

SIRIUS

SAMPLER
*Use with Your
Students!*

**GRADE
6**

MATH ZINGERS

Solving the Most-Missed STAAR® Test Items

- Builds test-taking skills and confidence.
- Engages all students with challenging test items.
- Promotes student thinking with interactive instruction.

SAMPLE

STAAR GRADE 6 MATHEMATICS REFERENCE MATERIALS

LENGTH

Customary

1 mile (mi) = 1,760 yards (yd)

1 yard (yd) = 3 feet (ft)

1 foot (ft) = 12 inches (in.)

Metric

1 kilometer (km) = 1,000 meters (m)

1 meter (m) = 100 centimeters (cm)

1 centimeter (cm) = 10 millimeters (mm)

VOLUME AND CAPACITY

Customary

1 gallon (gal) = 4 quarts (qt)

1 quart (qt) = 2 pints (pt)

1 pint (pt) = 2 cups (c)

1 cup (c) = 8 fluid ounces (fl oz)

Metric

1 liter (L) = 1,000 milliliters (mL)

WEIGHT AND MASS

Customary

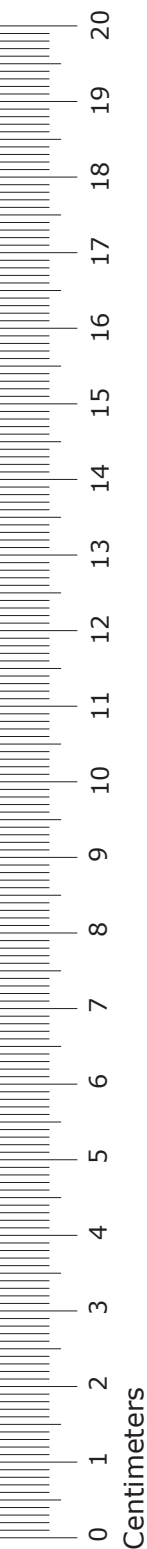
1 ton (T) = 2,000 pounds (lb)

1 pound (lb) = 16 ounces (oz)

Metric

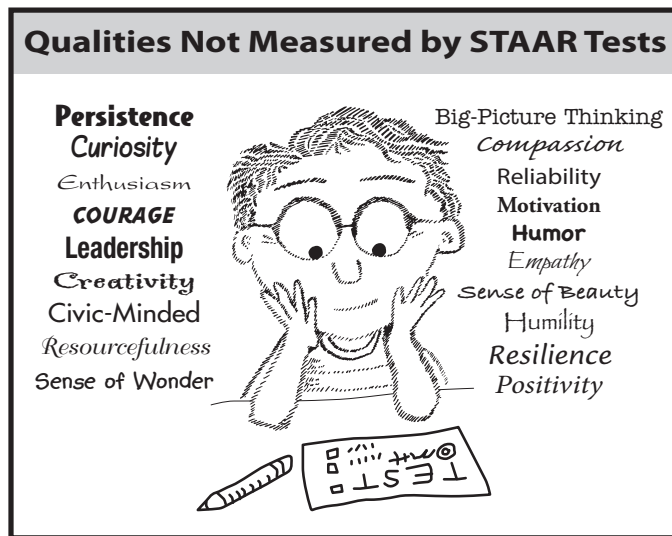
1 kilogram (kg) = 1,000 grams (g)

1 gram (g) = 1,000 milligrams (mg)



Dear Student,

There are many important qualities of character and intelligence that the STAAR tests are **not** designed to measure—as this cartoon shows.



What the STAAR Grade 6 Mathematics test does measure is your ability to solve specific kinds of math problems. The lessons in this workbook will teach you how to approach and successfully answer STAAR test questions. These skills are fun to learn, so you will probably enjoy the lessons.

Zingers— Solving the Most-Missed Test Items

With Zingers, you will become a better math STAAR-problem solver. Each Zinger presents one of the most difficult released STAAR test items and guides you to: read for understanding, plan and solve the problem, and reflect on the solution process. Finally, you practice with a similar test item to apply what you learned.

Preparing for the STAAR math test can be a fun challenge. And using Zingers will help you succeed!

Your partners in STAAR success,

The Sirius Education Team



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Printed in Texas.

ISBN: 978-1-949656-44-2

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Sampler

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1 Zingers—Solving the Most-Missed STAAR Test Items

	Percent Answering Incorrect	TEKS	Correlations to Grade 6 Math: STAAR Preparation and Practice	Page	Date Due	Done
Zinger 1	58%	6.3D	Lesson 1	2		
Zinger 2	59%	6.2D	Lesson 2	4		
Zinger 3	62%	6.3E	Lesson 3	6		
Zinger 4	53%	6.4G	Lesson 4	8		
Zinger 5	55%	6.7A	Lesson 5	10		
Zinger 6	74%	6.7D	Lesson 6	12		
Zinger 7	66%	6.4B	Lesson 7	14		
Zinger 8	55%	6.4B	Lesson 7	16		
Zinger 9	57%	6.5B	Lesson 8	18		
Zinger 10	70%	6.5B	Lesson 8	20		
Zinger 11	47%	6.10A	Lesson 9	22		
Zinger 12	60%	6.11A	Lesson 10	24		
Zinger 13	52%	6.6C	Lesson 11	26		
Zinger 14	60%	6.8D	Lesson 13	28		
Zinger 15	65%	6.12D	Lesson 14	30		
Zinger 16	62%	6.12C	Lesson 15	32		
Zinger 17	64%	6.12C	Lesson 15	34		
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Zinger 21	62%	6.10B	Supporting Success p. 212	42		
Zinger 22	62%	6.8A	Supporting Success p. 213	44		
Zinger 23	66%	6.8A	Supporting Success p. 213	46		
Zinger 24	57%	6.12A	Supporting Success p. 216	48		

