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GRADE 5 SCIENCE ZINGERS

Solving the Most-Missed STAAR® Test Items

2018 Streamlined TEKS

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

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GRADE 5 SCIENCE ZINGERS

Solving the Most-Missed STAAR® Test Items

Streamlined TEKS

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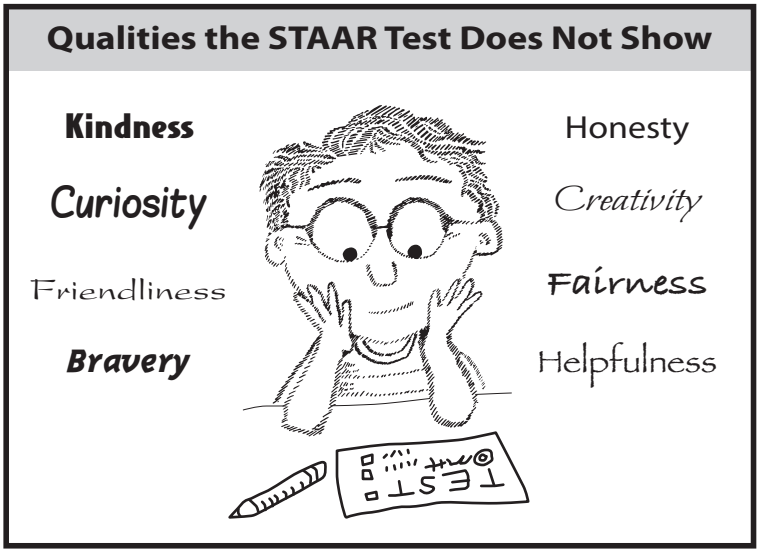
Dear Student,

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 5 Science test later this year. The test will ask questions about the science you learned in grades 3, 4, and 5. The questions may look different from what you have seen before, but don't worry. This workbook will help you. It has questions like the ones on the STAAR Science test, and it shows you how to solve them!

What's a Zinger?

A Zinger uses a STAAR Science test question that was hard for a lot of students. Pssst! Here's a secret. These kinds of questions won't be hard for you. Why not? Because you're going to learn how to solve them. So they won't surprise you when you see them on the STAAR Science Test.

Practice Smart

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

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

Your STAAR success coaches,

The Sirius Education Team

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Included in Sampler

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Zinger 1	49%	5.5C	Lesson 1.1	2		
Zinger 2	49%	5.5A	Lesson 1.2	4		
Zinger 3	38%	5.5A	Lesson 1.2	6		
Zinger 4	45%	5.5A	Lesson 1.2	8		
Zinger 5	41%	5.6B	Lesson 2.1	11		
Zinger 6	46%	5.6C	Lesson 2.2	14		
Zinger 7	39%	5.6C	Lesson 2.2	17		
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2 On Your Own—Mixed Readiness Practice

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	TEKS	Correlations to *Grade 5 Science: Preparation and Practice*
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8	5.6B	Lesson 2.1
9	5.9A	Lesson 4.1
10	5.10A	Lesson 4.3
11	5.5A	Lesson 1.2

How to Take the Zing Out of Zingers!

Zingers will not get the best of you! If you follow these steps, you will get better at solving STAAR test problems.

STEP 1 **READ and UNDERSTAND** Read the problem carefully.

READ and UNDERSTAND **Read the problem carefully. 49% missed it!**

A beaker with 115 mL of solution has a temperature of 21°C. The solution contains 5 g of salt and 115 mL of water. Students added two ice cubes to the solution and stirred the solution with a stirring rod.

Which properties of the solution changed as the ice cubes melted?

STAAR Grade 5 Science 2018 #23

A The color and physical state of the solution

B The temperature, mass, and volume of the solution

C The volume, temperature, and mass of the salt in the solution

D The physical state and temperature of the solution

1. When a substance melts, it changes from a gas | liquid | solid to a gas | liquid | solid . Melting is a change in the substance's physical state | mass .

1. Look at question **1** below the boxed problem. How can this help you solve the problem? _____

_____

If you know how to solve the problem, solve it now. But if you are not sure how to solve it, that's OK! Go on to the next section.

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

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

Bob thinks. . .

I know ice melts at 0°C and becomes liquid water. Melting ice cubes would add cold water to the salt water solution. This would make the solution colder. The solution would contain more liquid, so it would be heavier and take up more space than before.

The solution's temperature, mass, and volume would change.

*My choice is **B**.*

Juan thinks. . .

*The students mixed ice cubes and salt water. Neither substance has color, so I know the color won't change. That means **A** is incorrect.*

Ice melting is a change of state, so I think the solution's physical state changes. I know putting ice in water makes it colder, so the temperature must change.

*My choice is **D**.*

4. Bob correctly | incorrectly reasons that melting ice changes the volume and mass of the solution.

5. Juan correctly | incorrectly describes ice melting as a change of state.

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, watch out for errors. Finding their mistakes will help you avoid making 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. When the ice melts, does the physical state of the solution change? Explain.

_____

_____

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 beaker contains 230 mL of a solution of sugar in water. It has a temperature of 24°C. Students pour 100 mL of solution out of the beaker and then add 100 mL of 35°C water to the beaker.

Which physical properties change as a result of the students' procedure?

F The temperature, mass, and volume of the solution

G The temperature of the solution and the mass of sugar in the solution

H The physical state, mass, and volume of the solution

J The color and particle size of the sugar in the solution

8. Compared to the solution the students pour out of the beaker, the water they add has more | less | the same volume and contains more | less | the same amount of sugar.

STEP 5 **INDEPENDENT PRACTICE** Next, this is your chance to show what you know. Use everything you have learned to answer questions.

INDEPENDENT PRACTICE **Complete each problem.**

11. When a substance dissolves, it forms larger | smaller pieces and it seems to disappear | increase in volume . Its mass increases | decreases | stays the same .

12. How are melting and dissolving similar? How are they different?

_____

Finally, STAAR problem solving takes time, so don't rush. And write neatly. If you make a mistake, look back and try to find your error. When you learn from a mistake, you have a better chance of not making it again.

