

# **NEBRASKA STATE ACCOUNTABILITY**



## **MATHEMATICS ITEM AND SCORING SAMPLER GRADE 3**

## INFORMATION ABOUT THE ITEM AND SCORING SAMPLER

General Introduction.....	1
Sampler Contents.....	1
Purpose and Uses.....	1
Item Format and Scoring Guidelines.....	1
Multiple Choice (MC).....	1
Auto-Scored Constructed Response (ASCR).....	1
Depth of Knowledge.....	2
Item and Scoring Sampler Format.....	3
Additional Information.....	3

## ITEMS

Multiple-Choice Items.....	4
Auto-Scored Constructed Response Items.....	30

## 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-MATH.

## SAMPLER CONTENTS

This sampler contains test questions (items) that have been written to align to the assessment indicators that are based on the Nebraska College- and Career-Ready Mathematics Standards. The test questions provide a simulation of the types of items that will appear on an operational Nebraska College- and Career-Ready NeSA-MATH. Each sample test question has been through a rigorous review process to ensure alignment with the assessment indicators.

## PURPOSE AND USES

The purpose of the sampler is to expose teachers and administrators to new item types and to show how these items align to the revised Nebraska College- and Career-Ready Mathematics Standards. Many of the items provided in the sampler will be accessible to students in the form of MATH Practice Tests, Guided Practice Tests, and Online Tools Training resources.

## ITEM FORMAT AND SCORING GUIDELINES

The Nebraska College- and Career-Ready NeSA-MATH has two types of test questions. The types of test questions are Multiple-Choice (MC) and Auto-Scored Constructed Response (ASCR).

### MULTIPLE CHOICE (MC):

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

### AUTO-SCORED CONSTRUCTED RESPONSE (ASCR):

ASCR item types provide a new forum in which to address higher-level thinking skills without the use of hand-scored test questions. Using the expansive features and functions of online testing, developers will incorporate technical enhancements to the test question, the response area, and/or the stimulus. Item types may include drag-and-drop, hot-spot, and in-line selection of multiple answers from drop-down menus. Students will be able to manipulate information within dynamic tasks such as dragging and pasting elements, using manipulatives, and selecting multiple answers from a variety of presentation methods. Each ASCR test question is worth 2 points.

## DEPTH OF KNOWLEDGE

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.

**Level 1 (Recall)** includes the recall of information such as a fact, definition, term, or a simple procedure, as well as performing a simple algorithm or applying a formula. That is, in mathematics, a one-step, well-defined, and straight algorithmic procedure should be included at this lowest level. Other key words that signify Level 1 include “identify,” “recall,” “recognize,” “use,” and “measure.” Verbs such as “describe” and “explain” could be classified at different levels, depending on what is to be described and explained.

**Level 2 (Skill/Concept)** includes the engagement of some mental processing beyond a habitual response. A Level 2 assessment item requires students to make some decisions as to how to approach the problem or activity, whereas Level 1 requires students to demonstrate a rote response, perform a well-known algorithm, follow a set procedure (like a recipe), or perform a clearly defined series of steps. Keywords that generally distinguish a Level 2 item include “classify,” “organize,” “estimate,” “make observations,” “collect and display data,” and “compare data.” These actions imply more than one step. For example, to compare data requires first identifying characteristics of objects or phenomena and then grouping or ordering the objects. Some action verbs, such as “explain,” “describe,” or “interpret,” could be classified at different levels depending on the object of the action. For example, interpreting information from a simple graph, or reading information from the graph, also are at Level 2. Interpreting information from a complex graph that requires some decisions on what features of the graph need to be considered and how information from the graph can be aggregated is at Level 3. Level 2 activities are not limited only to number skills, but may involve visualization skills and probability skills. Other Level 2 activities include noticing or describing non-trivial patterns; explaining the purpose and use of experimental procedures; carrying out experimental procedures; making observations and collecting data; classifying, organizing, and comparing data; and organizing and displaying data in tables, graphs, and charts.

**Level 3 (Strategic Thinking)** requires reasoning, planning, using evidence, and a higher level of thinking than the previous two levels. In most instances, requiring students to explain their thinking is at Level 3. Activities that require students to make conjectures are also at this level. The cognitive demands at Level 3 are complex and abstract. The complexity does not result from the fact that there are multiple answers, a possibility for both Levels 1 and 2, but because the task requires more demanding reasoning. An activity, however, that has more than one possible answer and requires students to justify the response they give would most likely be at Level 3. Other Level 3 activities include drawing conclusions from observations, citing evidence and developing a logical argument for concepts, explaining phenomena in terms of concepts, and deciding which concepts to apply in order to solve a complex problem.

## ITEM AND SCORING SAMPLER FORMAT

Sample questions are provided in this sampler, along with any related stimulus information such as a passage or graphic. Following each test question is an item information table.

Example Response Item Information Table

Item Information		
<b>Alignment</b>	Assigned Indicator	Assigned indicator definition
<b>Answer Key</b>	Correct Answer	<b>Option Annotations</b>  Brief answer option analysis or rationale
<b>Depth of Knowledge</b>	Assigned DOK	
<b>Focus</b>	Skill/Task	

The NeSA-MATH is administered primarily online. Although there is a paper-pencil format, the examples in this sampler include samples of students' responses in online format.

