



# NEVADA INSTRUCTIONAL MATERIALS

FOR THE  
NEVADA ACADEMIC CONTENT STANDARDS FOR MATHEMATICS

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# Grade 3

## STUDENT WORKBOOK

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## **Introduction**

This document represents the Phase III release of Nevada Instructional Materials. These released materials were developed in collaboration with Nevada educators, the Nevada Department of Education, and WestEd (a nonprofit research development and service agency).

These materials are intended for use in various guided instructional activities to support deep understanding of the Nevada Academic Content Standards (NVACS) for English Language Arts and mathematics based on Common Core. The Nevada Instructional Materials provide educators opportunities to investigate and explore the standards and tasks that are aligned to the standards. The Nevada educators involved in the development of these materials also developed “Teacher Tips” to assist in using these materials as an instructional resource. The Nevada Instructional Materials also provide educators opportunities to investigate and explore the standards and tasks that are aligned to the standards.

While these materials can provide students with practice in responding to a variety of assessment items, it is more important that they are used to help students deepen their understanding of the expectations embedded in the standards. If these instructional materials are used solely as an assessment practice activity, we highly recommend that educators go over each item with their students and evaluate each answer choice so that students can better understand the knowledge required to successfully complete each task.

Through rich classroom discussion around each item and the various answer choices or potential responses, educators can actively engage students in critical thinking, reasoning, and application of knowledge and skills, helping to ensure all students are ready for success in the 21st century.



Name: \_\_\_\_\_

# Mathematics

## Grade 3

This booklet contains mathematics questions for you to answer. There are four types of questions in this booklet: multiple-choice, selected-response (some of which are simulated technology-enhanced), short-answer, and written-response questions.

- For the multiple-choice questions you will be given four answer choices—A, B, C, and D. You are to select the correct answer from the four choices. Each question has only one correct answer.
- For simulated technology-enhanced questions, you will be required to perform the required task (e.g., filling in the blank(s), matching, graphing, completing tables).
- For other selected-response questions, you will be given different numbers of answer choices. You are to select ALL the correct answers from the choices. Each question has multiple correct answers.
- The short-answer questions and the written-response questions require you to give a written response to a question as indicated in the booklet.

You may use the rubrics below to help you do a good job when you are answering the short-answer questions and the written-response questions.

### Two-Point Short-Answer

Score	Description
2	Response: <ul style="list-style-type: none"><li>• Demonstrates an understanding of the standard</li><li>• Answers the question clearly and correctly</li><li>• Includes all work to show how the answer was found and/or a correct and complete explanation</li></ul>
1	Response: <ul style="list-style-type: none"><li>• Demonstrates a limited understanding of the standard</li><li>• Answers part of the question correctly</li><li>• Includes some work to show how the answer was found and/or a partially correct explanation</li></ul>
0	Response: <ul style="list-style-type: none"><li>• Is not correct</li><li>• Includes no answer and/or an insufficient (or no) explanation</li></ul>

### Three-Point Extended-Response

Score	Description
3	Response: <ul style="list-style-type: none"><li>• Demonstrates a thorough understanding of the standard</li><li>• Answers all parts of the question clearly and correctly</li><li>• Includes all work to show how the answer was found and/or a correct and complete explanation</li></ul>
2	Response: <ul style="list-style-type: none"><li>• Demonstrates a general understanding of the standard</li><li>• Answers most parts of the question correctly</li><li>• Includes some work to show how the answer was found and/or a partially correct explanation</li></ul>
1	Response: <ul style="list-style-type: none"><li>• Demonstrates a minimal understanding of the standard</li><li>• Answers some part of the question</li><li>• Includes minimal (or no) work to show how the answer was found and/or a minimal (or no) explanation</li></ul>
0	Response: <ul style="list-style-type: none"><li>• Is not correct</li><li>• Includes no answer and/or an insufficient (or no) explanation</li></ul>

### Four-Point Extended-Response

Score	Description
4	Response: <ul style="list-style-type: none"><li>• Demonstrates a thorough understanding of the standard</li><li>• Answers all parts of the question clearly and correctly</li><li>• Includes all work to show how the answer was found and/or a correct and complete explanation</li></ul>
3	Response: <ul style="list-style-type: none"><li>• Demonstrates a general understanding of the standard</li><li>• Answers most parts of the question correctly</li><li>• Includes some work to show how the answer was found and/or a partially correct explanation</li></ul>
2	Response: <ul style="list-style-type: none"><li>• Demonstrates a limited understanding of the standard</li><li>• Answers some parts of the question correctly</li><li>• Includes minimal work to show how the answer was found and/or a minimal explanation</li></ul>
1	Response: <ul style="list-style-type: none"><li>• Demonstrates a minimal understanding of the standard</li><li>• Answers some part of the question</li><li>• Includes insufficient (or no) work to show how the answer was found and/or an insufficient (or no) explanation</li></ul>
0	Response: <ul style="list-style-type: none"><li>• Is not correct</li><li>• Includes no answer and/or an insufficient (or no) explanation</li></ul>