2 On Your Own—Mixed Readiness Practice

	TEKS	Correlations to Grade 6 Math: STAAR Preparation and Practice		TEKS	Correlations to Grade 6 Math: STAAR Preparation and Practice
1	6.4H	Lesson 12	9	6.4G	Lesson 4
2	6.4B	Lesson 7	10	6.13A	Lesson 16
3	6.12D	Lesson 14	11	6.3D	Lesson 1
4	6.2D	Lesson 2	12	6.6C	Lesson 11
5	6.10A	Lesson 9	13	6.5B	Lesson 8
6	6.12C	Lesson 15	14	6.7A	Lesson 5
7	6.7D	Lesson 6	15	6.3E	Lesson 3
8	6.11A	Lesson 10	16	6.8D	Lesson 13

Reference Materials inside front cover & back cover

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Using the Grade 6 Mathematics 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 concepts** 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 **interactive** 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!

TEKS with full text

Wow, 59% of the students tested missed this problem!

ZINGER 2

6.2B Order a set of rational numbers arising from mathematical and real-world contexts.

READ and UNDERSTAND Read the problem carefully. 59% of students missed this one!

Which list shows the numbers in order from least value to greatest value?

STAAR Grade 6 2018 #30

- F $-\frac{2}{5}$, -2.47 , $-\frac{2}{2}$, 5 , $\frac{21}{4}$
- G $-\frac{2}{5}$, -2.47 , $-\frac{2}{2}$, $\frac{21}{4}$, 5
- H $-\frac{2}{2}$, -2.47 , $-\frac{2}{5}$, 5 , $\frac{21}{4}$
- J $-\frac{2}{2}$, -2.47 , $-\frac{2}{5}$, $\frac{21}{4}$, 5

- Each list shows different | the same numbers.
- Circle the types of numbers included in the lists.
fraction | mixed number | percent | whole number
- You are asked to choose the list of numbers that is in order from least to greatest | greatest to least .

Circle the answer.

PLAN and SOLVE Read what each student thinks.

Alicia thinks . . .

I'll compare the negative numbers first. $-\frac{2}{2} = -2.5$, which is less than -2.47 . I know that $-\frac{2}{5}$ is the greatest of the negative numbers, because it is between -1 and 0 . In order from least to greatest, these numbers are $-\frac{2}{2}$, -2.47 , and $-\frac{2}{5}$. Next, I'll compare the positive numbers. $\frac{21}{4} = 5.25$, which is greater than 5 . My choice is H.

David thinks . . .

I'll write all the fractions as decimals. $-\frac{2}{5} = -\frac{2 \times 2}{5 \times 2} = -\frac{4}{10} = -0.4$
 $-\frac{2}{2} = -\frac{2 \times 5}{2 \times 5} = -\frac{10}{10} = -1.0$
 $\frac{21}{4} = \frac{5 \times 4 + 1}{4 \times 25} = \frac{25}{100} = 0.25$
Now I'll include -2.47 and 5 , and order the decimals from least to greatest: -1.0 , -2.47 , -0.4 , 5 , 5.25 . My choice is F.

- Alicia finds that $-\frac{2}{2}$ is greater than | less than -2.47 .
- David finds that -0.4 is greater than | less than -2.47 .

4 Grade 6 Math Zingers Solving the Most-Missed STAAR Test Items

LOOK BACK Answer each question.

- Alicia | David finds the correct answer. Explain the mistake the other student made. _____
- Another student wrote all the numbers as fractions with the same denominator. Which denominator could the student have used? Explain your answer. _____
- The correct answer choice is F | G | H | J .

Show your thinking.

GUIDED PRACTICE Read the problem carefully.

Which list shows the numbers in order from greatest to least?

- A $1\frac{2}{3}$, $1\frac{3}{8}$, $-\frac{1}{4}$, $-\frac{7}{8}$, $-\frac{3}{4}$
- B $1\frac{2}{3}$, $1\frac{3}{8}$, $-\frac{3}{4}$, $-\frac{7}{8}$, $-1\frac{1}{4}$
- C $-\frac{1}{4}$, $-\frac{7}{8}$, $-\frac{3}{4}$, $1\frac{2}{3}$, $1\frac{3}{8}$
- D $1\frac{3}{8}$, $1\frac{2}{3}$, $-\frac{3}{4}$, $-\frac{7}{8}$, $-1\frac{1}{4}$

- The least common denominator of the fractions is 12 | 24 | 48 . Write each fraction with this denominator.

$$-\frac{1}{4} = -1 \frac{\square}{\square} \quad -\frac{7}{8} = -\frac{\square}{\square} \quad 1\frac{3}{8} = 1 \frac{\square}{\square} \quad 1\frac{2}{3} = 1 \frac{\square}{\square} \quad -\frac{3}{4} = -\frac{\square}{\square}$$

- The fraction $-\frac{21}{24}$ is greater than | less than $-\frac{18}{24}$.

- Order the rewritten numbers from greatest to least. _____

Complete the step-by-step solution.

- The correct answer choice is A | B | C | D .

INDEPENDENT PRACTICE Solve each problem.