## ADDITIONAL INFORMATION

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

**MULTIPLE-CHOICE ITEMS**

1. Jack has 346 marbles. He gives 157 marbles to his sister. How many marbles does Jack have left?
- A. 189 marbles
- B. 199 marbles
- C. 289 marbles
- D. 299 marbles

Item Information		
<b>Alignment</b>	MA 3.1.2.a	Add and subtract within 1,000 with or without regrouping.
<b>Answer Key</b>	A	<b>Option Annotations</b>  The student is asked to solve the problem by subtracting 157 from 346. Option A is the correct answer since $346 - 157 = 189$ . Option B is incorrect since the tens place is subtracted or regrouped incorrectly. Option C is incorrect since the hundreds place is subtracted or regrouped incorrectly. Option D is incorrect since the tens and hundreds places are subtracted or regrouped incorrectly.
<b>Depth of Knowledge</b>	2	
<b>Focus</b>	Subtraction with Regrouping	

2. There are 30 students in Ms. Brown's class. Each student brought \$3 for a field trip. How much money did the students bring for the field trip altogether?
- A. \$33
  - B. \$60
  - C. \$90
  - D. \$93

Item Information		
<b>Alignment</b>	MA 3.1.2.e	Multiply one digit whole numbers by multiples of 10 in the range of 10 to 90.
<b>Answer Key</b>	C	<b>Option Annotations</b>  The student is asked to solve the problem by multiplying 3 and 30. Option C is the correct answer since $3 \times 30 = 90$ . Option A is incorrect since 33 is the sum of 3 and 30. Option B is incorrect since 60 is the product of 2 and 30. Option D is incorrect since 93 is the product of 3 and 31.
<b>Depth of Knowledge</b>	2	
<b>Focus</b>	Multiplication by Multiples of 10	

3. Lily has 56 fish in a fish tank. She buys 15 more fish and then gives 8 fish to a friend. How many fish does Lily have now?
- A. 53 fish
  - B. 63 fish
  - C. 73 fish
  - D. 79 fish

Item Information		
<b>Alignment</b>	MA 3.2.3.a	Solve real-world problems involving two-step equations (involving two operations) involving whole numbers using addition and subtraction.
<b>Answer Key</b>	B	<b>Option Annotations</b>  The student is asked to solve the problem by finding the value of $56 + 15 - 8$ . Option B is correct since $56 + 15 - 8 = 63$ . Options A and C are incorrect since the tens place is subtracted or regrouped incorrectly. Option D is incorrect since 79 is the sum of the three numbers given in the problem.
<b>Depth of Knowledge</b>	2	
<b>Focus</b>	Real-World Two-Step Equations with Addition and Subtraction	

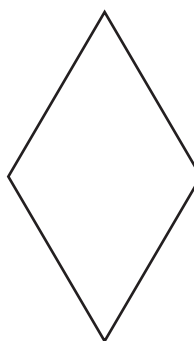


4. Which quadrilateral is a rectangle?

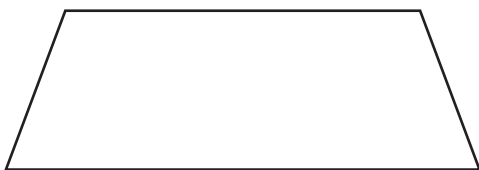
A.



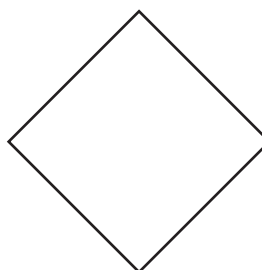
B.



C.

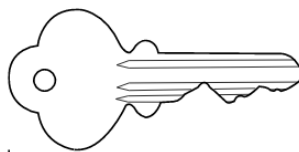


D.



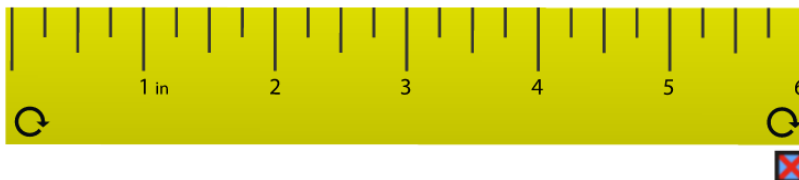
Item Information		
<b>Alignment</b>	MA 3.3.1.b	Sort quadrilaterals into categories (e.g., rhombuses, squares, and rectangles).
<b>Answer Key</b>	D	<b>Option Annotations</b>  The student is asked to identify the quadrilateral that is a rectangle. Option D is the correct answer since the figure is a quadrilateral with two pairs of parallel sides and four right angles. Option A is incorrect since the figure is a parallelogram without right angles. Option B is incorrect since the figure is a rhombus without right angles. Option C is incorrect since the figure is a trapezoid.
<b>Depth of Knowledge</b>	1	
<b>Focus</b>	Categories of Quadrilaterals	

5. Use the ruler tool to measure the key below to answer the question.



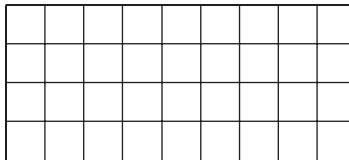
What is the length of the key?

- (a) 2 inches
- (b)  $2\frac{1}{4}$  inches
- (c)  $2\frac{1}{2}$  inches
- (d) 3 inches

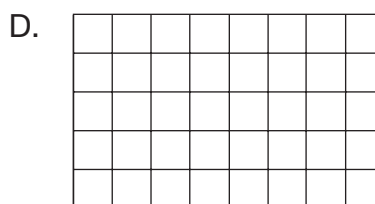
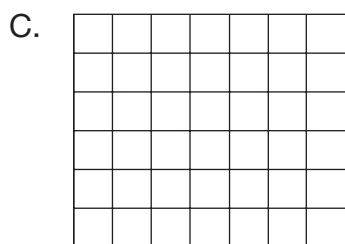
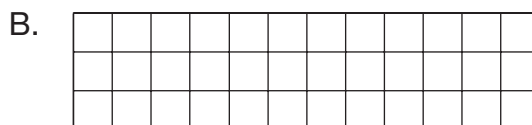
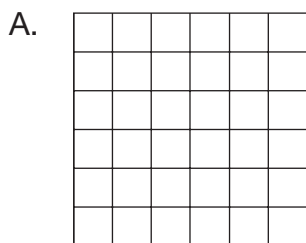


