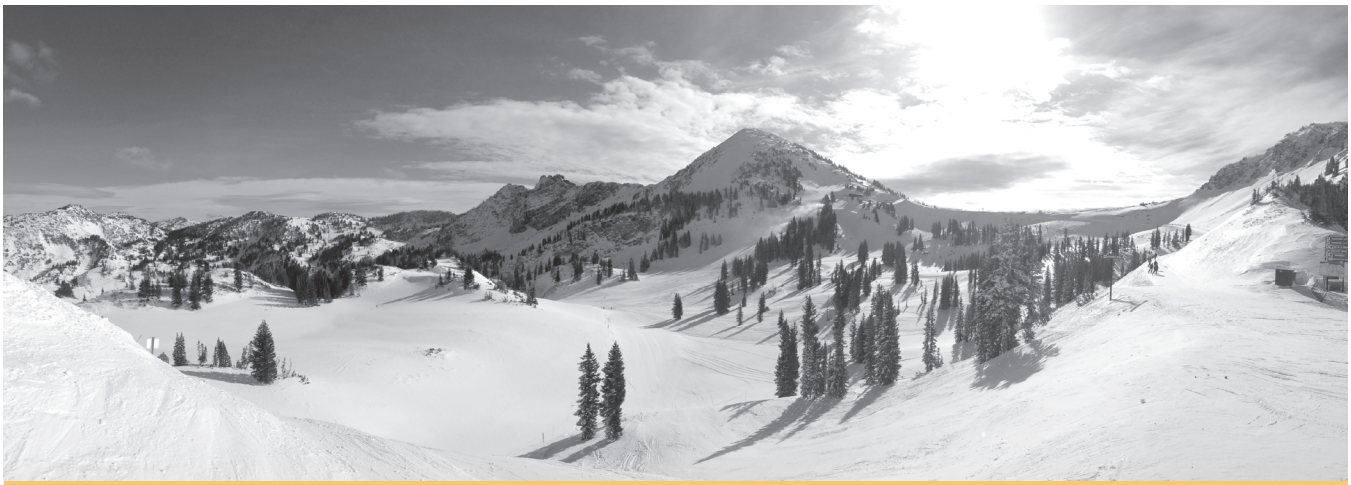
Colorado Measures of Academic Success



Grade 7

Reading and Writing

English Language Arts

Paper Practice Resource for Students

Paper Practice Resource for Students

The Colorado Measures of Academic Success (CMAS) is Colorado's standards-based assessment program designed to measure the Colorado Academic Standards (CAS) in the content areas of science, social studies, English language arts, and mathematics. The sample items included in this resource provide students with an opportunity to become familiar with the format of test items that appear in the paper-based test books.

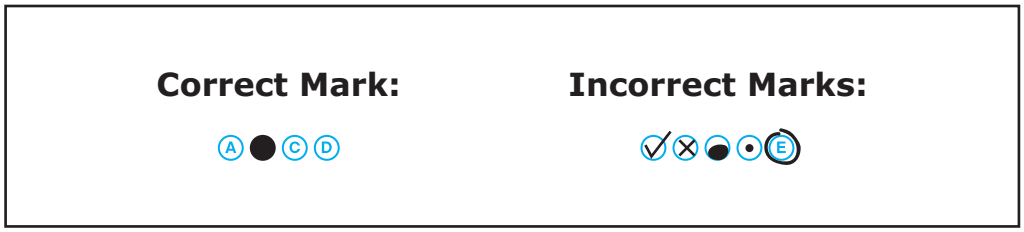
While the use of the sample items is not required, it is strongly encouraged to help ensure students are familiar with the types of items they may encounter while taking the paper-based test.

The sample item sets in the CMAS Practice Resources are not intended to be representative of a complete unit or test, nor are they intended to cover all assessed content or item types. To view assessment frameworks, high level blueprints, scoring rubrics, evidence statements and standards for the CMAS assessments, visit: https://www.cde.state.co.us/assessment/cmas_testdesign.

Item Types:

Selected Response Items

Selected response items are multiple choice questions. To respond, the student indicates their response by filling in the circle(s) next to their answer choice.



Constructed Response Items

Constructed response items are questions or prompts that require an independent, written response. To respond, the student writes his or her answer in the response box in the test book.

Converted Online Technology-Enhanced Item Types

Online technology-enhanced items converted to the paper testing format may ask students to:

- Circle the correct answer
- Complete a table with checkmarks, Xs, or letters from a list of answer choices
- Fill in the blank
- Draw lines from boxes to correct answers
- Complete a bar graph or histogram

ITEM SET 1

Today you will read three passages about deep-sea exploration. You will read a passage from "The Deep Seas Are Alive with Light," a passage from "Eyes on the Depths," and a passage from "Going Off the (Really) Deep End." As you review these texts, you will gather information so that you can write a response.

Read the passage from "The Deep Seas Are Alive with Light." Then answer question 1.

from "The Deep Seas Are Alive with Light"

by William J. Broad

1 In 1932, William Beebe wedged his lanky body into a cramped submersible and became the first scientist to descend into the sea's inky darkness. A tiny window let him gaze out. Later, he described an unfamiliar world of dancing lights, pale glows and beguiling[1] shimmers.

2 "It seemed to explode," he said of one luminous creature. Nothing, he added in his book, *Half Mile Down*, had prepared him for the spectacular displays. The colors included pale greens, blues, reds and especially blue-greens, which by nature can travel far in seawater.

3 Over the decades, biologists learned that the creatures of the deep sea use light much as animals on land use sound—to lure, intimidate, stun, mislead and find mates.

4 The living lights emanated[2] from tiny fish with needlelike fangs, and gelatinous brutes with thousands of feeding tentacles. The sheer variety suggested that bioluminescence[3] was fairly common, but no scientist came up with a measurement of the phenomenon.

5 Now, 85 years after Dr. Beebe's pioneering dive, scientists have succeeded in gauging the actual extent of bioluminescence in the deep ocean.

6 During 240 research dives in the Pacific, they recorded every occurrence and kind of glowing sea creature—more than 500 types living down as deep as two miles. Then, the researchers merged the results into a comprehensive survey.

[1]beguiling—enchanting

[2]emanated—spread out

[3]bioluminescence—the production of light by a living creature

7 The result? Most of the creatures—a stunning 76 percent—made their own light, vastly outnumbering the ranks of the unlit, such as dolphins.