- Order the numbers $1\frac{3}{25}$, -0.8 , $1\frac{1}{10}$, -1.18 , and $-\frac{3}{5}$ from least to greatest. _____

- Order the numbers $\frac{5}{9}$, $-\frac{2}{9}$, $-\frac{4}{9}$, $-\frac{1}{3}$, and $\frac{2}{3}$ from greatest to least. _____

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When taking the STAAR Grade 6 Math test, you will have both graph paper and scratch paper. You will also have a 2-page **Reference Sheet** that is on the inside of the covers of this workbook.

ZINGER 6

6.7D Generate equivalent expressions using the properties of operations: inverse, identity, commutative, associative, and distributive properties.

READ and UNDERSTAND Read the problem carefully. 74% of students missed this one!

Regina writes the expression $y + 9 \cdot \frac{3}{4}$. Which expression is equivalent to the one Regina writes?

STAAR Grade 6 2019 #23

- A $(9 \cdot 3 \div 4) + y$
- B $9 + y \cdot (3 \div 4)$
- C $(y + 9)(3 \div 4)$
- D None of these

1. The expression Regina wrote **includes** | **does not include** a fraction.
The answer choices **include** | **do not include** a fraction .
2. The correct answer is an expression equivalent to $y + 9 \cdot \frac{3}{4}$. This means that for any value of y , it will be **equal to** | **not equal to** $y + 9 \cdot \frac{3}{4}$.

PLAN and SOLVE Read what each student thinks.

Diego thinks . . .

I will check whether I can write each answer choice as the expression Regina wrote, $y + 9 \cdot \frac{3}{4}$.

For B, the 9 and y can be switched, because $9 + y$ is the same as $y + 9$.

$$9 + y \cdot (3 \div 4) = y + 9 \cdot (3 \div 4)$$

Then, $3 \div 4$ can be written as $\frac{3}{4}$, so

$$y + 9 \cdot (3 \div 4) = y + 9 \cdot \frac{3}{4}$$

My choice is B.

Luis thinks . . .

I should be able to write Regina's expression as the correct answer choice.

I will write $\frac{3}{4}$ as a division expression.

$$y + 9 \cdot \frac{3}{4} = y + 9 \cdot 3 \div 4$$

Order of operations tells me to evaluate $9 \cdot 3 \div 4$, then add it to y . Since adding gives the same answer in either order,

$$y + 9 \cdot 3 \div 4 = (9 \cdot 3 \div 4) + y$$

My choice is A.

3. Diego **correctly** | **incorrectly** writes $3 \div 4$ as $\frac{3}{4}$.
4. Luis switches the order of y and **9** | **$3 \div 4$** | **$9 \cdot 3 \div 4$** .

LOOK BACK Answer each question.

5. Diego thinks 9 and y are addends that can be switched. The addends in the expression $9 + y \cdot (3 \div 4)$ are 9 and **y** | **$y \cdot (3 \div 4)$** | **$(3 \div 4)$** .

6. One way to check whether expressions are equivalent is to use substitution. For example, when $y = 3$, the value of $y + 9 \cdot \frac{3}{4}$ is _____, and the value of expression C, $(y + 9)(3 \div 4)$, is _____.
- So these expressions are | are not equivalent.

7. The correct answer choice is A | B | C | D .

GUIDED PRACTICE Read the problem carefully.

Which two expressions are equivalent?

STAAR Grade 6 2016 #52

- | | |
|----------------------------|-----------------------------|
| F $9(6 + x)$ | H $8 \cdot 6 \div x$ |
| $9 \cdot 6 + 9 \cdot x$ | $8 \cdot x \div 6$ |
| G $x + (8 \cdot 9)$ | J $6 \cdot x + 3$ |
| $(x + 8) \cdot 9$ | $6 \cdot (x + 3)$ |

8. The distributive property says that $a(b + c) = a \cdot b +$ _____. In choice F, $9(6 + x)$ is | is not equivalent to $9 \cdot 6 + 9 \cdot x$.
9. By order of operations, if there are no parentheses you should add | multiply before you add | multiply . This means that $6 \cdot x + 3$ is equivalent to $(6 \cdot x) + 3$ | $6 \cdot (x + 3)$, and $x + 8 \cdot 9$ is equivalent to $(x + 8) \cdot 9$ | $x + (8 \cdot 9)$.
10. By the commutative property of addition, $a + b = b + a$. Another commutative property says that $a \cdot b = b \cdot a$ | $a \div b = b \div a$. In choice H, $6 \div x$ is | is not equivalent to $x \div 6$.
11. The correct answer choice is F | G | H | J .

INDEPENDENT PRACTICE Solve each problem.

12. Choose all pairs of expressions that are equivalent.

$$\begin{array}{ccc} 78 + 5 + 5 & | & 138 \cdot 5 \cdot 2 \\ 78 + 10 & | & 138 \cdot 5^2 \\ 16 + 97 + 4 & | & 97 + 20 \end{array}$$

13. Choose all expressions that are equivalent to $y + x$.

$$1 \cdot (y + x) \quad | \quad x + y \quad | \quad x - y \quad | \quad 0 \cdot (y + x) \quad | \quad 0 + (y + x)$$

14. Choose all pairs of expressions that are equivalent.

$$\begin{array}{ccccccc} y - x & | & y \cdot x & | & y \div x & | & y^2 \\ x - y & | & x \cdot y & | & x \div y & | & 2 \cdot y \\ 0 \cdot (y + x) & | & y + x + z & & & & \end{array}$$

15. Choose all expressions that are equivalent to another expression shown.

$$y - 6x \quad | \quad (y - x) \cdot 6 \quad | \quad 6y - 6x \quad | \quad 6y - x \quad | \quad 6(y - x) \quad | \quad 6(y - 6x)$$

ZINGER 13

6.6C Represent a given situation using verbal descriptions, tables, graphs, and equations in the form $y = kx$ or $y = x + b$.

