SIRIUS
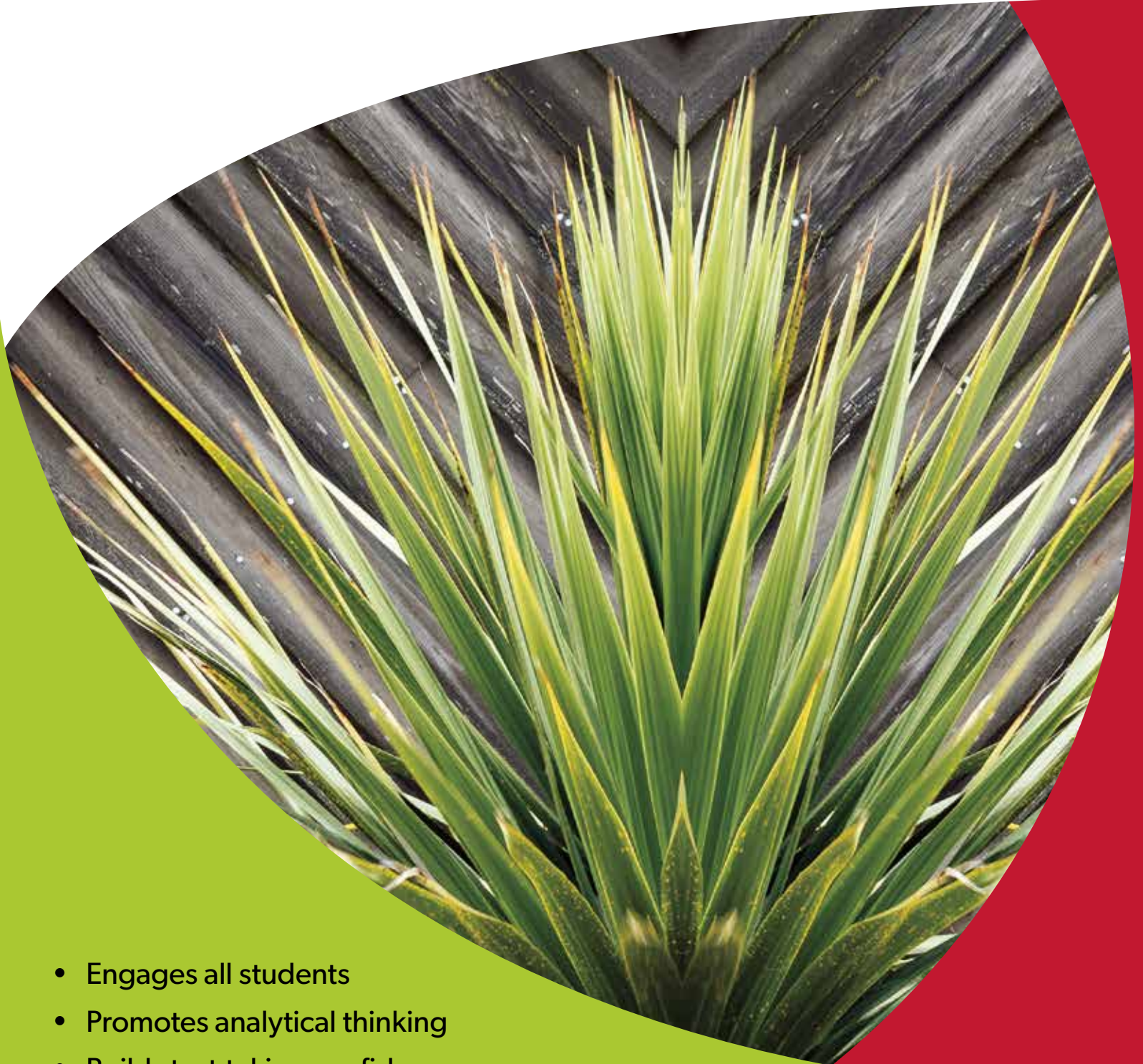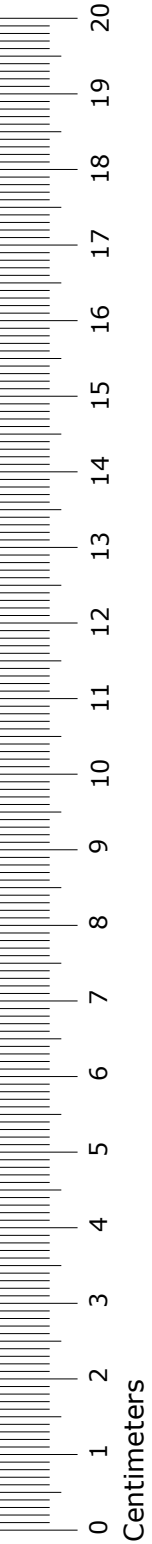
GRADE 3