8 "People think bioluminescence is some kind of exotic characteristic," said Séverine Martini, a marine biologist and lead author of the study, published this year in *Scientific Reports*. "Even oceanographers don't realize that it's common."

9 Her own awakening came one night in a sailboat off Africa. "I was looking at the stars and learning about constellations," she recalled, and then suddenly began "seeing things that were glowing in the waves."

10 As the deep sea is the planet's largest habitat, the new findings confirm bioluminescence to be one of the earth's dominant ecological traits, despite its unfamiliarity, according to Dr. Martini and her co-author, Steven H. D. Haddock, both of the Monterey Bay Aquarium Research Institute in California.

11 "A lot of these questions are centuries old," Dr. Haddock said. "You see sparks in the water and have no idea what they represent."

12 Over the decades, scientists have traced the evolutionary roots of the living oceanic lights to primal seas hundreds of millions of years ago, long before the age of dinosaurs.

13 By contrast, terrestrial[4] bioluminescence is relatively new. And the land creatures that light up, unlike their undersea kin, constitute[5] a tiny minority. The ranks include not only fireflies but also some beetles, millipedes and earthworms.

14 The research institute—in Moss Landing, Calif., at the midpoint of the Monterey Bay shoreline—is a pioneer of deep ocean exploration. It was established in 1987 by David Packard, the billionaire co-founder of Hewlett-Packard and a creator of Silicon Valley.

15 Dr. Haddock is a world authority on bioluminescence who has published dozens of scientific papers on luminescent ocean life. A decade ago, he set up the Bioluminescence Web Page, which offers detailed information about deep creatures, including dozens of dramatic images. It is required reading at some universities.

[4]terrestrial—on land

[5]constitute—make up

16 The 240 dives used to perform this survey were all research trips he had conducted personally since arriving in 1999 at the institute. Sailing out from Moss Landing, the cruises ranged up to 180 miles offshore and covered an area roughly the size of Ireland.

17 The sea floor off Monterey Bay, 60 miles south of San Francisco, drops off sharply, unlike the shallow continental shelves on most coasts. That makes it easy for research vessels to quickly reach and access deep environments.

18 For years, Dr. Haddock and his colleagues lowered robots on long tethers to explore the icy darkness. Sensitive cameras on the vehicles let the scientists conduct wide visual hunts. In all, the researchers made more than 350,000 sightings of deep-sea life.

19 Their finds included anglerfish, a famous example of bioluminescence. These skilled hunters lure prey by dangling lines tipped with glowing lures in front of large mouths full of daggerlike teeth.

20 A rare sighting was *Vampyroteuthis infernalis*. . . . The odd creature has blue eyes, a dark red body and cloaklike webbing over its arms. The tips glow.

21 Dr. Haddock and his colleagues have discovered that the squids also emit luminous blue particles that can form a glowing cloud around the animal, apparently to distract predators so the squid can vanish into darkness.

22 Many of the dives found swarms of gelatinous animals known as siphonophores. The otherworldly creatures have long bodies ringed by pulsing bells for propulsion, and up to thousands of elastic tentacles for catching and drawing in prey.

23 Most siphonophores light up brightly. Scientists judge their startling brilliance to be a way to scare off predators. Dr. Haddock and his colleagues uncovered another reason while studying a creature known as Erenna.

24 The ends of its tentacles turned out to bear twitching red lights, apparently for drawing prey into waiting stingers and its stomach. “It opened my eyes,” Dr. Haddock said.

25 On land, Dr. Martini took the lead in compiling the numbers, comparing the sea creatures seen during the dives with a list of animals known to be luminescent.

26 This comprehensive list was based on a review of previous scientific reports, as well as the firsthand observations that Dr. Haddock and other scientists have made over the years.

1. Complete an analysis of how the author organizes information in the passage from "The Deep Seas Are Alive with Light" by writing the letter for the heading that **best** describes the content of each section in its appropriate place in the table. Each heading can be used only once.

A. Using Bioluminescence to Escape Danger

B. The Beauty of the Bioluminescent Ocean

C. The Extent of Bioluminescence in the Ocean

D. David Packard: A Pioneer of Bioluminescence Research

E. A Variety of Bioluminescent Creatures

F. Researching Bioluminescence

Section in the Passage	Appropriate Heading
paragraphs 3–13	_____
paragraphs 14–18	_____
paragraphs 19–24	_____

Read the passage from "Eyes on the Depths." Then answer questions 2 and 3.

from "Eyes on the Depths"

by Mark Schrope

1 A team of researchers recently made an 11-day expedition to the Bahamas. . . . On the expedition, called Deep Scope 2007, the researchers used a deep-diving submersible, a special camera system, and other tools to try to see what deep-sea creatures see.

2 Their results are changing what we know about life in the dark depths of the sea.

A big place

3 Water covers most of the Earth, and the oceans are thousands of feet deep in most spots. Compared to forests, prairies, and other ecosystems, the deep sea is by far the largest type of environment on the planet where animals can live. So, if you want to understand Planet Earth, you have to understand its oceans.

4 Exploring the deepest parts of the sea, however, is challenging if you're limited to the equipment that scientists have generally used for the task.

5 "What we've been doing is like driving a tank through Yellowstone [National] Park and hoping to see elk and bear," says Edith Widder, a deep-sea biologist with the Ocean Research and Conservation Association in Fort Pierce, Fla. She was one of the leaders of the Deep Scope expedition.

6 Driving a tank through Yellowstone would not be a good way to spot wildlife because the park is huge, and noisy tanks scare animals away. Underwater, many animals have a similar reaction to loud, brightly lit submersibles and robotic vehicles.

7 The Deep Scope team began its expedition with a tanklike submersible called the Johnson-Sea-Link II. The sub, which can carry two pilots and two observers, is owned by the Harbor Branch Oceanographic Institution in Ft. Pierce.

8 The Johnson-Sea-Link II allowed the researchers to explore the depths and watch deep-sea animals that were not scared away by the machine.

9 The sub even had a suction tube and robotic arm for collecting underwater creatures. The sub delivered these specimens to the team's main ship on the ocean's surface.

10 The group also used the submersible to drop off and pick up a special camera system called the Eye-in-the-Sea, or EITS. The system has a video camera inside a waterproof case. The camera sits on a metal tripod that is about 6 feet tall. It films with red light, which most deep-sea animals can't see, so they don't get scared away.