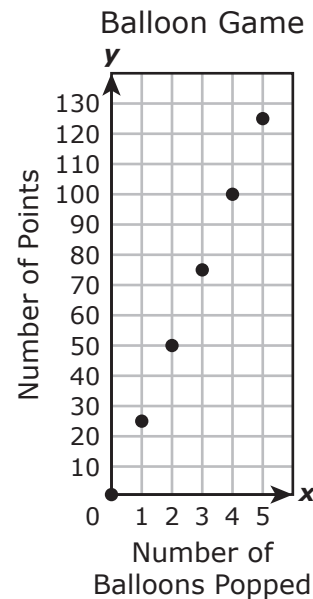
READ and UNDERSTAND Read the problem carefully. 52% of students missed this one!

The graph shows the number of points, y , a player earns in a balloon game based on the number of balloons the player pops, x .

Which equation best represents the relationship between x and y ?

STAAR Grade 6 2017 #13

- A $y = x + 25$
- B $x = y + 25$
- C $x = 25y$
- D $y = 25x$



- The x -values of the points on the graph represent the number of **balloons** | **points**, and the y -values represent the number of **balloons** | **points**.
- The correct answer is a(n) **equation** | **graph** | **verbal description** that represents the relationship between x and y .

PLAN and SOLVE Read what each student thinks.

Eito thinks. . .

I'll pick a point from the graph that is not at the origin, and see if its x - and y -values work in each equation. I'll use (2, 50).

- A $50 \neq 2 + 25$
- B $2 \neq 50 + 25$
- C $2 \neq 25(50)$
- D $50 = 25(2)$

So, my choice is D.

Paulina thinks. . .

I'll make a table of the x - and y -values of the points in the graph.

x	0	1	2	3	4	5
y	0	25	50	75	100	125

When the x -value increases by 1, the y -value increases by 25.

Choice B shows adding 25 to y , so I choose B.

- Eito substitutes the x - and y -values from (2, 50) into each equation **correctly** | **incorrectly**.
- Paulina records the x - and y -values in the table **correctly** | **incorrectly**.

LOOK BACK Answer each question.

- Could Eito have substituted the values from the point (0, 0) into each equation to find the correct answer? Explain your answer. _____

- In Paulina's table, each y-value is 25 **plus** | **times** the corresponding x-value. How can you use this pattern to choose the correct answer?

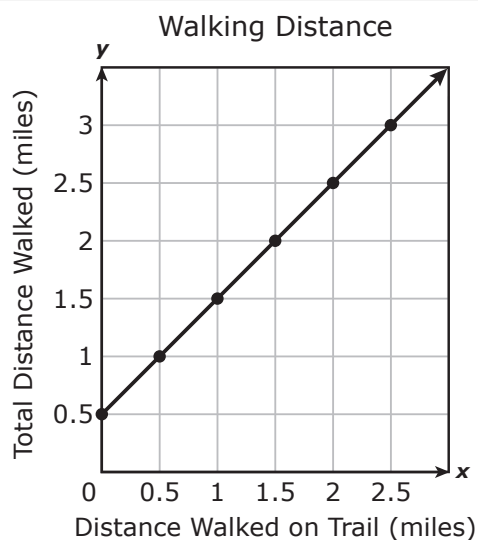
- The correct answer choice is **A** | **B** | **C** | **D** .

GUIDED PRACTICE Read the problem carefully.

Susan often walks to a trail near her house, then continues walking on the trail. The graph shows the total distance in miles Susan walks, y , based on the distance in miles she walks on the trail, x .

Which equation best represents the relationship between x and y ?

- F** $x = y + 0.5$
- G** $y = x + 0.5$
- H** $x = 0.5y$
- J** $y = 0.5x$



- Circle the coordinate pairs that represent points on the graphed line.
(0, 0.5) | (1, 2) | (2, 1.5) | (2.5, 3)
- Each answer choice includes the decimal _____. The y-value of each point is equal to the x-value **plus** | **times** this number.
- The correct answer choice is **F** | **G** | **H** | **J** .

INDEPENDENT PRACTICE Use your own paper to graph each set of points. Then write an equation to represent the relationship between x and y .

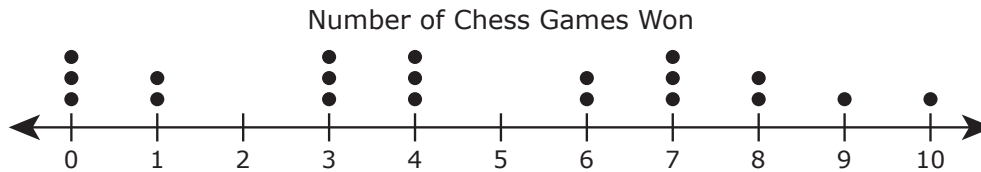
- Graph the points (0, 6), (1, 7), (2, 8), and (3, 9).
The equation is _____.
- Graph the points (0, 0), (4, 1), (8, 2), and (12, 3).
The equation is _____.

