNATE ASSESSMENT
MATHEMATICS
ITEM AND SCORING SAMPLER
GRADES 6–8**

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GENERAL INTRODUCTION

The Nebraska Department of Education provides districts and schools with tools to assist in delivering focused instructional programs aligned to the state assessment system. These tools include Table of Specifications documents, administration manuals, and content-based item and scoring samplers. This Item and Scoring Sampler is a useful tool for Nebraska educators in the preparation of local instructional programs and the statewide NeSA-Mathematics Alternate Assessment.

SAMPLER CONTENTS

This sampler contains test questions (items) that have been written to align to the assessment extended indicators that are based on the Nebraska College- and Career-Ready Mathematics Standards. The test questions provide an example of the types of questions that will appear on an operational, College- and Career-Ready NeSA-Alternate Assessment in Mathematics. All sample test questions have been through a rigorous review process to ensure alignment with the assessment extended indicators.

PURPOSE AND USES

The purpose of the sampler is to expose teachers and administrators to new items and to show how these items align to the revised Nebraska College- and Career-Ready Mathematics Extended Standards.

DOK

In addition to being aligned to the standards, the sample items included in this sampler were also developed with a particular emphasis on cognitive complexity, or Depth of Knowledge (DOK). The DOK level is also provided for each item in this sampler in the Item Information Table. DOK measures the level of cognitive demand required to complete an assessment item. The following descriptions show the expectations of the DOK levels in greater detail. Four levels of DOK are used for this analysis. The NeSA-Alt assessments include items written at levels 1 and 2. Levels 3 and 4 items are not included. In addition, the NeSA-Alt items are classified based on DOK stages—subsets of the four DOK levels. The stages include responding, reproducing, recalling at DOK 1, and basic reasoning at DOK 2.

MATHEMATICS LEVEL 1-STAGE 1: RESPONDING TO MATHEMATICAL FEATURES

Level 1-Stage 1 requires the ability to respond to, indicate, or acknowledge mathematical features. Some examples that represent, but do not constitute all of, Level 1-Stage 1 performance are:

- Students are able to recognize that there is a difference in patterns.
- Students respond to math ideas using appropriate vocabulary.

MATHEMATICS LEVEL 1-STAGE 2: REPRODUCE MATHEMATICAL FEATURES

Level 1-Stage 2 requires students to display the ability to copy, replicate, repeat, re-enact, mirror, or match mathematical features. Some examples that represent, but do not constitute all of, Level 1-Stage 2 performance are:

- Students write numbers accurately in a variety of contexts.
- Students accurately sort shapes into basic groups.
- Students accurately identify location terms when prompted (i.e., next to, between, over, under).

MATHEMATICS LEVEL 1-STAGE 3: RECALLS INFORMATION ABOUT MATHEMATICAL FEATURES

Level 1-Stage 3 requires the ability to recite or recall facts or information, using simple one-step procedures, and computing simple algorithms. Some examples that represent, but do not constitute all of, Level 1-Stage 3 performance are:

- Students locate a pattern to solve problems.
- Students measure lengths using feet and yards.
- Students use a calculator or concrete objects to add and subtract.

MATHEMATICS LEVEL 2-STAGE 4: BASIC REASONING

Level 2-Stage 4 requires students to make decisions of how to approach a problem. It requires students to compare, classify, organize, estimate, or order data. This typically involves two-step procedures. Some examples that represent, but do not constitute all of, Level 2-Stage 4 performance are:

- Students draw a two-dimensional representation of a three-dimensional object.
- Students evaluate an expression that requires two or more operations.
- Students identify characteristics of a number set (e.g., How many numbers are even?).

ITEM FORMAT AND SCORING GUIDELINES

The Nebraska College- and Career-Ready Alternate Assessment in Mathematics has one type of test question. Each assessment incorporates multiple-choice (MC) items to assess the Nebraska College- and Career-Ready Mathematics Extended Standards. Students are required to select a correct answer from three response choices with a single correct answer. MC items are used to assess a variety of skill levels in relation to the tested extended standards.

MULTIPLE CHOICE (MC)

All MC items have three answer choices, including two distractors and one correct answer. Distractors represent common misconceptions, incorrect logic, common misinterpretations, unsound reasoning, casual reading, etc. A correct response to an MC item is worth one point.