11 During the Deep Scope 2007 expedition, Widder and graduate student Erika Raymond occasionally left EITS on the seafloor for a day at a time. They programmed the camera to record for 1 minute out of every 5 minutes, for a total of about 300 minutes a day.

12 Later, when the two researchers watched the tape, they yelped with joy every time they saw something interesting. Sometimes, for example, they cheered for a 12-foot-long sixgill shark that made occasional appearances.

Light shows

13 One of the biggest advantages of EITS is that it allows researchers to see how deep-sea creatures communicate with one another—using a type of light called bioluminescence[1].

14 Bioluminescent creatures use chemicals to make their own light. Though only a very few animals, such as fireflies, do it above water, most animals in the ocean bioluminesce.

15 Scientists believe that sea creatures use this light for everything from scaring away predators to finding food in dark waters. But it's been hard to say for sure what bioluminescence is for because scientists can't spend much time in the deep sea.

16 EITS can stay underwater a lot longer than scientists can. It also has a gadget on the front that lights up to look just like bioluminescence.

17 On the Deep Scope expedition, Widder and Raymond programmed the light system to flash in different patterns. They were ecstatic[2] to find that when the lure flashed in certain ways, some animals flashed back.

[1]bioluminescence—the production of light by a living creature

[2]ecstatic—extremely happy

18 Those flashes showed that for the first time, the scientists were actually "talking" to deep-sea creatures using light.

19 "We finally established a line of communication," says Widder. However, it will take more research to figure out for sure what was said.

2. Part A

In which sentence of the passage from "Eyes on the Depths" does the author express a reasoned judgment?

Ⓐ "So, if you want to understand Planet Earth, you have to understand its oceans." (paragraph 3)

Ⓑ "The Deep Scope team began its expedition with a tanklike submersible called the Johnson-Sea-Link II." (paragraph 7)

Ⓒ "Sometimes, for example, they cheered for a 12-foot-long sixgill shark that made occasional appearances." (paragraph 12)

Ⓓ "Scientists believe that sea creatures use this light for everything from scaring away predators to finding food in dark waters." (paragraph 15)

Part B

Which sentence from the passage provides support for the reasoned judgment expressed in the answer to Part A?

Ⓐ "Water covers most of the Earth, and the oceans are thousands of feet deep in most spots." (paragraph 3)

Ⓑ "Exploring the deepest parts of the sea, however, is challenging if you're limited to the equipment that scientists have generally used for the task." (paragraph 4)

Ⓒ "The Johnson-Sea-Link II allowed the researchers to explore the depths and watch deep-sea animals that were not scared away by the machine." (paragraph 8)

Ⓓ "Though only a very few animals, such as fireflies, do it above water, most animals in the ocean bioluminesce." (paragraph 14)

3. In the passage from "Eyes on the Depths," what are the main ideas of the sections **A big place** and **Light shows**? Write **one** letter for the correct main idea in **each** box. Each main idea can be used only once.

A. EITS is an underwater camera that can film animals in the deep ocean.

B. Researchers on the Johnson-Sea-Link II used a robotic arm to collect underwater samples.

C. Scientists on the Deep Scope expedition spent 11 days studying the deep ocean.

D. Special equipment, such as the Johnson-Sea-Link II and EITS, is helping researchers study deep-sea animals.

E. The Deep Scope expedition allowed scientists to observe bioluminescent life.

F. EITS has helped scientists learn about communication between deep-sea creatures.

Main Idea: A big place

_____

Main Idea: Light shows

_____

Read the passage from "Going Off the (Really) Deep End." Then answer questions 4 through 6.

from "Going Off the (Really) Deep End"

by Carrie Clickard

1 Help Wanted: Expedition seeks explorers brave enough to face bizarre, glow-in-the-dark creatures. Must be able to navigate safely past vents spewing liquid carbon dioxide, erupting mud volcanoes, and a treacherous lake of molten sulfur.

2 What strange corner of the universe is this expedition headed for? It's a cozy little planet called Earth and a spot miles under the surface of the Pacific Ocean called the Mariana Trench.

A HOLE IN THE OCEAN FLOOR

3 In 1872, the HMS *Challenger* expedition set out to map the ocean floor. The explorers spent four years crisscrossing the globe, sailing 70,000 miles (112,654 kilometers)—one-third of the distance to the moon. It was backbreaking, boring work. Sail about 200 miles (322 kilometers), drop a weighted rope into the water. Measure how much rope it took to hit the bottom. Sail another 200 miles and do it again. And again. This expedition was a total snooze fest, until a day in 1875 about 200 miles off the coast of Guam. That morning, when the rope was dropped, the ocean swallowed up *miles* of it—five miles to be exact. The *Challenger's* crew had discovered a "hole" in the ocean floor.

BRAVING THE DEPTHS

4 It wasn't until the 1950s that we knew just how big *Challenger's* discovery was. Using sonar (an instrument that sends out sound waves and measures how long it takes them to come back), scientists discovered that the hole is actually a trench. It is twice as long as the state of California and 43 miles (69 kilometers) wide. Parts of the trench are only five miles deep, but at its southern end, the trench drops to almost seven miles. That means if you planted Mount Everest on the bottom and stacked three Empire State buildings on top, you still wouldn't reach the surface of the ocean.

5 In 1960, two brave explorers, Jacques Piccard and Lt. Don Walsh, became the first human beings to see the trench with their own eyes. It took years to design and test a submersible ship strong enough to survive the immense water pressure in the trench. Called the *Trieste*, their ship weighed 150 tons, including fuel, and was almost 60 feet (18 meters) long. But for all its size, the two hydronauts[1] would spend their journey in a round capsule only six feet in diameter. That's about the same amount of room per person that you'd find inside a refrigerator.

6 Crammed into that small space, at temperatures not much warmer than those in a fridge, it took the two explorers four hours and forty-eight minutes to descend the 6.77 miles (11 kilometers) into Challenger Deep—the deepest spot in the Mariana Trench. Unfortunately, during the 20 minutes they spent at the ocean bottom, the two hydronauts couldn't see much. The engines on the *Trieste* stirred up silt from the ocean floor and turned the water into what they described as swirling milk. But even though the *Trieste* didn't have the ability to take pictures outside the cabin, Piccard and Walsh got a chance to take the first deep-sea selfie.