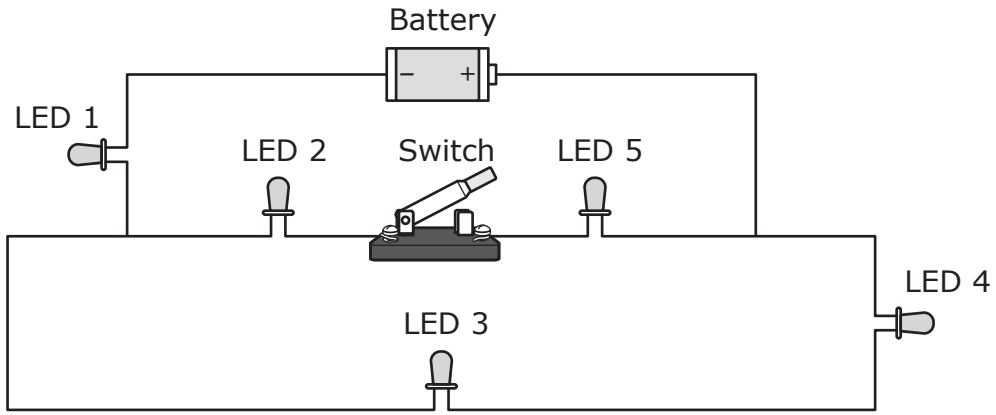
You are now ready to work on your Zingers!

ZINGER 5

5.6B Demonstrate that the flow of electricity in closed circuits can produce light, heat, or sound.

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

This circuit has five light-emitting diode, or LED, lights. It also has one battery and one switch.



Which LEDs produce light when the switch is in the position shown?

A LEDs 1, 3, and 4 only

B LEDs 1, 2, 3, and 4

C LEDs 3 and 4 only

D LEDs 1, 3, 4, and 5

STAAR Grade 5 Science 2018 #15

1. The source of electricity for the LEDs is the **switch** | **battery** .

2. The switch is **open** | **closed** , so electricity **does** | **does not** flow through the switch.

3. The LEDs can produce light only if they are part of a(n) **complete** | **incomplete** circuit.

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

Miriam thinks . . .

There is a complete circuit, or a complete path for electricity, that includes the battery and LEDs 1, 3, and 4. The switch is open, so there is no complete circuit including LEDs 2 and 5.

*My choice is **A**.*

Carla thinks . . .

If electricity flows from the + on the battery into the circuit, it can reach LED 5, but it can't go through the open switch, so it won't reach LED 2. Then it can continue through LEDs 4, 3, and 1.

*My choice is **D**.*

4. Miriam **correctly** | **incorrectly** describes a complete circuit.

5. Carla **correctly** | **incorrectly** concludes that electricity will flow through LED 5.

LOOK BACK **Answer each question.**

6. Which LEDs in the circuit do NOT produce light? Explain why.

_____

_____

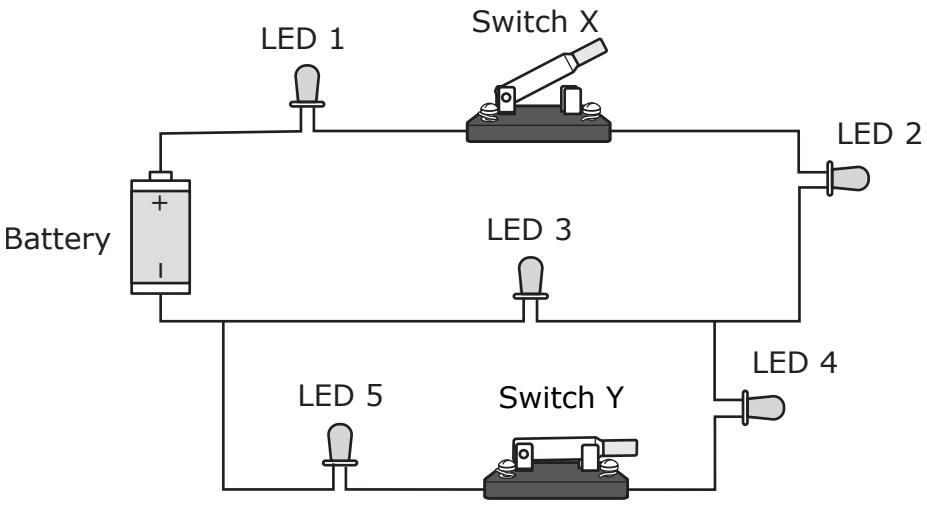
_____

_____

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

GUIDED PRACTICE **Read the problem carefully.**

The circuit below has one battery, two switches, and five light-emitting diode, or LED, bulbs.



Which LEDs produce light when the switches are in the positions shown?

F None of the LEDs

G LED 1 only

H LEDs 3, 4, and 5 only

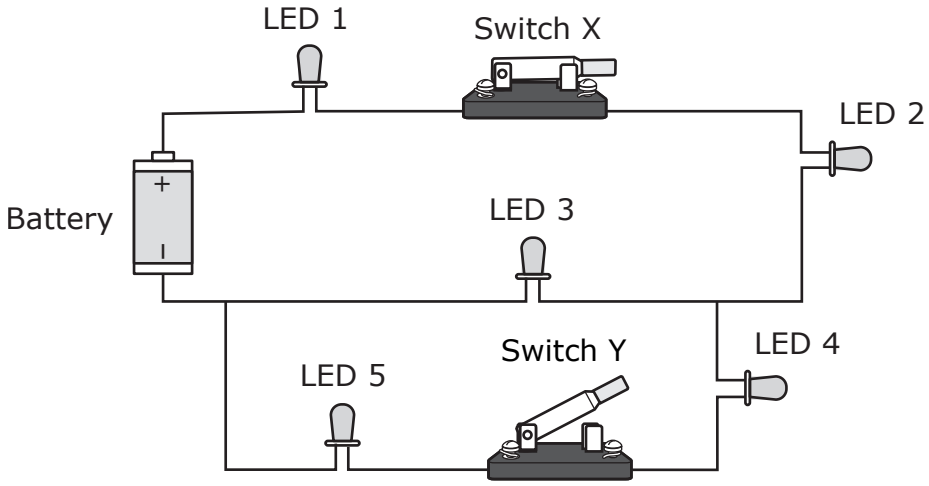
J LEDs 1, 3, 4, and 5 only

8. For a complete circuit, electricity must be able to flow from one terminal of the battery to the **same** | **opposite** terminal of the battery.