DESCRIPTION OF SAMPLE ITEMS

Sample items are provided in this sampler, along with any related stimulus information. Before each test item is an item information table. It is followed by the administrator's directions and then the student view of the item.

Example Response Item Information Table

Item Information		
Alignment	Assigned Extended Indicator	Assigned extended indicator definition
Answer Key	Correct Answer	Option Annotations Brief answer analysis or rationale
Depth of Knowledge	DOK Level, Stage	
Focus	Skill/Task	

ADDITIONAL INFORMATION

For more information related to the Nebraska plan and schedule for making the transition to NeSA-Alternate Mathematics, see <http://www.education.ne.gov/Assessment> and select the link on the left titled "CCR Math Transition".

ITEM INFORMATION AND QUESTIONS

Item Information		
Alignment	MAE.6.1.1.h	Compare and order integers (–10 to 10) on a number line.
Answer Key	A	<p style="text-align: center;">Option Annotations</p> <p>Option A is correct. The number 1 is to the right of 0 on the number line. Options B and C are incorrect. Students may choose these options if they do not understand how to compare integers on a number line.</p>
Depth of Knowledge	1, 3	
Focus	Comparing Integers on Number Line	

Administrator's Test Booklet	Indicator MAE.6.1.1.h Compare/Order DOK Level 1, Stage 3
Prepare	<ul style="list-style-type: none"> • <i>Place student test page in front of the student.</i> • <i>Call student's attention to the page.</i>
SAY	Here is a number line. <i>Indicate.</i>
ASK	<p>Which number is greater than zero? <i>Indicate and read answers.</i></p> <p>A. 1 B. -2 C. -1</p>

Question 1



1 -2 -1

Item Information		
Alignment	MAE.6.2.2.b	Identify a value for the variable that makes a one-step equation or inequality true.
Answer Key	C	<p style="text-align: center;">Option Annotations</p> <p>Option C is correct. When $n = 5$, $1 + 5 = 6$. Options A and B are incorrect. Students may choose these options if they do not understand equations with variables or if they make calculation errors.</p>
Depth of Knowledge	1, 3	
Focus	Identifying Value of Variable for One-Step Equation	

Administrator's Test Booklet	Indicator MAE.6.2.2.b One-Step Equations DOK Level 1, Stage 3
Prepare	<ul style="list-style-type: none"> • <i>Place student test page in front of the student.</i> • <i>Call student's attention to the page.</i>
SAY	This says $1 + n = 6$. Indicate.
ASK	<p>Which number goes where n is to make the sentence true? <i>Indicate and read answers.</i></p> <p>A. 3 B. 4 C. 5</p>

Question 2

$$1 + n = 6$$

3

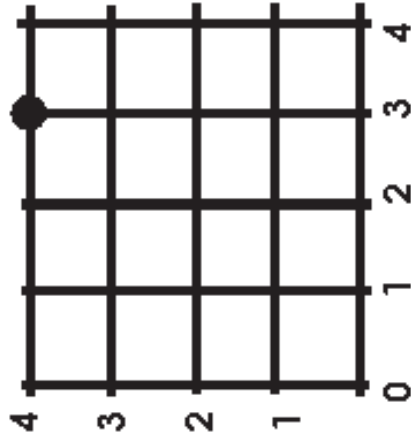
4

5

Item Information		
Alignment	MAE.6.3.2.c	Identify a point on a 4 by 4 grid in quadrant 1.
Answer Key	B	<p style="text-align: center;">Option Annotations</p> <p>Option B is correct. The dot is located 3 units to the right and 4 units up from 0. Options A and C are incorrect. Students may choose these options if they do not understand how to name a point on a grid using ordered pairs or if they miscount.</p>
Depth of Knowledge	1, 3	
Focus	Identifying Ordered Pair of Point	

Administrator's Test Booklet	<p>Indicator MAE.6.3.2.c Points on a Grid DOK Level 1, Stage 3</p>
Prepare	<ul style="list-style-type: none"> • <i>Place student test page in front of the student.</i> • <i>Call student's attention to the page.</i>
SAY	<p>Here is a grid. Indicate. There is a dot on the grid. Indicate.</p>
ASK	<p>Where is the dot? <i>Indicate and read answers.</i> A. three, three B. three, four C. three, five</p>