MATH ZINGERS

Solving the Most-Missed STAAR® Test Items

- Engages all students
- Promotes analytical thinking
- Builds test-taking confidence

STAAR GRADE 3 MATHEMATICS REFERENCE MATERIALS

20

19

18

17

16

15

14

13

12

11

10

9

8

7

6

5

4

3

2

1

0

Centimeters

This page shows only
the metric ruler.

Sampler

Table of Contents

❶ Zingers—Solving the Most-Missed STAAR Test Items (Spring 2016–2017)

	Percent Answering Incorrectly	TEKS	Correlations to *Grade 3 Math: Readiness Review and Practice*	Page	Date Due	Done
Zinger 1	40%	3.2D	Lesson 2	2		
Zinger 2	53%	3.3F	Lesson 3	4		
Zinger 3	30%	3.3H	Lesson 4	6		
Zinger 4	35%	3.3H	Lesson 4	8		
Zinger 5	41%	3.4A	Lesson 5	10		
Zinger 6	42%	3.4A	Lesson 5	12		
Zinger 7	39%	3.4K	Lesson 6	14		
Zinger 8	38%	3.4K	Lesson 6	16		
Zinger 9	30%	3.5A	Lesson 7	18		
Zinger 10	40%	3.5A	Lesson 7	20		
Zinger 11	45%	3.5B	Lesson 8	22		
Zinger 12	56%	3.5B	Lesson 8	24		
Zinger 13	35%	3.5E	Lesson 9	26		
Zinger 14	44%	3.5E	Lesson 9	28		
Zinger 15	34%	3.6A	Lesson 10	30		
Zinger 16	33%	3.6C	Lesson 11	32		
Zinger 17	36%	3.7B	Lesson 12	34		
Zinger 18	60%	3.7B	Lesson 12	36		
Zinger 19	33%	3.8A	Lesson 13	38		
Zinger 20	37%	3.8A	Lesson 13	40		

❷ On Your Own—Mixed Readiness Practice (13 STAAR Test Items)

	TEKS	Correlations to *Grade 3 Math: Readiness Review and Practice*		TEKS	Correlations to *Grade 3 Math: Readiness Review and Practice*
1	3.6A	Lesson 10	8	3.5E	Lesson 9
2	3.5A	Lesson 7	9	3.4K	Lesson 6
3	3.2A	Lesson 1	10	3.6C	Lesson 11
4	3.3H	Lesson 4	11	3.5B	Lesson 8
5	3.8A	Lesson 13	12	3.4A	Lesson 5
6	3.2D	Lesson 2	13	3.7B	Lesson 12
7	3.3F	Lesson 3			

Dear Student,

You are amazing! A test cannot show how great you are.