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

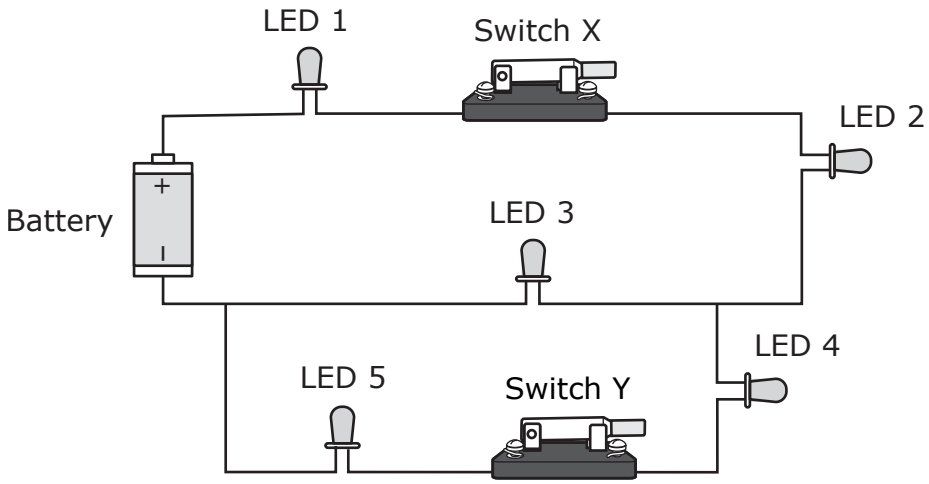
INDEPENDENT PRACTICE **Answer each question.**

10. Suppose Switch X is closed and Switch Y is open, as shown below.



Which LEDs in the circuit will produce light? _____

11. Suppose both switches are closed, as shown below.



a. Which LEDs in the circuit will produce light? _____

b. Where could you place an open switch in this circuit so that only LEDs 1, 2, 4, and 5 produce light?

_____

ZINGER 11

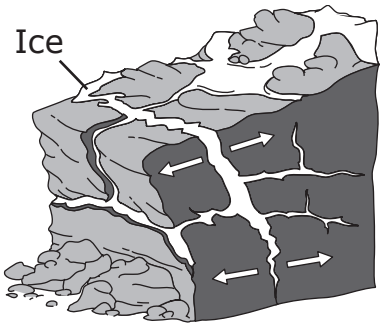
5.7A Explore the processes that led to the formation of sedimentary rocks and fossil fuels.

READ and UNDERSTAND **Read the problem carefully. 46% missed it!**

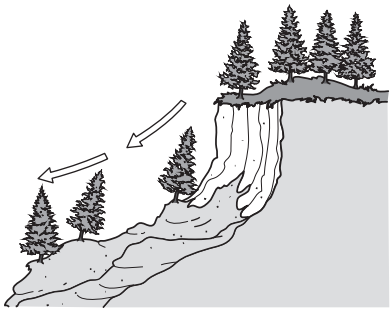
Which diagram models the process of compaction leading to the formation of sedimentary rock?

STAAR Grade 5 Science 2017 #28

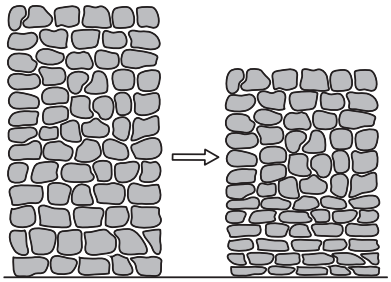
F



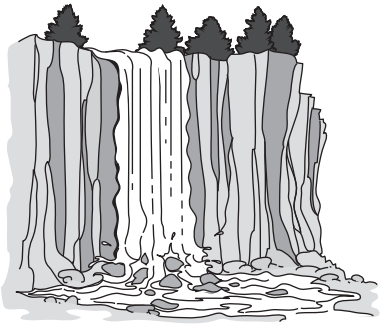
H



G



J



1. Rock formed from layers of sediment is called _____ rock.

2. The process of breaking down rock into smaller pieces is called **deposition** | **weathering** .

3. A substance that is *compact* is **packed together** | **spread apart** .

4. The process that moves sediment to a new location is **compaction** | **erosion** .

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

Anna thinks. . .

*I remember that sedimentary rock is made up of broken rock pieces. So maybe the process of compaction includes breaking rock into pieces. I don't think **H** is correct because it shows rock sliding down a hill. **F** shows ice splitting rock into pieces.*

*My answer is **F**.*

Nicole thinks. . .

I know that something that is compact *is pushed together. So the process of* compaction *must include pushing the parts of sedimentary rock together. The word* sediment *is part of the term* sedimentary rock*. Only* ***G*** *shows sediment that gets pushed together.*

My answer is ***G****.*

5. Anna **correctly** | **incorrectly** guesses that compaction includes breaking rock into pieces.

6. Nicole **correctly** | **incorrectly** uses word parts to figure out what *compaction* means.

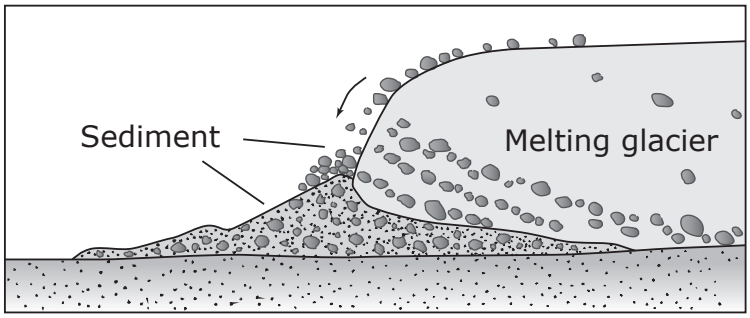
LOOK BACK **Answer each question.**

7. Describe how one student correctly uses reasoning to find the answer.

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

GUIDED PRACTICE **Read the problem carefully.**

The diagram models one of the processes that leads to the formation of sedimentary rock. It shows a side view of the leading edge of a glacier.



