SIRIUS

SAMPLER
Use with Your Students!

GRADE 4

MATHEMATICS

STAAR® Preparation and Practice

Available in Spanish!

- Over 550 STAAR practice items
- 3-step approach for remediation
- Systematic Readiness TEKS instruction and practice

STAAR GRADE 4 MATHEMATICS REFERENCE MATERIALS

LENGTH

Customary	Metric
1 mile (mi) = 1,760 yards (yd)	1 kilometer (km) = 1,000 meters (m)
1 yard (yd) = 3 feet (ft)	1 meter (m) = 100 centimeters (cm)
1 foot (ft) = 12 inches (in.)	1 centimeter (cm) = 10 millimeters (mm)

VOLUME AND CAPACITY

Customary	Metric
1 gallon (gal) = 4 quarts (qt)	1 liter (L) = 1,000 milliliters (mL)
1 quart (qt) = 2 pints (pt)	
1 pint (pt) = 2 cups (c)	
1 cup (c) = 8 fluid ounces (fl oz)	

WEIGHT AND MASS

Customary	Metric
1 ton (T) = 2,000 pounds (lb)	1 kilogram (kg) = 1,000 grams (g)
1 pound (lb) = 16 ounces (oz)	1 gram (g) = 1,000 milligrams (mg)

TIME

1 year = 12 months	1 day = 24 hours
1 year = 52 weeks	1 hour = 60 minutes
1 week = 7 days	1 minute = 60 seconds

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TEKS Correlations—Where to Find Them

Readiness TEKS	Readiness Lesson
4.2B	Lesson 2 (p. 20)
4.2G	Lesson 1 (p. 7)
4.3D	Lesson 3 (p. 36)
4.3E	Lesson 5 (p. 69)
4.4A	Lesson 4 (p. 53)
4.4H	Lesson 6 (p. 86)
4.5A	Lesson 7 (p. 104)
4.5B	Lesson 8 (p. 120)
4.5D	Lesson 9 (p. 143)
4.6D	Lesson 10 (p. 162)
4.7C	Lesson 11 (p. 182)
4.8C	Lesson 12 (p. 198)
4.9A	Lesson 13 (p. 217)

Supporting TEKS			
RC 1		RC 3	
4.2A	p. 252	4.6A	p. 277
4.2C	p. 253	4.6B	p. 279
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4.3B	p. 262	RC 4	
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RC 2		4.10B	p. 292
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4.4B	p. 268		
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4.4E	p. 272		
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SIRIUS EDUCATION SOLUTIONS

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Sampler

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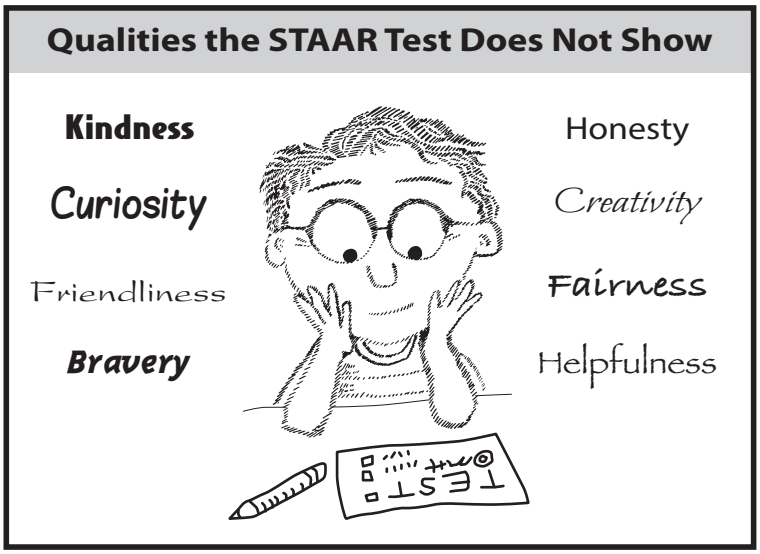
Included in Sampler

SUPPORTING SUCCESS—Practice in all 28 Supporting TEKS

Dear Student,

You are amazing in so many ways. There is no test that shows all the qualities that make you YOU.



You will take the STAAR Grade 4 Math test later this year. The test will ask questions about the math you learn over the whole year. The questions may look different from what you have seen before, but don't worry. This workbook will help you.

Practice Smart

You can do well on the STAAR Math test if you practice. But it's important to practice smart. Don't practice by solving just any old math problems. Practice with problems like the ones on the test. You'll have a chance to practice smart by using this workbook.

When practicing, don't be afraid of making a mistake. Your mistakes give important feedback, telling you what you need to learn. So when you miss a question, spend extra time analyzing it. Why is another answer the correct answer? What did you do wrong to get the incorrect answer? This way, you won't make the same mistake on the actual STAAR test!

Remember that you build your test-taking "muscles" one practice test question at a time. When you give a problem your full attention, you are building your test-taking muscles of focus.

Getting ready for the STAAR Math test can be fun! Read each lesson carefully, and practice, practice, practice. Keep trying and you will succeed!

Your STAAR success coaches,

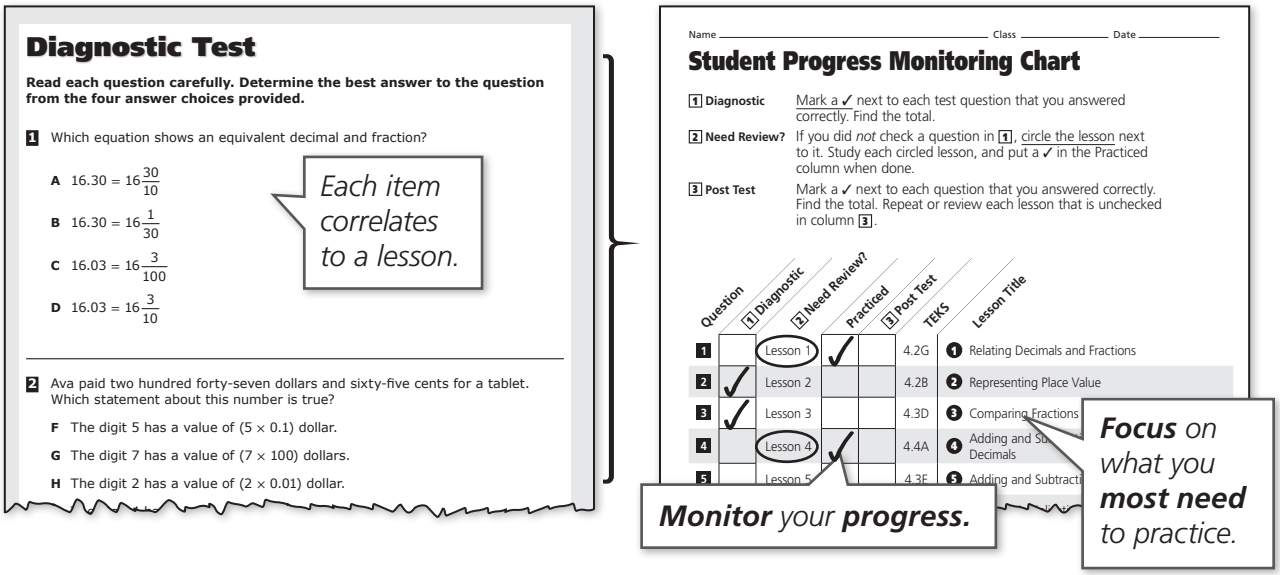
The Sirius Education Team

How to Use This Book for STAAR Success

This workbook is your path to winning results on the STAAR test.
Find out what you already know. Review and practice the rest.

STEP 1 Identify Your Needs—Diagnostic Test

Use the 13-item Diagnostic Test to find out what you know and what you need to review. Keep track of your results in the Student Progress Monitoring Chart.



Diagnostic Test

Read each question carefully. Determine the best answer to the question from the four answer choices provided.

1 Which equation shows an equivalent decimal and fraction?

A $16.30 = 16\frac{30}{10}$

B $16.30 = 16\frac{1}{30}$

C $16.03 = 16\frac{3}{100}$

D $16.03 = 16\frac{3}{10}$

Each item correlates to a lesson.

2 Ava paid two hundred forty-seven dollars and sixty-five cents for a tablet. Which statement about this number is true?

F The digit 5 has a value of (5×0.1) dollar.

G The digit 7 has a value of (7×100) dollars.

H The digit 2 has a value of (2×0.01) dollar.

Name _____ Class _____ Date _____

Student Progress Monitoring Chart

1 Diagnostic Mark a ✓ next to each test question that you answered correctly. Find the total.

2 Need Review? If you did *not* check a question in 1, circle the lesson next to it. Study each circled lesson, and put a ✓ in the Practiced column when done.

3 Post Test Mark a ✓ next to each question that you answered correctly. Find the total. Repeat or review each lesson that is unchecked in column 3.

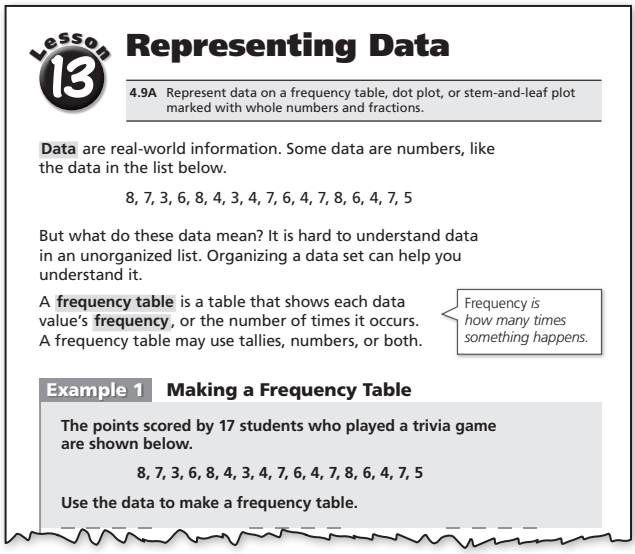
Question	1 Diagnostic	2 Need Review?	Practiced	3 Post Test	TEKS	Lesson Title
1		Lesson 1	✓		4.2G	1 Relating Decimals and Fractions
2	✓	Lesson 2			4.2B	2 Representing Place Value
3	✓	Lesson 3			4.3D	3 Comparing Fractions
4		Lesson 4	✓		4.4A	4 Adding and Su… Decimals
5		Lesson 5			4.3F	5 Adding and Subtracti…

Monitor** your **progress.

***Focus** on what you **most need** to practice.*

STEP 2 Focus Preparation—Learning and Practice

Use your Diagnostic Test results to focus on your unique STAAR needs.



LESSON 13

Representing Data

4.9A Represent data on a frequency table, dot plot, or stem-and-leaf plot marked with whole numbers and fractions.

Data are real-world information. Some data are numbers, like the data in the list below.

8, 7, 3, 6, 8, 4, 3, 4, 7, 6, 4, 7, 8, 6, 4, 7, 5

But what do these data mean? It is hard to understand data in an unorganized list. Organizing a data set can help you understand it.

A **frequency table** is a table that shows each data value's **frequency**, or the number of times it occurs. A frequency table may use tallies, numbers, or both.

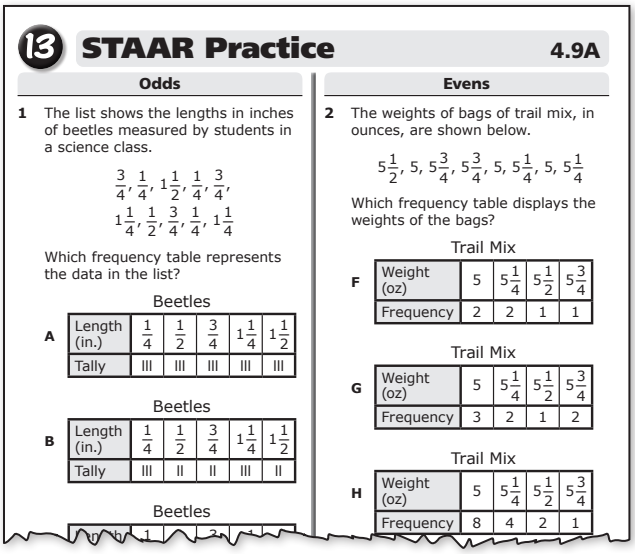
Frequency is how many times something happens.

Example 1 **Making a Frequency Table**

The points scored by 17 students who played a trivia game are shown below.

8, 7, 3, 6, 8, 4, 3, 4, 7, 6, 4, 7, 8, 6, 4, 7, 5

Use the data to make a frequency table.



13 **STAAR Practice** 4.9A

Odds

1 The list shows the lengths in inches of beetles measured by students in a science class.

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

Which frequency table represents the data in the list?

A

Beetles

Length (in.)	$\frac{1}{4}$	$\frac{1}{2}$	$\frac{3}{4}$	$1\frac{1}{4}$	$1\frac{1}{2}$
Tally	III	III	III	III	III

B

Beetles

Length (in.)	$\frac{1}{4}$	$\frac{1}{2}$	$\frac{3}{4}$	$1\frac{1}{4}$	$1\frac{1}{2}$
Tally	III	II	II	III	II

Beetles

Evens

2 The weights of bags of trail mix, in ounces, are shown below.

$5\frac{1}{2}, 5, 5\frac{3}{4}, 5\frac{3}{4}, 5, 5\frac{1}{4}, 5, 5\frac{1}{4}$

Which frequency table displays the weights of the bags?