# Operations and Algebraic Thinking

**Grade 3**  
**Student Workbook**

**1** Which phrases describe a situation in which the total number of pencils is equivalent to the value of  $8 \times 3$ ? Select **all** that apply.

- A** 3 groups of pencils with 24 pencils in each group
- B** 3 groups of pencils with 8 pencils in each group
- C** 8 groups of pencils with 24 pencils in each group
- D** 8 groups of pencils with 3 pencils in each group
- E** 24 groups of pencils with 3 pencils in each group
- F** 24 groups of pencils with 8 pencils in each group

**2** There are 30 students in a dance class. The class is split into 6 groups of equal size to learn a new dance move. Which expression could be used to find the number of students in each group?

- A**  $30 \times 5$
- B**  $30 \times 6$
- C**  $30 \div 5$
- D**  $30 \div 6$

**3** Mary divided a number of crackers into equal-sized groups. She used the expression shown below to find the number of crackers in each group.

$$24 \div 4$$

Use the expression to complete the sentences below by writing a number in each blank.

Mary divided \_\_\_\_\_ crackers into \_\_\_\_\_ equal-sized groups.

There are \_\_\_\_\_ crackers in each group.



**5** In which equations is 9 the unknown number? Select **all** that apply.

A  $4 = 36 \div \underline{\quad}$

B  $18 = 3 \times \underline{\quad}$

C  $\underline{\quad} \times 5 = 40$

D  $\underline{\quad} \div 3 = 3$

E  $2 \times \underline{\quad} = 16$

**6** Which expression has the same value as  $(7+6) \times 4$  ?

A  $(7 \times 4) + (6 \times 4)$

B  $(7 \times 4) \times (6 \times 4)$

C  $(7+6) + (6 \times 4)$

D  $(7+6) \times (7+4)$

**7** Which equations are true? Select **all** that apply.

A  $40 = 5 \times 8$

B  $10 \times 0 = 10$

C  $63 \div 7 = 1 \times 9$

D  $6 \times 6 = 42$

E  $6 \times 4 = 3 \times 8$



**9**

All the lockers in a school locker room are arranged in rows.

- There are 8 rows of lockers.
- Each row has 8 lockers.

Over the summer, some new lockers are added to the lockers that are already in the locker room. There are now 96 lockers in the locker room.

- A** Write and solve an equation that could be used to find the number ( $n$ ) of new lockers that are added to the locker room over the summer. Show your work.
- B** Explain why the total number of lockers in the locker room could still be arranged in 8 rows with an equal number of lockers in each row.

**Write your response on the grid on the next page.**

<b>A</b>													
<b>B</b>													

**10**

Look at the multiplication table shown below.

$\times$	4
1	4
2	8
3	12
4	16
5	20
6	24

Which statements about the product of any whole number and 4 are true? Select **all** that apply.

- A** The product will always be an odd number.
- B** The product will always be an even number.
- C** The product will never be evenly divided by 3 .
- D** The product will always be evenly divided by 4 .
- E** The product will never be evenly divided by 10 .

**STOP**



# Number and Operations in Base Ten

**Grade 3**  
**Student Workbook**

**11**

What is 1,237 rounded to the nearest 10 ?

\_\_\_\_\_

What is 1,237 rounded to the nearest 100 ?

