Mathematics Assessment
Updates for 2012

Measurements of Student Progress
Grades 3-5

Table of Contents

Introduction

Updates for 2012 contains pertinent information for Washington educators. This document includes a summary of changes and new information in mathematics assessment, links to resources for teachers, and sample test items. *Updates for 2012* has been customized into grade bands: Grades 3-5, Grades 6-8, and End-of-Course Assessments. The documents are available on http://www.k12.wa.us/Mathematics/default.aspx.

Measurements of Student Progress Development Information

Washington State K-12 Mathematics Learning Standards

In 2008, the State Board of Education voted to approve the revised K-8 Mathematics Learning Standards and 9-12 Mathematics Learning Standards for adoption by the Office of Superintendent of Public Instruction (OSPI). Along with the new standards, the legislature provided direction for the redesign of the assessment system. The Measurements of Student Progress (MSP) replaced the Washington Assessment of Student Learning (WASL) and assessed the new mathematics standards in grades 3-8 starting in the spring of 2010. End-of-course (EOC) exams replaced the High School Proficiency Exam (HSPE) starting in 2011. These EOC exams assess the Algebra 1/Integrated Mathematics 1 and Geometry/Integrated Mathematics 2 performance expectations.

View the Washington State K-12 Mathematics Learning Standards at:
http://www.k12.wa.us/Mathematics/Standards.aspx

Test and Item Specifications

The Test and Item Specifications provide guidelines for developing large-scale assessments based on the Washington State K-12 Mathematics Learning Standards that assess the levels of proficiency students have achieved.

The test specifications provide a grade-level or course test map that delineates the type and number of test items in each Area of Emphasis.

The Test and Item Specifications are periodically updated. Included with each updated version of the Test and Item Specifications will be a summary of the changes made since the previous version. Updates made to the Test and Item Specifications do not indicate changes to which standards (performance expectations) are being assessed; the test content and test map remain the same. The updates address questions from educators requesting clarification of performance expectation scope and/or limitation. The Test and Item Specifications can be accessed through the following link:
http://www.k12.wa.us/Mathematics/TestItemSpec.aspx.

Vocabulary Excel Workbook

The vocabulary lists used in each course have been moved from the Test and Item Specifications to a separate Excel workbook. There are three worksheets in the vocabulary workbook.

1. MSP: First Used in Assessment Items
2. EOC: First Used in Exam Items
3. Not Used: Not used in assessment items

The Vocabulary workbook can be accessed through the following link:
http://www.k12.wa.us/Mathematics/pubdocs/MathAssessmentVocabulary.xls.

Performance Level Descriptors

Performance Level Descriptors (PLDs) give teachers, parents/guardians and students more information about the typical skills and knowledge a student demonstrates on state assessments in each performance level. Committees of Washington state teachers, parents, community members and business representatives develop the Performance Level Descriptors during the standard setting process.

PLDs are broken down by the score levels students can earn:

- Basic (Level 2)
- Proficient (Level 3)
- Advanced (Level 4)

NOTE: There are no PLDs for Below Basic (Level 1).

PLDs for Grades 3 through 8 can be downloaded at
http://www.k12.wa.us/assessment/StateTesting/PLD/default.aspx .

MSP Testing Windows

2012 Calendar for Paper-Pencil Testing

Paper/Pencil Schedule

Grades	Subjects	Requirement	2012 Paper/Pencil Testing Window	Schedule
3 & 6	Reading Mathematics	Required	April 25 to May 18	Locally Approved
4 & 7	Reading Writing Mathematics	Required	April 25 to May 18	Locally Approved
5 & 8	Reading Mathematics Science	Required	April 25 to May 18	Locally Approved

2012 Calendar for Online Testing:

Grades	Subjects	Requirement	2012 Online Testing Window	Schedule
3-8	Reading Mathematics	Required	April 25 to June 4	Locally Approved
7	Writing	Required	April 25 to June 4	Locally Approved
5 & 8	Science	Required	April 25 to June 4	Locally Approved

Online Testing

Online testing in Washington began in spring 2010 in grades 6-8 in reading and math. In spring 2011, reading and math were added in grades 4 and 5, and science in grades 5 and 8. In spring 2012, students in grade 3 will be able to take reading and math via computer.

Washington has joined a growing number of states that have moved to online testing. By spring 2012, it's expected a majority of students in grades 4-8 will take the MSP online instead of the traditional paper-and-pencil format.

A Student Demo for mathematics will be posted on the state's online-testing website early in 2012. The Student Demo allows students to view a demonstration of the testing software. The Demo can also be shared with parents and other interested community members.

A mathematics tutorial, known as the Online Testing Tools (OTT), will also be posted early in 2012. The OTT allows students to practice with the testing software, including navigating through the test and typing their responses to completion and short answer questions. The testing software must be loaded on the computer before using the OTT. Student responses are not saved or recorded.

Visit the online testing website for more information about online testing in Washington: http://www.k12.wa.us/assessment/StateTesting/OnlineTesting.aspx

Grades 3—5 Information

Manipulatives and Tools Allowed

on the Measurements of Student Progress (MSP), End-of-Course (EOC) Exams, and EOC Retake Exams

New content in the K-12 Mathematics Learning Standards has resulted in confusion about which manipulatives are allowed during the state assessments. Use of a variety of manipulatives by teachers during instruction can be beneficial for students to build concrete understanding of mathematical content and procedures. Students are also expected to understand the meaning of symbolic notation, develop fluency, and apply concepts and procedures in problem solving situations. Many performance expectations require students to demonstrate understanding at the symbolic notation, fluency, and application levels. Because of the need to assess these levels of understanding, some manipulatives used in the classroom are not appropriate for use on the state assessments. Of the utmost importance—**manipulatives should not provide answers to items.**

Manipulatives and Tools Allowed	Manipulatives and Tools Not Allowed

Manipulatives that are used during the assessment should not be distributed to the students but should be available in the classroom to students who elect to use them.
 	
• Straightedge (all grades)
• Ruler with centimeters and inches for grade 3 (required)
• Protractor or angle ruler for grade 5 (required)
• Compass for Year 2 EOC only
• Abacus for visually impaired/blind students using Braille edition
• Tiles, algebra tiles, cubes
• Base-ten pieces
• Pattern blocks, geoboards, Cuisenaire rods
• Judy clocks without a digital display
• Glossary of Non-Mathematics Terms
• Graph paper for grades 3-8 only (must be collected and shredded)
Tools that can remain on teachers' walls:
  • Hundreds charts (0-99 or 1-100 only)
  • Number lines with whole numbers only
	Because of the multitude and variety of materials available, the following list of materials that are not allowed is not exhaustive. Consider all manipulatives "Not Allowed" if they are not listed as "Allowed".
	
	The following list addresses the most commonly asked questions concerning manipulative use from the field.
	
	• Calculators for grades 3-6
	• Multiplication or addition matrices
	• Number lines with integers, fractions, decimals, or markings of multiples, prime, and/or composite numbers
	• Commercially- or student-made fraction pieces, fraction templates, or fraction materials, whether labeled or unlabeled
	• Dictionaries or thesauruses
	• Patty paper or tracing paper
	• Dry erase boards
	• Highlighters

If you have further questions regarding manipulatives contact: Assessment@k12.wa.us.

Common Core State Standards Updates

Washington formally adopted the Common Core State Standards (CCSS) July 20, 2011. These standards describe the knowledge and skills in English language arts and mathematics that young people will need upon graduation from high school, whatever their choice of college or career. More than 40 states have now adopted these standards.

OSPI and its partners will oversee a four-phase implementation strategy that begins in 2011-12 with developing awareness of what the standards are and how they differ from existing standards, and will conclude in 2014-15 with implementation of a new assessment system to measure student achievement of the standards. The goal for September 2014 is 100% of English language arts and mathematics teachers are prepared to teach Washington's new Common Core standards.

For more information regarding implementation of Common Core State Standards in Washington State, please see http://www.k12.wa.us/corestandards/ or http://www.k12.wa.us/Communications/PressReleases2011/CommomCore.aspx.

Resources

2011 Lessons Learned from Scoring Student Work

Each year, the Mathematics Assessment Team shares observations about student responses for the Measurements of Student Progress and the End-of-Course Exams and publishes these observations in *Lessons Learned from Scoring Student Work*. The purpose of this document is to provide teachers with insight into common misconceptions and errors that may keep students from earning full credit on state assessment items.

2011 Lessons Learned from Scoring Student Work will be available in November and can be downloaded at http://www.k12.wa.us/Mathematics/LessonsLearned.aspx.

Online Supports

The Mathematics Team has created support Moodle sites to provide a forum for teachers to collaborate and share with other teachers across the state. Each support Moodle sites contain links to OSPI resources, a database of teacher-created resources, and discussion forums.

MSP Supports Moodle:
http://moodle.ospi.k12.wa.us/course/view.php?id=28

Teacher Tool

The Teacher Tool gives diagnostic information about items on the MSP. A brief description of each item on the MSP is provided as well as state-level performance data.