Which statement best describes the process shown in the diagram?

A Sediment builds up as it is deposited in a new location.

B The weight of material above layers of sediment presses them together.

C Sediment forms as weathering breaks rock into smaller pieces.

D Loose sediment becomes cemented together and forms sedimentary rock.

9. The diagram shows sediment moved by **ice** | **wind** .

10. As a glacier moves slowly downhill, it
erodes sediment | **presses sediment together** .

11. As a glacier melts, sediment is **carried away** | **deposited** .

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

INDEPENDENT PRACTICE **Answer each question.**

13. How could the sediment deposited by a glacier become sedimentary rock? Identify the steps in the process.

_____

_____

_____

_____

_____

14. The terms below describe steps in the formation of sedimentary rock. Write them in the order they occur.

cementation erosion deposition
compaction weathering

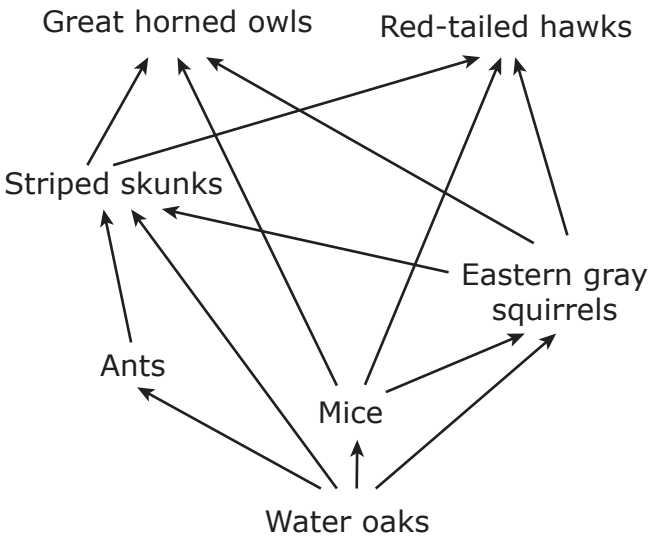
1. _____ ↓
2. _____ ↓
3. _____ ↓
4. _____ ↓
5. _____

ZINGER 18

5.9B Describe the flow of energy within a food web, including the roles of the Sun, producers, consumers, and decomposers.

READ and UNDERSTAND **Read the problem carefully. 47% missed it!**

A partial food web from the Texas Piney Woods is shown.



How many types of organisms in this food web obtain energy directly from producers?

STAAR Grade 5 Science 2018 #27

A Two

B Three

C Four

D Five

1. A *producer* is an organism that **makes** | **consumes** its food by using water, carbon dioxide, and energy from the _____.

2. In the diagram, the arrow between the great horned owls and striped skunks means that the great horned owls **are eaten by** | **eat** the striped skunks.

3. Which organisms in the food web are producers? _____

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

Sandra thinks. . .

Producers are located at the bottom of a food web. Water oaks are the only producers in the diagram.

Organisms that eat producers are located above the producers. The diagram shows ants, mice, and eastern gray squirrels directly above the water oaks.

*My choice is **B**.*

Pedro thinks. . .

Producers provide energy for all the other organisms in an ecosystem. The producers in the diagram are the water oaks.

There are four arrows coming from the water oaks. Each arrow goes to a different consumer. These four consumers get energy directly from water oaks.

*My choice is **C**.*

4. Sandra **correctly** | **incorrectly** thinks that water oaks are the only producers in the diagram.

5. Pedro **correctly** | **incorrectly** thinks that each arrow coming from the producer goes to a different consumer.

LOOK BACK **Answer each question.**

6. **Sandra** | **Pedro** finds the correct answer choice.

What mistake does the other student make? _____

_____

_____

_____

_____

_____

7. What would you do so that you do not make the same mistake?

_____

_____

_____

_____

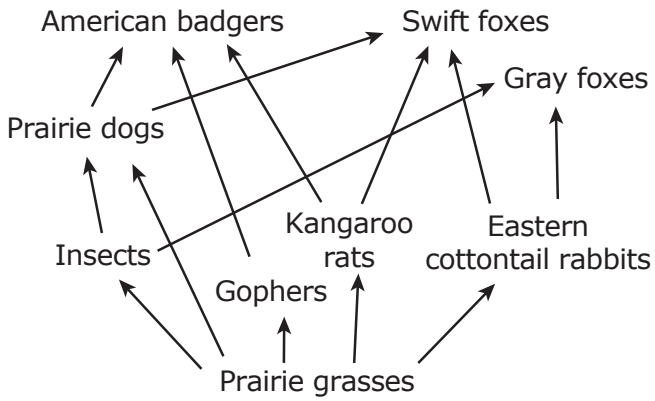
_____

_____

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

GUIDED PRACTICE **Read the problem carefully.**

The Rolling Plains area of Texas is the southern end of the Great Plains of the United States. A partial food web from the Rolling Plains is shown.



How many types of organisms in this food web get their energy by eating only other consumers?

F Two

G Three

H Four

J Five

9. Which organisms in the food web are producers? _____

10. The question asks for the number of organisms that eat **consumers | producers** but do not eat **consumers | producers** .

Which organisms in the food web should NOT be counted?

_____

_____

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

INDEPENDENT PRACTICE **Use the food web diagram above.**

12. Omnivores are animals that eat both plants and animals. Kayla says that prairie dogs are the only omnivores in the food web.

Do you agree? Explain why or why not. _____

_____

_____

_____

4. Miriam (correctly) | incorrectly describes a complete circuit.

5. Carla correctly | (incorrectly) concludes that electricity will flow through LED 5.

LOOK BACK **Answer each question.**

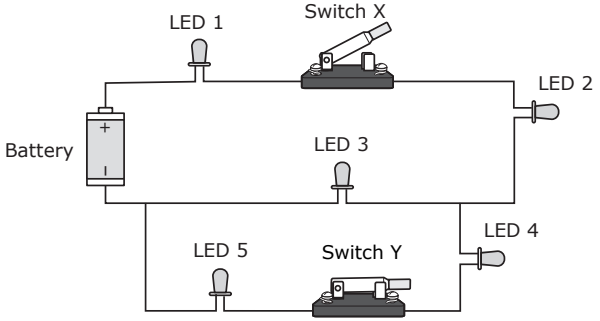
6. Which LEDs in the circuit do NOT produce light? Explain why.