\_\_\_\_\_

**12**

Subtract:

$$798 - 409$$

- A 381
- B 389
- C 391
- D 399

**13**Which expressions are equal to 860 ? Select **all** that apply.

- A  $606 + 254$
- B  $981 - 121$
- C  $726 - 134$
- D  $200 + 600 + 10 + 50 + 6 + 4$
- E  $300 + 500 + 40 + 10 + 6 + 4$

**14**What is  $60 \times 8$  ?

- A 480
- B 488
- C 608
- D 680

**15**Which expressions have the same value as  $4 \times 40$  ? Select **all** that apply.

- A  $2 \times 80$
- B  $5 \times 30$
- C  $6 \times 10$
- D  $40 \times 4$
- E  $50 \times 3$

**STOP**



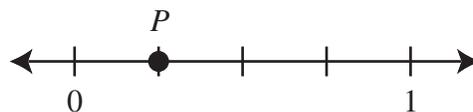
# Numbers and Operations— Fractions

**Grade 3**  
**Student Workbook**

**16** Which of these **best** describes a model of the fraction  $\frac{2}{3}$ ?

- A A square is divided into 2 parts of equal size. Then, 1 part is shaded and 1 part remains unshaded.
- B A square is divided into 3 parts of equal size. Then, 2 parts are shaded and 1 part remains unshaded.
- C A square is divided into 2 parts of equal size. Then, none of the parts are shaded.
- D A square is divided into 3 parts of equal size. Then, all 3 of the parts are shaded.

**17** Point  $P$  is shown on the number line below.

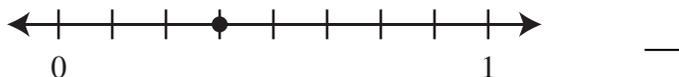


Which fraction is described by the location of point  $P$  on the number line?

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

**18**

A point is graphed on each number line below. Using the fraction bars next to the number lines, write the fraction that **best** describes the location of the point on **each** number line.



**19**

Copy the number line below onto the grid below.

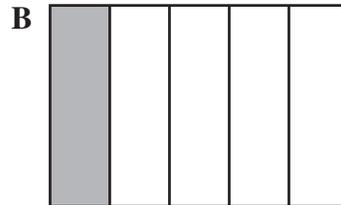
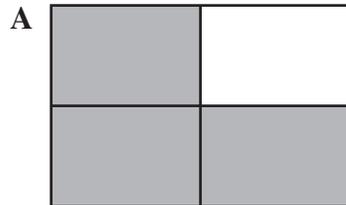


Graph a point on the number line to show the location of  $\frac{5}{6}$ . Explain how you know that the point you graphed is located at  $\frac{5}{6}$ .

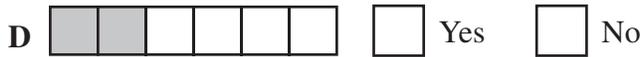
Write your response on the grid below.



**20** Lucy shaded  $\frac{1}{4}$  of a rectangle. Which rectangles shown below are shaded to model an equivalent fraction? Circle **all** that apply.

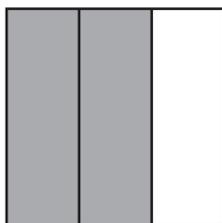


**21** Each rectangle below is shaded to model a fraction. Is the modeled fraction equivalent to  $\frac{1}{3}$ ? Select yes or no for **each** rectangle.

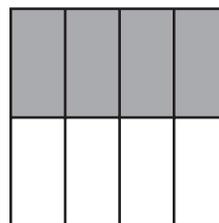


**22**

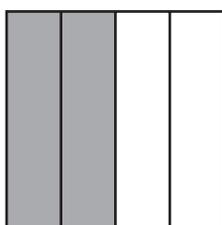
Four squares of equal size are shown below. Each square is divided into parts of equal size, and is shaded to model a fraction.



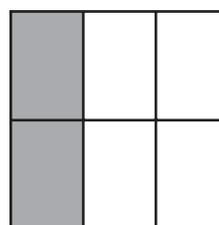
Square A



Square B



Square C



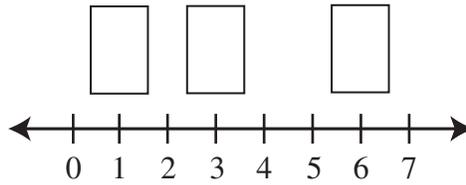
Square D

Circle **all** the squares for which the fraction modeled is equivalent. Explain why the squares you circled model equivalent fractions.

Write your response on the grid below.


**23**

A number line is shown below.



Each fraction listed below is equivalent to a whole number on the number line.

$$\frac{3}{1} \quad \frac{8}{8} \quad \frac{12}{2}$$

Write each fraction in the correct box above the equivalent whole number on the number line.

**24**

Jack measured the lengths of 3 beetles.

- The length of the 1st beetle is  $\frac{3}{8}$  inch.
- The length of the 2nd beetle is  $\frac{7}{8}$  inch.
- The length, in inches, of the 3rd beetle is greater than the length of the 1st beetle but less than the length of the 2nd beetle.