The Teacher Tool can be accessed at the end of October and is located at http://www.k12.wa.us/TeacherResourceTool2010-11/default.aspx.

Sample Items for Classroom Use

The need to build a robust item bank with items that assess the new mathematics standards prevents the release of actual test items that have been used operationally for the current mathematics standards. In this document you will find new sample items available for classroom use as well as information and links to sample items released in other documents. Items on the MSP will consist of multiple-choice, completion, and short-answer items.

Item Types on the MSP

	Multiple-Choice	Completion	Short-Answer
Point Value	**1**	**1**	**2**
Distinguishing Feature(s)	• Each Multiple-Choice item has three answer choices, the correct answer and two distractors.	• Each Completion item requires the student to enter a numerical answer.	• Each Short-Answer item requires a constructed response. • A Short-Answer item may ask the student to write a sentence or equation; complete a table, graph, or chart; draw a picture; construct a diagram; or perform a calculation. • An Enhanced Multiple-Choice item will ask the student to select from a list of three answer choices and then show work to either explain the reason(s) for choosing that answer or to solve a problem.

New Samples for 2012

These items are samples that are aligned with the K-12 Mathematics Learning Standards. They have not gone through the comprehensive review process that test items must pass before placement on an actual state test. Teachers may still use these items as classroom exercises, or informal checks for understanding, as teachers have the ability and choice to clarify any questions about these items as students are working on them.

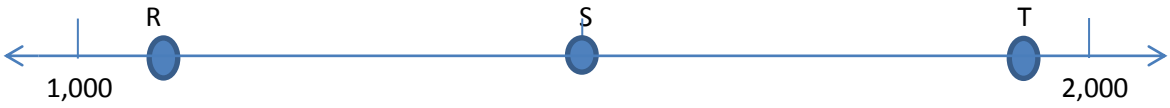
Please see the MSP Item Writing materials posted on the MSP Supports Moodle for more information.

Grade 3

Multiple-Choice

Sample item for performance expectation 3.1.A

Look at the number line.



Which point is closest to 1,059?

- **A.** Point R
- **B.** Point S
- **C.** Point T

Answer: A

Sample item for performance expectation 3.1.B

There are 5,493 people living in Lake Town.

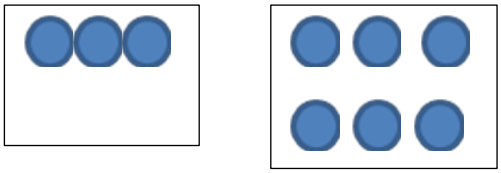
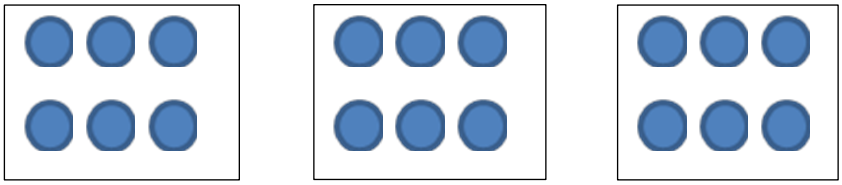
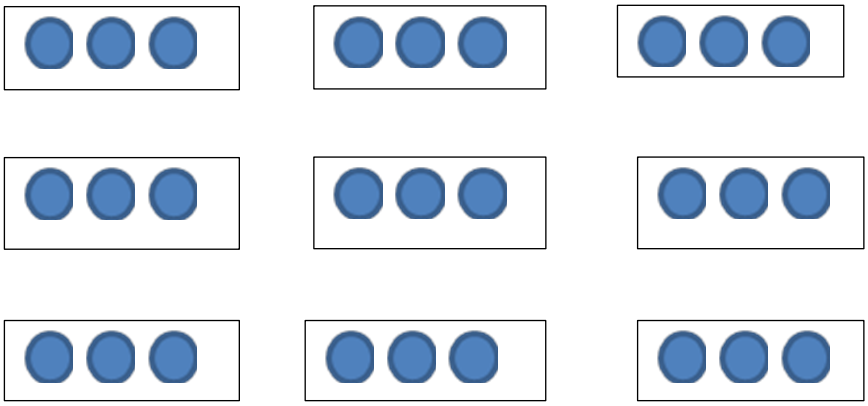
What is 5,493 rounded to the nearest thousand?

- **A.** 5,000
- **B.** 5,500
- **C.** 6,000

Answer: A

Sample Item for performance expectation 3.2.A

Which model represents 3 x 6?

- **A.** 
- **B.** 
- **C.** 

Answer: B

Sample item for performance expectation 3.2.H

Amanda has 34 toy cars. She wants to fill paper bags with toy cars to give away. Amanda found that 5 cars will fill a bag.

What is the greatest number of bags of toy cars Amanda can fill?

- **A.** 4
- **B.** 6
- **C.** 7

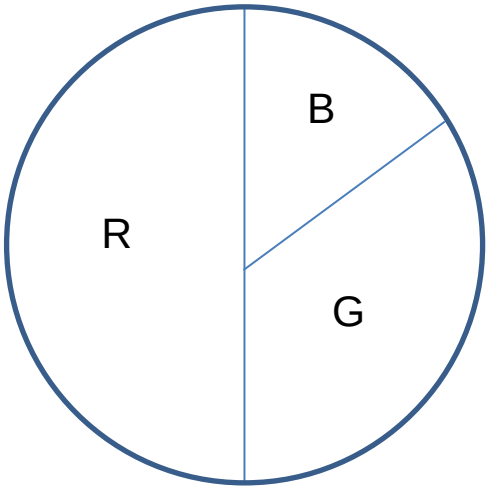
Answer: B

Sample item for performance expectation 3.3.A

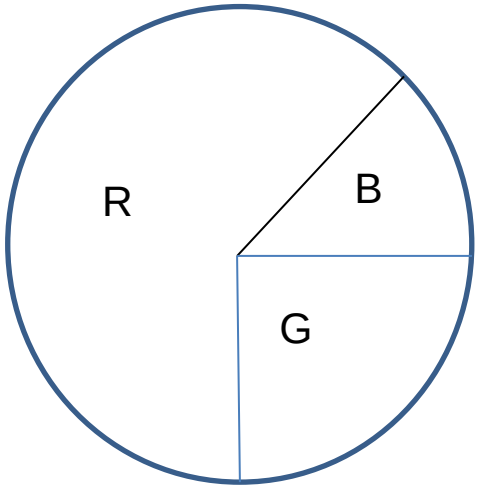
Jakob drew a circle. He colored the circle $\frac{1}{4}$ green (G), $\frac{1}{8}$ blue (B) and the rest of the circle red (R).

Which circle could represent the circle Jakob drew?

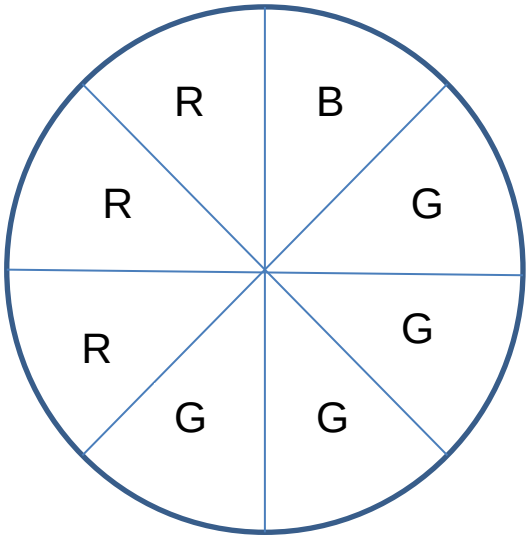
○ **A.**



○ **B.**



○ **C.**



Answer B:

Sample Item for performance expectation 3.3.B

Which list shows the fractions from least to greatest?