LEDs 2 and 5; Sample: For an LED to light up, electricity has to flow in one side of the LED and out the other. With the switch open, the electricity can't flow through LEDs 2 and 5.

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

GUIDED PRACTICE **Read the problem carefully.**

The circuit below has one battery, two switches, and five light-emitting diode, or LED, bulbs.



Which LEDs produce light when the switches are in the positions shown?

(F) None of the LEDs

G LED 1 only

H LEDs 3, 4, and 5 only

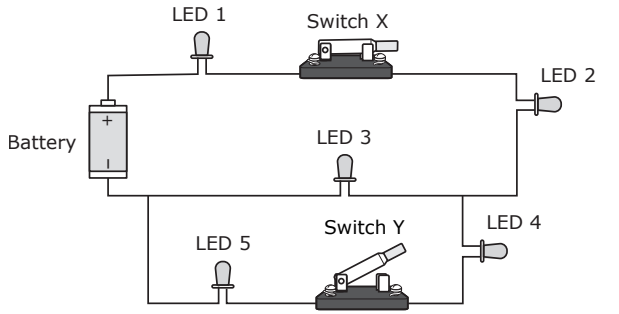
J LEDs 1, 3, 4, and 5 only

8. For a complete circuit, electricity must be able to flow from one terminal of the battery to the same | (opposite) terminal of the battery.

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

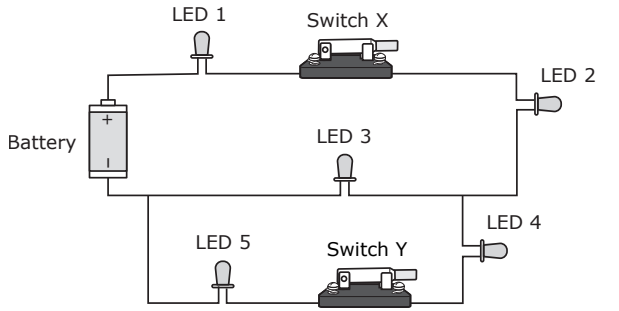
INDEPENDENT PRACTICE **Answer each question.**

10. Suppose Switch X is closed and Switch Y is open, as shown below.



Which LEDs in the circuit will produce light? **LEDs 1, 2, and 3**

11. Suppose both switches are closed, as shown below.



a. Which LEDs in the circuit will produce light? **all five LEDs**

b. Where could you place an open switch in this circuit so that only LEDs 1, 2, 4, and 5 produce light?

just to the right or left of LED 3

SAMPLER

GRADE 5 SCIENCE ZINGERS CONTENTS

Part 1: ZINGERS

Part 2: ON YOUR OWN

11 Mixed Readiness TEKS STAAR Practice Items

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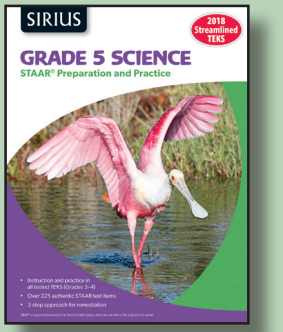
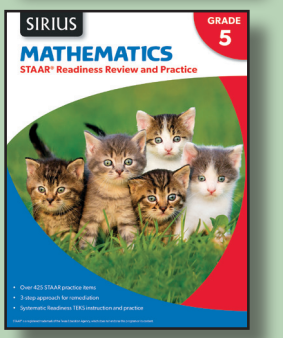
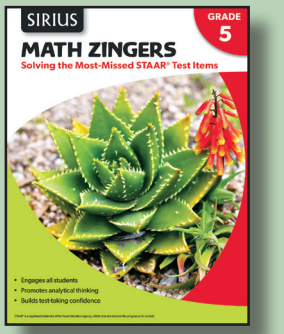
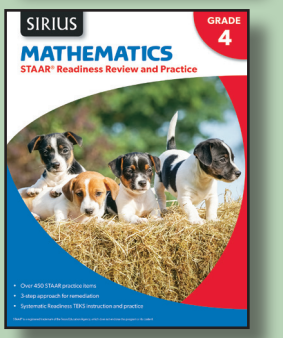
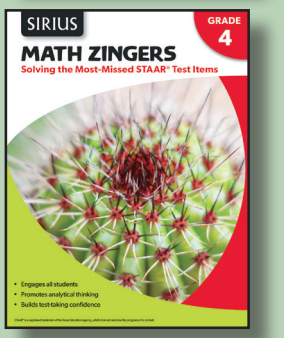
Visit SiriusEducationSolutions.com for additional STAAR resources.

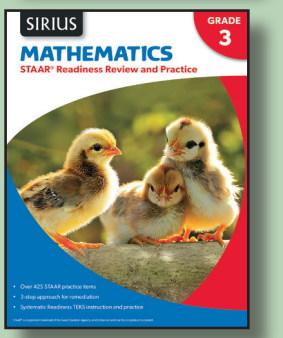


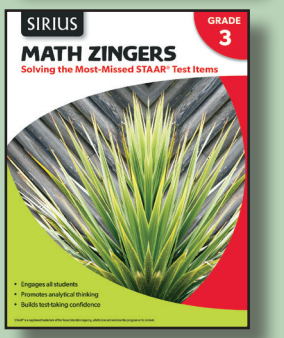












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STAAR Preparation and Practice