The incomplete number sentences below compare the lengths of the 1st beetle and the 2nd beetle to the length of the 3rd beetle.

$$\frac{3}{8} < \frac{3}{\square}$$

$$\frac{\square}{8} < \frac{7}{8}$$

Complete the number sentences by writing a number in each box so that **both** number sentences show the length of the 3rd beetle.

**25**

Three friends each bought a sandwich to eat.

- Allie’s sandwich and José’s sandwich were exactly the same size.
  - Kyle’s sandwich was a different size than his friends’ sandwiches.
  - Allie ate  $\frac{1}{2}$  of her sandwich.
  - José ate  $\frac{1}{3}$  of his sandwich.
  - Kyle ate  $\frac{1}{2}$  of his sandwich.
- A** Write a number sentence comparing the fraction of sandwich Allie ate to the fraction of sandwich José ate. Use the symbols  $<$ ,  $=$ , or  $>$  to compare the fractions. Explain how you know your answer is correct.
- B** Explain why it is **not** possible that Allie and Kyle ate an equal amount even though they both ate  $\frac{1}{2}$  of their sandwiches. Also, explain why it is **not** possible to tell whether Allie or Kyle ate a larger amount.

**Write your response on the grid on the next page.**

<b>A</b>													
<b>B</b>													

**STOP**



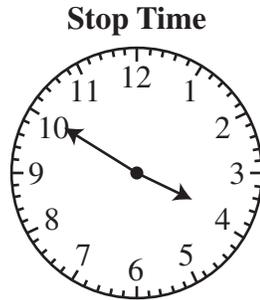
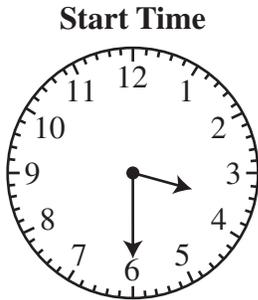
# Measurement and Data

**Grade 3**  
**Student Workbook**

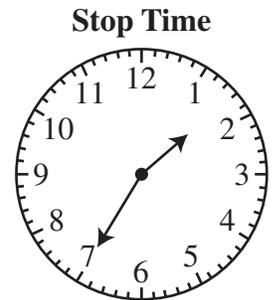
**26**

Which pairs of clocks show exactly 25 minutes from the start time to the stop time? Select **all** that apply.

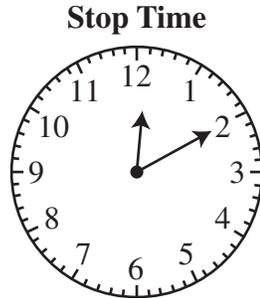
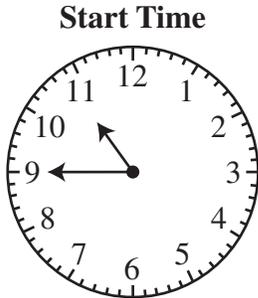
A



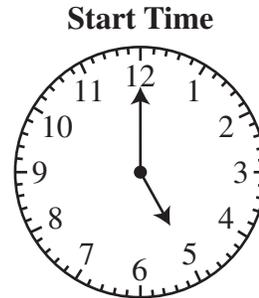
B



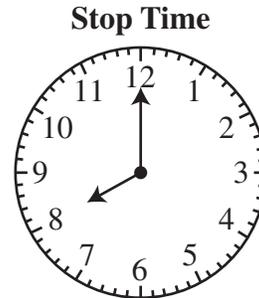
C



D



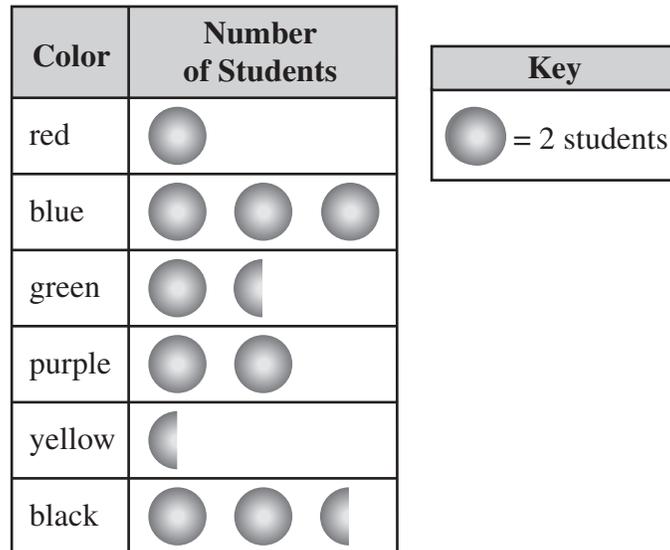
E





**28**

Each student in a class named one color as his or her favorite. The pictograph below shows the number of students who named each of the different colors as his or her favorite.