Item Information		
<b>Alignment</b>	MA 3.3.3.e	Estimate and measure length to the nearest half inch, quarter inch, and centimeter.
<b>Answer Key</b>	B	<b>Option Annotations</b>  The student is asked to use a ruler to measure the length of the key to the nearest quarter inch. Option B is the correct answer since the length of the key is $2\frac{1}{4}$ inches. Option A is incorrect since the length is rounded to the nearest inch. Option C is incorrect since the length is rounded to the nearest half inch. Option D is incorrect since the length is rounded up to the next inch.
<b>Depth of Knowledge</b>	2	
<b>Focus</b>	Measuring Length to Nearest Quarter Inch	

6. Use the rectangle below to answer the question.



Which rectangle has the same area and a smaller perimeter than the rectangle shown?



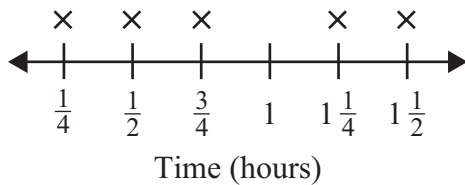
Item Information		
<b>Alignment</b>	MA 3.3.3.h	Identify and draw rectangles with the same perimeter and different areas or with the same area and different perimeters.
<b>Answer Key</b>	A	<b>Option Annotations</b>  The student is asked to identify the rectangle that has the same area (A) and smaller perimeter (P) than the rectangle shown ( $A = 36$ square units, $P = 26$ units). Option A is the correct answer since the rectangle has the same area of 36 square units and a smaller perimeter of 24 units. Option B is incorrect since the rectangle has a larger perimeter of 30 units. Option C is incorrect since the rectangle has a larger area of 42 square units and the same perimeter of 26 units. Option D is incorrect since the rectangle has a larger area of 40 square units and the same perimeter of 26 units.
<b>Depth of Knowledge</b>	3	
<b>Focus</b>	Perimeter and Area of Rectangles	

7. Use the list below to answer the question.

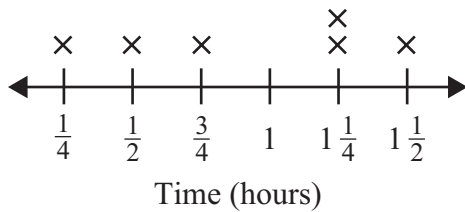
$$\frac{1}{4}, \frac{1}{2}, 1\frac{1}{4}, \frac{3}{4}, 1\frac{1}{2}, 1\frac{1}{4}, \frac{1}{2}$$

The list shows the number of hours Max spent reading each day for 7 days. Which line plot represents the number of hours Max spent reading?

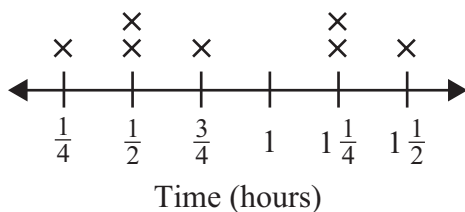
A. **Reading**



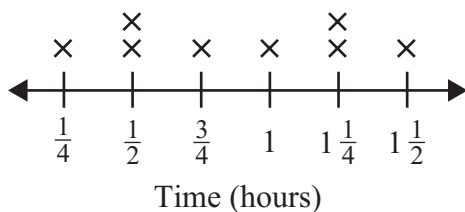
B. **Reading**



C. **Reading**



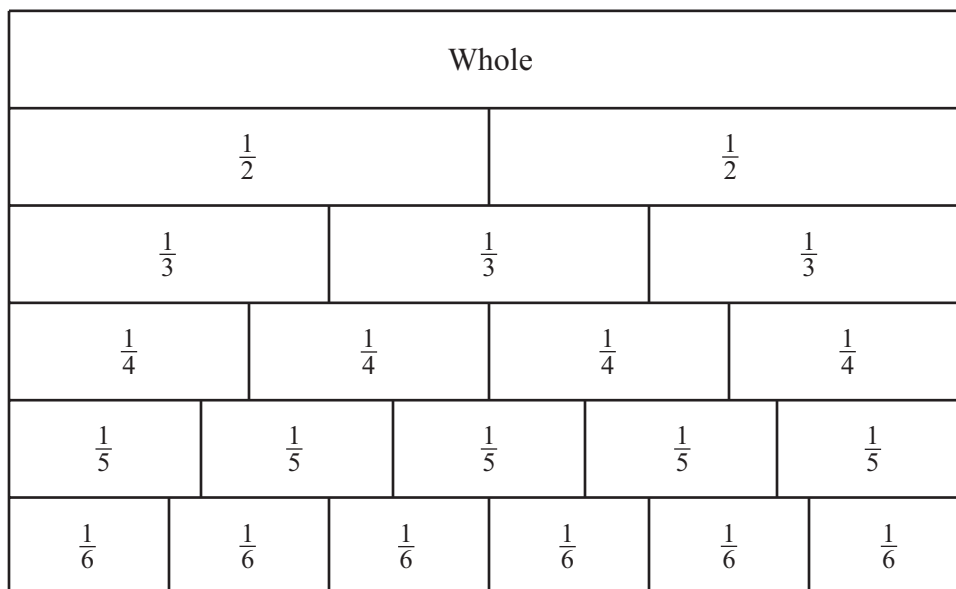
D. **Reading**



Item Information		
<b>Alignment</b>	MA 3.4.1.b	Represent data using line plots where the horizontal scale is marked off in appropriate units – whole numbers, halves, or quarters.
<b>Answer Key</b>	C	<b>Option Annotations</b>  The student is asked to identify the line plot that shows the numbers in the list. Option C is the correct answer since the line plot shows all the numbers in the list, and only those numbers. Option A is incorrect since the line plot does not account for the numbers that appear more than once in the list. Option B is incorrect since the line plot is missing one of the numbers in the list. Option D is incorrect since the line plot shows a number that is not in the list.
<b>Depth of Knowledge</b>	2	
<b>Focus</b>	Line Plots Scaled with Quarter Units	

8. Use the picture below to answer the question.

Fraction Strips



Which statement is true?