What the STAAR Test Does Not Show

Kind

Fair

Helpful

Brave

Caring

Honest

Creative

Funny

DyslexicKids.net
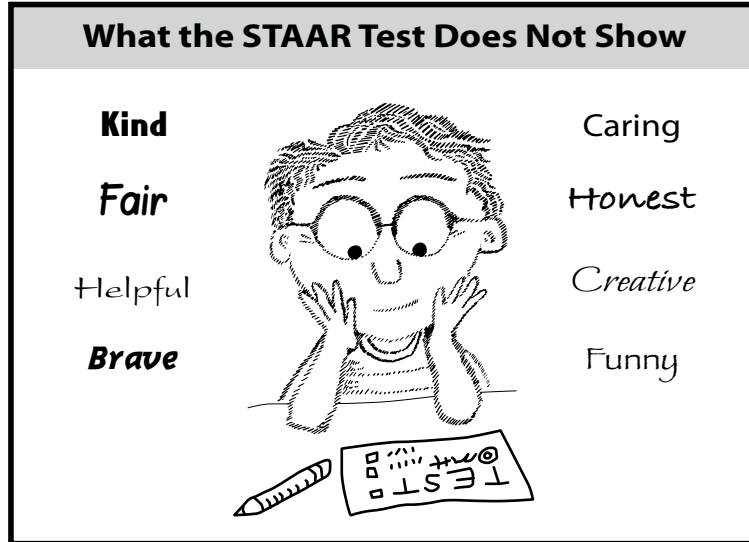
You will take the STAAR Grade 3 Math Test this year. It might be different from other tests. Don't worry. This book will help you.

What's a Zinger?

Some problems on the test were hard for other students. Those are Zingers!

Pssst! Here's a secret. They won't be hard for *you*. Why not? This book will teach you how to solve them.

Practice Smart

Here's another secret. If you practice, you can do well on the STAAR Test. But practice *smart*. Solve problems like the ones on the test. In this book, you can practice smart in every lesson.

Getting ready for the test can be fun! Read the lessons carefully. Solve the practice problems. Keep trying. You can do it!

Your STAAR success coaches,
The Sirius Education Team

Sampler

How to Take the Zing Out of Zingers!

You can solve Zingers! Follow these steps. They will help you do better on test problems.

STEP 1 READ and UNDERSTAND Read the problem carefully.

READ and UNDERSTAND Read the problem carefully. 45% of students missed it!

To make posters, 6 students each collected 8 pictures of animals. The students put 4 animal pictures on each poster they made. Which equation shows one way to find the number of posters the students made?

A $6 + 8 + 4 = 18$ 　　　　　 **C** $6 \times 8 \times 4 = 192$

B $6 \times 8 \div 4 = 12$ 　　　　　 **D** $6 + 8 - 4 = 10$

STAAR Grade 3 2016 #24

1. There were **6** | **8** | **4** students. Each student collected **6** | **8** | **4** pictures.

2. How many pictures were on each poster? _____

---

1. Look at the numbered questions below the boxed problem. How can these questions help you solve the problem?

_____

_____

If you are not sure how to solve this problem, that's OK! Go on to the next section. If you do know how, solve the problem now. But don't stop here! Keep reading. You may learn another method.

STEP 2 PLAN and SOLVE Read how two students solved the problem.

PLAN and SOLVE Read what each student thinks.

Daisy thinks . . .

Each student collected 8 pictures, so that's $6 \times 8 = 48$ pictures in all. Then they put 4 pictures on each poster.

$$\begin{array}{r} 12 \\ 4\overline{)48} \\ -4 \\ \hline 08 \\ -8 \\ \hline 0 \end{array}$$

*My choice is **B**.*

Carla thinks . . .

*First I would multiply 6 by 8 to find how many pictures they collected. So I can eliminate **A** and **D**.*

Then I would multiply by 4 because each poster has 4 pictures.

*My choice is **C**.*

---

2. These two students' answers are **different** | **the same** .

So, it **is** | **is not** possible for both students to be right.

As you read what each student thinks, try to find mistakes. Then you won't make the same mistakes yourself.

STEP 3 LOOK BACK   What did you learn by seeing how other students solved the problem?

> LOOK BACK   **Answer each question.**
>
> **6.** Tell why Carla's answer is not correct. _____
>
> _____

Did you learn a new way to solve the problem? Knowing different ways to solve problems helps you on the test.

STEP 4 GUIDED PRACTICE   Now solve a similar problem. The steps below the problem can help you solve it.