Question 3



(3, 3)

(3, 4)

(3, 5)

Item Information		
Alignment	MAE.6.4.2.c	Find the mode of a set of ordered whole number data.
Answer Key	C	Option Annotations Option C is correct. The number 10 is the most occurring number in the list. Options A and B are incorrect. Students may choose these options if they do not understand the definition of mode.
Depth of Knowledge	1, 3	
Focus	Mode	

Administrator's Test Booklet	Indicator MAE.6.4.2.c Mode DOK Level 1, Stage 3
Prepare	<ul style="list-style-type: none"> Place student test page in front of the student. Call student's attention to the page.
SAY	Here are the numbers 10, 10, and 15. Indicate. The number most often in the row is called the mode.
ASK	What is the mode of these numbers? <i>Indicate and read answers.</i> A. 5 B. 15 C. 10

Question 4

10 10 15

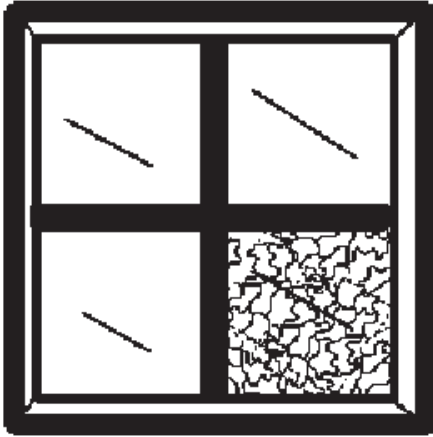
5 15 10

Item Information		
Alignment	MAE.7.1.2.a	Given a fraction $\frac{1}{4}$, $\frac{1}{2}$, or $\frac{3}{4}$, write the corresponding percentage.
Answer Key	A	<p style="text-align: center;">Option Annotations</p> <p>Option A is correct. The corresponding percentage to the fraction $\frac{1}{4}$ is 25%. Options B and C are incorrect. Students may choose these options if they do not understand multiple representations of fractions.</p>
Depth of Knowledge	1, 2	
Focus	Representing $\frac{1}{4}$ as Percentage	

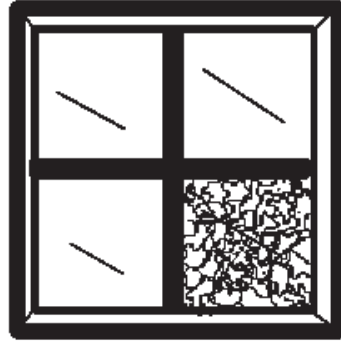
Administrator's Test Booklet	Indicator MAE.7.1.2.a Equivalent Fractions/Percentages DOK Level 1, Stage 2
Prepare	<ul style="list-style-type: none"> • <i>Place student test page in front of the student.</i> • <i>Call student's attention to the page.</i>
SAY	Here is a window that has four parts. Indicate. One-fourth of the window breaks.
ASK	<p>Which percent is the same as one-fourth? <i>Indicate and read answers.</i></p> <p>A. 25% B. 50% C. 75%</p>

Question 5

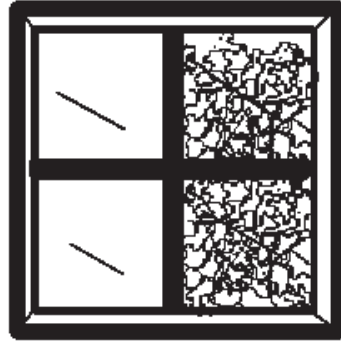
$$\frac{1}{4}$$



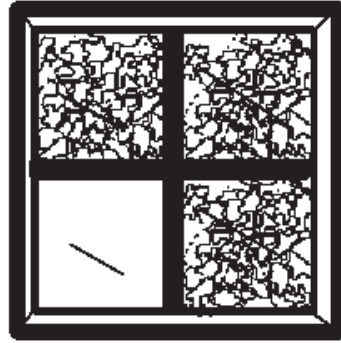
25%



50%



75%



Item Information		
Alignment	MAE.7.2.3.b	Identify a one-step linear equation containing a positive integer that represents a solution to a real-world problem.
Answer Key	B	<p style="text-align: center;">Option Annotations</p> <p>Option B is correct. The number sentence matches the story as 15 is the number of pigs, 10 is the number of cows, and 25 is the total number of animals. Options A and C are incorrect. Students may choose these options if they reverse some of the numbers or misinterpret addition and equal signs.</p>
Depth of Knowledge	1, 3	
Focus	Real-World One-Step Equations	