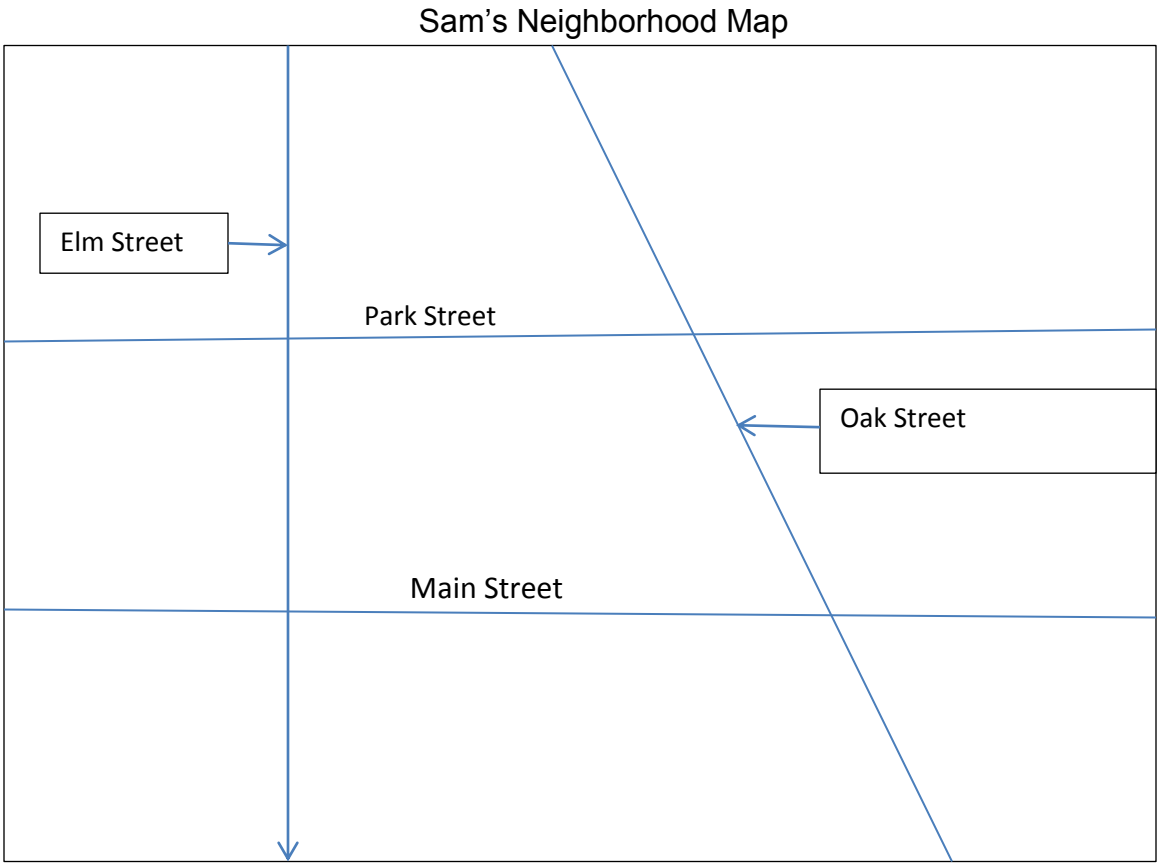
- **A.** $\frac{3}{5}$, $\frac{3}{8}$, $\frac{5}{10}$
- **B.** $\frac{5}{10}$, $\frac{3}{8}$, $\frac{3}{5}$
- **C.** $\frac{3}{8}$, $\frac{5}{10}$, $\frac{3}{5}$

Answer: C

Note: To order these fractions from least to greatest, students do not have to change the fractions to the same denominator. They can order these fractions by comparing each fraction to the benchmark $\frac{1}{2}$. The fraction $\frac{\mathbf{5}}{\mathbf{10}}$ is equal to $\frac{1}{2}$; $\frac{\mathbf{3}}{\mathbf{8}}$ is less than half; $\frac{\mathbf{3}}{\mathbf{5}}$ is greater than $\frac{1}{2}$.

Sample item for performance expectation 3.4.A

Sam found a map of his neighborhood.



Which two streets appear to be perpendicular?

- **A**. Elm Street and Main Street
- **B.** Oak Street and Elm Street
- **C**. Park Street and Main Street

Answer: A

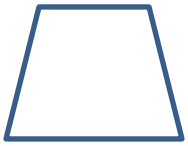
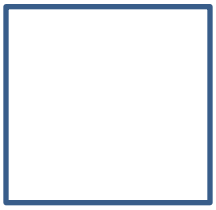
Sample Item for performance expectation 3.4.C

Henry is trying to find a shape.

He was given these clues:

– Opposite sides are equal.
– Opposite sides are parallel.
– The shape is a rectangle.

Which figure fits all the clues?

- **A.** 
- **B.** 
- **C.** 

Answer: C

Sample item for performance expectation 3.5.A

Which equation is true?

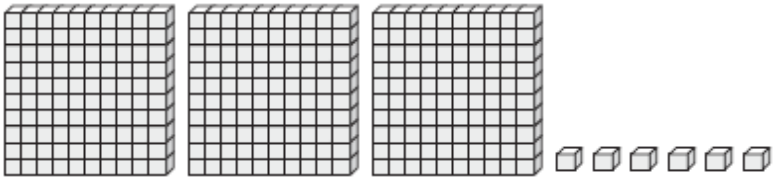
- **A.** 25 – 15 = 10 x 0
- **B**. 25 – 15 = 5 x 2
- **C.** 25 – 15 = 5 x 3

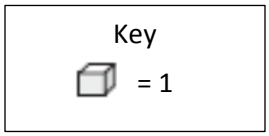
Answer : B

Completion

Sample item for performance expectation 3.1.A

Shannon modeled a number with place value blocks.





What number does Shannon's model represent?

Write your answer on the line.

What number does Shannon's model represent? _____

Answer: 306

Sample item for performance expectation 3.1.B

Round 2,099 to the nearest hundred.

Write your answer on the line.

What is 2,099 rounded to the nearest hundred? _____

Answer: 2, 100

Sample item for performance expectation 3.1.C

Find the sum.

4,985 + 3,849

Write your answer on the line.

What is the sum? _____

Answer: 8, 834

Sample item for performance expectation 3.1.C

A digit is missing in the work shown.

$$\begin{array}{r} 538 \\ 875 \\ +932 \\ \hline 2,\square 45 \end{array}$$

Find the digit that belongs in the box.

Write your answer on the line.

What digit belongs in the box? _____

Answer: 3

Sample Item for performance expectation 3.2.G

Find the product.

$$\begin{array}{r} 16 \\ \times\ 6 \\ \hline \end{array}$$

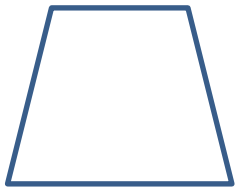
Write your answer on the line.

What is the product? _____

Answer: 96

Sample Item for performance expectation 3.4.D

Measure the perimeter of the quadrilateral to the nearest centimeter.



Write your answer on the line.

What is the perimeter of the quadrilateral to the nearest centimeter?

_____cm

Answer: The answer depends on the size you set your copier to print.

Short-Answer

New sample item for performance expectation 3.1.A and 3.1.E

Animals at the zoo were weighed.

Animal	Weight in Pounds
Elephant	7,243
Hippopotamus	5,319
Walrus	3,209
Grizzly Bear	1,028
Rhinoceros	3,869
Orca Whale	8,003

Find the difference between the greatest weight and least weight of the animals in the chart.

Show how you got your answer using words or numbers.

What is the difference between the greatest weight and least weight? _____ pounds

2-point response:
A student shows understanding of solving a word problem involving multi-digit subtraction and comparing whole numbers by doing the following:
Understanding:

- uses 8,003 and 1,028

Procedure:

- shows a procedure to determine the difference in the greatest and least weight

Answer:

- writes 6975.

Students can earn 1 point by doing one of the following:

- Uses 8,003 and 1,028 and shows a procedure that could lead to determining the difference in the greatest and least weight
- Writes 6975
- Uses two weights from the chart and shows work to determine the difference in the two weights.

Sample item for performance expectation 3.2.H

Sally picked apples for 7 days. On each of the 7 days, she picked 12 apples and put the apples in boxes of 4 apples each.

Find how many boxes of apples Sally picked in the 7 days.

Show all the steps you used to find your answer.

How many boxes of apples did Sally pick in 7 days?

_____ boxes

2-point response:
The student shows understanding of solving a multi-step word problem involving multiplication and division by doing the following:
Understanding:
- uses 7, 12, and 4

Procedure:
- shows a procedure to determine the number of boxes of apples Sally picked

Answer:
- writes 21.

Students can earn 1 point by doing one of the following:
- uses two of the numbers 7, 12, and 4 and shows a procedure that could lead to determining the number of boxes of apples Sally picked
- writes 21.

Sample item for performance expectation 3.5.E

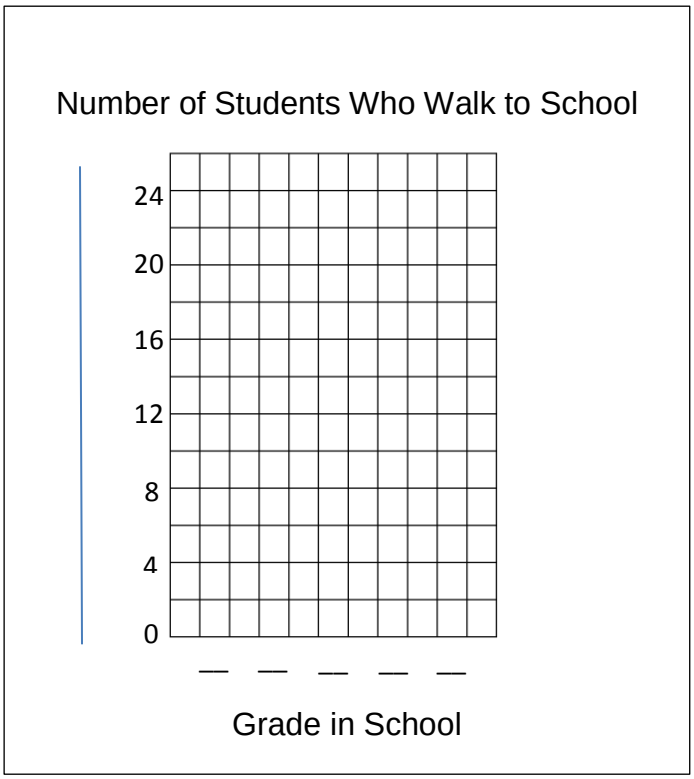
Minh wrote the number of students who walked to school in a table.