F

Trail Mix

Weight (oz)	5	$5\frac{1}{4}$	$5\frac{1}{2}$	$5\frac{3}{4}$
Frequency	2	2	1	1

G

Trail Mix

Weight (oz)	5	$5\frac{1}{4}$	$5\frac{1}{2}$	$5\frac{3}{4}$
Frequency	3	2	1	2

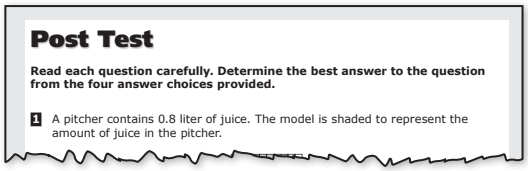
H

Trail Mix

Weight (oz)	5	$5\frac{1}{4}$	$5\frac{1}{2}$	$5\frac{3}{4}$
Frequency	8	4	2	1

STEP 3 Check Progress—Post Test

Use the 13-item Post Test to check your progress and to see what you still need to review. The Post Test uses the same TEKS in the same order as the Diagnostic Test.



Post Test

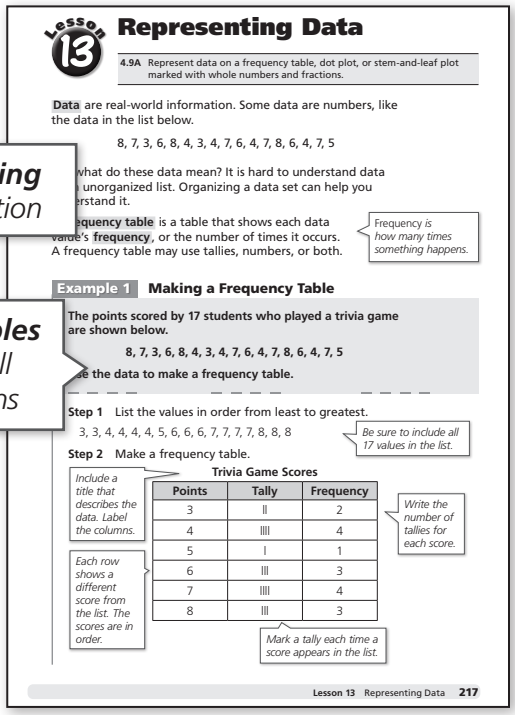
Read each question carefully. Determine the best answer to the question from the four answer choices provided.

1 A pitcher contains 0.8 liter of juice. The model is shaded to represent the amount of juice in the pitcher.

13 Lessons for Readiness TEKS

Lesson Instruction—Interesting & Interactive Learning

Take an active role in your learning with your write-in student workbook.



Lesson 13 Representing Data

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Data are real-world information. Some data are numbers, like the data in the list below.

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Frequency is how many times something happens.

Example 1 **Making a Frequency Table**

The points scored by 17 students who played a trivia game are shown below.

8, 7, 3, 6, 8, 4, 3, 4, 7, 6, 4, 7, 8, 6, 4, 7, 5

...e the data to make a frequency table.

Step 1 List the values in order from least to greatest.

3, 3, 4, 4, 4, 4, 5, 6, 6, 6, 7, 7, 7, 7, 8, 8, 8

Be sure to include all 17 values in the list.

Step 2 Make a frequency table.

Include a title that describes the data. Label the columns.

Trivia Game Scores

Points	Tally	Frequency
3	II	2
4	IIII	4
5	I	1
6	III	3
7	IIII	4
8	III	3

Write the number of tallies for each score.

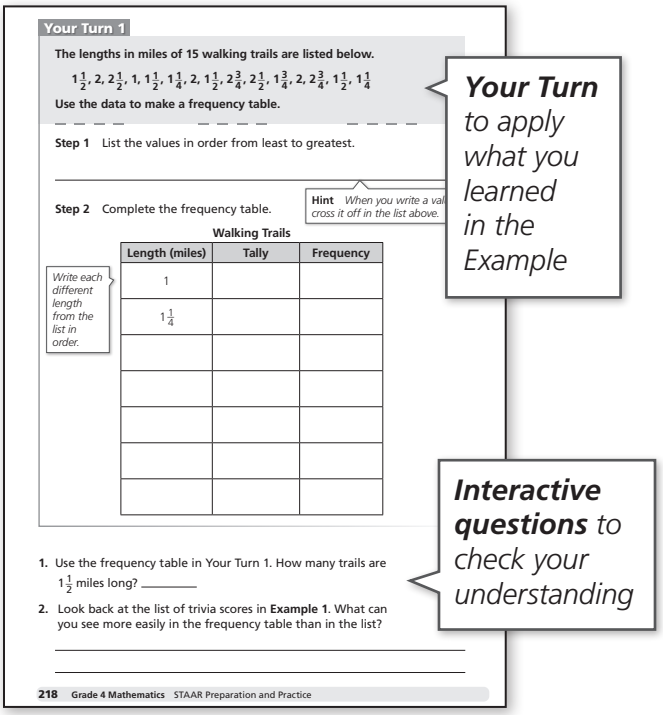
Each row shows a different score from the list. The scores are in order.

Mark a tally each time a score appears in the list.

Lesson 13 Representing Data 217

Engaging *instruction*

Examples *with full solutions*



Your Turn 1

The lengths in miles of 15 walking trails are listed below.

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

Use the data to make a frequency table.

Step 1 List the values in order from least to greatest.

Step 2 Complete the frequency table.

Hint *When you write a val... cross it off in the list above.*

Walking Trails

Length (miles)	Tally	Frequency
1		
$1\frac{1}{4}$		

Write each different length from the list in order.

1. Use the frequency table in Your Turn 1. How many trails are $1\frac{1}{2}$ miles long? _____

2. Look back at the list of trial scores in **Example 1**. What can you see more easily in the frequency table than in the list?

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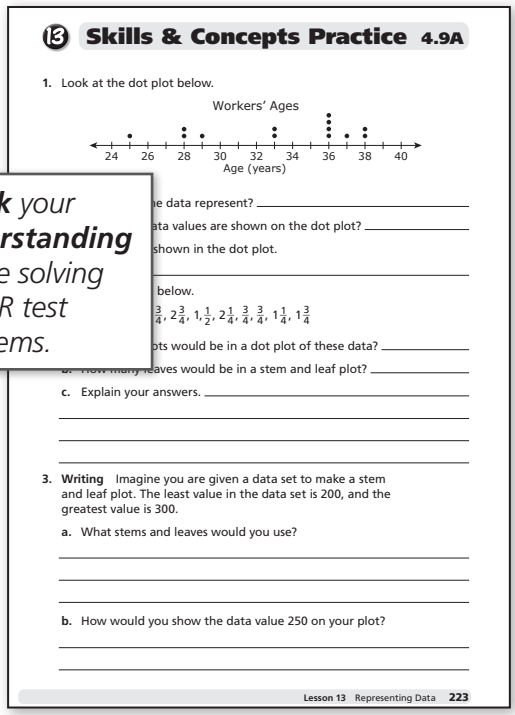
Your Turn *to apply what you learned in the Example*

Interactive questions *to check your understanding*

Lesson Practice—Abundant & Systematic Practice

Use the **Skills & Concepts Practice** to check your understanding.
Then apply your skills to solve authentic STAAR test items in **STAAR Practice**.



Skills & Concepts Practice 4.9A

1. Look at the dot plot below.

Workers' Ages

...e data represent? _____

...ta values are shown on the dot plot? _____

...shown in the dot plot.

_____

... below.

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

...ots would be in a dot plot of these data? _____

...leaves would be in a stem and leaf plot? _____

c. Explain your answers. _____

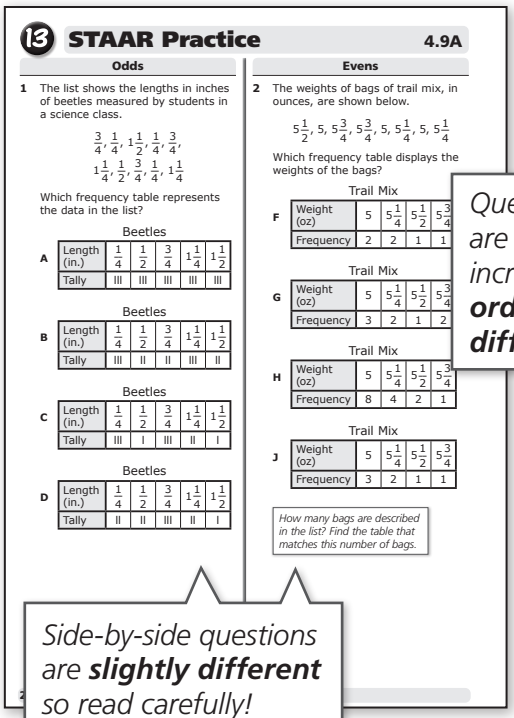
3. **Writing** Imagine you are given a data set to make a stem and leaf plot. The least value in the data set is 200, and the greatest value is 300.

a. What stems and leaves would you use?

b. How would you show the data value 250 on your plot?

Lesson 13 Representing Data 223

Check *your* ***understanding*** *before solving STAAR test problems.*



STAAR Practice 4.9A

Odds

1 The list shows the lengths in inches of beetles measured by students in a science class.

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

Which frequency table represents the data in the list?

A

Beetles

Length (in.)	$\frac{1}{4}$	$\frac{1}{2}$	$\frac{3}{4}$	$1\frac{1}{4}$	$1\frac{1}{2}$
Tally	III	III	III	III	III

B

Beetles

Length (in.)	$\frac{1}{4}$	$\frac{1}{2}$	$\frac{3}{4}$	$1\frac{1}{4}$	$1\frac{1}{2}$
Tally	III	II	II	III	II

C

Beetles

Length (in.)	$\frac{1}{4}$	$\frac{1}{2}$	$\frac{3}{4}$	$1\frac{1}{4}$	$1\frac{1}{2}$
Tally	III	I	III	II	I

D

Beetles

Length (in.)	$\frac{1}{4}$	$\frac{1}{2}$	$\frac{3}{4}$	$1\frac{1}{4}$	$1\frac{1}{2}$
Tally	II	II	III	II	I

Evens

2 The weights of bags of trail mix, in ounces, are shown below.

$5\frac{1}{2}, 5, 5\frac{3}{4}, 5\frac{3}{4}, 5, 5\frac{1}{4}, 5, 5\frac{1}{4}$

Which frequency table displays the weights of the bags?

F

Trail Mix

Weight (oz)	5	$5\frac{1}{4}$	$5\frac{1}{2}$	$5\frac{3}{4}$
Frequency	2	2	1	1

G

Trail Mix

Weight (oz)	5	$5\frac{1}{4}$	$5\frac{1}{2}$	$5\frac{3}{4}$
Frequency	3	2	1	2

H

Trail Mix

Weight (oz)	5	$5\frac{1}{4}$	$5\frac{1}{2}$	$5\frac{3}{4}$
Frequency	8	4	2	1

J

Trail Mix

Weight (oz)	5	$5\frac{1}{4}$	$5\frac{1}{2}$	$5\frac{3}{4}$
Frequency	3	2	1	1

How many bags are described in the list? Find the table that matches this number of bags.

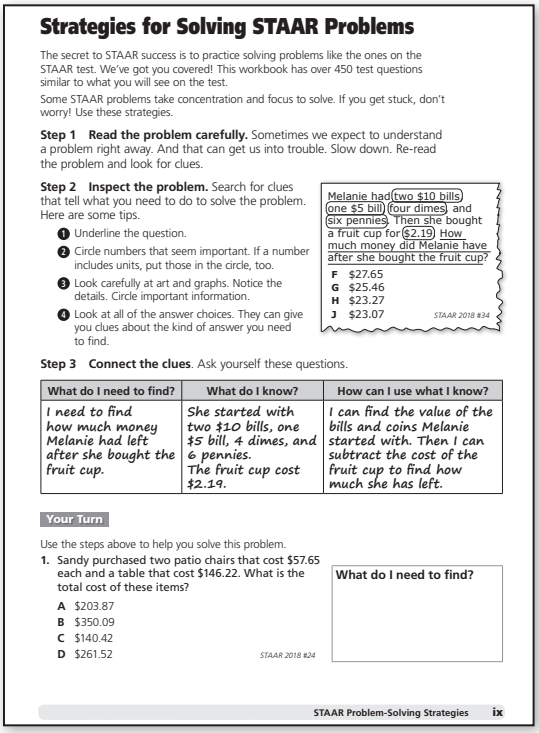
Side-by-side questions are ***slightly different*** *so read carefully!*

Questions are in an increasing ***order of difficulty***

Additional In-Book Resources for STAAR Success

Solving STAAR Problems

Learn strategies to solve STAAR problems like a pro!



Strategies for Solving STAAR Problems

The secret to STAAR success is to practice solving problems like the ones on the STAAR test. We've got you covered! This workbook has over 450 test questions similar to what you will see on the test.

Some STAAR problems take concentration and focus to solve. If you get stuck, don't worry! Use these strategies.

Step 1 Read the problem carefully. Sometimes we expect to understand a problem right away. And that can get us into trouble. Slow down. Re-read the problem and look for clues.

Step 2 Inspect the problem. Search for clues that tell what you need to do to solve the problem. Here are some tips.

1. Underline the question.
2. Circle numbers that seem important. If a number includes units, put those in the circle, too.
3. Look carefully at art and graphs. Notice the details. Circle important information.
4. Look at all of the answer choices. They can give you clues about the kind of answer you need to find.

Melanie had (two $10 bills), (one $5 bill), (four dimes), and (six pennies). Then she bought a fruit cup for ($2.19). How much money did Melanie have after she bought the fruit cup?

F $27.65
G $25.46
H $23.27
J $23.07

STAAR 2018 #34

Step 3 Connect the clues. Ask yourself these questions.

What do I need to find?	What do I know?	How can I use what I know?
I need to find how much money Melanie had left after she bought the fruit cup.	She started with two $10 bills, one $5 bill, 4 dimes, and 6 pennies. The fruit cup cost $2.19.	I can find the value of the bills and coins Melanie started with. Then I can subtract the cost of the fruit cup to find how much she has left.

Your Turn

Use the steps above to help you solve this problem.