Administrator's Test Booklet	<p>Indicator MAE.7.2.3.b Representations DOK Level 1, Stage 3</p>
Prepare	<ul style="list-style-type: none"> • <i>Place student test page in front of the student.</i> • <i>Call student's attention to the page.</i>
SAY	<p>Follow along as I read this story. Indicate. The farmer has 15 pigs in the barn. He brings 10 cows into the barn. There are now 25 animals in the barn.</p>
ASK	<p>Which number sentence goes with the story? <i>Indicate and read answers.</i></p> <p>A. 15 + 25 = 40 B. 15 + 10 = 25 C. 10 + 25 = 35</p>

Question 6

The farmer has 15 pigs in the barn. He brings 10 cows into the barn. There are now 25 animals in the barn.

$$15 + 25 = 40$$

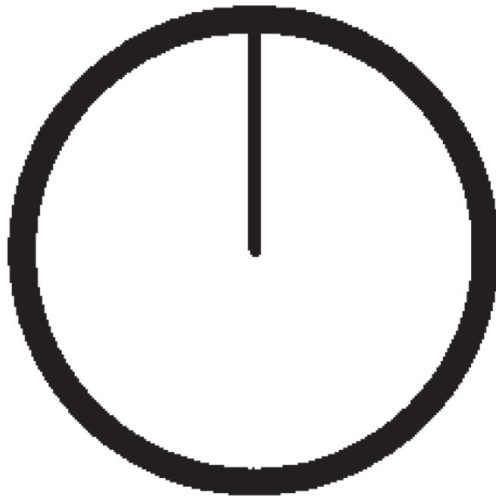
$$15 + 10 = 25$$

$$10 + 25 = 35$$

Item Information		
Alignment	MAE.7.3.3.c	Identify the center and radius of a circle.
Answer Key	A	<p style="text-align: center;">Option Annotations</p> <p>Option A is correct. The picture shows a circle with a line extending from the center to the edge. Options B and C are incorrect. Students may choose these options if they are not familiar with characteristics of circles.</p>
Depth of Knowledge	1, 3	
Focus	Identifying Radius of Circle	

Administrator's Test Booklet	<p>Indicator MAE.7.3.3.c Radius/Diameter DOK Level 1, Stage 3</p>
Prepare	<ul style="list-style-type: none"> • <i>Place student test page in front of the student.</i> • <i>Call student's attention to the page.</i>
SAY	<p>Here is a circle. <i>Indicate.</i> There is a line in the circle. <i>Indicate.</i></p>
ASK	<p>What is the line in the circle called? <i>Indicate and read answers.</i></p> <p>A. radius B. diameter C. area</p>

Question 7



radius

diameter

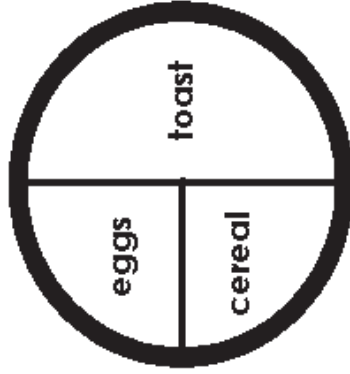
area

Item Information		
Alignment	MAE.7.4.2.a	Solve problems with thirds and fourths of a circle using a circle graph.
Answer Key	B	<p style="text-align: center;">Option Annotations</p> <p>Option B is correct. The circle graph shows toast as $\frac{1}{2}$ of people's favorite breakfast foods, and shows eggs and cereal as only $\frac{1}{4}$ each. Options A and C are incorrect. Students may choose these options if they do not recognize halves or fourths of a circle or do not understand the magnitudes.</p>
Depth of Knowledge	1, 3	
Focus	Circle Graphs	