THERE AND BACK AGAIN

7 In 2012, film director and explorer James Cameron led the second human expedition (and the first solo dive) into the Challenger Deep. It took him half the time to reach the bottom, two-and-a-half hours, and he did it in a ship that weighed less than one-tenth what the *Trieste* did. Surrounded by water pressure 1,000 times greater than at the ocean surface, he spent three hours filming and taking scientific samples.

8 With six high-definition cameras, Cameron and his team filmed some of the deepest-dwelling creatures in existence, including a giant amoeba-like xenophyophore[2] four inches (10 centimeters) wide and a unique sea cucumber.

9 And since the *Trieste* explorers had already taken the first undersea selfie, Cameron's Twitter feed captured the moment he touched the ocean floor: "Hitting bottom never felt so good."

[1]hydronauts—people trained to work in deep-sea vessels

[2]amoeba-like xenophyophore—a large single-celled sea creature

4. Part A

What does the phrase “swallowed up” in paragraph 3 of the passage from “Going Off the (Really) Deep End” communicate to readers?

Ⓐ the difficulty of measuring the ocean floor

Ⓑ the dullness of the exploration work

Ⓒ the extreme depth of the trench

Ⓓ the large size of the ocean

Part B

Which sentence from paragraph 3 **best** supports the answer to Part A?

Ⓐ “The explorers spent four years crisscrossing the globe, sailing 70,000 miles (112,654 kilometers)—one-third of the distance to the moon.”

Ⓑ “Sail about 200 miles (322 kilometers), drop a weighted rope into the water.”

Ⓒ “This expedition was a total snooze fest, until a day in 1875 about 200 miles off the coast of Guam.”

Ⓓ “The *Challenger’s* crew had discovered a ‘hole’ in the ocean floor.”

5. Part A

What does the author of the passage from "Going Off the (Really) Deep End" likely consider to have been the biggest problem with the *Trieste* expedition?

Ⓐ The explorers endured uncomfortable temperatures during their trip.

Ⓑ The explorers had to work in a space that was extremely small.

Ⓒ The ship took more than four hours to reach the ocean floor.

Ⓓ The engines made the water cloudy by stirring up silt.

Part B

Which sentence from the passage **best** supports the answer to Part A?

Ⓐ "Called the *Trieste*, their ship weighed 150 tons, including fuel, and was almost 60 feet (18 meters) long." (paragraph 5)

Ⓑ "That's about the same amount of room per person that you'd find inside a refrigerator." (paragraph 5)

Ⓒ "Unfortunately, during the 20 minutes they spent at the ocean bottom, the two hydronauts couldn't see much." (paragraph 6)

Ⓓ "But even though the *Trieste* didn't have the ability to take pictures outside the cabin, Piccard and Walsh got a chance to take the first deep-sea selfie." (paragraph 6)

6. Part A

In the passage from "Going Off the (Really) Deep End," what is the central idea of the section **THERE AND BACK AGAIN**?

Ⓐ Cameron led an expedition to try to determine which animals live in the deepest part of the Mariana Trench.

Ⓑ Cameron's experiences as a film director and an undersea explorer were valuable to the expedition.

Ⓒ Cameron's submersible ship was much more advanced than the one that Piccard and Walsh used.

Ⓓ Cameron went on a recent solo expedition into the Challenger Deep to film and research the area.

Part B

Which **two** pieces of evidence **best** support the answer to Part A? Select one piece of evidence from paragraph 7 and one from paragraph 8.

Ⓐ ". . . half the time to reach the bottom . . ." (paragraph 7)

Ⓑ ". . . in a ship that weighed less than one-tenth what the *Trieste* did." (paragraph 7)

Ⓒ ". . . spent three hours filming and taking scientific samples." (paragraph 7)

Ⓓ ". . . filmed some of the deepest-dwelling creatures in existence . . ." (paragraph 8)

Ⓔ ". . . a giant amoeba-like xenophyophore . . ." (paragraph 8)

Ⓕ ". . . a unique sea cucumber." (paragraph 8)

Refer to the passages from “The Deep Seas Are Alive with Light,” from “Eyes on the Depths,” and from “Going Off the (Really) Deep End.” Then answer question 7.

7. Which points of view do the authors reveal in the passages from “The Deep Seas Are Alive with Light,” from “Eyes on the Depths,” and from “Going Off the (Really) Deep End”? Circle the correct response in each box to complete the sentences.

1. The author of the passage from “The Deep Seas Are Alive with Light” seems to most value _____ .

Steven H. D. Haddock’s research
David Packard’s leadership
William Beebe’s writing

2. The author of the passage from “Eyes on the Depths” seems to most appreciate the ability of the _____ to advance undersea research.

Johnson-Sea-Link II
robotic arm
EITS

3. The author of the passage from “Going Off the (Really) Deep End” appears to especially respect the courageousness of _____ .

the crew of HMS Challenger
Piccard and Walsh
James Cameron

Refer to the passages from “The Deep Seas Are Alive with Light,” from “Eyes on the Depths,” and from “Going Off the (Really) Deep End.” Then answer question 8.

8. You have read passages from “The Deep Seas Are Alive with Light,” from “Eyes on the Depths,” and from “Going Off the (Really) Deep End.”

Studying deep ocean animal life has many challenges. Write an essay explaining some of those challenges and how scientists have overcome them by using special equipment designed for underwater research. Support your essay with evidence from all **three** passages.

Read the passage from *Speechless*. Then answer questions 9 through 12.

from *Speechless*

by Valerie Sherrard

1 If you asked my parents or friends or even one of my sisters to describe me they'd most likely sum me up in one word:

2 Quiet.

3 I guess I am.

4 Fact is, I don't like to draw attention to myself. And, as a person whose main goal is to make sure people don't notice me, it pretty much follows that I don't talk a whole lot. No one pays much attention to you if you don't have much to say, so there was no way I could have predicted what would happen when I stopped talking *altogether*.

5 The whole thing started because of an English assignment we got back in January, when Mr. Furlong announced that it was time for us to start working on our oratory[1] presentations.

6 I broke out in a sweat right there at my desk, second from the back, third row from the door. It was a bit early to be panicking, so the cold chill that ran through me seemed like a bad sign. The first part of the assignment—which was writing the speech—wasn't due for a week, and we wouldn't start delivering them in front of the class for another week or so after that. Even so, I found my hands getting clammy and felt hot prickles creeping along my neck.