> GUIDED PRACTICE   **Read the problem carefully.**
>
> A classroom currently contains 6 rows of chairs with 5 chairs per row. On parents' night the classroom had twice as many chairs.
>
> Which number sentence can be used to find the number of chairs in the classroom on parents' night?
>
> **F** $6 + 5 + 2 = \boxed{}$ **H** $6 \times 5 \div 2 = \boxed{}$
>
> **G** $6 \times 5 \times 2 = \boxed{}$ **J** $6 + 5 \times 2 = \boxed{}$
>
> *STAAR Grade 3 2017 #21*

10. On parents' night, there were _____ as many chairs.

That means you would   **multiply | divide**   the current

number by _____ to find the number on parents' night.

STEP 5 INDEPENDENT PRACTICE   Finally, try these problems on your own. Use everything you have learned. You can do it!

> INDEPENDENT PRACTICE   **Solve the problem.**
>
> **12.** Mario makes a poster for science class. First he draws 4 rows of 9 seashells each. Then he circles equal groups of shells. In all, he draws 6 circles. Fill in the number sentence to show one way to find the number of shells in each circle.
>
> $4 \times \underline{\boxed{}} 6 = 6$

Solving STAAR problems takes time. Work carefully, and write neatly. If you get a wrong answer, look at your work. Try to find your mistake. If you understand a mistake, you may not make it again.

ZINGER 5

3.4A Solve with fluency one-step and two-step problems involving addition and subtraction within 1,000 using strategies based on place value, properties of operations, and the relationship between addition and subtraction.

READ and UNDERSTAND   Read the problem carefully. 41% of students missed it!

Mr. Thompson sold 247 meals on Tuesday at his restaurant. He sold 516 meals on Wednesday. What is the difference between the numbers of meals Mr. Thompson sold on these two days?   *STAAR Grade 3 2016 #46*

A 763

B 331

C 379

D 269

1. Mr. Thompson sold 247 meals on _____ and 516 meals on _____ .

2. You want to find the   **difference | total**   of the numbers of meals sold on these two days.

PLAN and SOLVE   Read what each student thinks.

Dalila thinks . . .

*The word "difference" means subtract. So **A** can't be right, because 763 is bigger than both 247 and 516.*
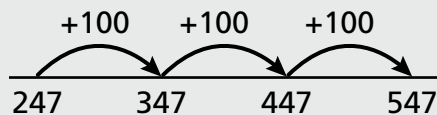
516 is close to 500 and 247 is close to 250. The difference is about 500 − 250 = 250.

$$\begin{array}{r} {\scriptstyle 4\ \ 10\ \ 16} \\ \cancel{5}\cancel{1}\cancel{6} \\ -\ 247 \\ \hline 269 \end{array} \qquad \begin{array}{l} \text{Check:} \end{array} \qquad \begin{array}{r} {\scriptstyle 1\ 1} \\ 247 \\ +\ 269 \\ \hline 516\ \checkmark \end{array}$$

*My choice is **D**.*

Keenan thinks . . .

I'll start at 247 and add on.

+100   +100   +100

247   347   447   547

Adding on 200 makes 447. That's too small. But adding on 300 makes 547, and that's too big. The right answer must be between 200 and 300.

*My choice is **D**.*

3. Dalila   **adds | subtracts**   to find the answer. Then she **adds | subtracts**   to check.

4. Keenan   **adds | subtracts**   and compares the result to _____ .

5. Why does Keenan choose **D**?

_____

_____

LOOK BACK **Answer each question.**

6. Could Dalila have used her estimate to find the correct answer? Explain. _____

_____

7. Whose way of solving the problem do you like better? Why?

_____

_____

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

GUIDED PRACTICE **Read the problem carefully.**

Adyssen started with $87 in her bank account. She put $213 into her account last week and another $137 this week.

What is the total amount Adyssen now has in her bank account?

Record your answer in the boxes. Be sure to use the correct place value.