- A.  $\frac{1}{2} = \frac{3}{5}$
- B.  $\frac{1}{3} = \frac{2}{4}$
- C.  $\frac{2}{4} = \frac{4}{5}$
- D.  $\frac{2}{3} = \frac{4}{6}$

Item Information		
<b>Alignment</b>	MA 3.1.1.f	Show and identify equivalent fractions using visual representations including pictures, manipulatives, and number lines.
<b>Answer Key</b>	D	<b>Option Annotations</b>  The student is asked to use the fraction strips to help identify which pair of fractions is equivalent. Option D is the correct answer since $\frac{2}{3}$ is equivalent to $\frac{4}{6}$ . Option A is incorrect since $\frac{1}{2}$ is less than $\frac{3}{5}$ . Option B is incorrect since $\frac{1}{3}$ is less than $\frac{2}{4}$ . Option C is incorrect since $\frac{2}{4}$ is less than $\frac{4}{5}$ .
<b>Depth of Knowledge</b>	2	
<b>Focus</b>	Equivalent Fractions with Fraction Strips	

9. Pat is putting stickers on paper. She makes four rows on each page. Each row has six stickers. How many stickers are on each page?
- A. 2 stickers
- B. 10 stickers
- C. 12 stickers
- D. 24 stickers

Item Information		
Alignment	MA 3.2.1.b	Interpret a multiplication equation as equal groups (e.g., Interpret $4 \times 6$ as the total number of objects in four groups of six objects each). Represent verbal statements of equal groups as multiplication equations.
Answer Key	D	<b>Option Annotations</b>  The student is asked to solve the problem by finding the number of stickers in an array with four rows of six. Option D is the correct answer since $6 \times 4 = 24$ . Option A is incorrect since $6 - 4 = 2$ . Option B is incorrect since $6 + 4 = 10$ . Option C is incorrect since $3 \times 4 = 12$ , or $6 \times 2 = 12$ .
Depth of Knowledge	1	
Focus	Multiplication Arrays in Words	

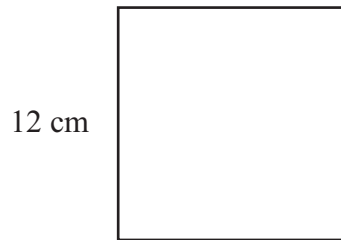
10. Which is equal to  $9,000 + 900 + 9$ ?

- A. 9,099
- B. 9,909
- C. 9,990
- D. 9,999

Item Information		
Alignment	MA 3.1.1.a	Read, write and demonstrate multiple equivalent representations for numbers up to 100,000 using objects, visual representations, including standard form, word form, expanded form, and expanded notation.
Answer Key	B	<b>Option Annotations</b>  The student is asked to use standard form to represent the expanded form of the number given. Option B is the correct answer since 9,909 has 9 thousands, hundreds, and ones, and there are 0 tens. Option A is incorrect since 9,099 has 0 hundreds and 9 tens. Option C is incorrect since 9,990 has 9 tens and 0 ones. Option D is incorrect since 9,999 has 9 tens.
Depth of Knowledge	1	
Focus	Expanded and Standard Forms	



11. Use the figure below to answer the question.



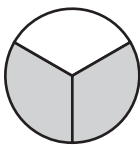
What is the perimeter of the square shown?

- A. 3 cm
- B. 24 cm
- C. 48 cm
- D. 144 cm

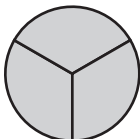
Item Information		
<b>Alignment</b>	MA 3.3.3.a	Find the perimeter of polygons given the side lengths, and find an unknown side length.
<b>Answer Key</b>	C	<b>Option Annotations</b>  The student is asked to find the perimeter of the square shown. Option C is the correct answer since the perimeter of the square is 48 cm. Option A is incorrect since 3 is the value of the side length divided by the number of sides of the square. Option B is incorrect since 24 is the sum of two of the sides of the square. Option D is incorrect since 144 is the value of the area of the square.
<b>Depth of Knowledge</b>	1	
<b>Focus</b>	Perimeter of Square	

12. Which picture shows  $\frac{1}{3}$  shaded?

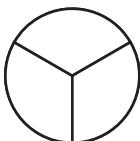
A.



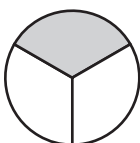
B.



C.



D.



Item Information		
Alignment	MA 3.1.1.g	Find parts of a whole and parts of a set using visual representations.
Answer Key	D	<b>Option Annotations</b>  The student is asked to identify the picture that shows $\frac{1}{3}$ shaded. Option D is the correct answer since one of the three parts is shaded. Option A is incorrect since two of the three parts are shaded. Option B is incorrect since all three of the parts are shaded. Option C is incorrect since none of the three parts are shaded.
Depth of Knowledge	1	
Focus	Modeling Parts of a Whole	

13. Use the numbers below to answer the question.

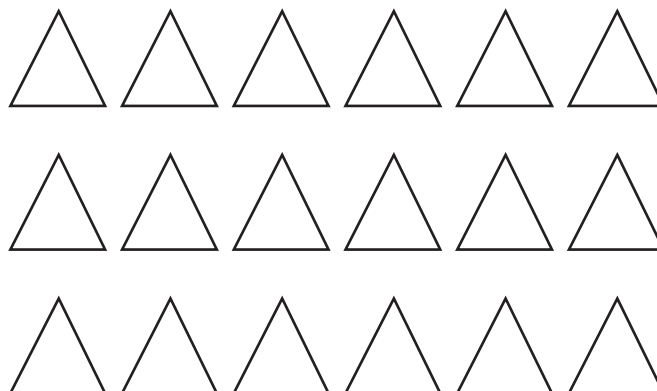
800, 775, 750, 725, 700, 675, 650

Beginning with 800, what is the pattern?