6.12C Summarize numeric data with numerical summaries, including the mean and median (measures of center) and the range and interquartile range (IQR) (measures of spread), and use these summaries to describe the center, spread, and shape of the data distribution.

READ and UNDERSTAND Read the problem carefully. **64% of students missed this one!**

The dot plot shows the number of chess games won by each of the 20 students in a competition.

STAAR Grade 6 2016 #34



Which statement about the data is true?

- F** The median is 4, and the interquartile range is 10.
- G** The median is 4, and the interquartile range is 5.
- H** The median is 5, and the interquartile range is 10.
- J** The median is 5, and the interquartile range is 5.

- The dot plot has a total of _____ dots, and each dot represents one student | game .
- Each answer choice is a statement about the _____ and the interquartile range (IQR) of the data.

PLAN and SOLVE Read what each student thinks.

Tyler thinks . . .

The median is the middle data point. There are 20 points and the tenth one is 4, so the median is 4. I can eliminate H and J.

The least data point is 0 and the greatest data point is 10, so the range is $10 - 0 = 10$.

My choice is F.

Benito thinks . . .

First I'll write out the data:

*0, 0, 0, 1, 1, 3, 3, 3, 4, 4,
4, 6, 6, 7, 7, 7, 8, 8, 9, 10*

The data set has an even number of values, so the median, or Q2, is the mean of the middle two values. The middle two values are both 4, so the median is 4.

The IQR is $Q3 - Q1$. Q1 is the median of the lower half, so Q1 is 2. Q3 is the median of the upper half, or 7. The IQR is $7 - 2 = 5$.

My choice is G.

- Tyler's values for the median and range are correct | incorrect .
- Benito correctly | incorrectly finds Q1, Q2, and Q3.

LOOK BACK Answer each question.

5. What is Tyler's mistake? Explain. _____

6. The correct answer choice is **F | G | H | J** .

GUIDED PRACTICE Read the problem carefully.

The dot plot shows the number of items purchased by 18 customers at a store.

Number of Items Purchased



Which statement about the data is true?

- A** The range is 8, and the interquartile range is 4.
- B** The range is 10, and the interquartile range is 5.
- C** The range is 8, and the interquartile range is 5.
- D** The range is 10, and the interquartile range is 4.

7. The range, or the maximum value minus the minimum value, is _____ .
8. There are 18 data points, so there are _____ data points in the lower half.
 Find Q1, the median of the lower half of the data. _____
9. Find Q3, the median of the upper half of the data. _____
10. The interquartile range, or Q3 minus Q1, is _____ .
11. The correct answer choice is **A | B | C | D** .

INDEPENDENT PRACTICE Answer each question. Use the dot plot above.

12. What is the median number of items purchased? _____
13. Add a data value of 3 to the dot plot. Now there are 19 data points.
 Find each measure for the new data set.
 range: _____ median: _____ Q1: _____
 Q3: _____ interquartile range: _____

STAAR GRADE 6 MATHEMATICS REFERENCE MATERIALS

AREA

Triangle

$$A = \frac{1}{2}bh$$

Rectangle or parallelogram

$$A = bh$$

Trapezoid

$$A = \frac{1}{2}(b_1 + b_2)h$$

VOLUME

Rectangular prism

$$V = Bh$$

Inches

0

1

2

3

4

5

6

7

8

To obtain a copy of the remaining answers
to this Sampler, email:

Teachers@SiriusEducationSolutions.com

SAMPLER

GRADE 6 MATH ZINGERS CONTENTS

Part 1: ZINGERS

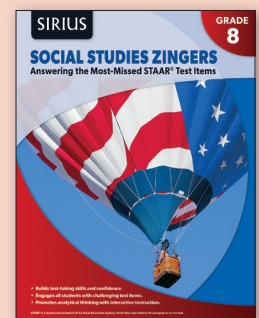
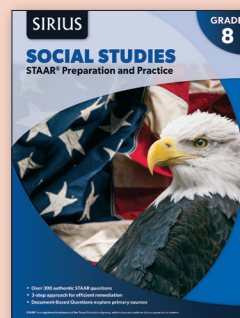
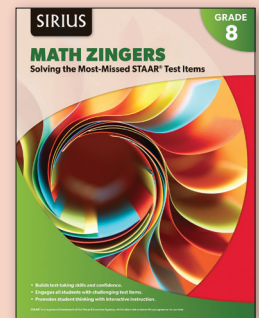
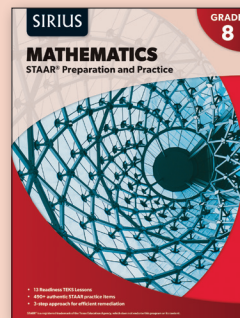
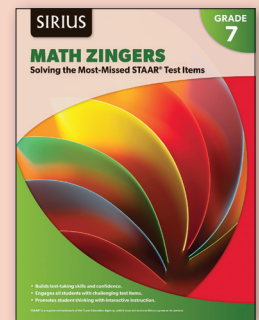
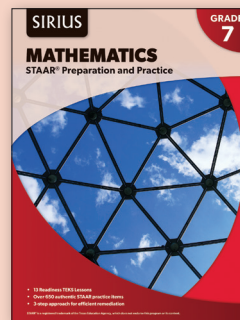
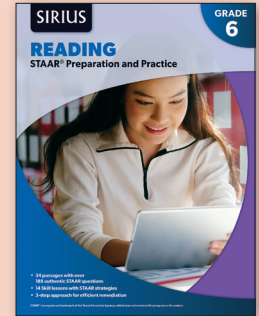
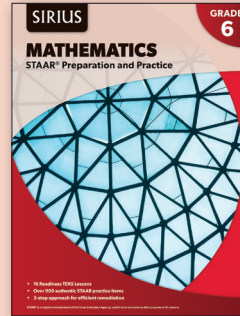
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Zinger 7	66% Incorrect
Zinger 8	55% Incorrect
Zinger 9	57% Incorrect
Zinger 10	70% Incorrect
Zinger 11	47% Incorrect
Zinger 12	60% Incorrect
Zinger 13	52% Incorrect
Zinger 14	60% Incorrect
Zinger 15	65% Incorrect
Zinger 16	62% Incorrect
Zinger 17	64% Incorrect
Zinger 18	69% Incorrect
Zinger 19	60% Incorrect
Zinger 20	58% Incorrect
Zinger 21	62% Incorrect
Zinger 22	62% Incorrect
Zinger 23	66% Incorrect
Zinger 24	57% Incorrect