1. Sandy purchased two patio chairs that cost $57.65 each and a table that cost $146.22. What is the total cost of these items?

A $203.87
B $350.09
C $140.42
D $261.52

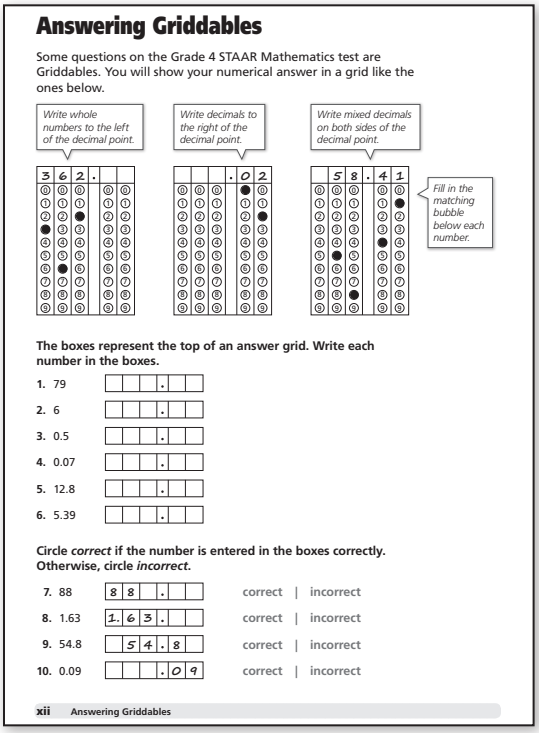
STAAR 2018 #24

What do I need to find?

STAAR Problem-Solving Strategies ix

Free Response Grids

Learn how to write answers in grids so you'll know what to do on test day.



Answering Griddables

Some questions on the Grade 4 STAAR Mathematics test are Griddables. You will show your numerical answer in a grid like the ones below.

Write whole numbers to the left of the decimal point. 3 6 2 .

Write decimals to the right of the decimal point. . 0 2

Write mixed decimals on both sides of the decimal point. 5 8 . 4 1

Fill in the matching bubble below each number.

The boxes represent the top of an answer grid. Write each number in the boxes.

1. 79
2. 6
3. 0.5
4. 0.07
5. 12.8
6. 5.39

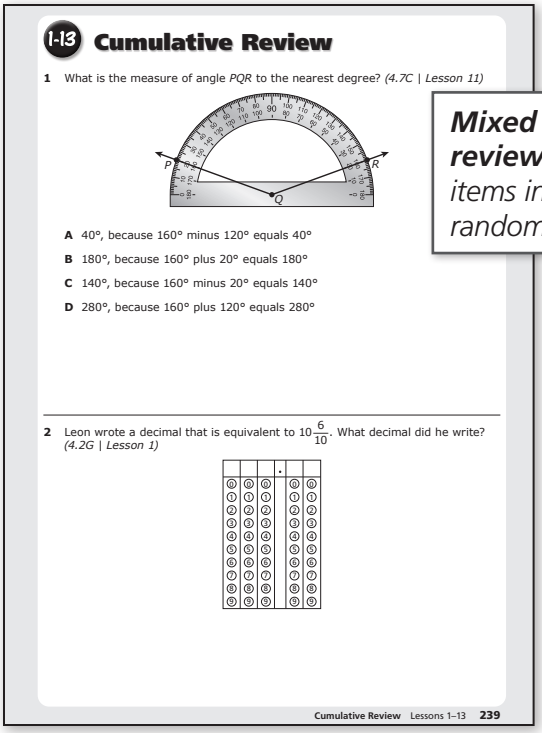
Circle *correct* if the number is entered in the boxes correctly. Otherwise, circle *incorrect*.

7. 88 — 8 8 . — correct | incorrect
8. 1.63 — 1. 6 3 . — correct | incorrect
9. 54.8 — 5 4 . 8 — correct | incorrect
10. 0.09 — . 0 9 — correct | incorrect

xii Answering Griddables

Cumulative Review

Mixed practice after every two Lessons helps you remember what you've learned.



1-13 Cumulative Review

1 What is the measure of angle *PQR* to the nearest degree? *(4.7C | Lesson 11)*

A 40°, because 160° minus 120° equals 40°
B 180°, because 160° plus 20° equals 180°
C 140°, because 160° minus 20° equals 140°
D 280°, because 160° plus 120° equals 280°

2 Leon wrote a decimal that is equivalent to $10\frac{6}{10}$. What decimal did he write? *(4.2G | Lesson 1)*

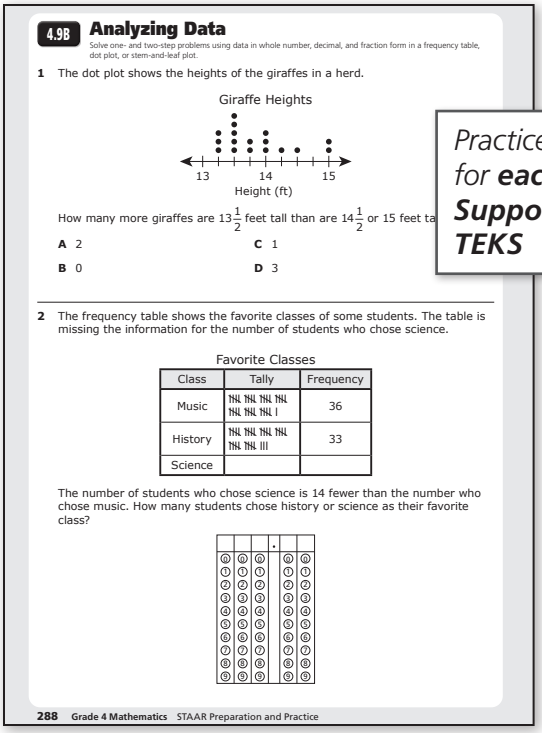
.

Cumulative Review Lessons 1–13 239

***Mixed review** with items in a random order*

Supporting Success

Practice is provided in all 28 supporting TEKS, with at least one page per standard.



4.9B Analyzing Data

Solve one- and two-step problems using data in whole number, decimal, and fraction form in a frequency table, dot plot, or stem-and-leaf plot.

1 The dot plot shows the heights of the giraffes in a herd.

Giraffe Heights

How many more giraffes are $13\frac{1}{2}$ feet tall than are $14\frac{1}{2}$ or 15 feet ta

A 2
B 0
C 1
D 3

2 The frequency table shows the favorite classes of some students. The table is missing the information for the number of students who chose science.

Favorite Classes

Class	Tally	Frequency
Music	𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 I	36
History	𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 III	33
Science		

The number of students who chose science is 14 fewer than the number who chose music. How many students chose history or science as their favorite class?

.

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*Practice for **each Supporting TEKS***

Name _____ Class _____ Date _____

Student Progress Monitoring Chart

1 Diagnostic Mark a ✓ next to each test question that you answered correctly. Find the total.

2 Need Review? If you did *not* check a question in 1, circle the lesson next to it. Study each circled lesson, and put a ✓ in the Practiced column when done.

3 Post Test Mark a ✓ next to each question that you answered correctly. Find the total. Repeat or review each lesson that is unchecked in column 3.

Question	1 Diagnostic	2 Need Review?	Practiced	3 Post Test	TEKS	Lesson Title
1		Lesson 1			4.2G	1 Relating Decimals and Fractions
2		Lesson 2			4.2B	2 Representing Place Value
3		Lesson 3			4.3D	3 Comparing Fractions
4		Lesson 4			4.4A	4 Adding and Subtracting Whole Numbers and Decimals
5		Lesson 5			4.3E	5 Adding and Subtracting Fractions
6		Lesson 6			4.4H	6 Solving Multiplication and Division Problems
7		Lesson 7			4.5A	7 Representing Multi-Step Problems
8		Lesson 8			4.5B	8 Representing Number Patterns
9		Lesson 9			4.5D	9 Solving Perimeter and Area Problems
10		Lesson 10			4.6D	10 Classifying Shapes
11		Lesson 11			4.7C	11 Measuring Angles
12		Lesson 12			4.8C	12 Solving Measurement Problems
13		Lesson 13			4.9A	13 Representing Data
	/13			/13	Total Correct	

Included in Sampler

Lesson 13 Representing Data

4.9A Represent data on a frequency table, dot plot, or stem-and-leaf plot marked with whole numbers and fractions.

Data are real-world information. Some data are numbers, like the data in the list below.

8, 7, 3, 6, 8, 4, 3, 4, 7, 6, 4, 7, 8, 6, 4, 7, 5

But what do these data mean? It is hard to understand data in an unorganized list. Organizing a data set can help you understand it.

A **frequency table** is a table that shows each data value's **frequency**, or the number of times it occurs. A frequency table may use tallies, numbers, or both.

Frequency is how many times something happens.

Example 1 Making a Frequency Table

The points scored by 17 students who played a trivia game are shown below.

8, 7, 3, 6, 8, 4, 3, 4, 7, 6, 4, 7, 8, 6, 4, 7, 5

Use the data to make a frequency table.

Step 1 List the values in order from least to greatest.

3, 3, 4, 4, 4, 4, 5, 6, 6, 6, 7, 7, 7, 7, 8, 8, 8

Be sure to include all 17 values in the list.

Step 2 Make a frequency table.

Include a title that describes the data. Label the columns.

Trivia Game Scores

Points	Tally	Frequency
3	II	2
4	IIII	4
5	I	1
6	III	3
7	IIII	4
8	III	3

Each row shows a different score from the list. The scores are in order.

Write the number of tallies for each score.

Mark a tally each time a score appears in the list.

Your Turn 1

The lengths in miles of 15 walking trails are listed below.

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

Use the data to make a frequency table.

Step 1 List the values in order from least to greatest.

Step 2 Complete the frequency table.

Hint *When you write a value, cross it off in the list above.*

Write each different length from the list in order.

Walking Trails

Length (miles)	Tally	Frequency
1		
$1\frac{1}{4}$		

1. Use the frequency table in Your Turn 1. How many trails are $1\frac{1}{2}$ miles long? _____

2. Look back at the list of trivia scores in **Example 1**. What can you see more easily in the frequency table than in the list?

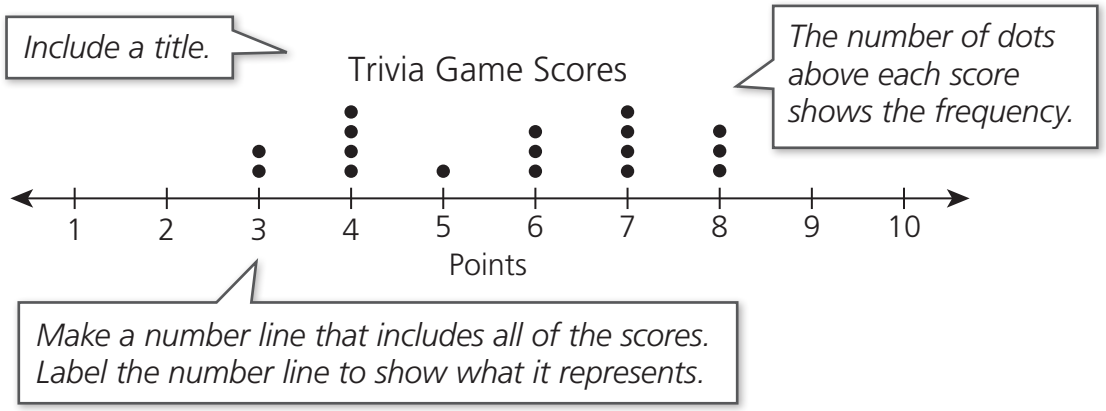
A **dot plot** uses a number line and dots to show a data set. There is one dot for each data value.

Example 2 Making a Dot Plot

Use the frequency table of the trivia scores to make a dot plot.

Trivia Game Scores

Points	Frequency
3	2
4	4
5	1
6	3
7	4
8	3



Your Turn 2

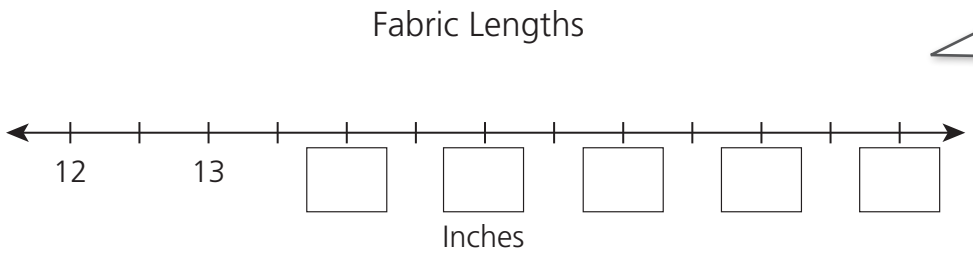
The lengths in inches of several fabric pieces are listed below.

$13\frac{1}{2}$, 14, 15, $14\frac{1}{2}$, 13, $14\frac{1}{2}$, $13\frac{1}{2}$, $17\frac{1}{2}$, 12, 13, $12\frac{1}{2}$, $15\frac{1}{2}$, $13\frac{1}{2}$, $12\frac{1}{2}$

Make a dot plot of the data.

Step 1 List the values in order from least to greatest.

Step 2 Complete the dot plot.



For each fabric piece, draw a dot above its length on the number line.

A **stem and leaf plot** shows data in order according to place value. In a stem and leaf plot, each data value is divided into a *stem* (all digits except the last one) and a *leaf* (the last digit).

Look at the stem and leaf plot of the temperature data.

96°F, 101°F, 87°F, 90°F, 84°F

All digits in a temperature except the last one form the stem.

Stems are from least to greatest.

Temperatures

Stem	Leaf
8	4 7
9	0 6
10	1

8|4 means 84°F.

For each temperature, the last digit is the leaf.

Leaves for each stem are from least to greatest.

The key tells how to read each stem and leaf.