- A. add 25
- B. subtract 25
- C. add 50
- D. subtract 50

Item Information		
Alignment	MA 3.2.1.a	Identify arithmetic patterns (including patterns in the addition or multiplication tables) using properties of operations.
Answer Key	B	<b>Option Annotations</b>  The student is asked to use the numbers to identify the pattern. Option B is the correct answer since each number in the pattern is generated by subtracting 25 from the previous number. Option A is incorrect since each number in the pattern is not increasing by increments of 25. Option C is incorrect since each number in the pattern is not increasing by increments of 50. Option D is incorrect since each number in the pattern is not decreasing by increments of 50.
Depth of Knowledge	1	
Focus	Arithmetic Patterns	

14. Use the picture below to answer the question.



Which expression matches the picture?

- A.  $3 + 6$
- B.  $6 + 3$
- C.  $6 + 6 + 6$
- D.  $3 + 3 + 3 + 3 + 3$

Item Information		
Alignment	MA 3.1.2.c	Use drawings, words, arrays, symbols, repeated addition, equal groups, and number lines to explain the meaning of multiplication.
Answer Key	C	<b>Option Annotations</b>  The student is asked to use the array to create a repeated addition expression representing the same multiplication expression. Option C is the correct answer since the array shows 3 rows of 6, or $6 + 6 + 6$ . Options A and B are incorrect since the array represents the product of 3 and 6 rather than the sum of 3 and 6. Option D is incorrect since the array shows 6 columns of 3 rather than 5 columns of 3.
Depth of Knowledge	1	
Focus	Multiplication Arrays and Repeated Addition	

15. Which value of  $f$  makes  $f + 15 = 41$  true?

- A. 16
- B. 26
- C. 36
- D. 56

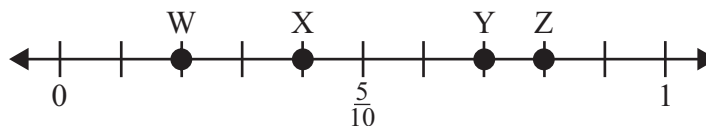
Item Information		
<b>Alignment</b>	MA 3.2.2.b	Solve one-step whole number equations involving addition, subtraction, multiplication, or division, including the use of a letter to represent the unknown quantity.
<b>Answer Key</b>	B	<b>Option Annotations</b>  The student is asked to solve the equation to find the value of the variable. Option B is the correct answer since $f + 15 = 41$ , $f + 15 - 15 = 41 - 15$ , $f = 26$ .  Option A is incorrect since 16 is the solution to $f + 15 = 31$ , $f + 15 - 15 = 31 - 15$ , $f = 16$ .  Option C is incorrect since 36 is the solution to $f + 15 = 51$ , $f + 15 - 15 = 51 - 15$ , $f = 36$ .  Option D is incorrect since 56 is the solution to $f - 15 = 41$ , $f - 15 + 15 = 41 + 15$ , $f = 56$ .
<b>Depth of Knowledge</b>	1	
<b>Focus</b>	One-Step Equations with Addition	

16. How many angles does a quadrilateral have?

- A. 3
- B. 4
- C. 5
- D. 6

Item Information		
Alignment	MA 3.3.1.a	Identify the number of sides, angles, and vertices of two-dimensional shapes.
Answer Key	B	<b>Option Annotations</b>  The student is asked to identify the number of angles in a quadrilateral. Option B is the correct answer since a quadrilateral has 4 angles. Options A, C, and D are incorrect since they show the numbers of angles in other two-dimensional shapes.
Depth of Knowledge	1	
Focus	Identifying Angles in Two-Dimensional Shapes	

17. Use the number line below to answer the question.



Which letter shows the location of  $\frac{2}{10}$ ?

- A. W
- B. X
- C. Y
- D. Z

Item Information		
<b>Alignment</b>	MA 3.1.1.d	Represent and understand a fraction as a number on a number line.
<b>Answer Key</b>	A	<b>Option Annotations</b>  The student is asked to use the number line to identify the letter that is located at $\frac{2}{10}$ . Option A is the correct answer since the letter W is located at $\frac{2}{10}$ . Option B is incorrect since the letter X is located at $\frac{4}{10}$ . Option C is incorrect since the letter Y is located at $\frac{7}{10}$ . Option D is incorrect since the letter Z is located at $\frac{8}{10}$ .
<b>Depth of Knowledge</b>	1	
<b>Focus</b>	Representing Fractions on Number Line	

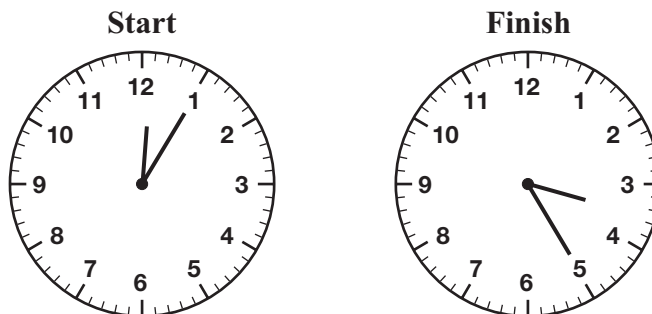
18. Which is true?