Use with your class for free!

Part 2: ON YOUR OWN

16 Mixed Readiness TEKS
STAAR Practice Items

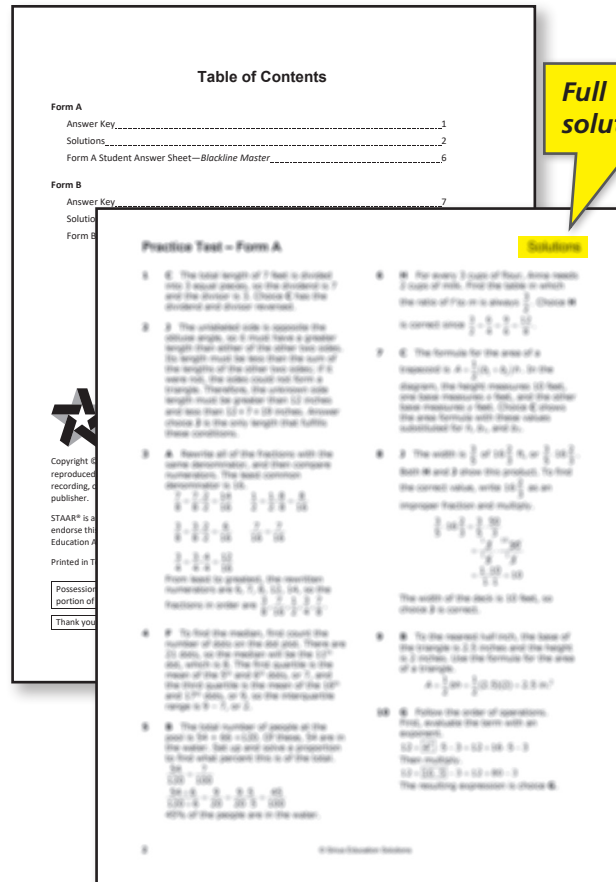
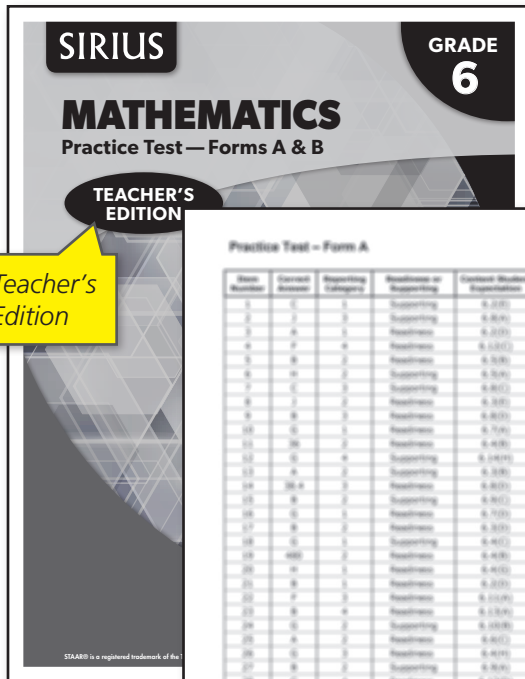
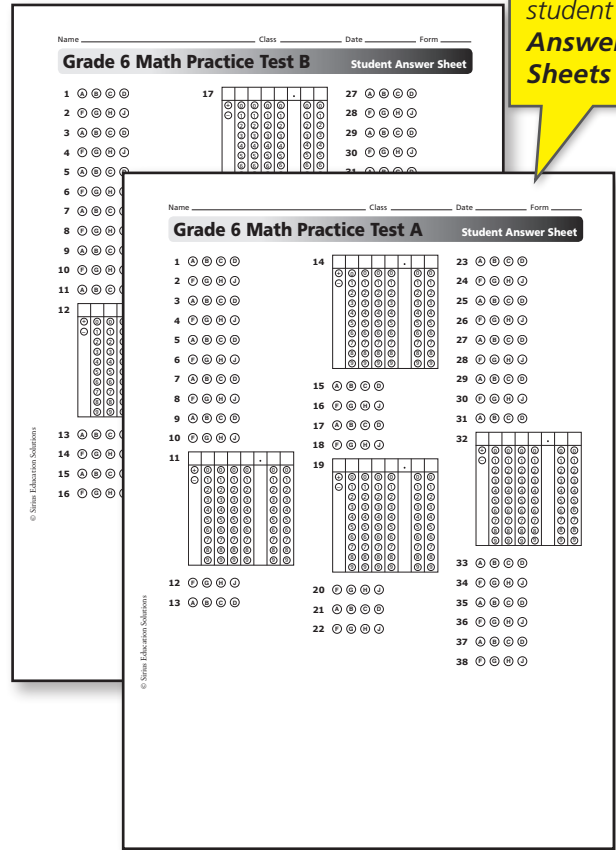
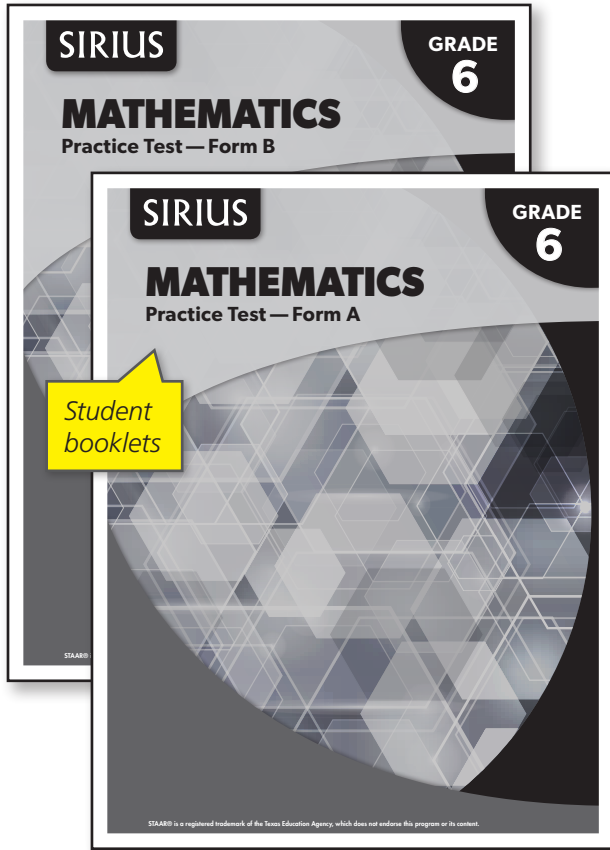
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STAAR GRADE 6 MATHEMATICS Practice Tests Forms A & B