Example 3 Making a Stem and Leaf Plot

A ranger measured the heights of several young trees in a park. The measurements in feet are listed below.

$3\frac{1}{4}, 3, 3\frac{3}{4}, 2\frac{3}{4}, 2\frac{1}{2}, 5, 3\frac{3}{4}, 3\frac{1}{4}, 3\frac{1}{2}, 5\frac{1}{2}, 2\frac{3}{4}, 2\frac{1}{2}$

Make a stem and leaf plot of the data.

Step 1 List the values in order from least to greatest.

$2\frac{1}{2}, 2\frac{1}{2}, 2\frac{3}{4}, 2\frac{3}{4}, 3, 3\frac{1}{4}, 3\frac{1}{4}, 3\frac{1}{2}, 3\frac{3}{4}, 3\frac{3}{4}, 5, 5\frac{1}{2}$

Step 2 Make a stem and leaf plot.

For these data, the stems are whole numbers.

The least stem is 2. The greatest stem is 5.

The leaves are fractions.

If a data value is a whole number, the leaf is a fraction with 0 in the numerator.

Tree Heights

Stem	Leaf
2	$\frac{1}{2}$ $\frac{1}{2}$ $\frac{3}{4}$ $\frac{3}{4}$
3	$\frac{0}{4}$ $\frac{1}{4}$ $\frac{1}{4}$ $\frac{1}{2}$ $\frac{3}{4}$ $\frac{3}{4}$
4	
5	$\frac{0}{4}$ $\frac{1}{2}$

List each stem once.

*Include **all** stems from 2 to 5. Do not skip 4, even though it is not in the data set.*

When a height is repeated, put a leaf for each time.

Use blank rows for stems that have no leaves.

2 | $\frac{1}{2}$ means $2\frac{1}{2}$ feet.

Your Turn 3

A pilot recorded her flight distances.

Flight Distances (miles)
183, 219, 174, 210, 203, 181, 207, 219, 189, 203, 214, 179, 203, 206

Make a stem and leaf plot of the data.

Step 1 List the values in order from least to greatest.

Step 2 Complete the stem and leaf plot.

Include a title.

Stem	Leaf
17	4

17 | 4 means _____.

3. In **Your Turn 3**, why are there no leaves for the stem 19?

Diagnostic Test Item

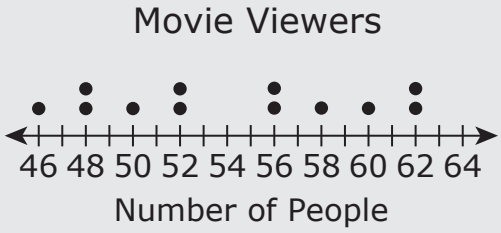
4.9A

13 The list shows the number of people seated in each movie theater at a cinema.

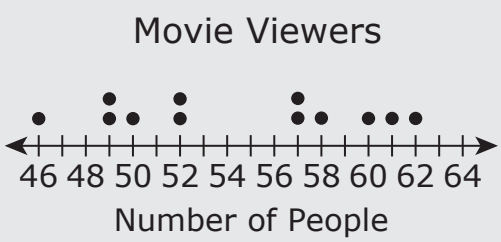
52, 49, 57, 50, 46, 52, 63, 49, 60, 58, 61, 57

Which plot represents the data in the list?

A



B



C

Movie Viewers

Stem	Leaf
4	6 9 9
5	2 2 7 7 8
6	1 3

4|6 means 46 people.

D

Movie Viewers

Stem	Leaf
4	6 9 9
5	0 2 2 7 7 8
6	0 1 3

4|6 means 46 people.

List the data in order from least to greatest.

46, 49, 49, 50, 52, 52, 57, 57, 58, 60, 61, 63

How does it help to write the data in order?

Compare the data to each plot.

A The dot plot has dots above even values only. But some of the data values are odd. ✗

B The dot plot has a dot above 62, but 62 is not in the data set. ✗

C The stem and leaf plot does not have the data values 50 or 60. ✗

D The stem and leaf plot has all of the data values. ✓

The correct answer is **D**.

13 Skills & Concepts Practice 4.9A

1. Look at the dot plot below.

a. What does the data represent? _____

b. How many data values are shown on the dot plot? _____

c. List the ages shown in the dot plot.

_____

2. Look at the data below.

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

a. How many dots would be in a dot plot of these data? _____

b. How many leaves would be in a stem and leaf plot? _____

c. Explain your answers. _____

_____

_____

_____

3. **Writing** Imagine you are given a data set to make a stem and leaf plot. The least value in the data set is 200, and the greatest value is 300.

a. What stems and leaves would you use?

_____

_____

_____

b. How would you show the data value 250 on your plot?

_____

_____

13 STAAR Practice 4.9A

Odds

1 The list shows the lengths in inches of beetles measured by students in a science class.

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

Which frequency table represents the data in the list?

A

Beetles

Length (in.)	$\frac{1}{4}$	$\frac{1}{2}$	$\frac{3}{4}$	$1\frac{1}{4}$	$1\frac{1}{2}$
Tally	III	III	III	III	III

B

Beetles

Length (in.)	$\frac{1}{4}$	$\frac{1}{2}$	$\frac{3}{4}$	$1\frac{1}{4}$	$1\frac{1}{2}$
Tally	III	II	II	III	II

C

Beetles

Length (in.)	$\frac{1}{4}$	$\frac{1}{2}$	$\frac{3}{4}$	$1\frac{1}{4}$	$1\frac{1}{2}$
Tally	III	I	III	II	I

D

Beetles

Length (in.)	$\frac{1}{4}$	$\frac{1}{2}$	$\frac{3}{4}$	$1\frac{1}{4}$	$1\frac{1}{2}$
Tally	II	II	III	II	I

Evens

2 The weights of bags of trail mix, in ounces, are shown below.

$$5\frac{1}{2}, 5, 5\frac{3}{4}, 5\frac{3}{4}, 5, 5\frac{1}{4}, 5, 5\frac{1}{4}$$

Which frequency table displays the weights of the bags?

F

Trail Mix

Weight (oz)	5	$5\frac{1}{4}$	$5\frac{1}{2}$	$5\frac{3}{4}$
Frequency	2	2	1	1

G

Trail Mix

Weight (oz)	5	$5\frac{1}{4}$	$5\frac{1}{2}$	$5\frac{3}{4}$
Frequency	3	2	1	2

H

Trail Mix

Weight (oz)	5	$5\frac{1}{4}$	$5\frac{1}{2}$	$5\frac{3}{4}$
Frequency	8	4	2	1

J

Trail Mix

Weight (oz)	5	$5\frac{1}{4}$	$5\frac{1}{2}$	$5\frac{3}{4}$
Frequency	3	2	1	1

How many bags are described in the list? Find the table that matches this number of bags.

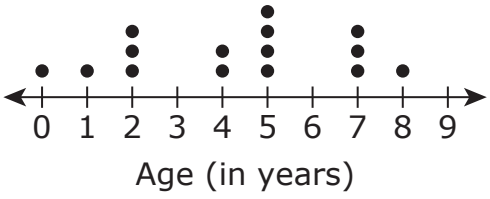
Odds

3 The list shows the ages, in years, of dogs at a pet clinic.

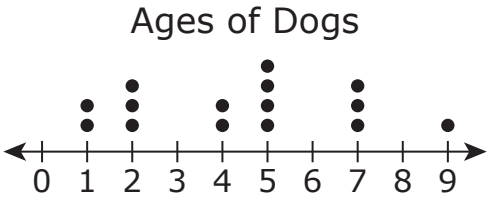
4, 5, 7, 2, 4, 2, 1, 5, 5, 9, 7, 1, 2, 5, 7

Which dot plot displays the same data?

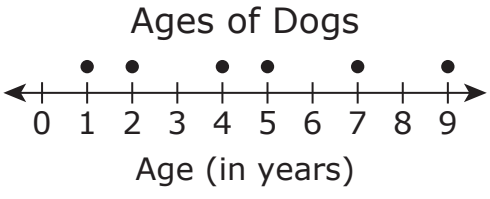
A



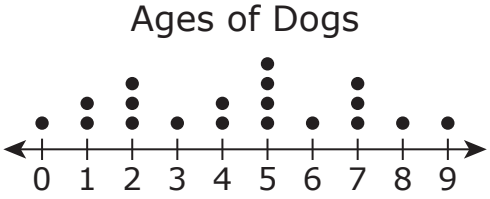
B



C



D



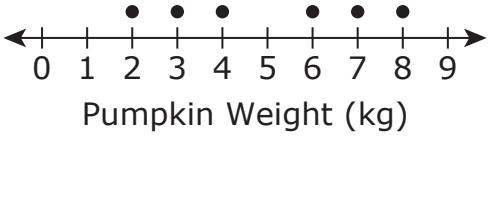
Evens

4 The dot plot shows the weights, in kilograms, of pumpkins in a garden.

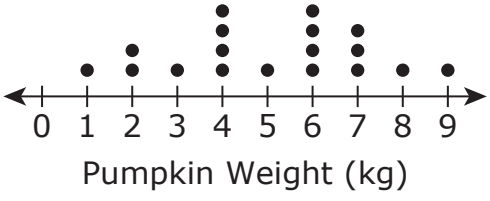
2, 6, 7, 4, 3, 4, 8, 6, 7, 2, 4, 6, 4, 7, 6

Which dot plot displays the same data?

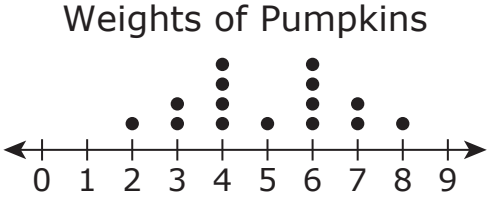
F



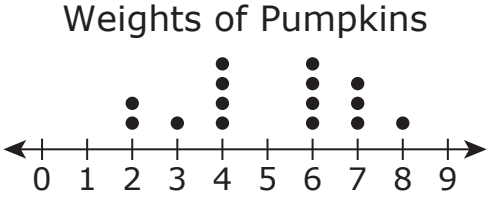
G



H



J



Odds

5 The table below shows the number of books that each student in Mr. Brown's class read last month.

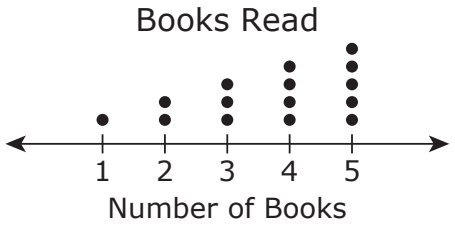
Books Read

Number of Books	Tally
1	|||
2	𝍸 |
3	𝍸 ||
4	𝍸
5	||||

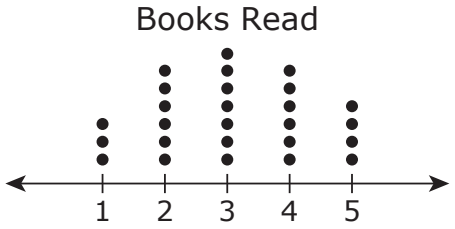
How are tallies related to dots in a dot plot?

Which dot plot represents the data in the table?

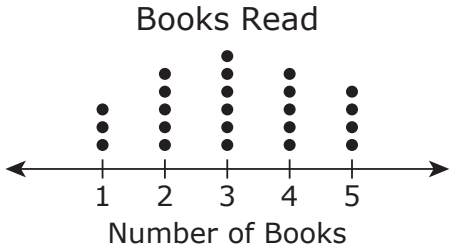
A



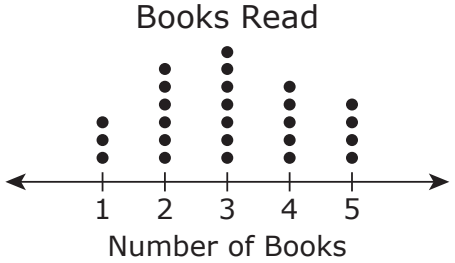
B



C



D



Evens

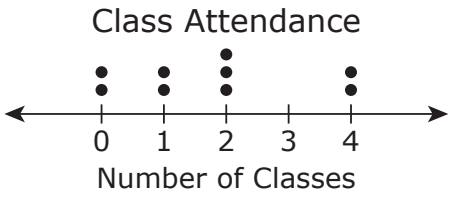
6 The table shows the number of classes attended by gym members each week.

Class Attendance

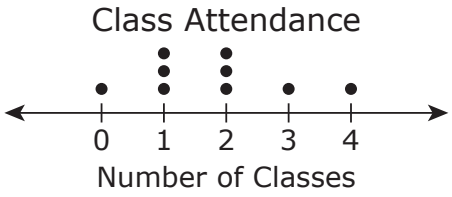
Number of Classes	Frequency
0	2
1	2
2	4
3	0
4	1

Which dot plot displays these data?

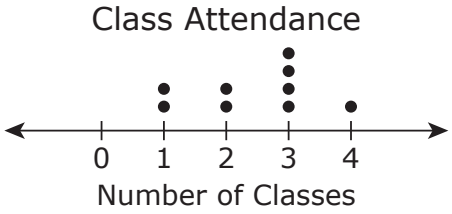
F



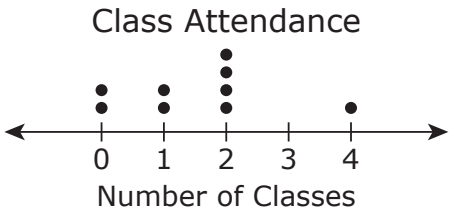
G



H



J



Odds

7 The table below shows runners' race times, in seconds.

Race Results

Runner	J	K	L	M	N	P
Time (seconds)	73	86	91	87	104	91

Which stem and leaf plot displays the data?

A

Race Results

Stem	Leaf
7	3
8	6
8	7
9	1
10	4

7|3 means 73 seconds.