Number of
Students Who Walk to School

Grade	Number of Students
1 (First)	8
2 (Second)	5
3 (Third)	18
4 (Fourth)	9
5 (Fifth)	21

Make a bar graph of the data.

Be sure to include:
- A label for the vertical axis
- A label for each Grade
- Bars to show the number of students in each grade.



2-point response:

The student shows understanding of constructing a bar graph by doing the following:

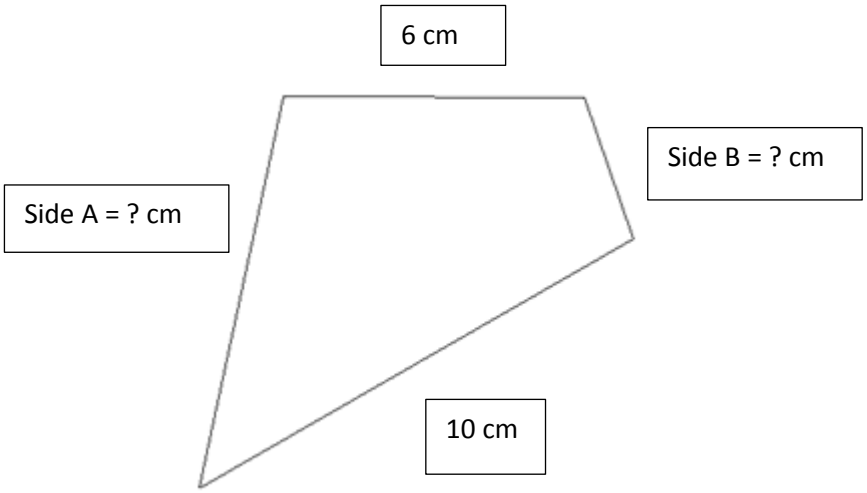
- Labels the vertical axis “Number of Students”, or equivalent
- Labels the grades: 1, 2, 3, 4, 5, or equivalent
- Draws 5 of 5 bars

Students can earn 1 point by doing one of the following:

- Draws and labels 3 of 5 bars.
- Draws 5 of 5 bars

New sample item for performance expectation 3.6.E (3.4.E)

Alice knows this information about the quadrilateral shown:
– the perimeter is 27 centimeters
– one side is 6 cm and another is 10 cm
– Side A is 5 centimeters longer than Side B.



Find the lengths of Side A and Side B.

Show your work using words or numbers

What are the lengths of Side A and of Side B?

Side A _____ cm

Side B _____ cm

2-point response:
The student shows understanding of solving a problem by doing the following:
Understanding:

- uses 27, 6, 10, and 5

Strategy:

- shows a procedure involving perimeter to determine the lengths of Side A and Side B

Answer:

- writes 8 for Side A and 3 for Side B.

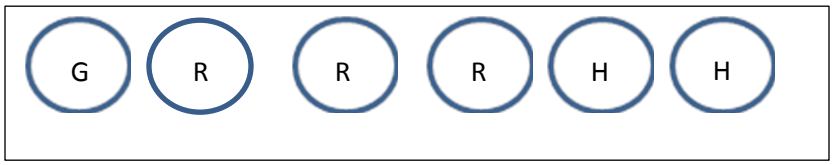
Students can earn 1 point by doing one of the following:

- uses 27, 6, and 10 and shows a strategy that could lead to determining the lengths of Side and Side B
- writes 8 for Side A and 3 for Side B

Sample item for performance expectation 3.6.F (3.3.A)

A farm has a petting zoo. Last year the petting zoo had goats (G), rabbits (R), and horses (H). The picture represents the number of each animal the petting zoo had last year.

Animals at the Petting Zoo Last Year



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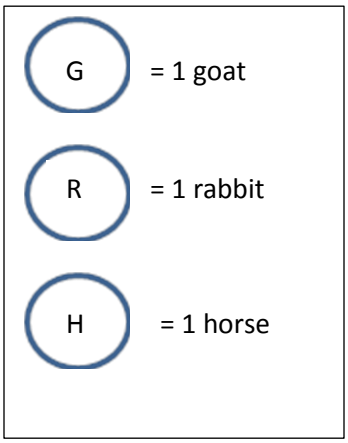


This year the farm has two times the number of animals in their petting zoo as last year.

- $\frac{1}{4}$ of the animals are goats
- $\frac{1}{3}$ of the animals are rabbits
- the rest of the animals are horses.

Use the symbols in the key to represent the number of animals in the petting zoo this year.

Be sure to represent:

- Two times as many animals as last year
- $\frac{1}{4}$ of the animals as goats (G), $\frac{1}{3}$ of the animals as rabbits (R), and the rest of the animals as horses (H)

Animals at the Petting Zoo This Year

2-point response: A student shows understanding of representing a problem situation by doing the following:

- represents 12 animals
- labels 3 goats, 4 rabbits, and 5 horses

Students can earn 1 point by doing one of the following:

- represents 12 animals and labels 3 goats
- represents 12 animals and labels 4 rabbits
- represents 8 or more animals and represents $\frac{1}{4}$ of the animals as goats (G)
- represents 9 or more animals and represents $\frac{1}{3}$ of the animals as rabbits (R)

Sample item for performance expectation 3.6.I (3.4.C)

Karin and Felix were asked to describe these quadrilaterals.

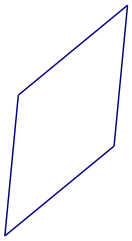


Figure A

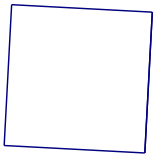


Figure B

Karin described the quadrilaterals in these ways.

– Figure A is a rhombus.
– Figure B is not a rhombus because it is a square.

Are Karin's descriptions correct? Explain why or why not.

Explain why this statement is correct or not correct: Figure A is a rhombus.

_____
_____
_____
_____

Explain why this statement is correct or not correct: Figure B is not a rhombus because it is a square.

_____
_____
_____
_____
_____

2-point response: A student shows understanding of drawing conclusions and explaining reasoning by doing the following:

- writes Figure A is a rhombus because all 4 sides are equal
- writes Figure B is a rhombus because all 4 sides are equal and Figure B is a square because all 4 sides are equal and all 4 angles are 90 degrees

Students can earn 1 point by doing one of the following:

- writes Figure A is a rhombus because all 4 sides are equal
- writes B is a rhombus because all 4 sides are equal and Figure B is a square because all 4 sides are equal and all 4 angles are 90 degrees

Grade 4

Multiple-Choice

Sample Item for performance expectation 4.1.B

Which list shows factors of 12?

- **A.** 1, 2, 3, 4, 6, 12
- **B.** 2, 4, 6, 8, 10, 12
- **C.** 12, 24, 36, 48, 60, 72

Answer: A

Sample Item for performance expectation 4.1.E

The value of 4 in the number 4,281 is how many times the value of the 4 in the number 3,245?

- **A.** 10 times
- **B.** 100 times
- **C.** 1,000 times

Answer: B

Sample item for performance expectation 4.2.A

Look at the number line.

What number is closest to the point on the number line?

- **A.** 2.01
- **B.** 2.15
- **C.** 2.25

Answer: B

Sample item for performance expectation 4.2.B

Which list of decimal numbers is ordered from least to greatest?

- **A.** 1.12 0.99 1.09 1.3
- **B.** 1.3 0.99 1.09 1.12
- **C.** 0.99 1.09 1.12 1.3

Answer: C

Sample item for performance expectation 4.2.D

Which decimal number is equivalent to $\frac{2}{5}$?

- **A.** 0.2
- **B.** 0.25
- **C.** 0.4

Answer: C

Sample item assessing 4.4.A

Tracy is working to save money for a bike that costs $75. She earns $5 a day. After working a number of days, Tracy still does not have enough money to buy the bike.

Let d represent the number of days Tracy has worked.

Which number sentence represents the amount of money Tracy has earned?

- **A.** $5 \times d = 75$
- **B.** $5 \times d > 75$
- **C.** $5 \times d < 75$

Answer: C

Sample item for performance expectation 4.4.C

Kylie left home at 2:50 P.M. She returned at 4:05 P.M.

How much time was Kylie away from home?

- **A.** 1 hour 15 minutes
- **B.** 1 hour 55 minutes
- **C.** 2 hours 55 minutes

Answer: A

Sample item for performance expectation 4.4.F

Julie has a bag of 50 balls that are the same size and shape. The balls come in 4 different colors: red, white, green, and yellow.

In the bag:

– there are 6 red balls
– there are twice as many white balls as red balls
– there are 14 green balls
– the rest of the balls are yellow.

Julie will pull one ball out of the bag without looking.