- A.  $51,600 > 51,660$
- B.  $62,505 > 62,055$
- C.  $73,420 < 73,402$
- D.  $84,220 < 84,022$

Item Information		
Alignment	MA 3.1.1.b	Compare whole numbers through the hundred thousands and represent the comparisons using the symbols $>$ , $<$ , or $=$ .
Answer Key	B	<b>Option Annotations</b>  The student is asked to identify the comparison that is true. Option B is the correct answer since 62,505 is greater than 62,055 (hundreds place). Option A is incorrect since 51,600 is less than 51,660 (tens place). Option C is incorrect since 73,420 is greater than 73,402 (tens place). Option D is incorrect since 84,220 is greater than 84,022 (hundreds place).
Depth of Knowledge	1	
Focus	Comparing Whole Numbers Through Ten Thousands	



19. Use the clocks below to answer the question.

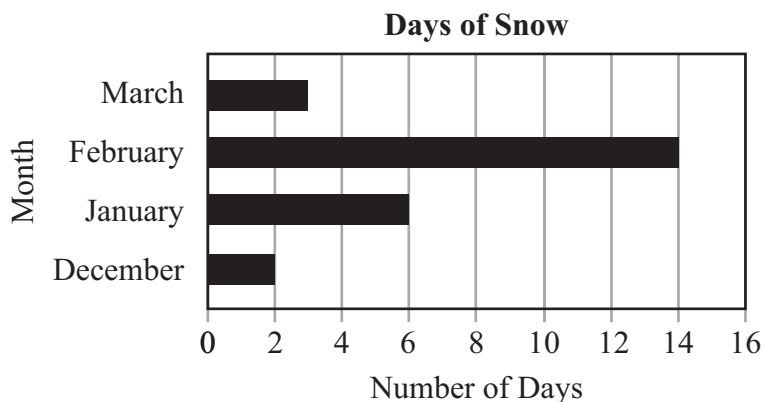


Connor is mowing his neighbor's yard. The times on the clocks show the start and finish times. How long does Connor mow?

- A. 2 hours 20 minutes
- B. 2 hours 25 minutes
- C. 3 hours 20 minutes
- D. 3 hours 25 minutes

Item Information		
<b>Alignment</b>	MA 3.3.3.c	Solve real-world problems involving addition and subtraction of time intervals and find elapsed time.
<b>Answer Key</b>	C	<b>Option Annotations</b>  The student is asked to use the clocks to find the elapsed time between 12:05 pm and 3:25 pm. Option C is the correct answer since there are 3 hours between 12:05 pm and 3:05 pm and 20 minutes between 3:05 pm and 3:25 pm, totaling 3 hours 20 minutes. Option A is incorrect since the number of hours is not correct. Option B is incorrect since the number of hours and number of minutes are not correct. Option D is incorrect since the number of minutes is not correct.
<b>Depth of Knowledge</b>	2	
<b>Focus</b>	Elapsed Time	

20. Use the graph below to answer the question.



How many more days of snow were there in February and December than in March and January?

- A. 6
- B. 7
- C. 8
- D. 9

Item Information		
<b>Alignment</b>	MA 3.4.2.a	Solve problems and make simple statements about quantity differences (e.g., how many more and how many less) using information represented in pictographs and bar graphs.
<b>Answer Key</b>	B	<b>Option Annotations</b>  The student is asked to use the graph to solve the problem. Option B is the correct answer since there were $14 + 2 = 16$ days of snow in February and December combined and $3 + 6 = 9$ days of snow in March and January combined, and 16 is 7 more than 9. Options A, C, and D are incorrect since the difference between 16 and 9 is not 6, 8, or 9.
<b>Depth of Knowledge</b>	2	
<b>Focus</b>	Quantity Differences Using Bar Graphs	

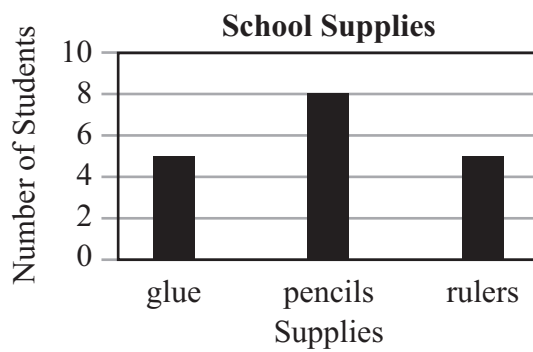
21. Use the chart below to answer the question.

School Supplies

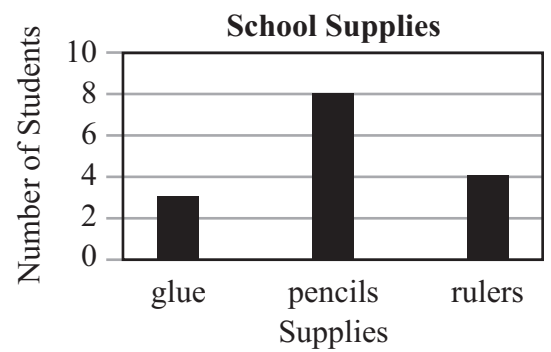
Supplies	Number of Students
glue	
pencils	<del>    </del>
rulers	<del>    </del>

Which bar graph shows the information from the tally chart?

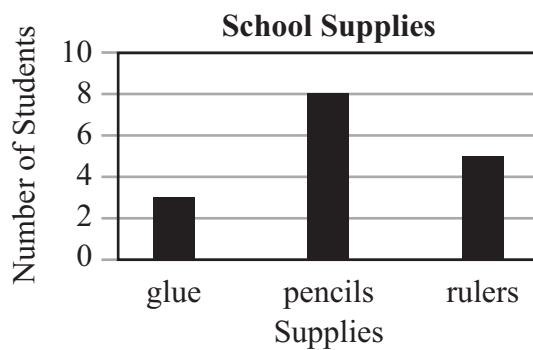
A.