7 You'd understand *why* if you'd been here to see what happened last year.

8 It was our first time doing speeches and when our English teacher, Miss Harlan, gave us the assignment it didn't even seem like such a big deal. We only had to come up with a two-minute talk and it could be on anything we wanted. I wasn't thrilled, but I sure didn't picture it turning out the way it did.

9 The first mistake I made was mentioning it at home when we were eating dinner that night. Actually, all I did was ask my sister, Kellie, who's one grade ahead of me, if her class had done speeches the year before. . . .

[1]oratory—public speaking

10 . . . Then [Mom] turned to me and said, “She did her speech on Kalan Porter. You must remember her practising it.” . . .

11 “Why? Is your class doing speeches?” Kellie asked.

12 “Yeah,” I mumbled. I wished I hadn’t brought it up.

13 “Griffin is going to give a speech,” Mom said to Dad.

14 “Hungh,” said Dad, who was sitting right there and had heard the whole thing. . . .

15 “You know,” Mom said, “I used to get really good marks in English when I was in school.”

16 Like I hadn’t heard that before—maybe a couple of thousand times.

17 “I *enjoy* writing, and I’m really, well, quite good at it.” She smiled and tried to look modest. “Why don’t I help you with your speech?”

18 “Uh, that’s okay,” I said.

19 “It’s no trouble, really. In fact, I’d *love* to do it.” She smiled at me. “It will be *nice* for us to do something together, don’t you think?”

20 There’s no right answer to a question like that. I shrugged and said, “I guess.” Even Mom should have been able to see that my enthusiasm was at a record low.

21 “Wonderful!” Mom said. “Why don’t we get started as soon as the dishes are done?”

22 Something you should know about my mom: when she gets an idea in her head, there’s no shaking it. Or her. After a couple of hours, during which she made suggestions and forced me to listen to sample paragraphs on a bunch of different subjects, I did something even stupider than mentioning it in the first place: I gave in. Or, as my best friend Bryan said when I told him about it later, I capitulated[2].

[2]capitulated—surrendered

23 In my defence, by that time I hardly knew *what* I was doing. I just wanted the torture to end. But when the confusion lifted from my brain I discovered that the topic I'd agreed to was *not*, as I'd thought, interplanetary travel. Instead, it was some stupid thing about men being from Mars and women being from Venus.

9. Part A

Read the dictionary entry.

> **shake:** *v*. **1.** to cause to tremble or quiver **2.** to make something less strong, powerful, or confident **3.** to disturb or alarm emotionally **4.** to free oneself of, to get rid of

Which definition **best** describes the word **shaking** as it is used in paragraph 22?

Ⓐ definition 1

Ⓑ definition 2

Ⓒ definition 3

Ⓓ definition 4

Part B

Which evidence from the passage **best** supports the answer to Part A?

Ⓐ ". . . she made suggestions. . . ." (paragraph 22)

Ⓑ ". . . a bunch of different subjects . . ." (paragraph 22)

Ⓒ "In my defence . . ." (paragraph 23)

Ⓓ ". . . wanted the torture to end." (paragraph 23)

10. Part A

What effect does Griffin allowing his mother to help him with his speech have on the plot of the passage?

Ⓐ It leads Griffin to make a commitment he soon regrets.

Ⓑ It causes Griffin to think about an earlier experience.

Ⓒ It makes Griffin more aware of his shortcomings.

Ⓓ It prompts Griffin to ask a friend for advice.

Part B

Select **two** pieces of evidence from the passage that **best** support the answer to Part A.

Ⓐ "It was our first time doing speeches and when our English teacher, Miss Harlan, gave us the assignment . . ." (paragraph 8)

Ⓑ "Like I hadn't heard that before—maybe a couple of thousand times." (paragraph 16)

Ⓒ "'Uh, that's okay,' I said." (paragraph 18)

Ⓓ ". . . even stupider than mentioning it in the first place: I gave in." (paragraph 22)

Ⓔ ". . . when the confusion lifted from my brain I discovered that the topic I'd agreed to was *not*, as I'd thought, interplanetary travel." (paragraph 23)

11. Write the letters for **five** statements in the boxes in the correct order to create the most accurate summary of the passage. Statements can be used only once.

A.	Griffin expresses annoyance about the process of choosing a topic and the topic itself.
B.	Griffin describes his father's reaction to the news that he will be giving a speech.
C.	Griffin recalls that his mother expressed an uninvited interest in helping him.
D.	Griffin explains how his first mistake was mentioning his assignment at home.
E.	Griffin describes his response to receiving an assignment for a presentation.
F.	Griffin explains that the way others tend to view him is generally accurate.
G.	Griffin describes telling a friend about what happened with his mother.

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

12. Part A

What is a theme of the passage?

Ⓐ Gestures intended to be helpful may not be welcome.

Ⓑ Family relationships are difficult but worthwhile.

Ⓒ Doing well in school provides lasting benefits.

Ⓓ Asking for advice is not a simple process.

Part B

Which detail from the passage **best** supports the answer to Part A?

Ⓐ ". . . I found my hands getting clammy. . . ." (paragraph 6)

Ⓑ ". . . all I did was ask my sister, Kellie, who's one grade ahead of me. . . ." (paragraph 9)

Ⓒ ". . . 'I used to get really good marks in English. . . .'" (paragraph 15)

Ⓓ ". . . forced me to listen to sample paragraphs . . ." (paragraph 22)

This is the end of Item Set 1.

ITEM SET 2

Today you will read a passage from *In Search of Goliathus Hercules* and a passage from *Water for Elephants*. As you read, you will answer questions and gather information so that you can write a response.

Refer to the passage from *In Search of Goliathus Hercules*. Then answer questions 1 and 2.

from *In Search of Goliathus Hercules*

by Jennifer Angus

1 Two days after he had met Robin, she appeared in the flea-circus tent for the final show of the day.

2 The audience and the maestro[1] had already left when Robin approached the glass case where Henri was serving the evening meal. She watched, fascinated, as he provided a blood drop into the waiting mouths of each hungry flea. Robin looked very different without her clown makeup. She had long brown hair with rather severe bangs in front. She was about the same height as Henri, maybe an inch shorter. She wasn't exactly pretty, but there was something about her that was compelling.

3 "That was a really good show, Henri. I don't know how you manage to get the fleas to do that stuff. It's amazing!"