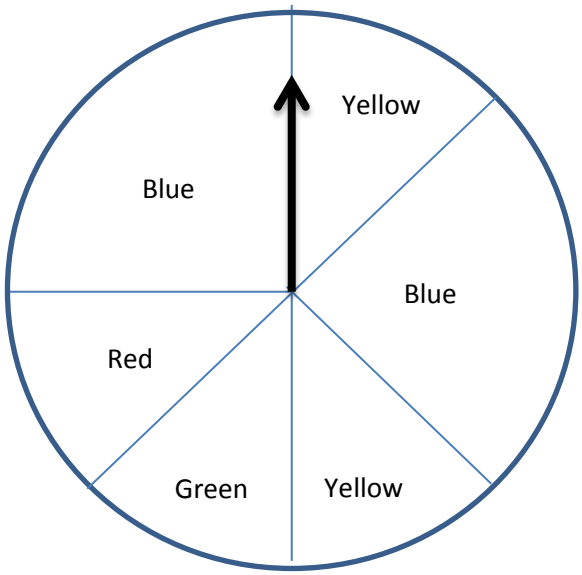
Which of these colors of ball is Julie most likely to pull out of the bag?

- **A**. green
- **B**. white
- **C.** yellow

Answer: C

Sample item for performance expectation 4.4.G

Patty made the spinner shown.



What is the probability that the spinner will land on Red?

○ **A.** $\frac{1}{4}$

○ **B.** $\frac{1}{6}$

○ **C.** $\frac{1}{8}$

Answer: C

Completion

Sample Item for performance expectation 4.1.D

Henry drives a truck. He drives 240 miles each trip.

Find how many miles he drives in 10 trips?

Write your answer on the line.

How many miles does Henry drive in 10 trips? _____ miles

Answer: 2,400

Sample item for performance expectation 4.2.C

Convert $\frac{55}{9}$ to a mixed number.

Write your answer on the line.

What is $\frac{55}{9}$ converted to a mixed number? _____

Answer: $6\frac{1}{9}$

Sample item for performance expectation 4.2.G

Write $\frac{8}{16}$ as a fraction simplified to lowest terms.

Write your answer on the line.

What is $\frac{8}{16}$ simplified to lowest terms? _____

Answer: $\frac{1}{2}$

Sample item for performance expectation 4.2.H

Round 119.09 to the nearest whole number.

Write your answer on the line.

What is 119.09 rounded to the nearest whole number? _____

Answer: 119

Sample item for performance expectation 4.3.C

A rectangular field has a length of 75 feet and a width of 45 feet.

Find the perimeter of the field. ($P = 2\,l + 2w$)

Write your answer on the line.

What is the perimeter of the field? _____ feet

Answer: 240

Short-Answer

Sample Item for performance expectation 4.1.I

Miss Bui went to a store to buy beads for her art students. She found a box of beads that had 100 packages of beads. She took out 35 packages of beads and bought the rest of the packages in the box. Each package of beads cost $12.

Find how much money Miss Bui spent on the packages of beads that she bought.

Show your work using words or numbers

How much money did Miss Bui spend on the packages of beads that she bought? $_____

2-point response:
The student shows understanding of solving a multi-step word problem involving multi-digit multiplication by doing the following:
Understanding:
- uses 100, 35, and 12

Procedure:
- shows a procedure to determine the amount of money Miss Bui spent on the packages of beads

Answer:
- writes 780

Students can earn 1 point by doing one of the following:
- uses 12 and at least one of the following: 100 or 35, and shows a procedure that could lead to determining the amount of money Miss Bui spent on the packages of beads
- writes 780.

Sample item for performance expectation 4.3.E

Anton gave his classmates clues for 2 rectangles that he drew.
– Each rectangle has a perimeter of 30 inches.
– Rectangle A has an area of 50 square inches.
– Rectangle B has a different area from rectangle A.

Draw a rectangle that fits the clues of Rectangle B.
Find the area of the your rectangle.

Be sure to:
- Draw a rectangle that has a perimeter of 30 inches and an area different than Rectangle A
- Label the length and width of your rectangle.
- Find the area of the rectangle you drew.

What is the area of the rectangle you drew?

_____ square inches

2-point response:
The student shows understanding of demonstrating that rectangles with the same perimeter can have different areas by doing the following:

- Draws and labels a rectangle with one of the sets of dimensions:

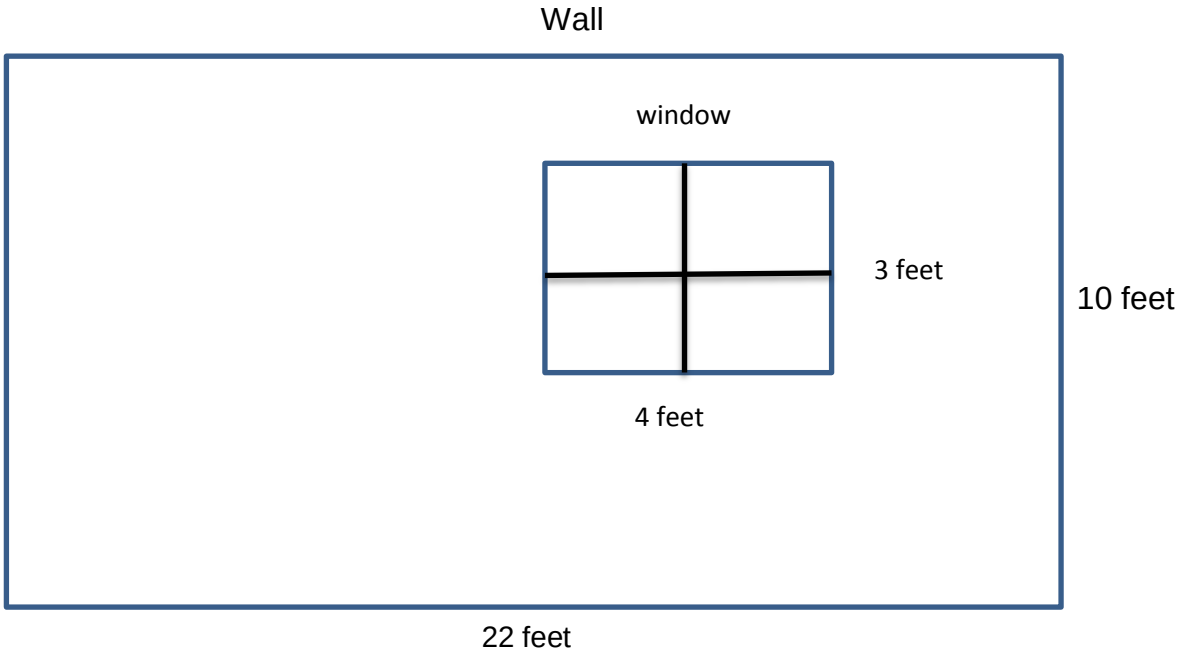
Length	Width	Area (sq. in.)
14	1	14
13	2	26
12	3	36
11	4	44
9	6	54
8	7	56

- Writes the area of the rectangle drawn.

Students can earn 1 point by doing one of the following:
The student draws and labels a rectangle with a perimeter of 30 inches.

Sample item for performance expectation 4.3.F

Felecia wants to paint a rectangular wall with the measurements shown.



Anita will not paint the rectangular window.

- Find the total area of wall Felecia will paint.
- Label your answer.

Show your work using words or numbers.

What is the total area of wall Felecia will paint? _____

2-point response:
The student shows understanding of solving a word problem involving areas of rectangles by doing the following:
Understanding:

- uses 3, 4, 10 and 22

Procedure:

- shows a procedure to determine the total area of wall Felecia will paint

Answer:

- writes 208 square feet

Students can earn 1 point by doing one of the following:
The student does one of the following:

- uses 3 and 4 or 10 and 22 and shows a procedure that could lead to determining the total area of wall Felecia will paint
- writes 208

SCORING NOTE: This item assesses a student's understanding of (1) the procedure to determine area and (2) the knowledge that area measurements involve square units. Other items may assess only a student's understanding of the procedure to determine area. When students are directed to "label" their answers, the correct unit label will be scored to earn full credit.

Sample item for performance expectation 4.5.E (4.4.B)

Greta has blocks of three different shapes: squares, triangles, and circles.

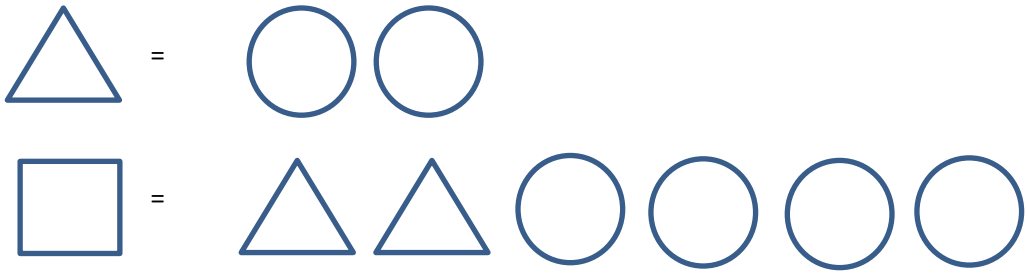
She knows this information about her blocks.