STAAR Grade 3 2016 #35

9. Adyssen started with $_____. Last week she added $_____. The sum of these two amounts is $_____.

10. The total amount she has now equals the sum you found in **#9**   plus | minus $137.

11. The correct answer is _____. Write this number in the grid and fill in the bubbles.

INDEPENDENT PRACTICE **Solve the problem.**

12. The table shows the numbers of pieces in four puzzles. Derek put together the two puzzles that had the greatest numbers of pieces. What is the total number of pieces in these two puzzles?
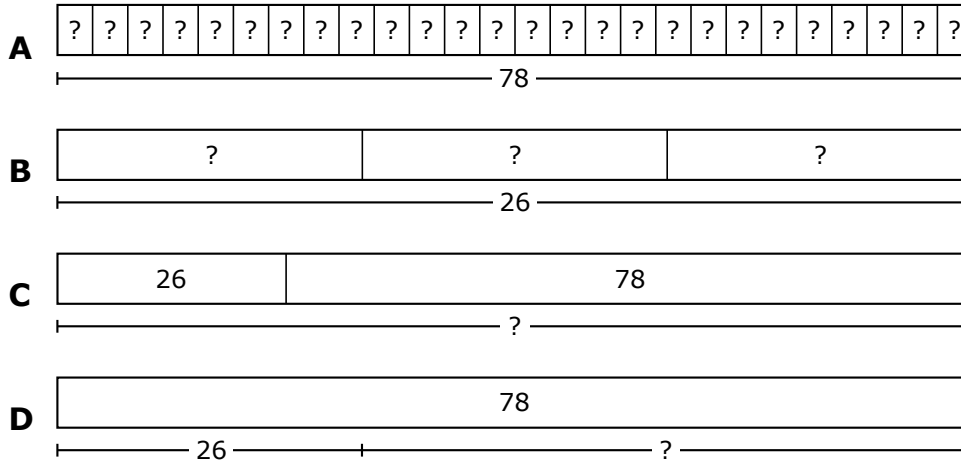
Puzzle Pieces

Puzzle	Number of Pieces
Lion	402
Boat	498
Garden	419
Waterfall	473

_____

ZINGER 12

3.5B Represent and solve one- and two-step multiplication and division problems within 100 using arrays, strip diagrams, and equations

READ and UNDERSTAND   Read the problem carefully. 56% of students missed it!

Edward made 26 hamburgers. He used a total of 78 pickle slices on the hamburgers. He put the same number of pickle slices on each hamburger. Which diagram shows how to find the number of pickle slices Edward put on each hamburger?   *STAAR Grade 3 2016 #14*

A | ? | ? | ? | ? | ? | ? | ? | ? | ? | ? | ? | ? | ? | ? | ? | ? | ? | ? | ? | ? | ? | ? | ? | ? | ? | ? |
⊢————————— 78 —————————⊣

B | ? | ? | ? |
⊢————————— 26 —————————⊣

C | 26 | 78 |
⊢————————— ? —————————⊣

D | 78 |
⊢——— 26 ———⊢——————— ? ———————⊣

1. Edward put a total of   **26 | 78**   pickle slices on

   26 | 78   hamburgers.

2. Each hamburger had   **the same | a different**   number of pickle slices.

3. You want to choose the diagram that shows how to find the

   number of pickle slices   **in all | on each hamburger**   .

PLAN and SOLVE   Read what each student thinks.

Angel thinks . . .

The problem is about dividing 78 pickles by 26 hamburgers. C and D show adding, so I can cross them out. A shows a total of 78 divided into 26 equal boxes. My choice is A.

Sawyer thinks . . .

The problem is about adding 26 pickles to 78 hamburgers. C and D are the only diagrams with 26 and 78. C shows 78 + 26 and D shows 78 − 26. My choice is C.