4 "I told you. I talk to them." Henri had to ask himself why he was telling her the truth. Until he had met Robin, his instincts had told him not to confide his secret to anyone. Despite the excitement of the circus, he was lonely, and there was something about Robin's smile that made him want her to be his friend.

5 "Come here," said Henri. "I'll introduce you to everyone. Hold up your opera glasses so you can see them. Everyone, I would like you to meet Robin. She's a clown in the big top. She said she really enjoyed the show." One by one, he introduced Robin to the fleas, who appeared to be quite excited that someone from the "big show," as they called it, had admired their performance. Robin was quite charmed as Sophia and Maria curtseyed[2] to her and the boys, in turn, bowed. Liora, who was still attached to the high trapeze, waved to her. (Henri was still trying to figure out how to get her down without losing her hind legs as had happened to Umberto.)

[1]maestro—master of the flea circus

[2]curtseyed—performed a greeting by bending their knees with one foot in front of the other

6 After the introductions, Robin looked up at Henri and said, “You really are speaking to them, aren’t you?”

7 “Yes, I told you I am. Do you need more proof?”

8 “Yep, I do. Why don’t you teach me to say hello in insect language?”

9 “Well, I can do that, but I’ve recently learned from the fleas that a more appropriate greeting in the insect world is, ‘Are you hungry?’ Their lives are short and they don’t have time for formalities. They have very immediate needs, food being the primary one.”

10 “So, if we were insects and I hadn’t seen you for a week, I wouldn’t say, ‘Hello, what have you been up to?’ I’d say, ‘Are you hungry?’”

11 “Right! It’s like learning the customs in another country,” said Henri. “You’ll make a good impression on them if you ask. Of course, they will say yes because they always want to eat.”

12 “Yes, I wouldn’t want to make a bad impression.” She rolled her eyes. “Am I going to have to give them my blood when they say yes?”

13 “No, no. They’ll just be happy you asked about their well-being.”

14 “OK, teach me,” Robin said.

15 “All right, it’s like this.” And Henri made a short combination of hisses and clicks.

16 “Um . . . Can you do that again?”

17 Henri repeated it several times, and Robin repeated it back to him. Finally he said, “I think you’ve got it. You have a strong accent, but I think they’ll understand.”

18 Robin stepped up to the case, and seeing Liora on the trapeze, she stammered out the series of sounds. “I think she made a sound back! I’m not quite sure.”

19 “She did. She said she’s famished,” and Henri laughed. Robin beamed. She sought out each of the fleas with Henri’s help and asked each of them if they were hungry. Henri translated. “They all say you’re very polite. They’re flattered that you asked.”

20 “Well, I’m just going to have to believe you because I could only hear a few faint sounds, and I certainly couldn’t understand.”

21 Henri paused and then said, “I never really thought about it, but I guess I have developed really keen hearing. I could hear them perfectly.” Strange, thought Henri, that he hadn’t noticed that before. “Do you need more proof?”

22 “Yes,” she said with a smile. He knew she didn’t, really. She believed him already, but she was having fun.

23 “OK, come outside.” They walked away from the circus tents to where Henri had spoken with the butterflies the day before. The butterflies were still clustered around the wildflower blooms. Henri made a few barely perceptible[3] sounds that Robin wouldn’t have otherwise noticed at all. Rising en masse[4] from the flowers, the butterflies began to fly in tight formation around Robin’s head. She giggled as she caught sight of the colorful wings.

24 Henri grabbed her hand and led her to the mirrors outside the fun house tent. Robin caught a glimpse of herself and gasped to see the butterflies circling her head like a hovering wreath or halo. “They’re beautiful. Oh, Henri! I look like I’m a fairy queen.”

25 Henri laughed, sharing her delight. She started to skip around, glancing at herself in the mirrors from time to time. A crowd was starting to gather to watch Robin as she leaped about with her colorful entourage[5]. She seemed to be testing to see if the butterflies could keep up with her. Henri decided that perhaps she was attracting a little too much attention. A faint whisper from his lips, and the butterflies stopped following Robin and began their flight back to the meadow.

26 Robin came back to Henri, out of breath. She grabbed his arm, saying, “That was wonderful! I looked beautiful.”

27 He laughed. He wanted to say that she didn’t need butterflies to look beautiful, but that would be embarrassing to say out loud.

[3]perceptible—able to be recognized

[4]en masse—as a group

[5]entourage—companions

1. Circle **one** correct synonym and **one** correct antonym for **each** word as it is used in the passage from *In Search of Goliathus Hercules*.

Word	Synonym	Antonym
keen (paragraph 21)	reliable sharp special	dull fragile unusual
clustered (paragraph 23)	detected grouped isolated	dismissed scattered vanished
hovering (paragraph 24)	floating moving swaying	disappearing falling shattering

2. How does the author develop different points of view between Henri and Robin in the passage from *In Search of Goliathus Hercules*? Write **one** letter representing a character's name in each box to complete the sentences.

A. Henri

B. Robin

At the beginning of the passage, [ ] wants to form a friendship with [ ], while [ ] seems more interested in learning about the fleas.

When communicating with the fleas, [ ] regards them as close friends, while [ ] worries about making the right impression.

Outside the circus tent, [ ] is eager to test the butterflies, while [ ] becomes concerned about attracting attention.

Refer to the passage from *Water for Elephants*. Then answer questions 3 and 4.

from *Water for Elephants*

by Sara Gruen

1 I've never seen her act—those of us who work behind the scenes don't have time for that luxury—but this time nothing could stop me. I secure Bobo's door and slip into the connection, the roofless canvas tunnel that joins the menagerie[1] to the big top. The reserved-seat ticket seller glances at me quickly, and when he realizes I'm not a cop goes back to his business. His pockets jingle, swollen with money. I stand beside him, looking across the three rings to the back end of the big top.

2 Uncle Al announces her, and she steps inside. She spins, holding both whips high in the air. She flicks one and takes a few steps backward. The two groups of horses hurry in behind her.

3 Marlena sashays[2] to the center ring and they follow, high-kicking, prancing clouds of black and white.

4 Once she's in the center of the ring, she slaps the air lightly. The horses start circling the ring at a trot, five white followed by five black. After two complete rotations, she wiggles the whip. The black horses speed up until each is trotting beside a white horse. Another wiggle, and they ease into line so that the horses are now alternating black and white.

5 She moves only minimally, her pink sequins shimmering under the bright lights. She walks a small circle in the center of the ring, flicking the whips in combinations of signals.