Administrator's Test Booklet	Indicator MAE.7.4.2.a Circle Graphs DOK Level 1, Stage 3
Prepare	<ul style="list-style-type: none"> • <i>Place student test page in front of the student.</i> • <i>Call student's attention to the page.</i>
SAY	This graph (indicate) shows what people eat for breakfast. People eat eggs (indicate), toast (indicate), and cereal (indicate).
ASK	<p>What do most people eat for breakfast? <i>Indicate and read answers.</i></p> <p>A. eggs B. toast C. cereal</p>

Question 8

Favorite Breakfast Foods



eggs

toast

cereal

Item Information		
Alignment	MAE.8.1.2.c	Determine absolute value using a model (e.g., temperature below zero).
Answer Key	B	Option Annotations Option B is correct. The distance from 0 to -3 is 3 units. Option A and C are incorrect. Students may choose these options if they do not understand the concept of distance on a number line.
Depth of Knowledge	1, 3	
Focus	Absolute Value Using Number Line Model	

Administrator's Test Booklet	Indicator MAE.8.1.2.c Absolute Value DOK Level 1, Stage 3
Prepare	<ul style="list-style-type: none"> • <i>Place student test page in front of the student.</i> • <i>Call student's attention to the page.</i>
SAY	Here is a number line. <i>Indicate.</i>
ASK	How far is it from 0 to -3? <i>Indicate and read answers.</i> A. 1 B. 3 C. 4

Question 9



1

3

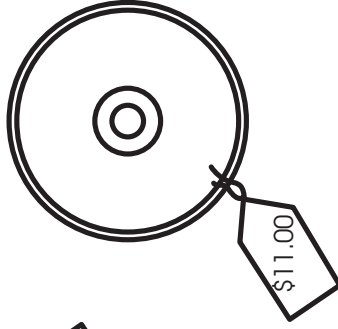
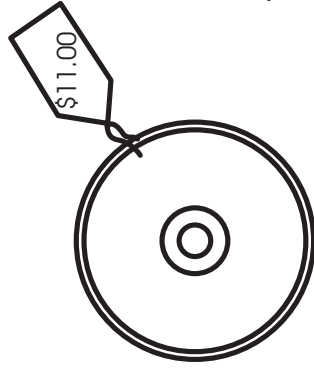
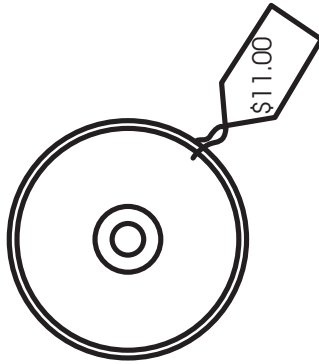
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Item Information		
Alignment	MAE.8.1.2.e	Estimate multiplication results to the nearest 10 up to 100.
Answer Key	A	<p style="text-align: center;">Option Annotations</p> <p>Option A is correct. By first rounding 11 to 10 and multiplying by 3, the correct answer is 30. Options B and C are incorrect. Students may choose these options if they miscalculate or do not understand how to estimate.</p>
Depth of Knowledge	2, 3	
Focus	Estimating Multiplication Results to Nearest 10	

Administrator's Test Booklet	Indicator MAE.8.1.2.e Estimation DOK Level 1, Stage 3
Prepare	<ul style="list-style-type: none"> • <i>Place student test page in front of the student.</i> • <i>Call student's attention to the page.</i>
SAY	Follow along as I read this sentence. Indicate. Robert wants to buy three CDs, which cost \$11.00 each.
ASK	About how much money will Robert spend? <i>Indicate and read answers.</i> A. \$30.00 B. \$50.00 C. \$70.00

Question 10

Robert wants to buy three CDs, which cost \$11.00 each.