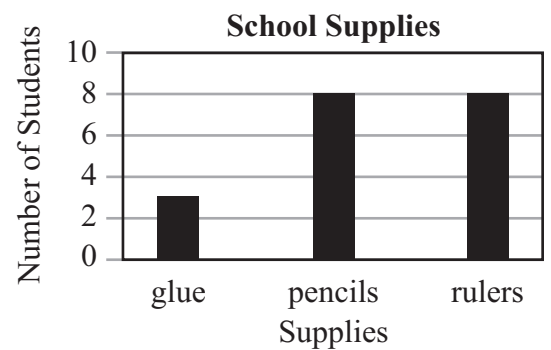
B.



C.

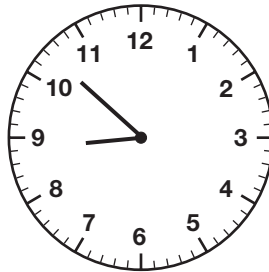


D.



Item Information		
<b>Alignment</b>	MA 3.4.1.a	Create scaled pictographs and scaled bar graphs to represent a data set – including data collected through observations, surveys, and experiments – with several categories.
<b>Answer Key</b>	C	<b>Option Annotations</b>  The student is asked to use the tally chart to create a bar graph representing the same data. Option C is the correct answer since the bar graph shows 3 students with glue, 8 students with pencils, and 5 students with rulers. Option A is incorrect since the bar graph shows 5 students with glue. Option B is incorrect since the bar graph shows 4 students with rulers. Option D is incorrect since the bar graph shows 8 students with rulers.
<b>Depth of Knowledge</b>	2	
<b>Focus</b>	Represent Data with Bar Graph	

22. Use the clock below to answer the question.



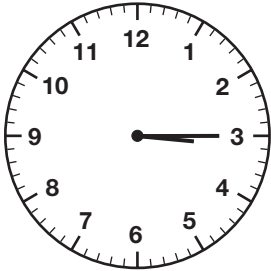
What time does the clock show?

- A. 8:50
- B. 8:52
- C. 9:52
- D. 10:42

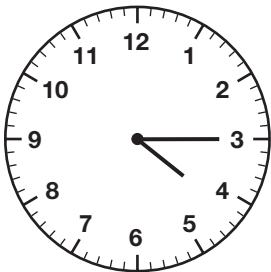
Item Information		
<b>Alignment</b>	MA 3.3.3.b	Tell and write time to the minute using both analog and digital clocks.
<b>Answer Key</b>	B	<b>Option Annotations</b>  The student is asked to tell the time shown on the analog clock. Option B is the correct answer since the clock shows the time of 8:52. Option A is incorrect since the minute hand is not represented correctly. Option C is incorrect since the hour hand is not represented correctly. Option D is incorrect since the hour and minute hands are not represented correctly.
<b>Depth of Knowledge</b>	2	
<b>Focus</b>	Tell Time to Minute Using Analog Clock	

23. Which clock shows a time of quarter to four?

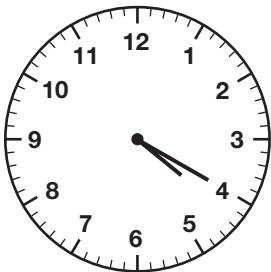
A.



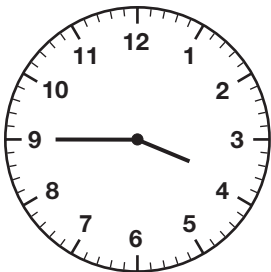
B.



C.




D.



Item Information		
<b>Alignment</b>	MA 3.1.1.h	Explain and demonstrate how fractions $\frac{1}{4}$ , $\frac{1}{2}$ , $\frac{3}{4}$ and a whole relate to time, measurement, and money, and demonstrate using visual representation.
<b>Answer Key</b>	D	<b>Option Annotations</b>  The student is asked to identify the clock that shows a time of a quarter to four. Option D is the correct answer since it shows a time of 3:45, or 15 minutes before 4:00. Option A is incorrect since the clock shows a time of 3:15, or three quarters to four. Option B is incorrect since the clock shows a time of 4:15, or a quarter after four. Option C is incorrect since it shows a time of 4:25, where the fraction $\frac{1}{4}$ is incorrectly related to money rather than time.
<b>Depth of Knowledge</b>	2	
<b>Focus</b>	Relating Fractions to Time	

**AUTO-SCORED CONSTRUCTED RESPONSE ITEMS**

24. Move the numbers into the boxes to complete the equations.


 ?

$$3 \times 4 = 4 \times \square$$
$$5 \times 12 = 5 \times (10 + \square)$$

1      2      3      4

**Answer Key – Completed Correct Response**

Move the numbers into the boxes to complete the equations.

 ?