B

Race Results

Stem	Leaf
7	3
8	6 7
9	1 1
10	4

7|3 means 73 seconds.

C

Race Results

Stem	Leaf
7	3
8	6 7
9	1
10	4

7|3 means 73 seconds.

D

Race Results

Stem	Leaf
7	3
8	6 7
9	1 1 4

7|3 means 73 seconds.

Evens

8 The table shows the season high scores for several basketball teams.

High Scores

Team	T	V	W	X	Y	Z
Points	94	91	101	79	76	95

Which stem and leaf plot shows the data in the table?

F

High Scores

Stem	Leaf
7	6 9
8	
9	1 4 5
10	1

9|4 means 94 points.

G

High Scores

Stem	Leaf
9	4 1
10	1
7	9 6
9	5

9|4 means 94 points.

H

High Scores

Stem	Leaf
7	6 9
8	0
9	1 4 5
10	1

9|4 means 94 points.

J

High Scores

Stem	Leaf
1	0 1
7	6 9
9	1 4 5

9|4 means 94 points.

Odds

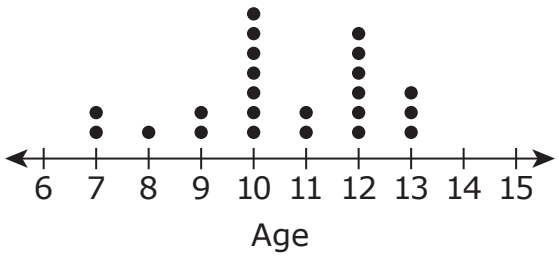
9 The table shows the ages of the members in a science club.

Science Club Members

Age (years)	Number of Students
7	𝍸
8	𝍸
9	𝍸
10	𝍸 𝍸
11	𝍸
12	𝍸 𝍸
13	𝍸

A teacher made this dot plot to show the ages. The dot plot is incomplete.

Science Club Ages



What age in years is missing a data point on the dot plot?

			.		
⓪	⓪	⓪		⓪	⓪
①	①	①		①	①
②	②	②		②	②
③	③	③		③	③
④	④	④		④	④
⑤	⑤	⑤		⑤	⑤
⑥	⑥	⑥		⑥	⑥
⑦	⑦	⑦		⑦	⑦
⑧	⑧	⑧		⑧	⑧
⑨	⑨	⑨		⑨	⑨

Evens

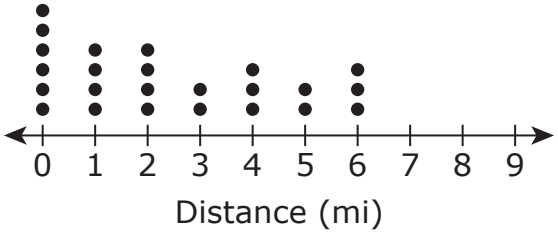
10 The table shows the distance from school some students live, to the nearest mile.

School Distance

Distance (mi)	Number of Students
0	𝍸 𝍸
1	𝍸
2	𝍸 𝍸
3	𝍸
4	𝍸
5	𝍸
6	𝍸

A student made this dot plot to show the distances. The dot plot is incomplete.

Student School Distance



What distance in miles is missing a data point on the dot plot?

			.		
⓪	⓪	⓪		⓪	⓪
①	①	①		①	①
②	②	②		②	②
③	③	③		③	③
④	④	④		④	④
⑤	⑤	⑤		⑤	⑤
⑥	⑥	⑥		⑥	⑥
⑦	⑦	⑦		⑦	⑦
⑧	⑧	⑧		⑧	⑧
⑨	⑨	⑨		⑨	⑨

Odds

11 The table shows the number of students in several grades.

Enrollment

Students	90	94	105	110
Frequency	1	2	2	1

Which stem and leaf plot displays the data from the table?

How many data values are shown in the table?

A

Enrollment

Stem	Leaf
9	0
9	4 4
10	5
10	5
11	1

9|4 means 94 students.

B

Enrollment

Stem	Leaf
9	0 4
10	5
11	0

9|4 means 94 students.

C

Enrollment

Stem	Leaf
9	0 4 4
10	5 5
11	0

9|4 means 94 students.

D

Enrollment

Stem	Leaf
9	4 4
10	5 5
11	

9|4 means 94 students.

Evens

12 The points scored by a team in its first six games are shown in the table.

Scores

Points	32	37	56	61
Tally	II	I	II	I

Which stem and leaf plot correctly shows the scores?

F

Scores

Stem	Leaf
3	2 2
6	1
3	7
5	6 6

3|2 means 32 points.

G

Scores

Stem	Leaf
3	2 2 7
6	1
5	6 6

3|2 means 32 points.

H

Scores

Stem	Leaf
3	2 2 7
4	6 6
5	1

3|2 means 32 points.

J

Scores

Stem	Leaf
3	2 2 7
4	
5	6 6
6	1

3|2 means 32 points.

Odds

13 The weights of several dogs, in pounds, are shown in the dot plot.

Dog Weights

Each dot represents a dog.

Which stem and leaf plot shows the same data?

A

Dog Weights

Stem	Leaf
1	6 6 9 9 9 9
2	0 4 4 4 5 7
3	0 0 0

1|6 means 16 pounds.

B

Dog Weights

Stem	Leaf
1	6 9
2	0 4 5 7
3	0

1|6 means 16 pounds.

C

Dog Weights

Stem	Leaf
1	6 9 9
2	4 5 7
3	

1|6 means 16 pounds.

D

Dog Weights

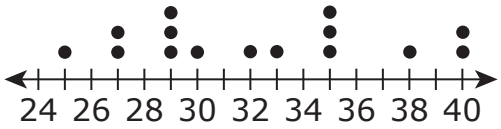
Stem	Leaf
1	6 6 9 9 9 9
2	4 4 4 5 7
3	

1|6 means 16 pounds.

Evens

14 The dot plot shows the heights in centimeters of plants in a garden.

Plant Heights



Which stem and leaf plot displays these data?

F

Plant Heights

Stem	Leaf
2	5 7 7 9 9 9
3	2 3 5 5 5 8
4	

2|5 means 25 centimeters.

G

Plant Heights

Stem	Leaf
2	5 7 7 9 9 9
3	0 2 3 5 5 5 8
4	0 0

2|5 means 25 centimeters.

H

Plant Heights

Stem	Leaf
2	5 7 9
3	0 2 3 5 8
4	0

2|5 means 25 centimeters.

J

Plant Heights

Stem	Leaf
2	5 7 9
3	2 3 5 8
4	

2|5 means 25 centimeters.

Odds

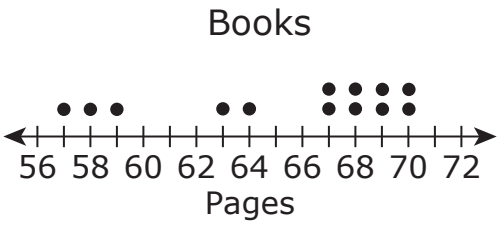
15 The list shows the numbers of pages in 12 books.

67, 68, 57, 63, 69, 59, 64, 70, 68, 71, 70, 64

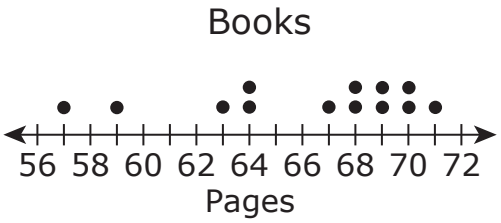
Write the data values in order.

Which plot displays the data?

A



B



C

Books

Stem	Leaf
5	7 9
6	3 4 7 8 9
7	1

5|7 means 57 pages.

D

Books

Stem	Leaf
5	7 9
6	3 4 4 7 8 8 9
7	0 0 1

5|7 means 57 pages.

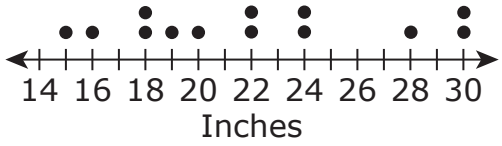
Evens

16 The lengths of 15 ribbons, in inches, are listed below.

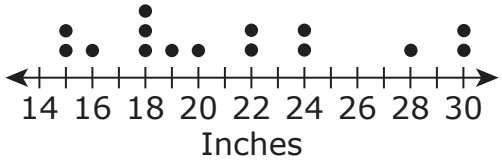
24, 16, 15, 18, 24, 15, 28, 19, 18, 22, 30, 22, 20, 30, 18

Which plot represents the data?

F



G



H

Ribbon Lengths

Stem	Leaf
1	5 6 8 8 9
2	0 2 4 8
3	0

1|5 means 15 inches.

J

Ribbon Lengths

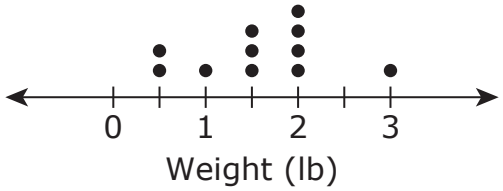
Stem	Leaf
1	5 5 6 8 8 8 9
2	2 2 4 4 8
3	

1|5 means 15 inches.

Odds

17 The dot plot shows the number of grocery shoppers who bought different numbers of pounds of apples on Monday.

Apples Sold on Monday



Which frequency table represents the same data shown in the dot plot?

A

Apples Sold on Monday

Weight (lb)	$\frac{1}{2}$	1	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Tally	II	I	III	III	I	I

B

Apples Sold on Monday

Weight (lb)	$\frac{1}{2}$	1	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Tally	II	I	III	IIII	I	I

C

Apples Sold on Monday

Weight (lb)	$\frac{1}{2}$	1	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Tally	II	I	III	IIII		I

D

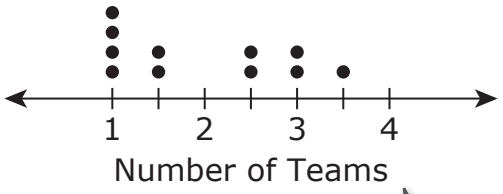
Apples Sold on Monday

Weight (lb)	$\frac{1}{2}$	1	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Tally	II	I	III	IIII		

Evens

18 The numbers of hours that different sports teams practiced last week are shown in the dot plot.

Practice Times (Hours)



Which frequency table displays the same data?

Each dot represents a team.

F

Practice Times

Hours	1	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$
Number of Teams	2	3	0	4	1	1

G

Practice Times

Hours	1	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$
Number of Teams	4	2	0	2	2	1

H

Practice Times

Hours	1	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$
Number of Teams	4	3	1	2	1	1

J

Practice Times

Hours	1	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$
Number of Teams	4	2	1	2	1	1

Odds

19 The list shows the heights in feet of students in a karate class.

$3\frac{1}{2}, 4, 3\frac{1}{2}, 4\frac{1}{2}, 5, 3\frac{1}{2}, 4\frac{1}{2}, 5\frac{1}{2}, 4, 4\frac{1}{2}$

Which stem and leaf plot represents the data?

A

Student Heights

Stem	Leaf
3	$\frac{1}{2}$
4	$\frac{0}{2}\ \frac{1}{2}$
5	$\frac{0}{2}\ \frac{1}{2}$

$3|\frac{1}{2}$ means $3\frac{1}{2}$ feet.

B

Student Heights

Stem	Leaf
3	$\frac{1}{2}\ \frac{1}{2}\ \frac{1}{2}$
4	$\frac{0}{2}\ \frac{0}{2}\ \frac{1}{2}\ \frac{1}{2}\ \frac{1}{2}$
5	$\frac{0}{2}\ \frac{1}{2}$

$3|\frac{1}{2}$ means $3\frac{1}{2}$ feet.

C

Student Heights

Stem	Leaf
3	$\frac{1}{2}\ \frac{1}{2}\ \frac{1}{2}$
4	$\frac{1}{2}\ \frac{1}{2}$
5	$\frac{1}{2}$

$3|\frac{1}{2}$ means $3\frac{1}{2}$ feet.

D

Student Heights

Stem	Leaf
3	$\frac{1}{2}\ \frac{1}{2}\ \frac{1}{2}$
4	$\frac{1}{2}\ \frac{1}{2}\ \frac{1}{2}$
5	$\frac{1}{2}$

$3|\frac{1}{2}$ means $3\frac{1}{2}$ feet.

Evens

20 Rosa measured her crayons in inches. She found the lengths listed below.

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

Start by writing the lengths in order.

Which stem and leaf plot displays Rosa's data?

F

Crayon Lengths

Stem	Leaf
1	$\frac{3}{4}$
2	$\frac{1}{2}\ \frac{3}{4}$
3	$\frac{1}{4}\ \frac{1}{2}$

$1|\frac{3}{4}$ means $1\frac{3}{4}$ inches.

G

Crayon Lengths

Stem	Leaf
1	$\frac{3}{4}$
2	$\frac{0}{4}\ \frac{1}{2}\ \frac{3}{4}$
3	$\frac{0}{4}\ \frac{1}{4}\ \frac{1}{2}$

$1|\frac{3}{4}$ means $1\frac{3}{4}$ inches.

H

Crayon Lengths

Stem	Leaf
1	$\frac{3}{4}\ \frac{3}{4}$
2	$\frac{0}{4}\ \frac{1}{4}\ \frac{1}{2}\ \frac{1}{2}\ \frac{3}{4}$
3	$\frac{0}{4}\ \frac{1}{4}\ \frac{1}{4}\ \frac{1}{2}$

$1|\frac{3}{4}$ means $1\frac{3}{4}$ inches.

J

Crayon Lengths

Stem	Leaf
1	$\frac{3}{4}\ \frac{3}{4}$
2	$\frac{1}{4}\ \frac{1}{4}\ \frac{1}{4}\ \frac{3}{4}$
3	$\frac{1}{4}\ \frac{1}{4}\ \frac{1}{4}$

$1|\frac{3}{4}$ means $1\frac{3}{4}$ inches.