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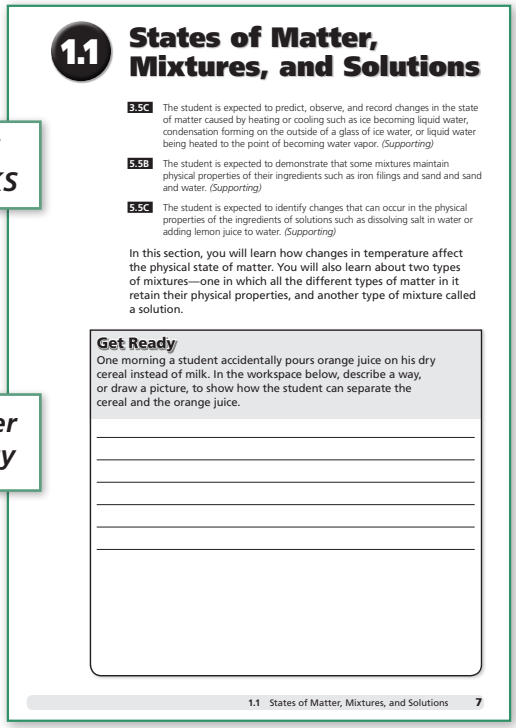


1.1 States of Matter, Mixtures, and Solutions

3.5C The student is expected to predict, observe, and record changes in the state of matter caused by heating or cooling such as ice becoming liquid water, condensation forming on the outside of a glass of ice water, or liquid water being heated to the point of becoming water vapor. *(Supporting)*

5.5B The student is expected to demonstrate that some mixtures maintain physical properties of their ingredients such as iron filings and sand and sand and water. *(Supporting)*

5.5C The student is expected to identify changes that can occur in the physical properties of the ingredients of solutions such as dissolving salt in water or adding lemon juice to water. *(Supporting)*

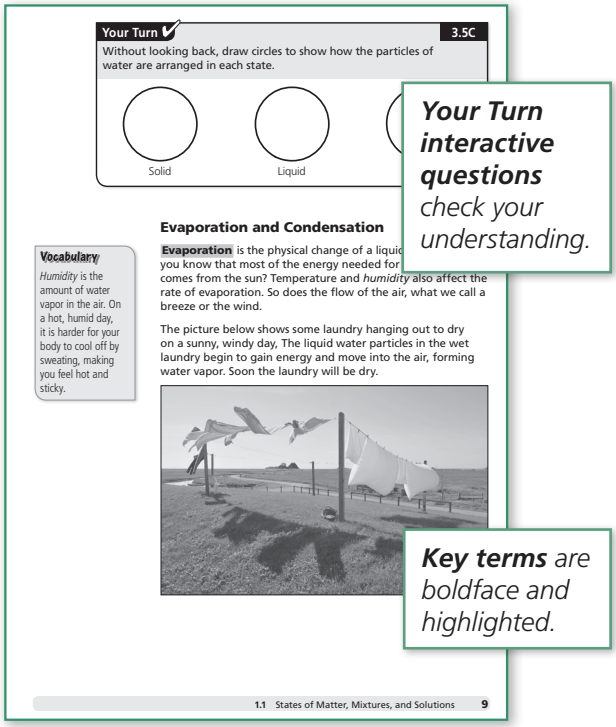
In this section, you will learn how changes in temperature affect the physical state of matter. You will also learn about two types of mixtures—one in which all the different types of matter in it retain their physical properties, and another type of mixture called a solution.

Get Ready
One morning a student accidentally pours orange juice on his dry cereal instead of milk. In the workspace below, describe a way, or draw a picture, to show how the student can separate the cereal and the orange juice.

1.1 States of Matter, Mixtures, and Solutions 7

Full TEKS

Opener activity



Your Turn 3.5C
Without looking back, draw circles to show how the particles of water are arranged in each state.

Solid Liquid

Evaporation and Condensation

Vocabulary
Humidity is the amount of water vapor in the air. On a hot, humid day, it is harder for your body to cool off by sweating, making you feel hot and sticky.

Evaporation is the physical change of a liquid you know that most of the energy needed for comes from the sun? Temperature and *humidity* also affect the rate of evaporation. So does the flow of the air, what we call a breeze or the wind.

The picture below shows some laundry hanging out to dry on a sunny, windy day, The liquid water particles in the wet laundry begin to gain energy and move into the air, forming water vapor. Soon the laundry will be dry.

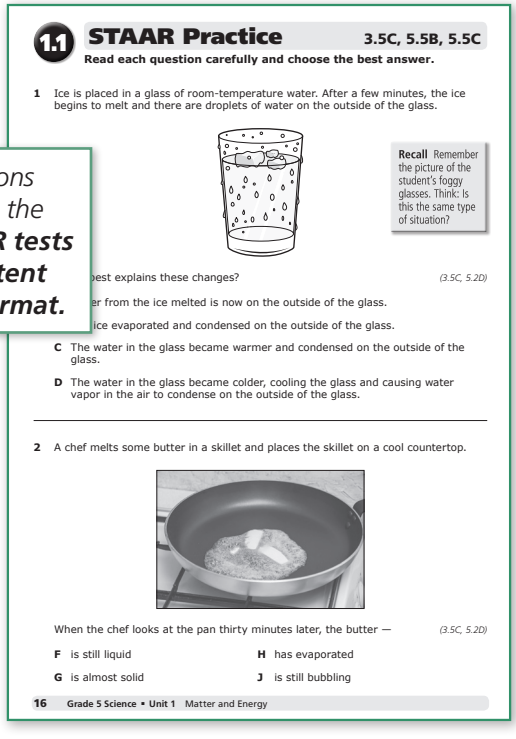
1.1 States of Matter, Mixtures, and Solutions 9

Your Turn interactive questions *check your understanding.*

Key terms *are boldface and highlighted.*

STAAR Practice—Abundant and Systematic Practice

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



1.1 STAAR Practice 3.5C, 5.5B, 5.5C

Read each question carefully and choose the best answer.

1 Ice is placed in a glass of room-temperature water. After a few minutes, the ice begins to melt and there are droplets of water on the outside of the glass.

Recall Remember the picture of the student's foggy glasses. Think: Is this the same type of situation?

best explains these changes? *(3.5C, 5.2D)*

er from the ice melted is now on the outside of the glass.

ice evaporated and condensed on the outside of the glass.

C The water in the glass became warmer and condensed on the outside of the glass.

D The water in the glass became colder, cooling the glass and causing water vapor in the air to condense on the outside of the glass.