\$30.00

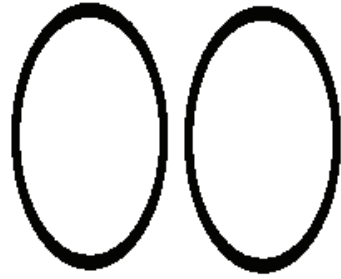
\$50.00

\$70.00

Item Information		
Alignment	MAE.8.3.2.b	Distinguish between pairs of congruent and non-congruent two-dimensional shapes.
Answer Key	C	Option Annotations Option C is correct. The ovals are the same size and shape. Options A and B are incorrect. Students may choose these options if they do not understand congruence or confuse it with similarity.
Depth of Knowledge	1, 3	
Focus	Congruent Shapes	

Administrator's Test Booklet	Indicator MAE.8.3.2.b Congruent Shapes DOK Level 1, Stage 3
Prepare	<ul style="list-style-type: none"> Place student test page in front of the student. Call student's attention to the page.
SAY	Here are three sets of shapes. Indicate.
ASK	<p>Which set has two congruent shapes? Indicate (but do not read) answers.</p> <p>A. oval, circle B. small circle, larger circle C. ovals the same size</p>

Question 11

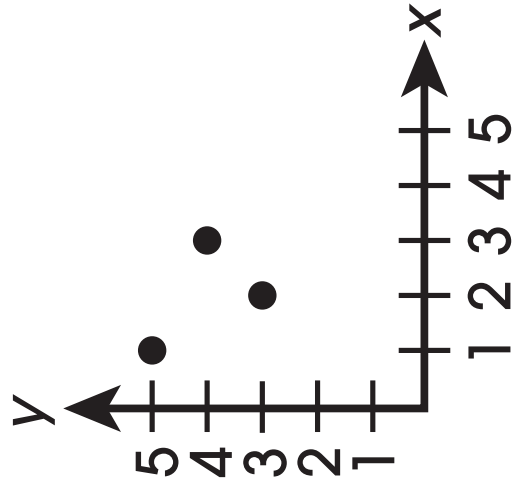
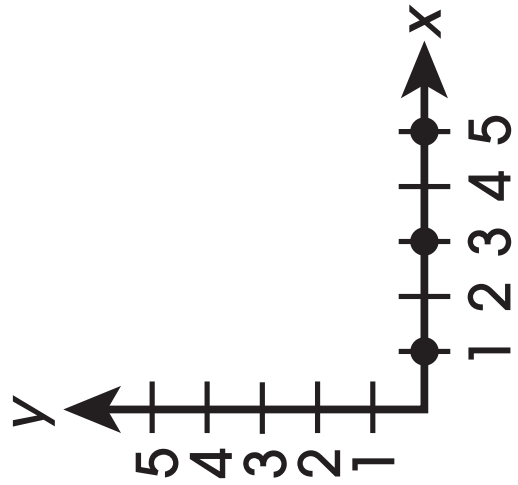
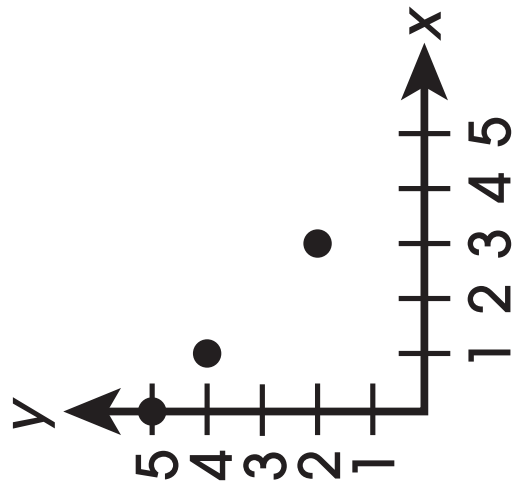


Item Information		
Alignment	MAE.8.4.1.a	Identify a scatter plot from graphical representations.
Answer Key	A	<p style="text-align: center;">Option Annotations</p> <p>Option A is correct. The graph shows the points (0, 5), (1, 4), and (3, 2) that are shown in the table. Options B and C are incorrect. Students may choose these options if they do not understand how to identify a scatter plot that represents information presented in a table.</p>
Depth of Knowledge	2, 4	
Focus	Scatter Plots	

Administrator's Test Booklet	Indicator MAE.8.4.1.a Data Representation DOK Level 2, Stage 4
Prepare	<ul style="list-style-type: none"> • Place student test page in front of the student. • Call student's attention to the page.
SAY	Here is a table of values for x and y . Indicate.
ASK	Which scatter plot shows the same information as the table? Indicate. A. graph A B. graph B C. graph C

Question 12

x	y
0	5
1	4
3	2



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