4. Angel thinks the problem is about   **addition | division**   .

5. Sawyer thinks the problem is about   **addition | division**   .

LOOK BACK   **Answer each question.**

6. Angel   **is** | **is not**   correct to eliminate **C** and **D**.

7. Sawyer thinks diagrams without the numbers 26 and 78

   **may** | **cannot**   be correct. Do you agree? Explain.

_____

_____

_____

8. The correct answer is   **A** | **B** | **C** | **D** .

GUIDED PRACTICE   **Read the problem carefully.**

Gina has 42 mushrooms to put into 6 salads. She wants to put the same number of mushrooms in each salad.

Which strip diagram shows how to find the number of mushrooms that Gina should put in each salad?   *STAAR Grade 3 2017 #9*

F | 7 | 7 | 7 | 7 | 7 | 7 |

G | 6 | 6 | 6 | 6 | 6 | 6 |

H | 42 | 42 | 42 | 42 | 42 | 42 |

J | 7 | 7 | 7 | 7 | 7 | 7 | 7 |
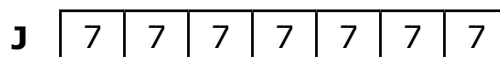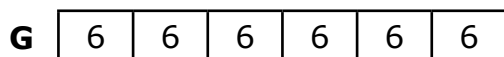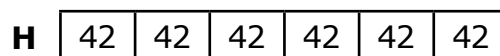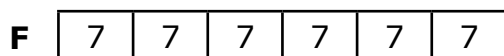
9. The diagrams are divided into boxes. Each box represents

   a **salad** | **mushroom** . So, in the correct diagram,

   the number of boxes is _____.

10. Look at answer **J**. How many boxes are in the diagram? _____

11. The number in a box stands for   **salads** | **mushrooms** .

   So, in the correct diagram, the total of the numbers is _____.

12. The correct answer is   **F** | **G** | **H** | **J** .

INDEPENDENT PRACTICE   **Use the diagrams above to solve the problem.**

13. Gina also puts 36 cherry tomatoes in the 6 salads. She puts
   the same number of tomatoes in each salad. Which diagram
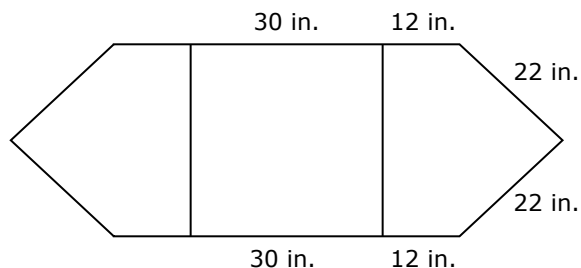   shows how to find the number of tomatoes in each salad?

   F | **G** | **H** | **J**

| ZINGER **18** | **3.7B** Determine the perimeter of a polygon or a missing length when given perimeter and remaining side lengths in problems. |

READ and UNDERSTAND   Read the problem carefully. 60% of students missed it!

Holly made a poster using two congruent pentagons and a square.

```
        30 in.    12 in.
                              22 in.



                              22 in.
        30 in.    12 in.
```

What is the perimeter of the poster in inches?

Record your answer in the boxes. Be sure to use the correct place value.   *STAAR Grade 3 2017 #14*

1. The shape in the middle is a _____. Each side is

_____ inches and   **2 | 4**   of the sides are included in the perimeter of the poster.

2. The other two shapes are congruent   **pentagons | squares** .

Their sizes   **are | are not**   the same.

3. You want to find the perimeter of   **each shape | the whole poster**

in _____.

PLAN and SOLVE   Read what each student thinks.

Jack thinks . . .

Perimeter means the distance around the poster. So I have to add all the distances.

My answer is 128 inches.

```
    30
    12
    22
    22
    12
 + 30
  128
```

Emilio thinks . . .

First, I'll add the side lengths on one end of the poster. 12 + 22 + 22 + 12 = 68
So for both ends, 68 + 68 = 136.
Now I'll add the top and bottom of the square. 136 + 30 + 30 = 196
The perimeter is 196 inches.

4. Jack's definition of perimeter

   is | is not   correct.