**Favorite Color**

Which statements about the numbers of students who named favorite colors are true? Select **all** that apply.

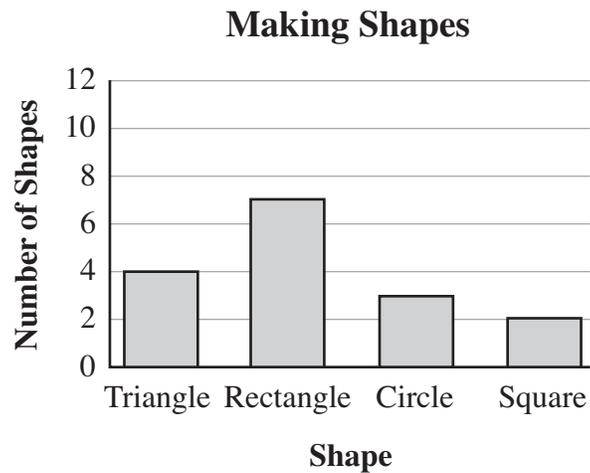
- A** The number of students who named blue is the same as the total number of students who named red and green.
- B** The number of students who named black is the same as the total number of students who named purple and yellow.
- C** The number of students who named purple is 3 greater than the number of students who named yellow.
- D** The number of students who named green is 1 less than the number of students who named black.

**29**

Cody is making paper shapes. The number of each shape Cody has made is described below.

- He has made 4 triangles.
- He has made 7 rectangles.
- He has made 3 **more** circles than triangles.
- He has made 2 **fewer** squares than rectangles.

Cody draws the bar graph below to show the number of each shape he has made, but Cody's graph is incorrect.



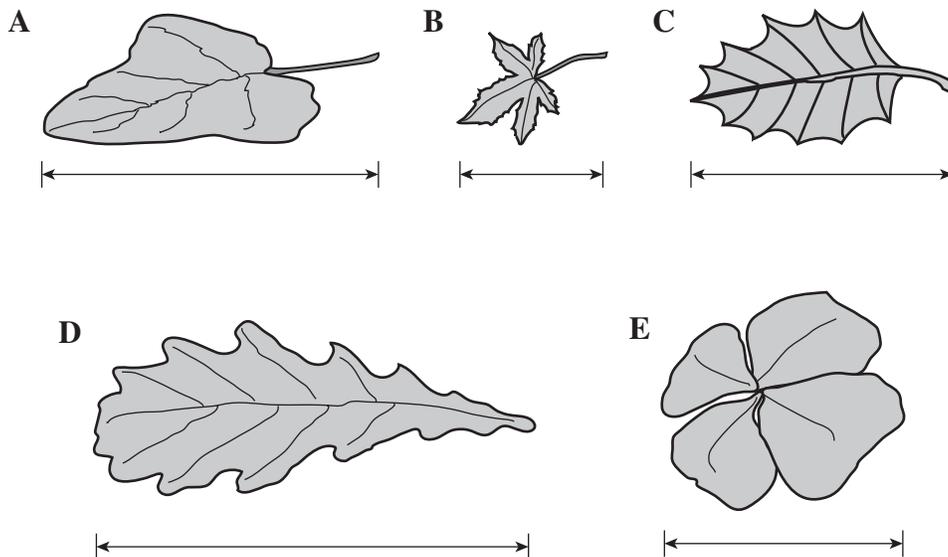
- A** Explain why Cody's graph is incorrect. Using the grid on the next page, draw a correct bar graph to show the number of each shape Cody has made. Be sure to include all labels, a scale, and a title.
- B** Cody makes 1 more rectangle. He then says he has made  $\frac{1}{2}$  as many triangles as rectangles. Explain why Cody is correct.

**Write your response on the grid on the next page.**

<b>A</b>													
<b>B</b>													

**30**

Use your ruler to measure the lengths of the leaves below. Circle **each** leaf whose length measures between 1 inch and  $1\frac{1}{2}$  inches.