$$3 \times 4 = 4 \times \boxed{3}$$
$$5 \times 12 = 5 \times (10 + \boxed{2})$$

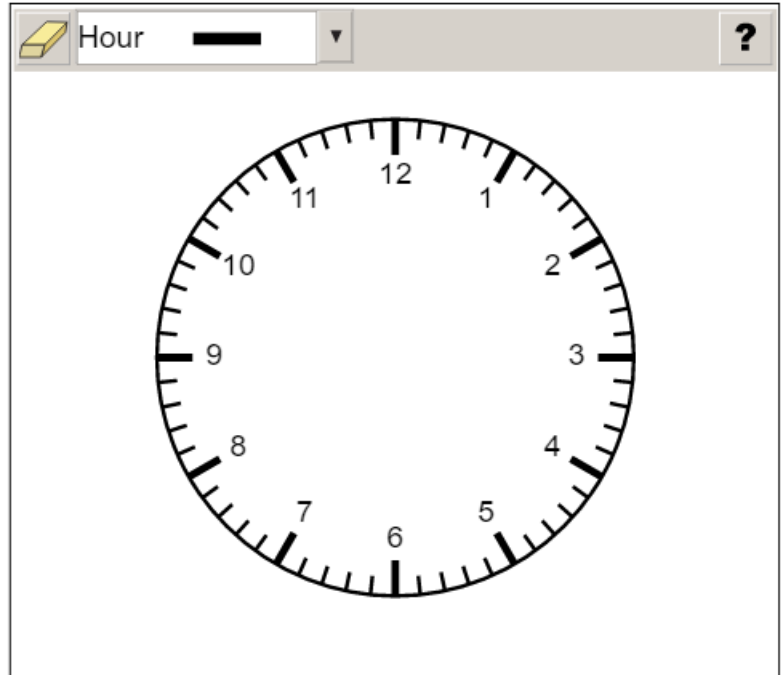
1      2      3      4



Item Information		
<b>Alignment</b>	MA 3.2.2.a	Apply the commutative, associative, and distributive properties as strategies to multiply and divide.
<b>Answer Key</b>	See Completed Correct Response	<b>Option Annotations</b>  The student is asked to move the numbers into the boxes to complete the equations. The number 3 belongs in the box to complete the top equation, since $3 \times 4 = 4 \times 3$ demonstrates the commutative property. The number 2 belongs in the box to complete the bottom equation, since $5 \times 12 = 5 \times (10 + 2)$ demonstrates the distributive property.
<b>Depth of Knowledge</b>	1	
<b>Focus</b>	Properties of Multiplication	

25. Parker's bus picks him up at 7:52. The bus drops him off at school 24 minutes later.

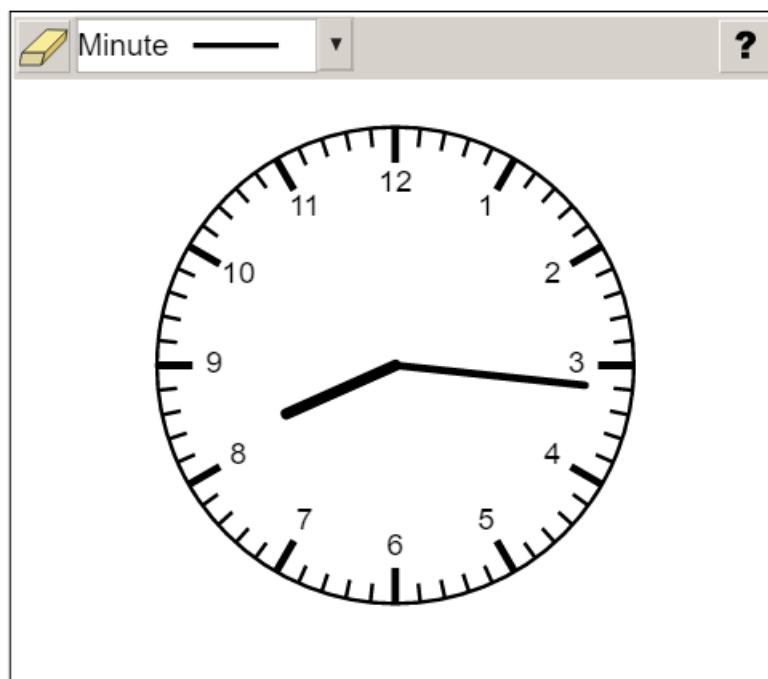
Move the hands on the clock to show the time that the bus drops Parker off at school.



**Answer Key – Completed Correct Response**

Parker's bus picks him up at 7:52. The bus drops him off at school 24 minutes later.

Move the hands on the clock to show the time that the bus drops Parker off at school.



Item Information		
Alignment	MA 3.3.3.b	Tell and write time to the minute using both analog and digital clocks.
Answer Key	See Completed Correct Response	<b>Option Annotations</b>  The student is asked to solve the problem and show the answer on the clock by moving the hour and minute hands. The correct time is 8:16, since 8:16 is 24 minutes after 7:52. The hour hand points a little past the 8, and the minute hand points at the first minute mark after the 3 to show 16 minutes.
Depth of Knowledge	2	
Focus	Writing Elapsed Time to Minute on Analog Clock	

26. Match each fraction to its equivalent number.

$\frac{2}{1}$	1
$\frac{3}{3}$	2
$\frac{6}{2}$	3

**Answer Key – Completed Correct Response**

Match each fraction to its equivalent number.

$\frac{2}{1}$	1
$\frac{3}{3}$	2
$\frac{6}{2}$	3

Item Information		
<b>Alignment</b>	MA 3.1.1.e	Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers.
<b>Answer Key</b>	See Completed Correct Response	<p><b>Option Annotations</b></p> <p>The student is asked to match each fraction to its equivalent whole number. The fraction <math>\frac{2}{1}</math> is equivalent to the whole number 2 since there are 2 ones in 2, or <math>2 \div 1 = 2</math>. The fraction <math>\frac{3}{3}</math> is equivalent to the whole number 1 since there are 3 one-thirds in 1 whole. The fraction <math>\frac{6}{2}</math> is equivalent to the whole number 3 since there are 6 one-halves in 3 wholes.</p>
<b>Depth of Knowledge</b>	1	
<b>Focus</b>	Equivalent Fractions and Whole Numbers	

**NeSA-MATHEMATICS  
ITEM AND SCORING SAMPLER  
GRADE 3**

Copyright © 2016 by the Nebraska Department of Education. The materials contained in this publication may be duplicated by Nebraska educators for local classroom use. This permission does not extend to the duplication of materials for commercial use.