5. How many lengths does Jack add?

_____

6. Emilio's perimeter includes the lengths of how many sides of the poster? _____

LOOK BACK   **Answer each question.**

7. Jack's sum for the numbers he added   **is** | **is not**

correct. Why is Jack's answer incorrect? _____

_____

_____

8. The correct answer is _____ . Write this number in
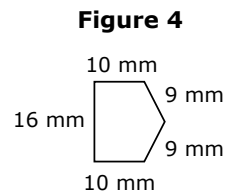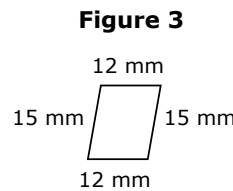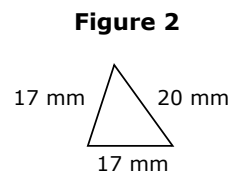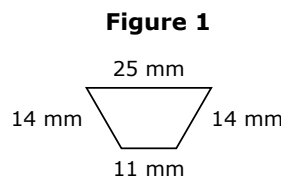the grid and fill in the bubbles.

GUIDED PRACTICE   **Read the problem carefully.**

Felix drew the figures shown.

Which list shows all the figures that
have a perimeter of 54 millimeters?

F   Figures 2, 3, and 4

G   Figures 2 and 4

H   Figures 1 and 3

J   Figures 1, 2, and 4

STAAR Grade 3 2016 #44

Figure 1

25 mm
14 mm   14 mm
11 mm

Figure 2

17 mm   20 mm
17 mm

Figure 3

12 mm
15 mm   15 mm
12 mm

Figure 4

10 mm
16 mm   9 mm
9 mm
10 mm

9. Find the perimeter of each figure.

Figure 1: 25 + 14 + 11 + _____ = _____ millimeters

Figure 2: 20 + _____ + _____ = _____ millimeters

Figure 3: _____ + _____ + _____ + _____

= _____ millimeters

Figure 4: _____ = _____ millimeters

10. The correct answer is   **F** | **G** | **H** | **J** .

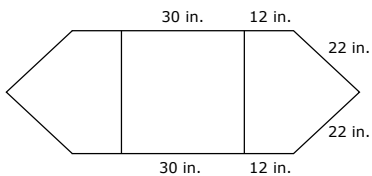**INDEPENDENT PRACTICE**   **Solve each problem.**

11. A rectangle has side lengths of 8 inches and 10 inches.

The perimeter of the rectangle is _____ inches.

12. Kate puts a fence around a square garden. Each side of
the garden is 5 meters. The total length of the fence is

_____ meters.

ZINGER 18

3.7B Determine the perimeter of a polygon or a missing length when given perimeter and remaining side lengths in problems.

READ and UNDERSTAND   Read the problem carefully. 60% of students missed it!

Holly made a poster using two congruent pentagons and a square.

30 in.   12 in.
22 in.
22 in.
30 in.   12 in.

40%

What is the perimeter of the poster in inches?

Record your answer in the boxes. Be sure to use the correct place value.   *STAAR Grade 3 2017 #14*

| 1 | 9 | 6 | . |

1. The shape in the middle is a **square** . Each side is **30** inches and (2) | 4 of the sides are included in the perimeter of the poster.

2. The other two shapes are congruent (pentagons) | squares . Their sizes (are) | are not the same.

3. You want to find the perimeter of each shape | (the whole poster) in **inches** .

PLAN and SOLVE   Read what each student thinks.

Jack thinks . . .

Perimeter means the distance around the poster. So I have to add all the distances.

My answer is 128 inches.

```
   30
   12
   22
   22
   12
+  30
  128
```

Emilio thinks . . .

First, I'll add the side lengths on one end of the poster. 12 + 22 + 22 + 12 = 68
So for both ends, 68 + 68 = 136.
Now I'll add the top and bottom of the square. 136 + 30 + 30 = 196
The perimeter is 196 inches.

4. Jack's definition of perimeter (is) | is not correct.

5. How many lengths does Jack add? **6**

6. Emilio's perimeter includes the lengths of how many sides of the poster? **10**


LOOK BACK   Answer each question.