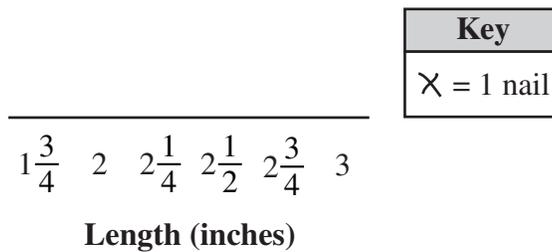
31

The lengths, in inches, of the nails in a tool box are listed below.

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

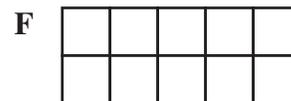
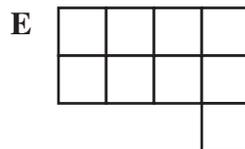
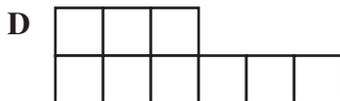
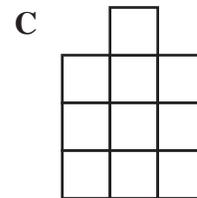
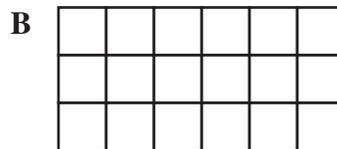
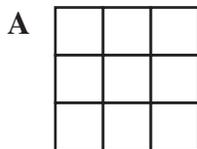
Complete the line plot below to show the number of nails of each length in the tool box.

### Nail Lengths



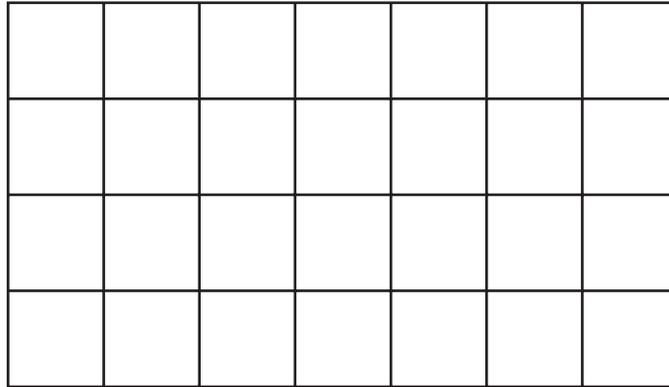
32

The plane figures shown below are covered with unit squares. The unit squares completely cover the figures, without any gaps or overlaps. Circle **each** figure that has an area of exactly 9 square units.



**33**

Elena covered the top of a rectangular table with square tiles. All the tiles fit completely on top of the table and none of the tiles overlapped, as pictured below.

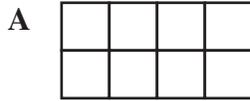


The area of each tile Elena used is 1 square foot. What is the total area of the top of the table?

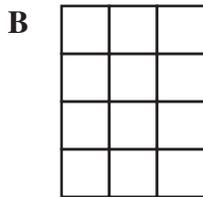
- A 18 square feet
- B 22 square feet
- C 24 square feet
- D 28 square feet

**34**

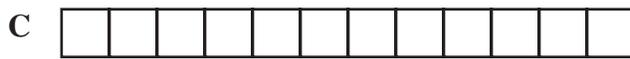
Look at the rectangles below. Each square tile represents 1 square unit. Is the area of each rectangle 12 square units? Select yes or no for **each** rectangle.



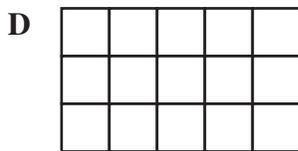
Yes     No



Yes     No



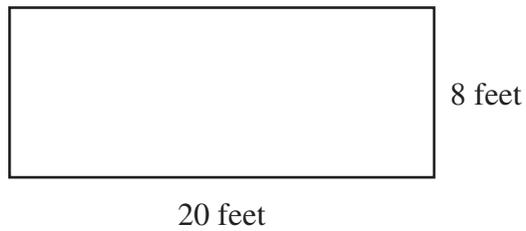
Yes     No



Yes     No

**35**

The picture below shows the side lengths of a rectangular play space.



What is the area of the play space?

- A 28 square feet
- B 56 square feet
- C 160 square feet
- D 320 square feet



**37**

A rectangle is divided into unit squares. Some of the unit squares are shaded, as shown in the picture below.



Which expressions could be used to find the area, in square units, of the entire rectangle? Select **all** that apply.