Odds

21 The stem and leaf plot shows the weights in pounds of melons at a market.

What data values are shown in the stem and leaf plot?

Melons

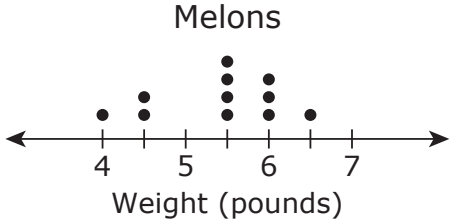
Stem	Leaf
4	$\frac{0}{2}$ $\frac{1}{2}$ $\frac{1}{2}$
5	$\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$
6	$\frac{0}{2}$ $\frac{0}{2}$ $\frac{0}{2}$ $\frac{1}{2}$

$4 \mid \frac{0}{2}$ means 4 pounds.

Which dot plot displays these data?

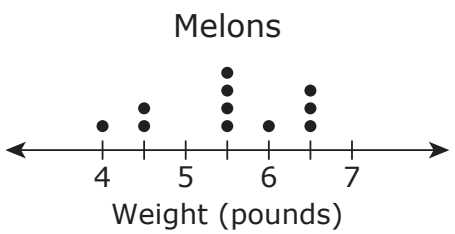
A

B



C

D



Evens

22 Students in a math class made this stem and leaf plot to show the number of hours they spent doing homework the night before.

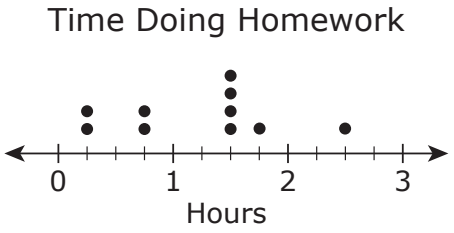
Time Doing Homework

Stem	Leaf
0	$\frac{1}{4}$ $\frac{1}{4}$ $\frac{3}{4}$ $\frac{3}{4}$
1	$\frac{0}{4}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{3}{4}$
2	$\frac{0}{4}$ $\frac{0}{4}$ $\frac{1}{2}$

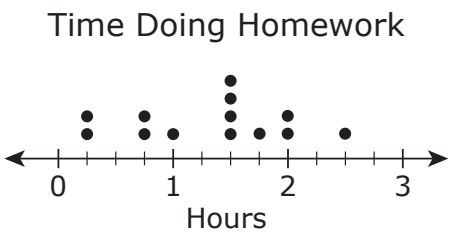
$1 \mid \frac{1}{4}$ means $1\frac{1}{4}$ hours.

Which dot plot shows the same data?

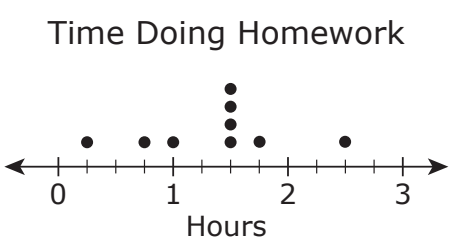
F



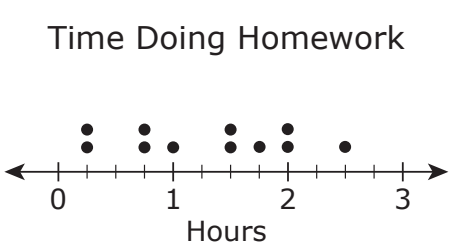
G



H



J



Odds

23 The table shows the lap times in minutes for several runners.

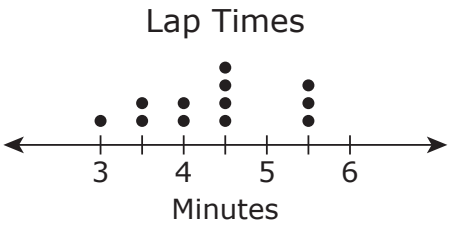
Compare the table to each plot.

Lap Times

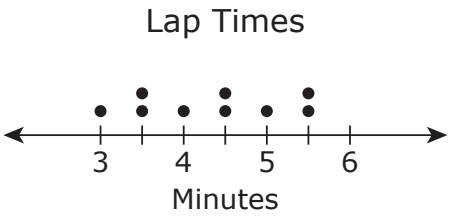
Minutes	3	$3\frac{1}{2}$	4	$4\frac{1}{2}$	$5\frac{1}{2}$
Number of Runners	1	2	2	4	3

Which plot displays these data?

A



B



C

Lap Times

Stem	Leaf
3	$\frac{1}{2}$ $\frac{1}{2}$
4	$\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$
5	$\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$

3|$\frac{1}{2}$ means $3\frac{1}{2}$ minutes.

D

Lap Times

Stem	Leaf
3	$\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$
4	$\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$
5	$\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$

3|$\frac{1}{2}$ means $3\frac{1}{2}$ minutes.

Evens

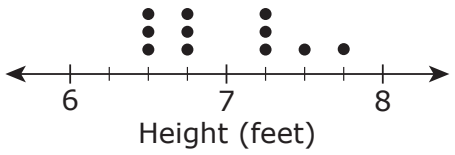
24 The table shows the heights in feet of trees in a small grove.

Tree Heights

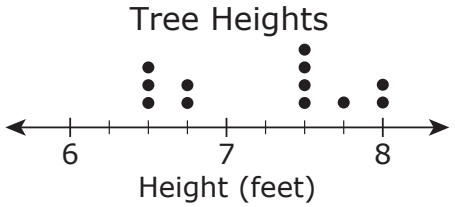
Height (feet)	$6\frac{1}{2}$	$6\frac{3}{4}$	$7\frac{1}{4}$	$7\frac{1}{2}$	8
Number of Trees	3	2	4	1	2

Which plot represents the data in the table?

F



G



H

Tree Heights

Stem	Leaf
6	$\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{3}{4}$ $\frac{3}{4}$
7	$\frac{1}{4}$ $\frac{1}{4}$ $\frac{1}{4}$ $\frac{1}{4}$ $\frac{1}{2}$
8	$\frac{0}{4}$ $\frac{0}{4}$

6|$\frac{1}{2}$ means $6\frac{1}{2}$ feet.

J

Tree Heights

Stem	Leaf
6	$\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{3}{4}$ $\frac{3}{4}$
7	$\frac{1}{4}$ $\frac{1}{4}$ $\frac{1}{4}$ $\frac{1}{4}$ $\frac{1}{2}$
8	

6|$\frac{1}{2}$ means $6\frac{1}{2}$ feet.

Odds

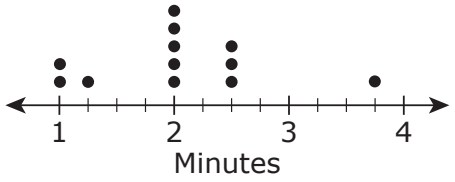
25 The lengths in minutes of some students' favorite songs are shown in the table.

Favorite Songs

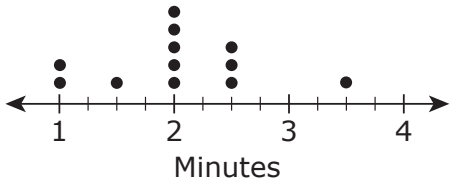
Minutes	1	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$
Number of Songs	2	1	5	3	0	1

Which dot plot displays these data?

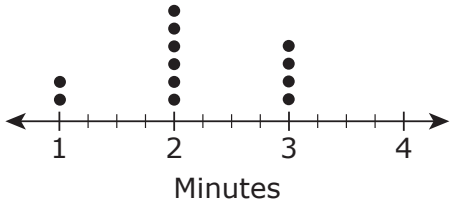
A



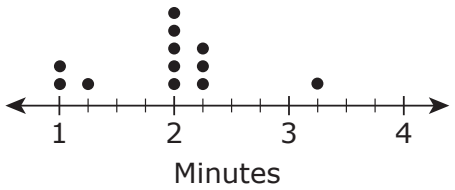
B



C



D



Evens

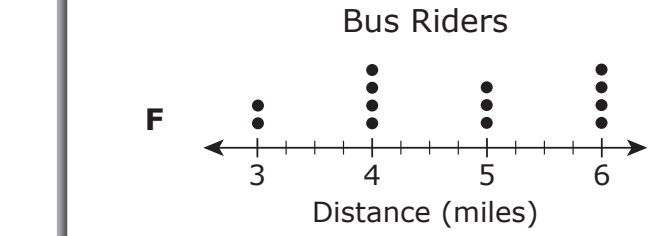
26 The table shows the distances that fourth-grade students who ride a school bus travel to school.

Bus Riders

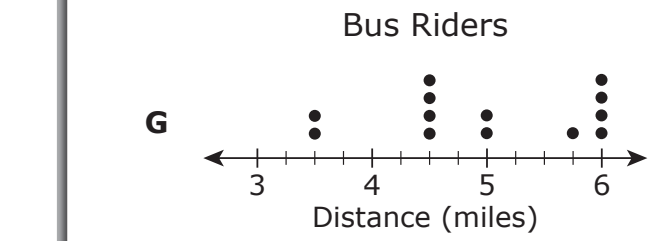
Distance (miles)	$3\frac{1}{2}$	4	$4\frac{1}{2}$	5	$5\frac{1}{2}$	6
Number of Students	2	0	4	2	1	4

Which dot plot represents the data in the table?

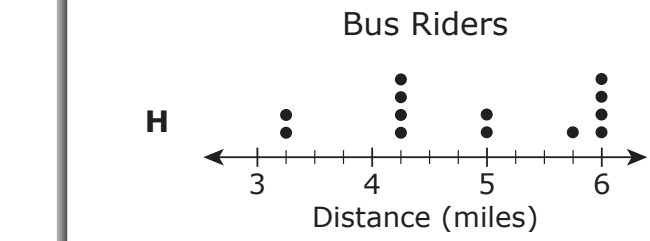
F



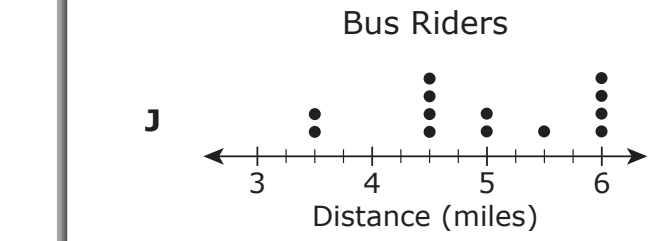
G



H



J



Can you cross out any answer choices?

Odds

27 The list gives information about the favorite pet of each of 23 students.

- 8 students chose dog.
- 2 fewer students chose dog than cat.
- 5 more students chose cat than hamster.

Which frequency table represents the number of students who chose each pet?

A

Favorite Pet

Pet	Number of Students
Dog	𝍸 III
Cat	𝍸 𝍸
Hamster	𝍸

B

Favorite Pet

Pet	Number of Students
Dog	𝍸 III
Cat	𝍸 I
Hamster	I

C

Favorite Pet

Pet	Number of Students
Dog	𝍸 III
Cat	𝍸 𝍸
Hamster	𝍸 𝍸 𝍸

D

Favorite Pet

Pet	Number of Students
Dog	II
Cat	𝍸 I
Hamster	I

Evens

28 The list gives information about the favorite fruit of each of 25 students.

- 5 students chose orange.
- 3 fewer students chose orange than banana.
- 4 more students chose apple than banana.

Which frequency table represents the number of students who chose each fruit?

F

Favorite Fruit

Fruit	Number of Students
Apple	𝍸 II
Orange	𝍸
Banana	II

G

Favorite Fruit

Fruit	Number of Students
Apple	𝍸 III
Orange	𝍸
Banana	𝍸 𝍸 II

H

Favorite Fruit

Fruit	Number of Students
Apple	𝍸 𝍸 II
Orange	𝍸
Banana	𝍸 III

J

Favorite Fruit

Fruit	Number of Students
Apple	IIII
Orange	𝍸
Banana	II

Odds

29 The frequency table shows the number of absences from school for a group of students last year.

Number of Absences	Number of Students
1–4	𝍸
5–8	𝍸
9–12	IIII
13–16	II

Which set of data could the frequency table represent?

A 1, 4, 5, 8, 9, 12, 13, 16

B 1, 2, 3, 4, 4, 5, 5, 5, 5, 11, 11, 11, 12, 15, 16

C 0, 1, 1, 3, 4, 6, 7, 7, 7, 8, 9, 9, 11, 12, 13, 13

D 1, 1, 3, 4, 4, 5, 5, 5, 8, 8, 9, 9, 11, 11, 15, 15

Evens

30 The frequency table shows the number of states that some students have visited.

Number of States Visited	Number of Students
1–5	IIII
6–10	𝍸 I
11–15	II
16–20	III

Which set of data could the frequency table represent?