– All the square blocks weigh the same.
– All the triangle blocks weigh the same.
– All the circle blocks weigh the same.

When she weighed the blocks on a scale, she found the following to be true:

 = 2 pounds

These blocks weighed the same:



Find how many ounces a circle block weighs.

Show your work using words or numbers.

How many ounces does a circle block weigh?_____ ounces

2-point response: The student shows understanding of solving a problem by doing the following:
Understanding:

- uses 2 (pounds) and the number of blocks given

Strategy:

- shows a strategy involving the number of ounces in a pound to determine the number of ounces a circle block weighs

Answer:

- writes 4

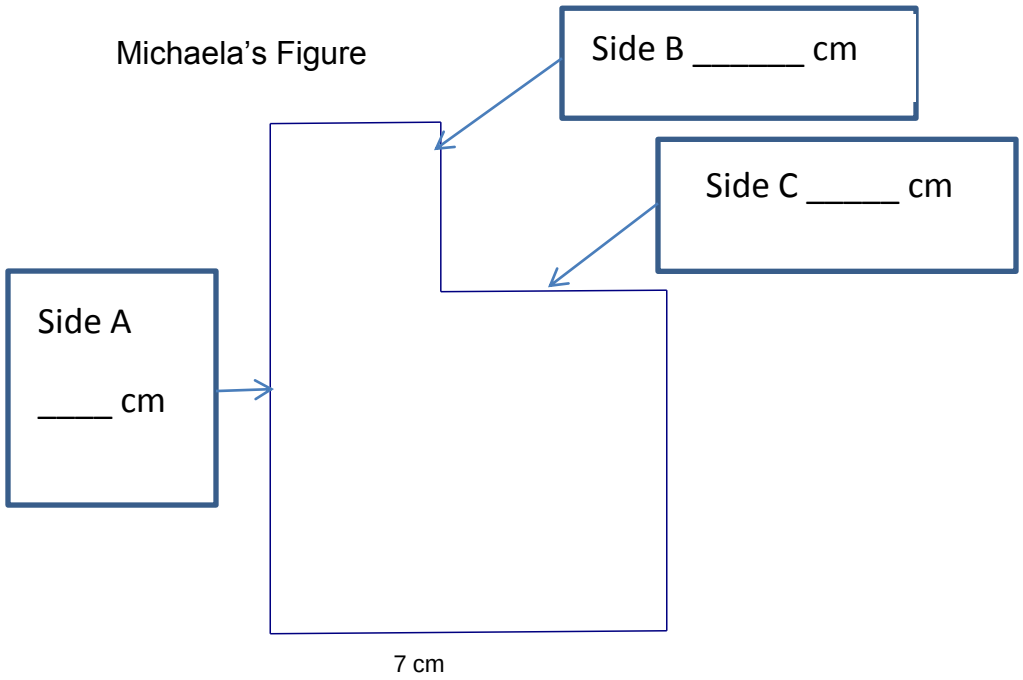
Students can earn 1 point by doing one of the following: uses 2, some of the blocks given, and shows a strategy involving the number of ounces in a pound that could lead to determining the number of ounceS a circle block weighs.

- writes 4

Sample item for performance expectation 4.5.E (4.3.D)

Michaela drew a figure that could be broken down into smaller rectangles. The figure has a total area of 51 square centimeters.

Find the possible lengths of the sides that are missing in the drawing.



Show the steps you used to determine the missing lengths.

What are the possible side lengths of the missing sides?

Side A _____ **cm**

Side B _____ **cm**

Side C _____ **cm**

2-point response:
A student shows understanding of solving a problem by doing the following:
Understanding:

- uses 7 and 51

Strategy:

- shows a strategy to determine the possible lengths of the missing sides

Answer:

- writes side lengths that result in a total area of 51 square centimeters
  Examples:

Side A	Side B*	Side C*
8	2	2.5
9	3	4

* Note: Side B and Side C lengths can be exchanged.

Students can earn 1 point by doing one of the following:
A student does one of the following:

- uses 7 and 51 and shows a strategy that could lead to determining the possible lengths of the missing sides
- writes side lengths that result in a total area of 51 square centimeters

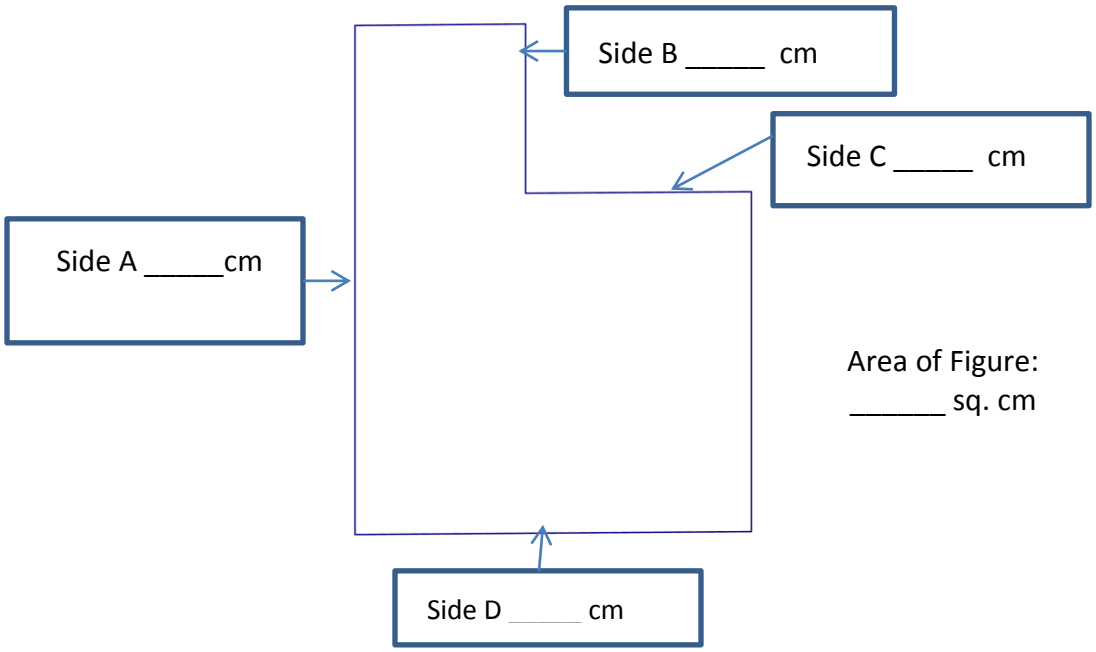
The following item can be used after students have experience with the "New sample item for performance expectation 4.5.E (4.3.D)" in the "Updates for 2012" document.

New sample item for performance expectation 4.5.F (4.3.D)

Draw a figure that can be broken down into rectangles like the example given.

You may use the "Example Figure" or draw your own figure on another sheet of paper.

Example Figure That Can Be Broken Down Into Rectangles



- Find the area of the figure you drew.
- Label all the lengths of the sides needed to find the area of your figure.

Show the steps you used to find the area of your figure.

2-point response:
A student shows understanding of representing a problem situation by doing the following:

- Draws a figure that can be broken down into rectangles and labels all the lengths of the sides needed to find the area of the figure
- Determines the area of the figure drawn.

Students can earn 1 point by doing one of the following:

- Draws a figure that can be broken down into rectangles and labels all the lengths of the sides needed to find the area of the figure
- Shows a procedure that could lead to determining the area of the figure drawn.

Grade 5

Multiple-Choice

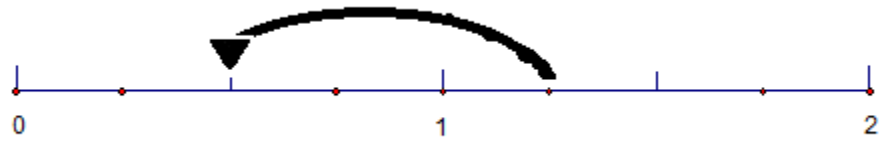
Sample item for performance expectation 5.2.A

Look at the equation.

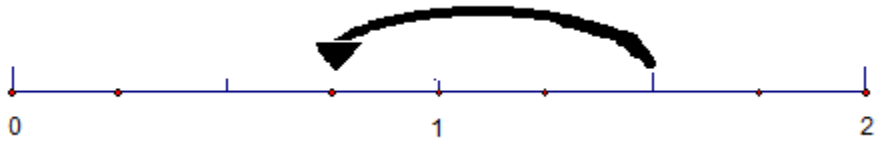
$$1\frac{1}{4} - \frac{3}{8} = \square$$

Which number line represents the equation?