- A  $(5 \times 3) + (5 \times 2)$
- B  $(5 \times 2) + (3 \times 2)$
- C  $(5 + 3 + 2) \times 2$
- D  $5 \times 3 \times 2$
- E  $(5 + 3) \times 2$
- F  $5 \times 2$

**38**

The perimeter of a rectangle is 104 inches. Could the pairs of measurements below be possible lengths and widths of the rectangle? Select yes or no for **each** pair of measurements.

- A** 18 inches and 34 inches  Yes  No
- B** 4 inches and 26 inches  Yes  No
- C** 34 inches and 70 inches  Yes  No
- D** 36 inches and 68 inches  Yes  No
- E** 21 inches and 31 inches  Yes  No

**39**

A hexagon has a perimeter of 54 centimeters (cm). Each side of the hexagon has the same length.

- A** What is the length, in centimeters, of each side of the hexagon? Show your work or explain your thinking.
- B** Rectangle *PQRS* also has a perimeter of 54 cm. The width of rectangle *PQRS* is equal to the length of each side of the hexagon.

Rectangle *WXYZ* also has a perimeter of 54 cm, but has a different length and width than rectangle *PQRS*.

What are a possible length and width of rectangle *WXYZ*? Explain your thinking.

**Write your response on the grid on the next page.**

<b>A</b>													
<b>B</b>													

**STOP**

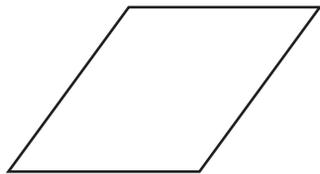


# Geometry

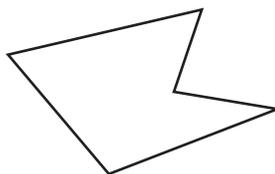
## Grade 3 Student Workbook

**40** Which shape is **not** a quadrilateral?

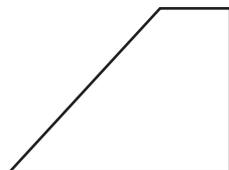
A



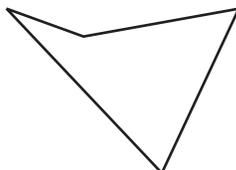
C



B

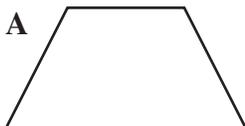


D



**41** Circle **each** quadrilateral below that appears to be a rectangle.

A



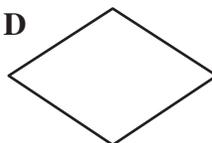
B



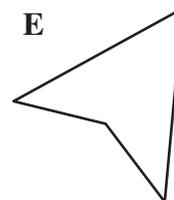
C



D

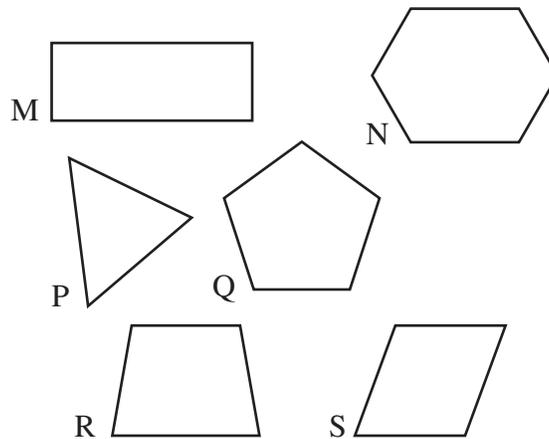


E



**42**

Look at the shapes below.



**A** List **all** the shapes that appear to be quadrilaterals. Explain how you know that the shapes you listed are quadrilaterals.

**B** Using the grid on the next page, draw a shape that is a quadrilateral but is **not** a rhombus, a rectangle, or a square. The shape should also be easily divided into 2 parts with equal areas.

Draw a line through the shape you drew to divide it into 2 parts with equal areas.

What fraction describes the area of each part of the shape? Explain how you know that each part has an equal area.

**Write your response on the grid on the next page.**

<b>A</b>													
<b>B</b>													

**43**

A game board shaped like a circle is divided into 6 equal-sized sections. What fraction of the game board does each section represent?

A  $\frac{1}{6}$

B  $\frac{1}{5}$

C  $\frac{5}{6}$

D  $\frac{6}{6}$

**44**

Each shape shown below is divided into 3 parts. In which shapes is the area of **each** part  $\frac{1}{3}$  of the area of the shape? Circle **all** that apply.