F 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 13, 15, 17, 17, 17

G 3, 3, 4, 5, 6, 6, 7, 8, 10, 10, 12, 15, 16, 19, 20

H 1, 1, 1, 5, 6, 9, 9, 10, 12, 14, 16, 18, 20

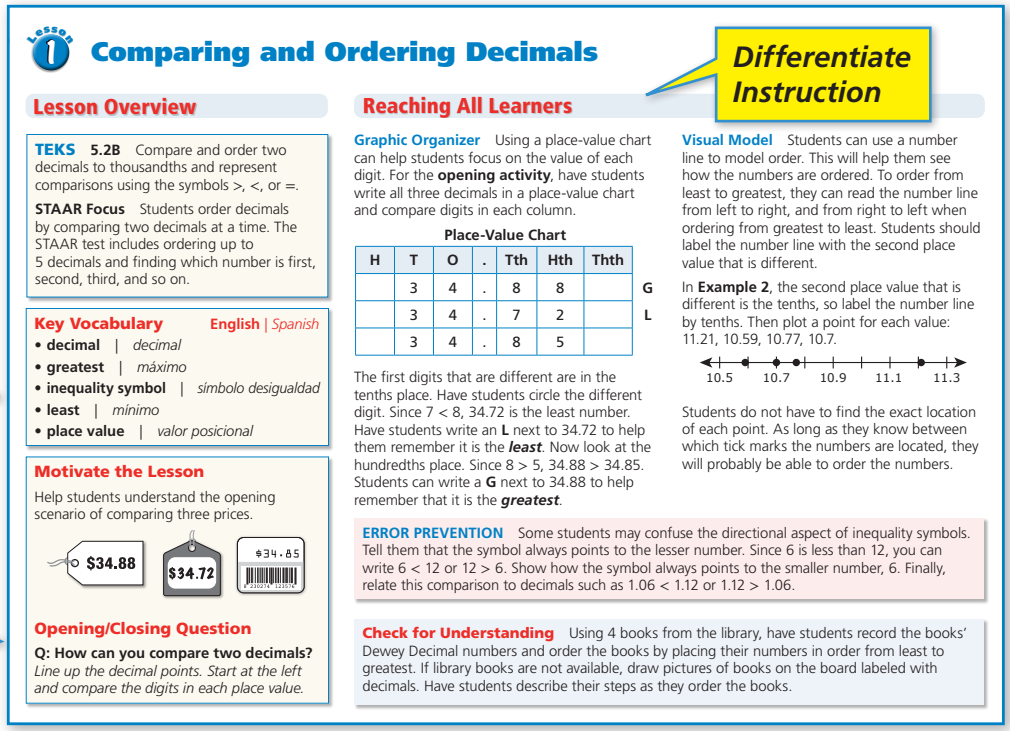
J 1, 5, 6, 10, 11, 15, 16, 20

GRADE 3–5 MATHEMATICS
STAAR® Preparation and Practice

TEACHER'S EDITION

Planning Each Lesson for Student Engagement

Each lesson includes a page of **resources** and **strategies** to help teachers enable all students to learn the STAAR tested math.



1 Comparing and Ordering Decimals

Lesson Overview

TEKS 5.2B Compare and order two decimals to thousandths and represent comparisons using the symbols >, <, or =.

STAAR Focus Students order decimals by comparing two decimals at a time. The STAAR test includes ordering up to 5 decimals and finding which number is first, second, third, and so on.

Key Vocabulary English | Spanish
- **decimal** | *decimal*
- **greatest** | *máximo*
- **inequality symbol** | *símbolo desigualdad*
- **least** | *mínimo*
- **place value** | *valor posicional*

Motivate the Lesson

Help students understand the opening scenario of comparing three prices.

$34.88 $34.72 $34.85

Opening/Closing Question

Q: How can you compare two decimals?
Line up the decimal points. Start at the left and compare the digits in each place value.

Reaching All Learners

Graphic Organizer Using a place-value chart can help students focus on the value of each digit. For the **opening activity**, have students write all three decimals in a place-value chart and compare digits in each column.

Place-Value Chart

H	T	O	.	Tth	Hth	Thth	
	3	4	.	8	8		G
	3	4	.	7	2		L
	3	4	.	8	5		

The first digits that are different are in the tenths place. Have students circle the different digit. Since 7 < 8, 34.72 is the least number. Have students write an **L** next to 34.72 to help them remember it is the ***least***. Now look at the hundredths place. Since 8 > 5, 34.88 > 34.85. Students can write a **G** next to 34.88 to help remember that it is the ***greatest***.

Visual Model Students can use a number line to model order. This will help them see how the numbers are ordered. To order from least to greatest, they can read the number line from left to right, and from right to left when ordering from greatest to least. Students should label the number line with the second place value that is different.

In **Example 2**, the second place value that is different is the tenths, so label the number line by tenths. Then plot a point for each value: 11.21, 10.59, 10.77, 10.7.

10.5 10.7 10.9 11.1 11.3

Students do not have to find the exact location of each point. As long as they know between which tick marks the numbers are located, they will probably be able to order the numbers.

ERROR PREVENTION Some students may confuse the directional aspect of inequality symbols. Tell them that the symbol always points to the lesser number. Since 6 is less than 12, you can write 6 < 12 or 12 > 6. Show how the symbol always points to the smaller number, 6. Finally, relate this comparison to decimals such as 1.06 < 1.12 or 1.12 > 1.06.

Check for Understanding Using 4 books from the library, have students record the books' Dewey Decimal numbers and order the books by placing their numbers in order from least to greatest. If library books are not available, draw pictures of books on the board labeled with decimals. Have students describe their steps as they order the books.

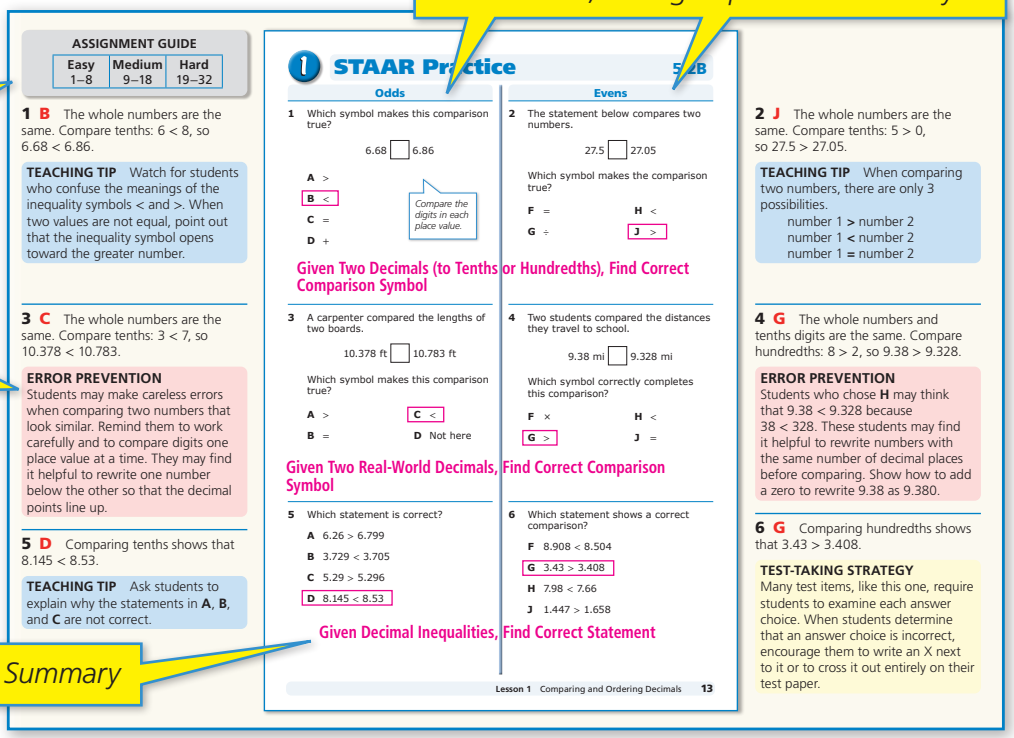
Differentiate Instruction

Key Vocabulary *in English and Spanish*

Opening/Closing Question

Giving Students Actionable Feedback

The *Sirius Mathematics Teacher's Edition* includes **full solutions** and **margin notes**.



ASSIGNMENT GUIDE

Easy 1–8	Medium 9–18	Hard 19–32

1 B The whole numbers are the same. Compare tenths: 6 < 8, so 6.68 < 6.86.

TEACHING TIP Watch for students who confuse the meanings of the inequality symbols < and >. When two values are not equal, point out that the inequality symbol opens toward the greater number.

3 C The whole numbers are the same. Compare tenths: 3 < 7, so 10.378 < 10.783.

ERROR PREVENTION Students may make careless errors when comparing two numbers that look similar. Remind them to work carefully and to compare digits one place value at a time. They may find it helpful to rewrite one number below the other so that the decimal points line up.

5 D Comparing tenths shows that 8.145 < 8.53.

TEACHING TIP Ask students to explain why the statements in **A**, **B**, and **C** are not correct.

STAAR Practice 5.2B

Odds

1 Which symbol makes this comparison true?
6.68 ☐ 6.86
A >
B <
C =
D +
Compare the digits in each place value.

Given Two Decimals (to Tenths or Hundredths), Find Correct Comparison Symbol

3 A carpenter compared the lengths of two boards.
10.378 ft ☐ 10.783 ft
Which symbol makes this comparison true?
A >
B =
C <
D Not here

Given Two Real-World Decimals, Find Correct Comparison Symbol

5 Which statement is correct?
A 6.26 > 6.799
B 3.729 < 3.705
C 5.29 > 5.296
D 8.145 < 8.53

Given Decimal Inequalities, Find Correct Statement

Evens

2 The statement below compares two numbers.
27.5 ☐ 27.05
Which symbol makes the comparison true?
F =
G ÷
H <
J >

4 Two students compared the distances they travel to school.
9.38 mi ☐ 9.328 mi
Which symbol correctly completes this comparison?
F ×
G >
H <
J =

6 Which statement shows a correct comparison?
F 8.908 < 8.504
G 3.43 > 3.408
H 7.98 < 7.66
J 1.447 > 1.658

Lesson 1 Comparing and Ordering Decimals 13

2 J The whole numbers are the same. Compare tenths: 5 > 0, so 27.5 > 27.05.

TEACHING TIP When comparing two numbers, there are only 3 possibilities.
number 1 > number 2
number 1 < number 2
number 1 = number 2

4 G The whole numbers and tenths digits are the same. Compare hundredths: 8 > 2, so 9.38 > 9.328.

ERROR PREVENTION Students who chose **H** may think that 9.38 < 9.328 because 38 < 328. These students may find it helpful to rewrite numbers with the same number of decimal places before comparing. Show how to add a zero to rewrite 9.38 as 9.380.

6 G Comparing hundredths shows that 3.43 > 3.408.

TEST-TAKING STRATEGY Many test items, like this one, require students to examine each answer choice. When students determine that an answer choice is incorrect, encourage them to write an X next to it or to cross it out entirely on their test paper.

Two sets *of paired questions for use in class and at home, or in groups and individually.*

Assignment Guide

Margin notes *include:*
- *Error Prevention*
- *Test-Taking Strategy*
- *Teaching Tip*
- *English Language Learners*

Problem Summary

Sirius Education Solutions • 1108 Lavaca Street, Suite 110-197 • Austin, TX 78701
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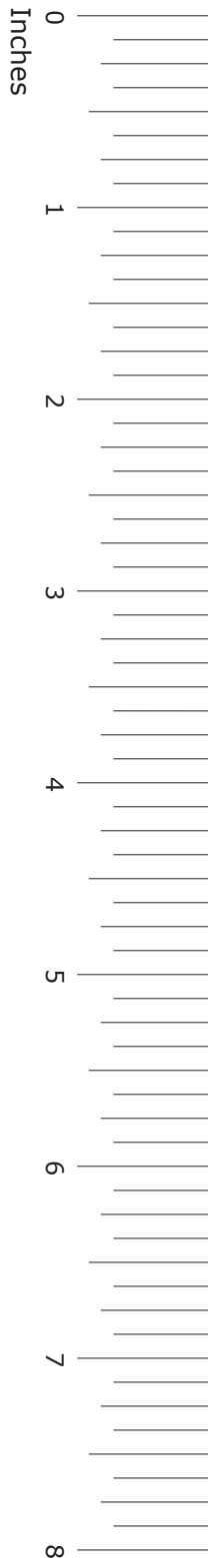
STAAR GRADE 4 MATHEMATICS REFERENCE MATERIALS

PERIMETER			
Square			$P = 4s$
Rectangle	$P = l + w + l + w$	or	$P = 2l + 2w$

AREA	
Square	$A = s \times s$
Rectangle	$A = l \times w$



SAMPLER

GRADE 4 MATHEMATICS CONTENTS

Use with your class for free!

Visit SiriusEducationSolutions.com for additional STAAR resources.