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

Includes
student
Answer
Sheets



Practice Test - Form A

Item Number	Correct Answer	Reporting Category	Readiness or Supporting	Common Student Expectation	Assessed Student Expectation
1	C	1	Supporting	6.2(2)	6.1A, 6.1B, 6.1F
2	D	1	Supporting	6.2(4)	6.1B, 6.1C, 6.1F
3	A	1	Supporting	6.2(1)	6.1B, 6.1F
4	B	1	Supporting	6.2(1)	6.1B, 6.1C, 6.1D, 6.1E
5	B	1	Supporting	6.2(8)	6.1B, 6.1C, 6.1F
6	B	1	Supporting	6.2(4)	6.1B, 6.1C, 6.1D, 6.1F
7	C	1	Supporting	6.2(1)	6.1B, 6.1C, 6.1D, 6.1E, 6.1F
8	D	1	Supporting	6.2(2)	6.1B, 6.1C, 6.1D, 6.1E
9	B	1	Supporting	6.2(1)	6.1B, 6.1C, 6.1D, 6.1F
10	D	1	Supporting	6.2(1)	6.1B, 6.1F
11	D	1	Supporting	6.2(1)	6.1B, 6.1C, 6.1D, 6.1F
12	D	1	Supporting	6.2(1)	6.1B, 6.1F
13	A	1	Supporting	6.2(1)	6.1B, 6.1C, 6.1D, 6.1F
14	A	1	Supporting	6.2(8)	6.1B, 6.1D
15	B	1	Supporting	6.2(1)	6.1B, 6.1C, 6.1F
16	B	1	Supporting	6.2(1)	6.1B, 6.1C, 6.1D, 6.1E
17	B	1	Supporting	6.2(1)	6.1B, 6.1F
18	B	1	Supporting	6.2(1)	6.1B, 6.1C, 6.1D, 6.1F
19	D	1	Supporting	6.2(1)	6.1B, 6.1C, 6.1F
20	A	1	Supporting	6.2(1)	6.1B, 6.1C, 6.1D, 6.1E
21	A	1	Supporting	6.2(1)	6.1B, 6.1C, 6.1D, 6.1E
22	B	1	Supporting	6.2(1)	6.1B, 6.1F
23	C	1	Supporting	6.2(1)	6.1B, 6.1C, 6.1D, 6.1F
24	B	1	Supporting	6.2(1)	6.1B, 6.1C, 6.1D, 6.1F
25	B	1	Supporting	6.2(1)	6.1B, 6.1C, 6.1D, 6.1F
26	B	1	Supporting	6.2(1)	6.1B, 6.1C, 6.1D, 6.1F
27	B	1	Supporting	6.2(1)	6.1B, 6.1C, 6.1D, 6.1F
28	B	1	Supporting	6.2(1)	6.1B, 6.1C, 6.1D, 6.1F
29	B	1	Supporting	6.2(1)	6.1B, 6.1C, 6.1D, 6.1F
30	B	1	Supporting	6.2(1)	6.1B, 6.1C, 6.1D, 6.1F
31	B	1	Supporting	6.2(1)	6.1B, 6.1C, 6.1D, 6.1F
32	D	1	Supporting	6.2(1)	6.1B, 6.1C, 6.1D, 6.1E, 6.1F
33	B	1	Supporting	6.2(1)	6.1B, 6.1C, 6.1D, 6.1E, 6.1F
34	B	1	Supporting	6.2(1)	6.1B, 6.1C, 6.1D, 6.1E, 6.1F
35	B	1	Supporting	6.2(1)	6.1B, 6.1C, 6.1D, 6.1E, 6.1F
36	B	1	Supporting	6.2(1)	6.1B, 6.1C, 6.1D, 6.1E, 6.1F
37	B	1	Supporting	6.2(1)	6.1B, 6.1C, 6.1D, 6.1E, 6.1F
38	B	1	Supporting	6.2(1)	6.1B, 6.1C, 6.1D, 6.1E, 6.1F