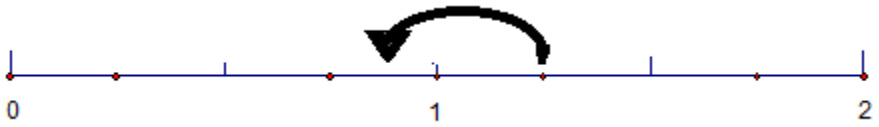
- **A.**



- **B.**



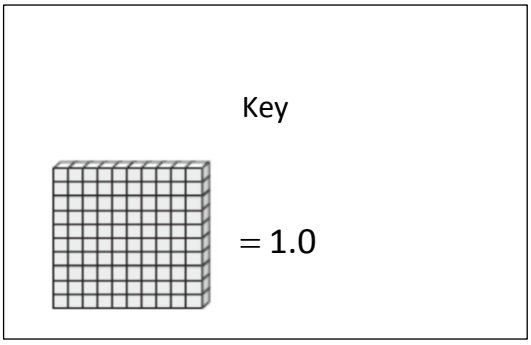
- **C.**



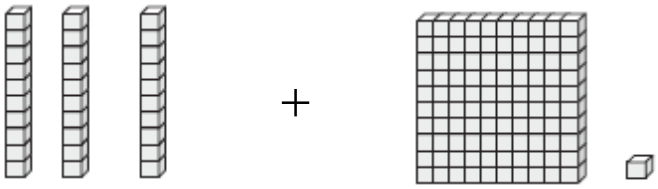
Answer: C

New sample item for performance expectation 5.2.B

Look at the key and the addition model.



Addition Model



Which expression is represented by the model?

- **A**. 3.0 + 1.10
- **B.** 0.3 + 1.1
- **C.** 0.30 + 1.01

Answer: C

Sample item for performance expectation 5.2.C

Look at the fractions:

$$\frac{2}{3} \qquad \frac{5}{12}$$

Which pair of fractions are equivalent to $\frac{2}{3}$ and $\frac{5}{12}$?

- **A.** $\frac{8}{12}$ and $\frac{5}{12}$
- **B.** $\frac{8}{24}$ and $\frac{10}{24}$
- **C.** $\frac{2}{36}$ and $\frac{5}{36}$

Answer: A

Sample item for performance expectation 5.2.E

Determine the sum.

$$3\frac{2}{3} + 5\frac{3}{5}$$

What is the sum?

- **A.** $8\frac{5}{8}$
- **B.** $8\frac{5}{15}$
- **C.** $9\frac{4}{15}$

Answer: C

Sample item for performance expectation 5.3.A

Which attributes describe all rhombuses?

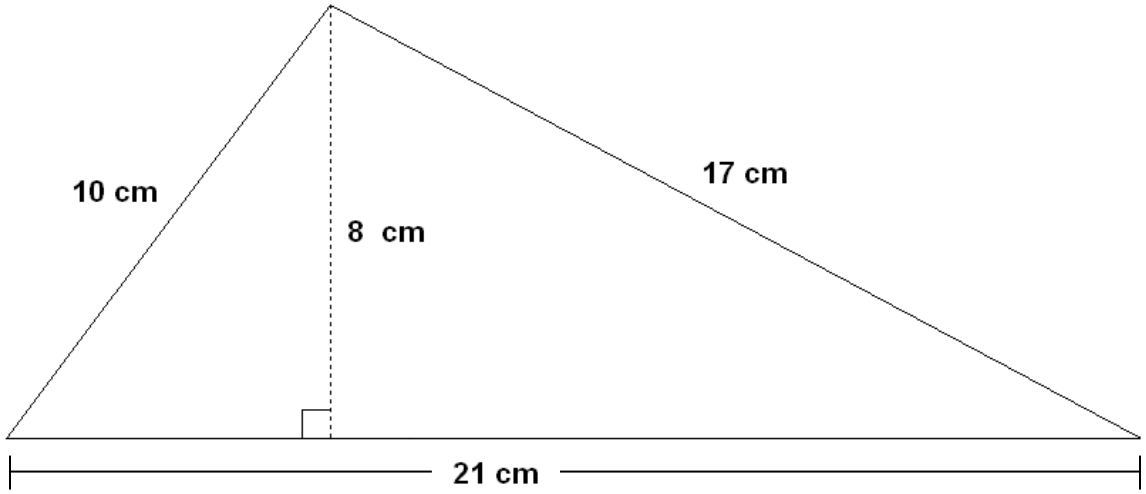
- **A.** four equal sides and four 90° angles
- **B.** four equal sides and opposite angles equal
- **C.** four equal sides and only two lines of symmetry

Answer: B

Sample item for performance expectations 5.3.F

Look at the triangle.

Determine the perimeter of the triangle.



What is the perimeter of the triangle?

- **A.** 48 cm
- **B.** 56 cm
- **C.** 168 cm

Answer: A

Sample item for performance expectation 5.4.B

Look at the numbers in the chart.

Starting Number	New Number
1	4
3	6
5	8
6	9

Which rule was applied to each starting number to get the new number?

- **A.** Add 3
- **B.** Multiply by 2
- **C.** Multiply by 4

Answer: A

Sample item for performance expectation 5.5.A

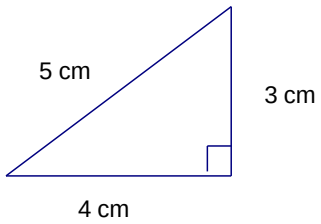
Which set of numbers contains only composite numbers?

- **A.** 2, 4, 6, 8, 10
- **B.** 9, 15, 21, 39, 51
- **C.** 3, 5, 7, 9, 11

Answer: B

Sample item for performance expectation 5.3.C

Look at the triangle.



Which two words describe the triangle?

- **A.** right, acute
- **B.** right, scalene
- **C.** right, isosceles

Answer: B

Completion

Sample item for performance expectation 5.1.B

Determine the quotient.

3,600 ÷ 60 = □

Write your answer on the line.

What is 3,600 ÷ 60? _____

Answer: 60

Sample item for performance expectation 5.2.E

Determine the sum.

$$3\frac{2}{3} + 6\frac{3}{4}$$

Write your answer on the line.

What is the sum? _____

Answer: $10\frac{5}{12}$

Sample item for performance expectation 5.2.F

Determine the difference.

$$15.5 - 3.97$$

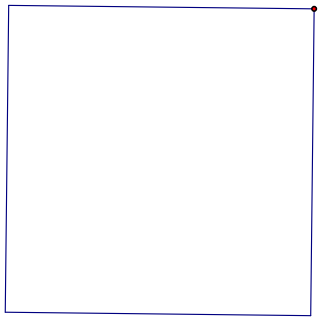
Write your answer on the line.

What is the difference? _____

Answer: 11.53

Sample item for performance expectation 5.3.H

Determine the number of lines of symmetry in the square.



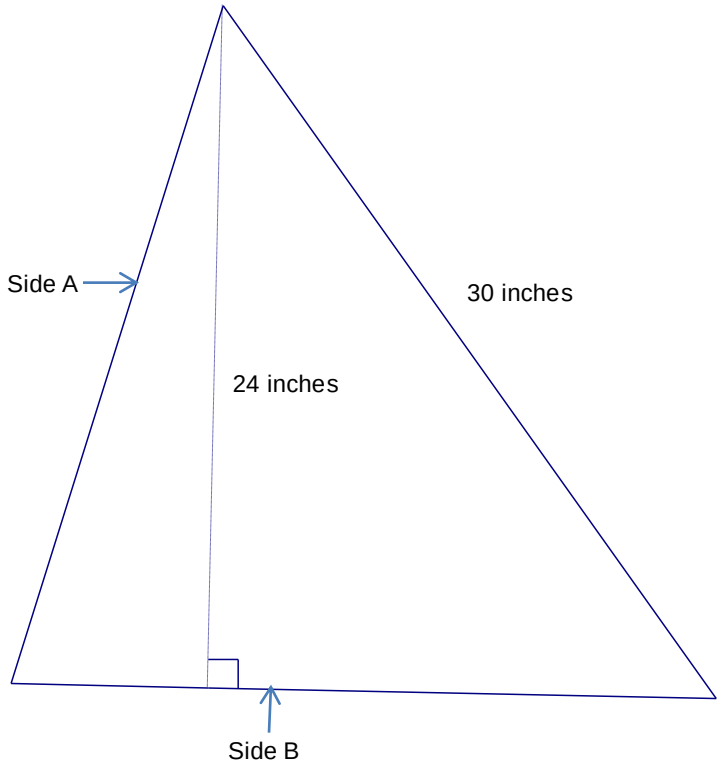
Write your answer on the line.

How many lines of symmetry in the square? _____

Answer: 4

Sample item for performance expectation 5.3.F

Look at the triangle.



The perimeter of the triangle is 80 inches. Side A and Side B have the same length.

Determine the length of Side A.

Write your answer on the line.

What is the length of Side A? _____ inches

Answer: 25

Short-Answer

Sample item for performance expectation 5.1.F

Maytown Health Food Company received an order of 1,200 Energy Bars. The store will keep 150 Energy Bars to sell in their main store. The rest of the Energy Bars will be packed in boxes of 36 bars to be sold in other stores.

Determine how many full boxes of Energy Bars the company can pack.

Show your work using words or numbers.

What is the number of full boxes of Energy Bars the company can pack? _____ boxes

2-point response: The student shows understanding of solving a multi-step word problem involving multi-digit division by doing the following:

Understanding:

- uses 1,200, 150, and 36

Procedure:

- shows a procedure to determine the number of full boxes of Energy Bars

Answer:

- writes 29.