6 The horses continue circling, with the white horses passing the black horses and then the black horses passing the white horses, with the end result always being alternating colors.

7 She calls out and they stop. She says something else, and they turn and step up so their front hooves are on the ring curb. They walk sideways, their tails toward Marlena and their hooves up on the rim. They do an entire rotation before she stops them again. They climb down and swing around to face her. Then she calls forth Midnight.

[1]menagerie—place where animals are kept and trained

[2]sashays—struts in a showy manner

8 He is a magnificent black, all Arabian fire with a perfect white diamond on his forehead. She speaks to him, taking both whips in one hand, and offering him her other palm. He presses his muzzle into it, his neck arched and nostrils flared.

9 Marlena steps backward and raises a whip. The other horses watch, dancing on the spot. She lifts the other whip and flicks its tip back and forth. Midnight rises up on his hind legs, his forelegs curled in front of him. She shouts something now—the first time she has raised her voice—and strides backward. The horse follows, walking on his hind legs and pawing the air in front of him. She keeps him upright all the way around the ring. Then she motions him down. Another cryptic circling of the whip, and Midnight bows, going down on the knee of one foreleg with the other extended. Marlena drops into a low curtsy[3] and the crowd goes wild. With Midnight still bowing, she lifts both whips and flicks them. The rest of the horses pirouette, turning circles on the spot.

10 More cheering, more adulation. Marlena spreads her arms in the air, turning to give each section of the audience a chance to adore her. Then she turns to Midnight and perches delicately on his lowered back. He rises, arches his neck, and carries Marlena from the big top. The rest of the horses follow, once again grouped by color, crowding each other to stay close to their mistress.

[3]curtsy—a gesture of respect made by bending the knees with one foot in front of the other

3. Part A

Read the sentence from paragraph 9 of the passage from *Water for Elephants*.

> The other horses watch, dancing on the spot.

What effect does the use of the word **dancing** have on the passage?

Ⓐ It creates the impression that the horses possess a special quality.

Ⓑ It suggests that the horses are spirited and wild creatures.

Ⓒ It emphasizes how well Marlena has trained the horses.

Ⓓ It makes the horses seem graceful and humanlike.

Part B

Which other phrase from the passage also has the effect described in the answer to Part A?

Ⓐ ". . . their hooves up on the rim." (paragraph 7)

Ⓑ ". . . presses his muzzle . . ." (paragraph 8)

Ⓒ ". . . legs and pawing the air . . ." (paragraph 9)

Ⓓ "With Midnight still bowing . . ." (paragraph 9)

4. What are the main ideas of paragraphs 8, 9, and 10 in the passage from *Water for Elephants*? Complete the table by writing the letter for the correct main idea for each paragraph in the appropriate box. Each main idea can be used only once or not at all.

A. Midnight demonstrates his obedience to Marlena.

B. Marlena and Midnight triumphantly lead the other horses away.

C. Midnight is a unique horse that has a special relationship with Marlena.

D. Marlena values Midnight above the other horses.

E. Midnight follows Marlena's commands to do extraordinary tricks.

Paragraph	**Main Idea**
8	_____
9	_____
10	_____

Refer to the passages from *In Search of Goliathus Hercules* and from *Water for Elephants*. Then answer question 5.

5. Complete the table by writing **one X** in **each** row to show which methods Henri and Marlena use to encourage animals to perform extraordinary feats in the passages from *In Search of Goliathus Hercules* and from *Water for Elephants*.

Methods	Henri	Marlena	Both Henri and Marlena
Physically signal to the animals.			
Listen to the animals.			
Speak directly to the animals.			
Touch the animals.			

Refer to the passages from *In Search of Goliathus Hercules* and from *Water for Elephants*. Then answer question 6.

6. Part A

How do the authors of the passages from *In Search of Goliathus Hercules* and from *Water for Elephants* develop similar themes about animals?

Ⓐ by emphasizing the idea that animals are more interesting than people

Ⓑ by demonstrating the responsibility people have to protect animals

Ⓒ by revealing that animals have many of the same feelings as people

Ⓓ by highlighting close relationships between people and animals

Part B

Which **two** pieces of evidence from the passages support the answer to Part A? Choose **one** piece of evidence from **each** passage.

Ⓐ "'They have very immediate needs, food being the primary one.'" (paragraph 9, from *In Search of Goliathus Hercules*)

Ⓑ "'Right! It's like learning the customs in another country,' said Henri." (paragraph 11, from *In Search of Goliathus Hercules*)

Ⓒ "She sought out each of the fleas with Henri's help and asked each of them if they were hungry." (paragraph 19, from *In Search of Goliathus Hercules*)

Ⓓ "She moves only minimally, her pink sequins shimmering under the bright lights." (paragraph 5, from *Water for Elephants*)

Ⓔ "She says something else, and they turn and step up so their front hooves are on the ring curb." (paragraph 7, from *Water for Elephants*)

Ⓕ "He is a magnificent black, all Arabian fire with a perfect white diamond on his forehead." (paragraph 8, from *Water for Elephants*)

TURN THE PAGE AND CONTINUE WORKING

Refer to the passages from *In Search of Goliathus Hercules* and from *Water for Elephants*. Then answer question 7.

7. The passages from *In Search of Goliathus Hercules* and from *Water for Elephants* both explore the theme of human communication with animals. Write an essay in which you contrast the differences in how the two passages develop this theme.

Be sure to support your response with evidence from **both** passages.

Read the passage from *Mesa Verde*. Then answer questions 8 through 13.

from *Mesa Verde*

by Mary Quigley

Ancestral Puebloans and culture

1 Some of the first Puebloan people found their way to the Four Corners area of North America. It is called this because it is where corners of Utah, Colorado, Arizona, and New Mexico meet. In this area are many mesas, which are flat plateaus with steep sides and moist, fertile land on the top. One large mesa was called "Mesa Verde," which means "green table."

2 Though they had been nomadic people who traveled in a constant search for food, the lush mesa tops offered prime land for agriculture and they learned to farm. Farming meant that their lifestyle changed drastically. Rather than being constantly on the move, they settled down and built towns. . . . Archaeologists divide the Ancestral Puebloan culture into periods that are defined by artistic, religious, technological, and social advances.