2 A chef melts some butter in a skillet and places the skillet on a cool countertop.

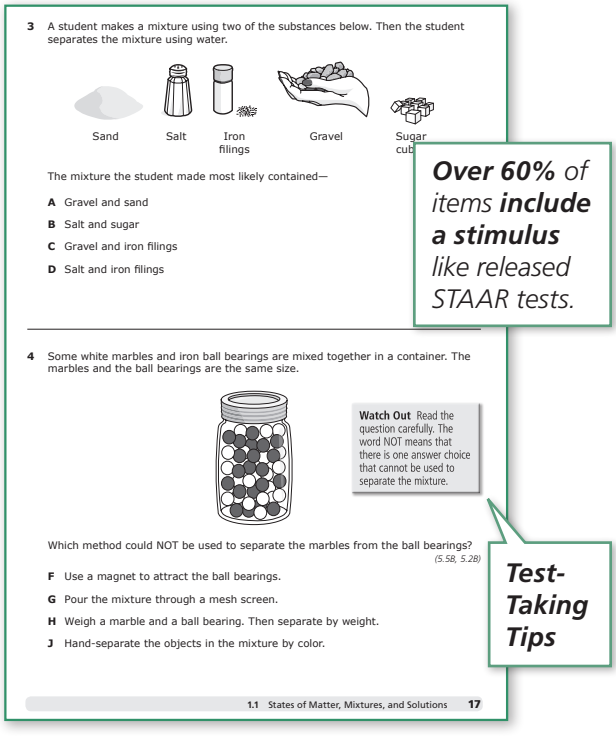
When the chef looks at the pan thirty minutes later, the butter — *(3.5C, 5.2D)*

F is still liquid **H** has evaporated

G is almost solid **J** is still bubbling

16 Grade 5 Science • Unit 1 Matter and Energy

Questions match the STAAR tests in content and format.



3 A student makes a mixture using two of the substances below. Then the student separates the mixture using water.

Sand Salt Iron filings Gravel Sugar cub

The mixture the student made most likely contained—

A Gravel and sand

B Salt and sugar

C Gravel and iron filings

D Salt and iron filings

4 Some white marbles and iron ball bearings are mixed together in a container. The marbles and the ball bearings are the same size.

Watch Out Read the question carefully. The word NOT means that there is one answer choice that cannot be used to separate the mixture.

Which method could NOT be used to separate the marbles from the ball bearings? *(5.5B, 5.2B)*

F Use a magnet to attract the ball bearings.

G Pour the mixture through a mesh screen.

H Weigh a marble and a ball bearing. Then separate by weight.

J Hand-separate the objects in the mixture by color.

1.1 States of Matter, Mixtures, and Solutions 17

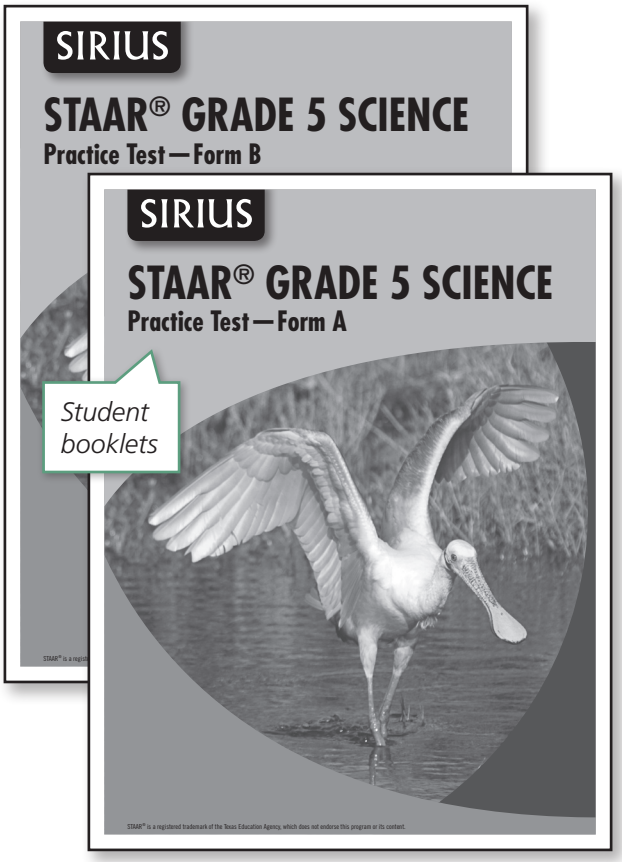
Over 60% *of items* ***include a stimulus*** *like released STAAR tests.*