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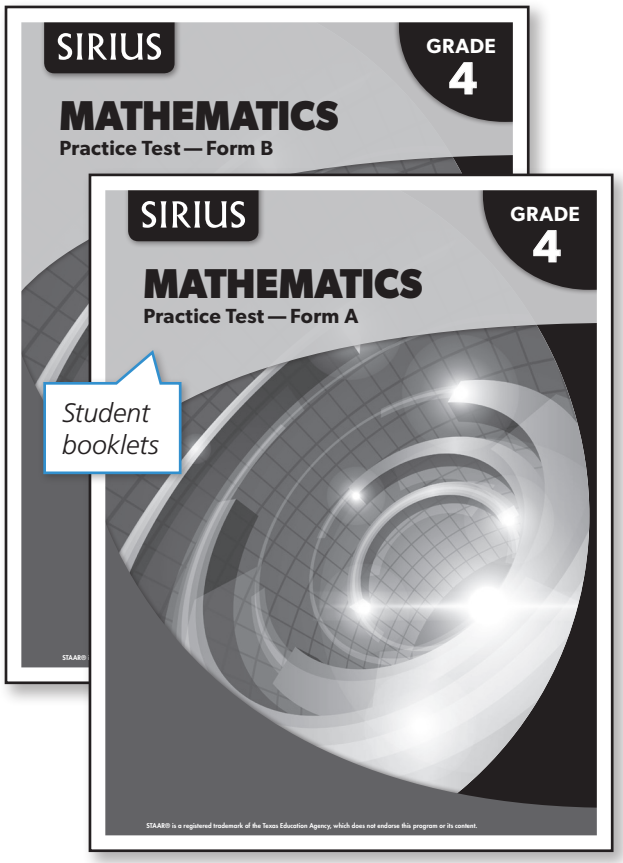
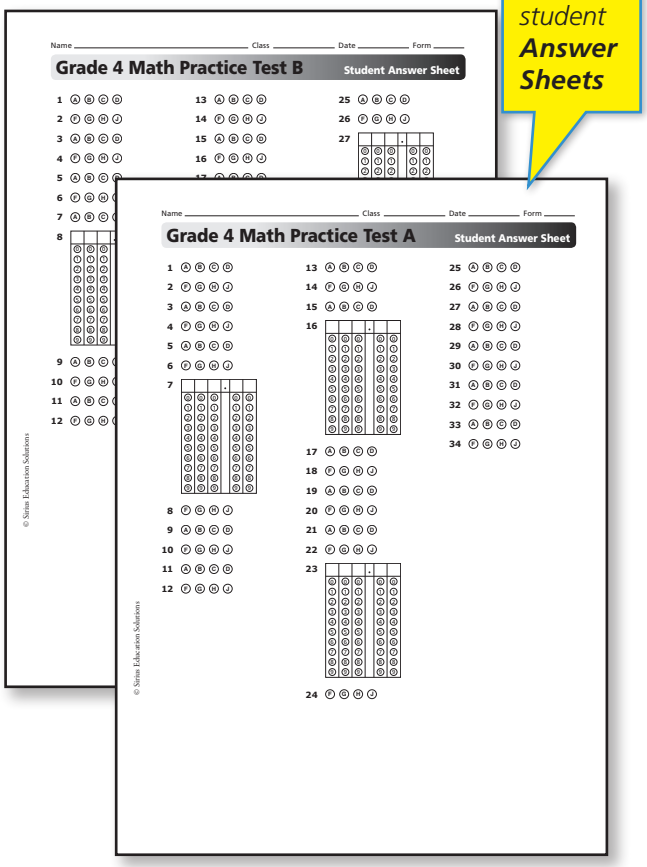
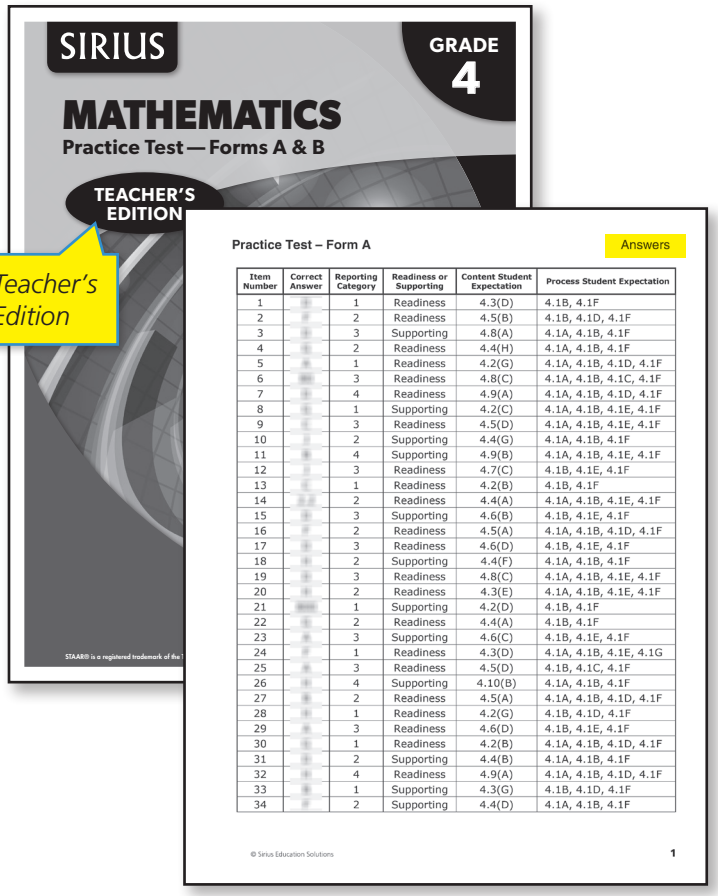
STAAR GRADE 4 MATHEMATICS

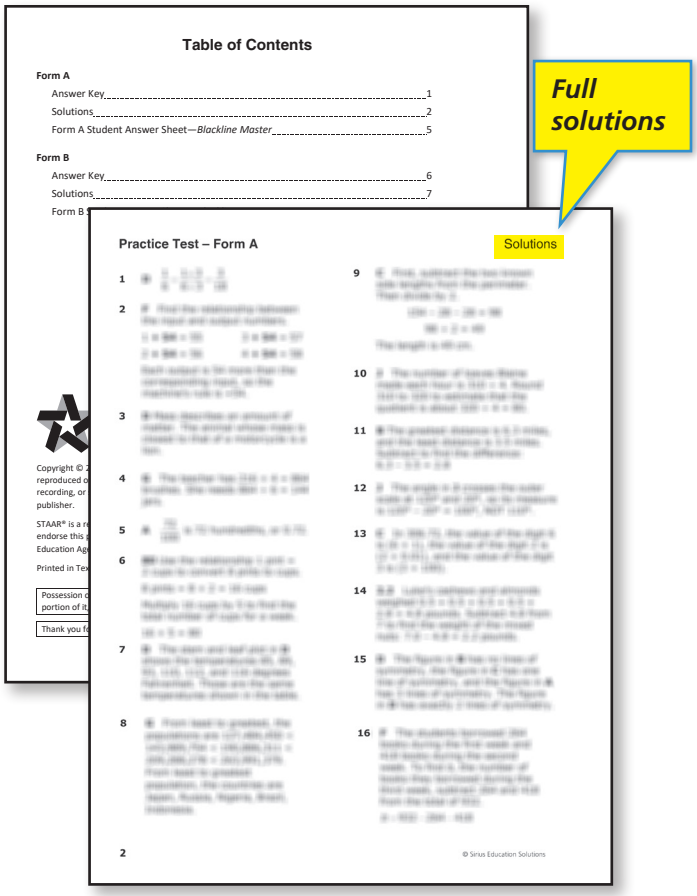
STAAR Practice Tests Forms A & B

Two distinct secure form tests that closely match the released STAAR test items and blueprint.









Practice Tests are sold in 10-packs: 10 Form A & 10 Form B student booklets with bubble sheets, and 1 Teacher's Edition

Grades 3–5 Math Zingers

Zingers teach how to **read actively**, **think carefully**, and **solve** some of the most-missed STAAR test items.

① READ and UNDERSTAND

Good problem solvers carefully read and reread the problem. Use the **interactive questions** to help you identify key facts such as:

- What **information is given**?
- What does the **problem ask for**?
- What **key concept**s do you need?

② PLAN and SOLVE

Examine what two **students think** as they attempt to solve the problem.

The students often use **different methods** to solve the problem. They might make mistakes. Correcting these mistakes helps you **avoid** making **common mistakes** on the STAAR test.

③ LOOK BACK

What do you think? What did you learn from the other students' solution processes?

Reflecting on the problem will help you remember it when you see similar problems on the STAAR test.

④ GUIDED PRACTICE

Now it's your turn to **solve a similar problem.**

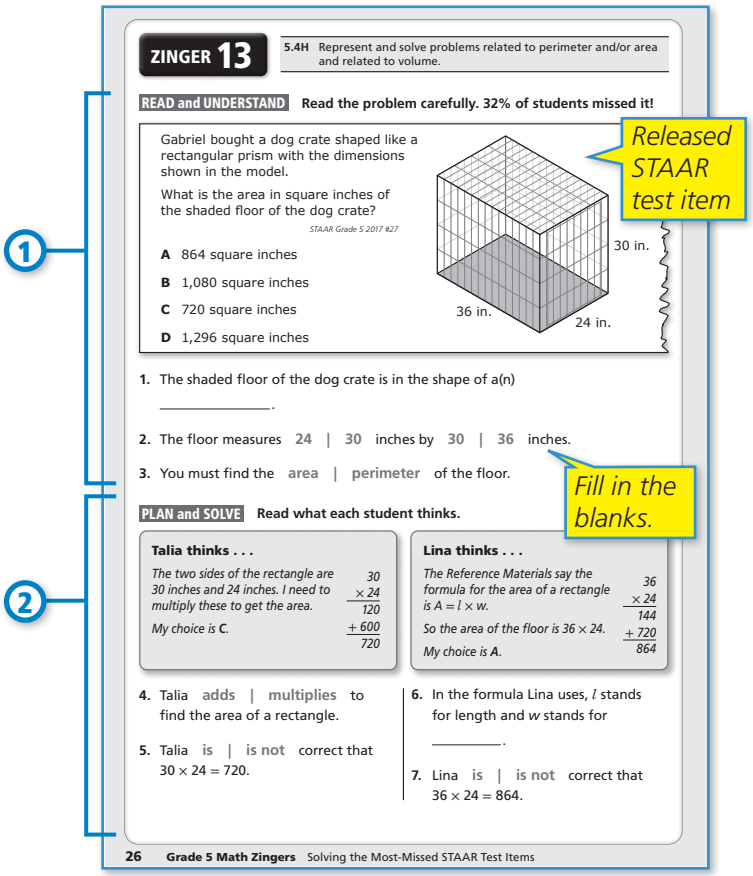
Use the **step-by-step** solution to avoid careless errors. With practice, you can solve the problems most students missed!

⑤ INDEPENDENT PRACTICE

Apply what you learned with more practice.

After this, you will feel **more confident** that you can succeed on the STAAR test. After all, you just solved one of the hardest problems!

Zingers Help Move More Students to Meets and Masters!



ZINGER 13

5.4H Represent and solve problems related to perimeter and/or area and related to volume.

READ and UNDERSTAND **Read the problem carefully. 32% of students missed it!**

Gabriel bought a dog crate shaped like a rectangular prism with the dimensions shown in the model.

What is the area in square inches of the shaded floor of the dog crate?

STAAR Grade 5 2017 #27

A 864 square inches
B 1,080 square inches
C 720 square inches
D 1,296 square inches

30 in.
36 in.
24 in.

Released STAAR test item

1. The shaded floor of the dog crate is in the shape of a(n) _____.
2. The floor measures 24 | 30 inches by 30 | 36 inches.
3. You must find the area | perimeter of the floor.

Fill in the blanks.

PLAN and SOLVE **Read what each student thinks.**

Talia thinks . . .

The two sides of the rectangle are 30 inches and 24 inches. I need to multiply these to get the area.

30 × 24 = 120 + 600 = 720

My choice is C.

Lina thinks . . .

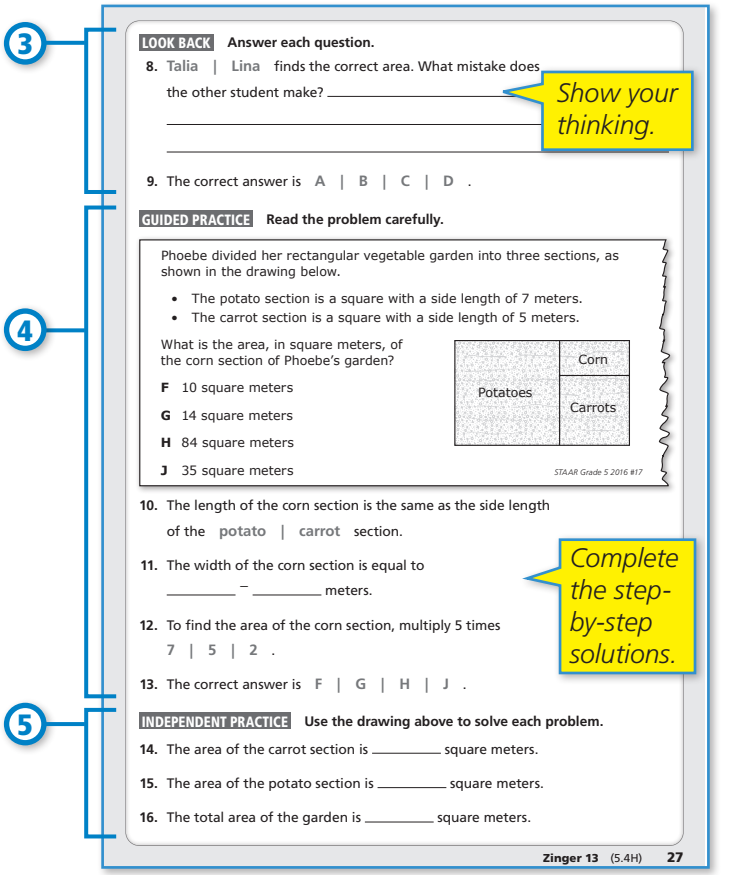
The Reference Materials say the formula for the area of a rectangle is A = l × w.

36 × 24 = 144 + 720 = 864

So the area of the floor is 36 × 24.

My choice is A.

4. Talia adds | multiplies to find the area of a rectangle.
5. Talia is | is not correct that 30 × 24 = 720.
6. In the formula Lina uses, *l* stands for length and *w* stands for _____.
7. Lina is | is not correct that 36 × 24 = 864.



LOOK BACK **Answer each question.**

8. Talia | Lina finds the correct area. What mistake does the other student make? _____

Show your thinking.

9. The correct answer is A | B | C | D .

GUIDED PRACTICE **Read the problem carefully.**

Phoebe divided her rectangular vegetable garden into three sections, as shown in the drawing below.

- The potato section is a square with a side length of 7 meters.
- The carrot section is a square with a side length of 5 meters.

What is the area, in square meters, of the corn section of Phoebe's garden?

F 10 square meters
G 14 square meters
H 84 square meters
J 35 square meters

Potatoes
Corn
Carrots

STAAR Grade 5 2016 #17

10. The length of the corn section is the same as the side length of the potato | carrot section.
11. The width of the corn section is equal to _____ – _____ meters.
12. To find the area of the corn section, multiply 5 times 7 | 5 | 2 .
13. The correct answer is F | G | H | J .

Complete the step-by-step solutions.

INDEPENDENT PRACTICE **Use the drawing above to solve each problem.**

14. The area of the carrot section is _____ square meters.
15. The area of the potato section is _____ square meters.
16. The total area of the garden is _____ square meters.