7. Jack's sum for the numbers he added (is) | is not correct. Why is Jack's answer incorrect? **Sample answer: He does not include the lengths of the unmarked sides on the left of the poster.**

8. The correct answer is **196** . Write this number in the grid and fill in the bubbles.

GUIDED PRACTICE   Read the problem carefully.

Felix drew the figures shown.

Which list shows all the figures that have a perimeter of 54 millimeters?
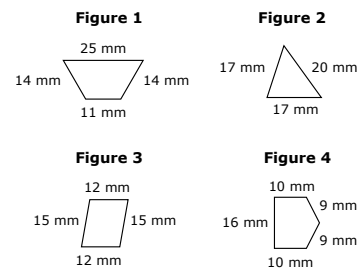
F Figures 2, 3, and 4   **72%**

G Figures 2 and 4   **13%**

H Figures 1 and 3   **9%**

J Figures 1, 2, and 4   **6%**

STAAR Grade 3 2016 #44

Figure 1
25 mm
14 mm   14 mm
11 mm

Figure 2
17 mm   20 mm
17 mm

Figure 3
12 mm
15 mm   15 mm
12 mm

Figure 4
10 mm
16 mm   9 mm
9 mm
10 mm

9. Find the perimeter of each figure.
   Figure 1: 25 + 14 + 11 + **14** = **64** millimeters
   Figure 2: 20 + **17** + **17** = **54** millimeters
   Figure 3: **15** + **12** + **15** + **12** = **54** millimeters
   Figure 4: **10 + 9 + 9 + 10 + 16** = **54** millimeters

10. The correct answer is (F) | G | H | J .

INDEPENDENT PRACTICE   Solve each problem.

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

Teachers@SiriusEducationSolutions.com

STAAR GRADE 3 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 year = 52 weeks

1 week = 7 days

1 day = 24 hours

1 hour = 60 minutes

1 minute = 60 seconds

Inches
0
1
2
3
4
5
6
7
8
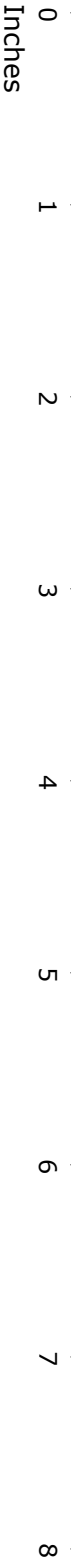
SAMPLER

GRADE 3 MATH ZINGERS CONTENTS

Visit SiriusEducationSolutions.com for additional STAAR resources.

Part 1: ZINGERS

Zinger 1	40% Incorrect
Zinger 2	53% Incorrect
Zinger 3	30% Incorrect
Zinger 4	35% Incorrect
Zinger 5	41% Incorrect
Zinger 6	42% Incorrect
Zinger 7	39% Incorrect
Zinger 8	38% Incorrect
Zinger 9	30% Incorrect
Zinger 10	40% Incorrect
Zinger 11	45% Incorrect
Zinger 12	56% Incorrect
Zinger 13	35% Incorrect
Zinger 14	44% Incorrect
Zinger 15	34% Incorrect
Zinger 16	33% Incorrect
Zinger 17	36% Incorrect
Zinger 18	60% Incorrect
Zinger 19	33% Incorrect
Zinger 20	37% Incorrect

Part 2: ON YOUR OWN

13 Mixed Readiness TEKS
STAAR Practice Items

Use with Your Students!

SIRIUS
MATHEMATICS
STAAR Readiness Review and Practice
GRADE 3

SIRIUS
MATHEMATICS
STAAR Readiness Review and Practice
GRADE 4

SIRIUS
MATH ZINGERS
Solving the Most-Missed STAAR Test Items
GRADE 4

SIRIUS
MATHEMATICS
STAAR Readiness Review and Practice
GRADE 5

SIRIUS
MATH ZINGERS
Solving the Most-Missed STAAR Test Items
GRADE 5

9 781943 008681 >