Students can earn 1 point by doing one of the following:

- uses 1200 and 36 and shows a procedure that could lead to determining the number of full boxes of Energy Bars
- writes 29.

Sample item for performance expectation 5.2.H

Cindy has 20 cups of sugar. She will use $2\frac{3}{4}$ cups of sugar to make bread and $6\frac{1}{8}$ cups of sugar to make cookies. The rest of the sugar will be used to make jam.

Determine how many cups of sugar Cindy has to make jam.

Show your work using words or numbers.

How many cups of sugar does Cindy have to make jam?

_____ cups

2-point response:
A student shows understanding of solving a multi-step word problem involving addition and subtraction of mixed numbers by doing the following:
Understanding:

- uses 20, $2\frac{3}{4}$, and $6\frac{1}{8}$

Procedure**:**

- shows a procedure to determine the number of cups of sugar to make jam

Answer:

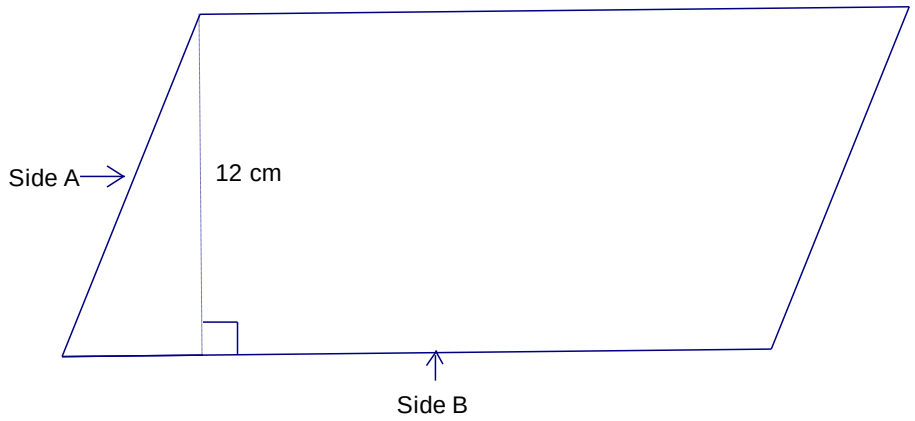
- writes $11\frac{1}{8}$.

Students can earn 1 point by doing one of the following:
A student does one of the following:

- uses two of the following: 20, $2\frac{3}{4}$, and $6\frac{1}{8}$ and shows a procedure that could lead to determining the number of cups of sugar to make jam
- writes $11\frac{1}{8}$.

Sample item for performance expectation 5.3.I

Therese drew and labeled a parallelogram with the given information.



The area of the parallelogram is 300 square centimeters.

- Use the information Therese has about the parallelogram to determine the length of Side A or Side B.
- Label which side length you determined.

Show your work using words or numbers.

What is the length of Side A or Side B? Side _____ Length _____

2-point response:
The student shows understanding of solving a word problem involving areas of parallelograms by doing the following:
Understanding:
- uses 300 and 12

Procedure:
- shows a procedure to determine the length of side B

Answer:
- writes B and 25

Students can earn 1 point by doing one of the following:
The student does one of the following:
- uses 300 and 12 and shows a procedure that could lead to determining the length of side B
- writes B and 25

Sample item for performance expectation 5.4.A

Tony used a rule to change a given number to a new number. He recorded the changes in a chart.

Given Number	New Number
2	6
4	12
5	15
8	24
10	?
12	?

What is the rule Tony used to change the given number to a new number?

Rule: _____

Use the rule to fill in the chart with the missing numbers.

Given Number	New Number
2	6
4	12
5	15
8	24
10	
12	

2-point response:
A student shows understanding of writing a rule to describe a pattern and extending the pattern by doing the following:

- writes x3, or equivalent
- writes 30, 36

Students can earn 1 point by doing one of the following:
A student does one of the following:

- writes x3, or equivalent
- writes 30, 36
- writes two values using the rule described

Sample item for performance expectation 5.4.C

Red River School set up a field day for students in grades 4-6. One game involved shooting baskets. Students were given a number of points to start and then a number of points for each basket they made. The number of points earned was different for each grade.

Points Earned for Shooting Baskets

Grade Level	Points to Start	Points Earned for Each Basket
Grade 4	3	6
Grade 5	2	5
Grade 6	1	4

Jesse is in Grade 5.

Let b represent the number of baskets made by a student in grade 5.

- Write an expression that can be used to determine the number of points a student in grade 5 would earn after making any number of baskets.

Expression: _____

Jesse made 8 baskets.

- Determine how many points Jesse earned.

How many points did Jesse earn after making 8 baskets?

_____ points

2-point response:
A student shows understanding of writing an algebraic expression that represents a simple situation and evaluating the expression by doing the following:

- writes $2 + 5b$, or equivalent
- writes 42 for the number of points

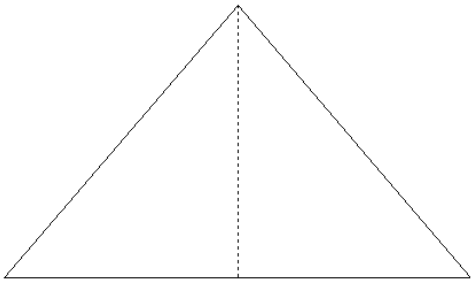
Students can earn 1 point by doing one of the following:
A student does one of the following:

- writes $2 + 5b$, or equivalent
- writes 42 for the number of points
- writes a number of points earned using the expression written

Sample item for performance expectation 5.6.I (5.3.F)

Linda looked at Triangle A.

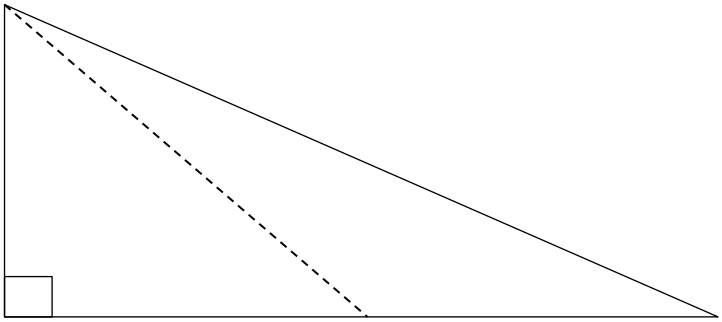
Linda divided Triangle A into two smaller triangles with equal areas by cutting the triangle along the dotted line. She explained that cutting Triangle A on the dotted line formed two congruent triangles, which would make the areas equal.



Triangle A

Linda looked at Triangle B. She wanted to divide Triangle B into two smaller triangles that also had equal areas. She drew a line segment from the top vertex of the triangle to the middle of the base of the triangle.

Linda said that by cutting on the line segment she made two smaller triangles with equal areas even though the two smaller triangles are not congruent.



Triangle B

Use what you know about determining the area of triangles and explain whether the two smaller triangles formed from Triangle B have equal areas or not.

Sample 2-point response:
The student shows understanding of explaining reasoning by doing the following:
Concludes that the two smaller triangles have equal areas because:

- the bases of the triangles are equal because the line segment was drawn to the middle of the base
- the heights of the triangles are the same because the line segment starts at the same point
- the areas of the two smaller triangle are equal because all values in the formula $\frac{1}{2}$ Bh= A are the same

Students can earn 1 point by doing one of the following:
The student concludes that the two smaller triangles have equal area but only explain one of the three bullets above.

NOTE: Bullet 3 alone would not constitute a complete explanation without a student explaining how (s)he could prove that the base and height are equal.

Other Sources of Sample Grade 3—5 MSP Items

More sample items can also be found in the following resources:

- Updates for 2011: http://www.k12.wa.us/Mathematics/pubdocs/GR3-5UpdatesFor2011.pdf

  This document contains sample items in multiple choice, completion, and short answer formats, with solutions.

- Quick Guides of previously released WASL items aligned to the new math standards:

  - Grade 3: http://www.k12.wa.us/Mathematics/pubdocs/QuickGuide_GR3.pdf
  - Grade 4: http://www.k12.wa.us/Mathematics/pubdocs/QuickGuide_GR4.pdf
  - Grade 5: http://www.k12.wa.us/Mathematics/pubdocs/QuickGuide_GR5.pdf

  These documents contain previously-released WASL items that align to the Mathematics Standards for EOC.

- MSP Supports Moodle: http://moodle.ospi.k12.wa.us/course/view.php?id=28

  This site contains a database of teacher-created resources where educators can share sample items and assessments.

Contact Information

Sign-up now for Movers and Shakers!
Receive pertinent mathematics assessment information and updates, meeting and workshop opportunities, and other mathematics notices on the Movers and Shakers email distribution list. To join, please send a request to felecia.mckinney@k12.wa.us.

Mathematics Assessment Webpage:
http://www.k12.wa.us/mathematics/

OSPI Moodle Server:
http://moodle.ospi.k12.wa.us/

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