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

GRADE 6 MATHEMATICS

STAAR Preparation and Practice

Lesson TEKS Instruction — Engaging Interactive Learning

Concise and student-friendly instruction reviews each Readiness TEKS.

Lesson 8 Solving Percent Problems

6.5B Solve real-world problems to find the whole given a part and the percent, to find the part given the whole and the percent, and to find the percent given the part and the whole, including the concrete and pictorial models.

A **percent** is a ratio that compares a number to 100. In fact, the percent symbol, %, means "per 100." Percents are rational numbers that can be rewritten as fractions and decimals. (See Lesson 4 for more about percents, fractions, and decimals.)

A percent describes the relationship between a whole amount and a part of that amount. Therefore, a situation involving percent contains a whole, a part of the whole, and a percent.

Proportion is an equation stating that two ratios are equivalent. (See Lesson 7 for more about equivalent ratios.) The relationship described by percent can be written as a proportion.

percent problem may ask you to find the part, the whole, or the percent.

Write a proportion for each percent problem. Use 7 to represent the missing number. Do not solve.

- 9 is 15% of what number? _____
- What percent of 125 is 35? _____
- What is 65% of 78? _____

Example 1 Solving Percent Problems Using Proportions

Ashton is a baseball pitcher. This season, he struck out 20% of the batters he faced. If Ashton faced 200 batters, how many did he strike out?

Use the given information to write a proportion.

Find a ratio equivalent to $\frac{20}{100}$ whose second term is 200. What number can you multiply or divide 100 by to get 200?

$\frac{20}{100} = \frac{20 \cdot 2}{100 \cdot 2} = \frac{40}{200}$ Multiply both terms in $\frac{20}{100}$ by 2.

Ashton struck out 40 batters.

Full TEKS

Student friendly instruction

Examples with full solutions

Your Turn 1

Melanie works at a produce stand. While sorting apples, she found that 12 out of 50 apples were bruised. What percentage of the apples were bruised?

Use the given information to write a proportion.

Find a ratio equivalent to $\frac{12}{50}$ whose first | second term is 100.

Multiply both terms in the ratio by _____.

_____ % Write the answer as a percent.

_____ % of the apples were bruised.

Another way to solve a percent problem is to write an equation. Use a variable to represent the missing number, and solve. (See Lesson 9 for more about solving equations.)

Write an equation for each percent problem. Use a variable to represent the missing number. Do not solve.

- 13 is 27% of what number? _____
- What percent of 297 is 99? _____
- What is 48% of 153? _____

Your Turn provides step-by-step scaffolding for students to apply what they learn in each Example.

Interactive questions reinforce key concepts and provide a quick check of understanding.

Authentic STAAR Practice

Each lesson includes authentic STAAR practice with test-taking tips.

8 STAAR Practice 6.5B

Odds	Evens
1 Out of 800 students enrolled in a recreational soccer program, 32% are sixth graders. How many students in the program are sixth graders? A 240 C 768 B 320 D 256	2 In a poll of 650 city residents, 4% did not support building a new park. How many residents polled did not support building a new park? F 260 H 26 G 40 J 162
3 In a survey of 450 students at a middle school, 90 of the students chose math as their favorite subject. What percentage of students chose math as their favorite subject? C 20% D 0.2%	4 A community center with 700 members has 56 teenage members. What percentage of the members are teenagers? F 56% G 8% H 5.6% J 80%
5 In Ms. Garcia's class, 75% of the students regularly play video games. If 18 students regularly play video games, how many students are in the class?	6 A box contains 21 green marbles. Green marbles make up 15% of all the marbles in the box. How many total marbles are in the box?

Questions are in increasing order of difficulty

Includes practice filling in grids

Ample practice with 650+ authentic STAAR questions

8 Odds Evens

- At basketball camp, Kylie made 18% of her free throws. Based on this information, which is the best prediction of the number of free throws she will make out of 50 attempts?
A 9 C 6
B 36 D 18
- In a shipment of tablets, 3% of the tablets were defective. Based on this information, which is the best prediction of the number of defective tablets in a shipment of 400?
F 3 H 12
G 90 J 12
- A teacher gave a test to three classes that contained 27, 25, and 23 students. A total of 18 students scored an A. Based on this information, which statement is true?
F Less than 20% of the students scored an A.
G More than 30% of the students scored an A.
H Between 25% and 30% of the students scored an A.
J Between 20% and 25% of the students scored an A.
- Nate surveyed 80 students at his school. The shaded squares in the grid below represent the 35% of the students who said they walk to school.
- A veterinary clinic saw 45 pets on Monday. The shaded squares in the grid below represent the 60% of pets seen on Monday that were dogs.

Matching questions are minimally different to promote careful reading and thinking.

Tips alert students to key facts.

Move More Students to Meets and Masters!