A



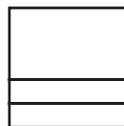
B



C



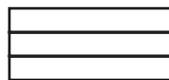
D



E



F



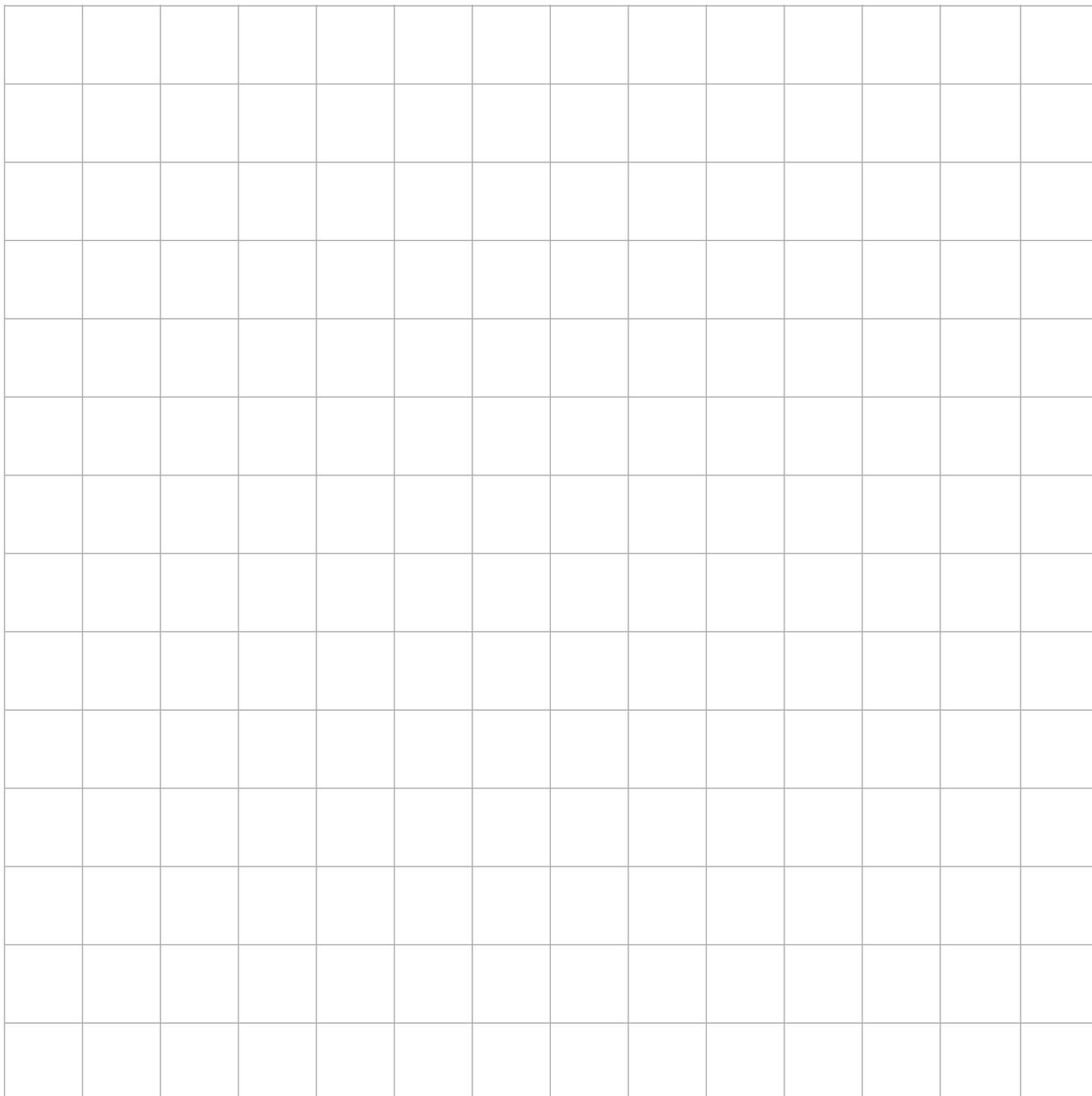
**45**

Zack cut a rectangular wooden board into 8 pieces of equal size.

Using the grid below, draw a picture that could represent the rectangular wooden board and the cuts Zack made to get 8 pieces of equal size.

What fraction of the entire wooden board does each piece represent?

Write your response on the grid below.

**STOP**



**Dale A.R. Erquiaga**

*Superintendent of Public Instruction*

**Office of Assessment, Program Accountability, and Curriculum**

775-687-9188

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