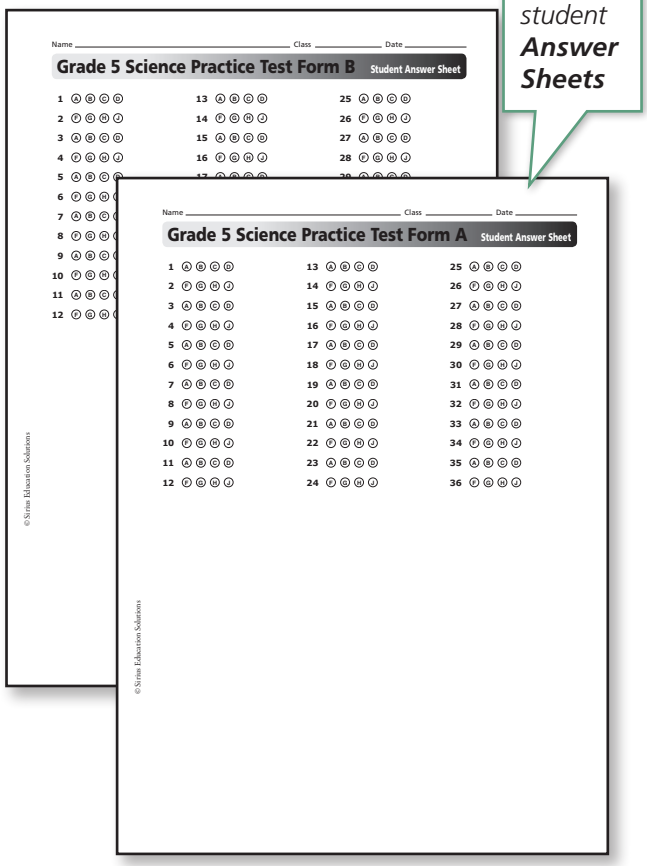
Test-Taking Tips

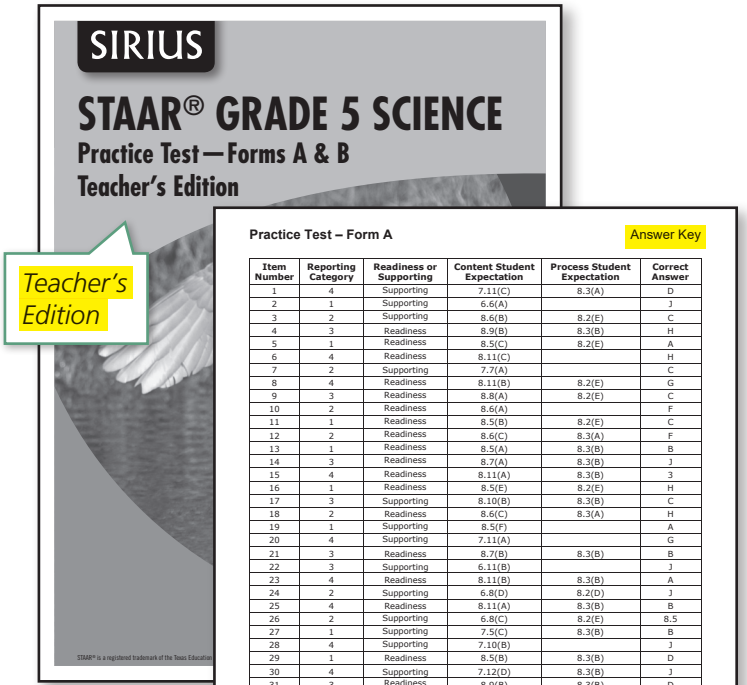
STAAR GRADE 5 SCIENCE

STAAR Practice Tests Forms A & B

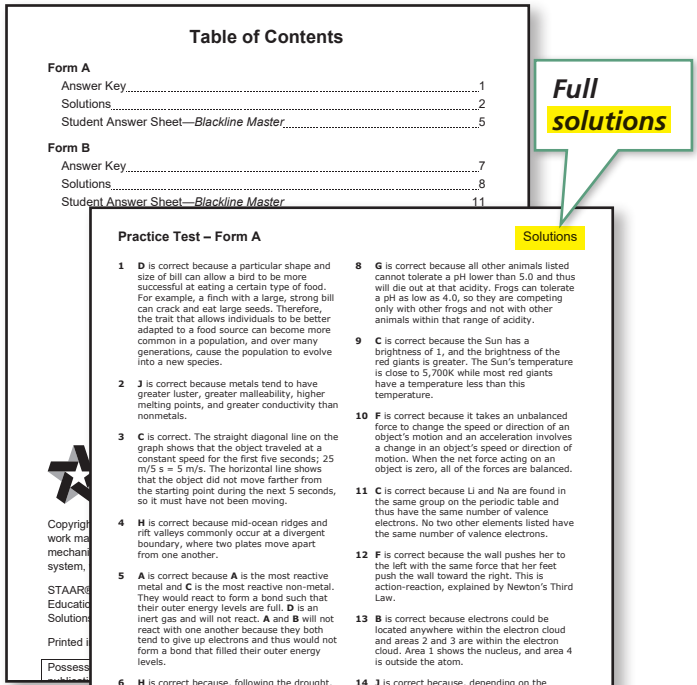
Two distinct secure form tests that closely match the released STAAR test items and blueprint.







Item Number	Reporting Category	Readiness or Supporting	Content Student Expectation	Process Student Expectation	Correct Answer
1	4	Supporting	7.11(C)	8.3(A)	D
2	1	Supporting	6.6(A)		J
3	2	Supporting	8.6(B)	8.2(E)	C
4	3	Readiness	8.9(B)	8.3(B)	H
5	1	Readiness	8.5(C)	8.2(E)	A
6	4	Readiness	8.11(C)		H
7	2	Supporting	7.7(A)		C
8	4	Readiness	8.11(B)	8.2(E)	G
9	3	Readiness	8.8(A)	8.2(E)	C
10	2	Readiness	8.6(A)		F
11	1	Readiness	8.5(B)	8.2(E)	C
12	2	Readiness	8.6(C)	8.3(A)	F
13	1	Readiness	8.5(A)	8.3(B)	B
14	3	Readiness	8.7(A)	8.3(B)	J
15	4	Readiness	8.11(A)	8.3(B)	3
16	1	Readiness	8.5(E)	8.2(E)	H
17	3	Supporting	8.10(B)	8.3(B)	C
18	2	Readiness	8.6(C)	8.3(A)	H
19	1	Supporting	8.5(F)		A
20	4	Supporting	7.11(A)		G
21	3	Readiness	8.7(B)	8.3(B)	B
22	3	Supporting	6.11(B)		J
23	4	Readiness	8.11(B)	8.3(B)	A
24	2	Supporting	6.8(D)	8.2(D)	J
25	4	Readiness	8.11(A)	8.3(B)	B
26	2	Supporting	6.8(C)	8.2(E)	8.5
27	1	Supporting	7.5(C)	8.3(B)	B
28	4	Supporting	7.10(B)		J
29	1	Readiness	8.5(B)	8.3(B)	D
30	4	Supporting	7.12(D)	8.3(B)	J
31	3	Readiness	8.9(B)	8.3(B)	D
32	2	Readiness	8.6(A)	8.3(B)	G
33	1	Readiness	8.5(C)	8.3(B)	D
34	3	Supporting	7.8(C)	8.3(B)	J
35	4	Readiness	8.11(A)		D
36	1	Supporting	6.5(C)	8.3(B)	J
37	3	Readiness	8.8(A)		B
38	4	Readiness	8.11(C)		G
39	3	Readiness	8.7(A)	8.3(B)	A
40	1	Readiness	8.5(E)	8.2(E)	G
41	3	Supporting	8.7(C)	8.3(B)	A
42	2	Readiness	8.6(A)		F



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