The Basketmakers

3 Before arriving at Mesa Verde, the Ancestral Puebloans are known by historians as the Basketmakers. This is because some of the main evidence of their culture is the baskets they made. For people on the move, basketmaking was an important skill. By weaving plant materials into vessels, they could carry the food that they gathered. Archaeologists learn about how the baskets were made, and what they were used for, by studying baskets that have been found at Mesa Verde. Around C.E. 550, the Ancestral Puebloans brought their culture to the Mesa Verde region.

4 When the Ancestral Puebloans arrived at Mesa Verde, the people settled in small villages. They were replacing their nomadic lifestyle by building permanent homes. They also began to learn how to make pottery. Making pottery suited their new lifestyle now that carrying heavy breakable pots was not an issue. They introduced beans to their diet, which were very nourishing. They used simple tools to create farms on the mesa top.

Pueblos

5 By about C.E. 750, the Ancestral Puebloans began to improve their houses. They made pueblo dwellings of wooden posts and sun-dried mud. Within about 250 years, they were cutting sandstone into blocks to build multi-room complexes with space for cooking, sleeping, and storing food.

6 How do we know how many people lived at Mesa Verde at a given time? The dwellings give clues. Archaeologists can estimate how many people could live in a dwelling and multiply that by the number of dwellings. Mesa Verde has generated population estimates ranging from 5,000 to 30,000.

The Classic period

7 The Classic or Great Pueblo period lasted from C.E. 1100 to C.E. 1300. By then Mesa Verde had become a civilization that survived through cooperation. They divided the responsibilities among members of the community, specialized in certain work based on their skills and customs, and traded by bartering. They further developed their creative and religious expression through art and ceremony. Their settlement shows evidence that a space was made for gathering together. In this setting, they could make political decisions, practice their religion, and socialize. It was during this period that they moved into the caves in the cliffs.

Life in the cliffs

8 The Ancestral Puebloan people managed to build a stable year-round community with a thriving culture, despite the dry desert summers and bitter winters. They still were able to grow crops and build homes using natural materials, their own hands, and simple tools. They found opportunities for play and for worship. They studied the stars, and learned to craft beautiful pottery, jewelry, and woven items. They left images on stones that tell a part of their story. Today, you can visit their deserted villages. You can also try to figure out why, suddenly, around C.E. 1300 the people of Mesa Verde left. Where did they go? And why?

Ancestral Puebloan finds

9 It takes many people to accurately document the story of a culture. Archaeologists look for things that early people left behind, such as dwellings, clothing, pottery, baskets, rock paintings, and etchings—even skeletal remains. But to understand the meaning of what they find, they work with specialists. For instance, medical doctors can help them to know how long someone lived by looking at the skeleton. A geologist, who studies Earth and its rocks, can help determine where the clay in a particular pot came from. This may tell where the person migrated from or whether they traded with someone from another region for their pottery. Anthropologists and linguists add their knowledge of stories and languages.

Early discoveries

10 The Mesa Verde region is the perfect place for learning about people of the past by using archaeology. The dry climate keeps artifacts from rotting and molding. The remote clifftop location prevents them from being washed away, lost, or broken. Wood-chewing insects find the area too dry to live in. Mesa Verde holds treasures, such as split willow baskets and clay pottery with painted designs. Archaeologists have even found fur clothing made from hide and cloth, jewelry, and tools. Every item tells a part of the story of the Ancestral Puebloan people.

11 Archaeologists have been helped by the fact that nobody moved into the Mesa Verde cliff dwelling after the Ancestral Puebloans moved away. Everything was left unchanged and undisturbed. Native people from surrounding areas respected the people who had lived there before and left their homes alone. Also, while the Ancestral Puebloans had learned how to farm and live in that region, it was difficult land that did not appeal to settlers. Although occasionally a traveler may have encountered some of the dwellings of Mesa Verde, European settlers were not widely aware of most of the Mesa Verde villages until the late 1800s.

8. Part A

What is the meaning of **encountered** as it is used in paragraph 11?

Ⓐ accidentally discovered

Ⓑ found artifacts from

Ⓒ studied in detail

Ⓓ mostly ignored

Part B

Which detail from the passage **best** supports the answer to Part A?

Ⓐ ". . . the perfect place for learning about people of the past . . ." (paragraph 10)

Ⓑ ". . . found fur clothing made from hide and cloth . . ." (paragraph 10)

Ⓒ ". . . was left unchanged . . ." (paragraph 11)

Ⓓ ". . . not widely aware of . . ." (paragraph 11)

9. Part A

Which sentence states the central idea of the passage?

Ⓐ Many experts, such as linguists and doctors, have helped archaeologists learn about the Puebloans.

Ⓑ As a result of living in a permanent settlement, the Puebloans made many advancements.

Ⓒ Innovations, such as in pottery and basketmaking, made life easier for the Puebloans.

Ⓓ After the Puebloans settled in permanent dwellings, their population grew.

Part B

Which **two** sentences from the passage **best** support the answer to Part A?

Ⓐ "Farming meant that their lifestyle changed drastically." (paragraph 2)

Ⓑ "This is because some of the main evidence of their culture is the baskets they made." (paragraph 3)

Ⓒ "Making pottery suited their new lifestyle now that carrying heavy breakable pots was not an issue." (paragraph 4)

Ⓓ "Mesa Verde has generated population estimates ranging from 5,000 to 30,000." (paragraph 6)

Ⓔ "Today, you can visit their deserted villages." (paragraph 8)

Ⓕ "A geologist, who studies Earth and its rocks, can help determine where the clay in a particular pot came from." (paragraph 9)

10. Circle the correct word or phrase from the choices to explain how settling in Mesa Verde changed the Puebloans' way of life.

According to details in _____ , the

paragraph 2
paragraph 3
paragraph 4

Puebloans were originally nomadic because they _____ .

wanted to remain undisturbed
had to build temporary homes
needed to find food sources

By developing _____ at Mesa Verde,

agriculture
pottery
religion

however, the Puebloans no longer had to be constantly on the move.
Consequently, during the Classic period, they were able to develop _____ .

gathering places
storytelling skills
pottery styles

11. Part A

Which statement **best** describes the author's point of view in the passage?

Ⓐ She finds it interesting that socializing was so important to the Puebloans.

Ⓑ She is surprised by how much experts have learned about the Puebloans.

Ⓒ She feels regret about the disappearance of the Puebloans.

Ⓓ She is impressed by the advancements Puebloans made.

Part B

Which detail from the passage **best** supports the answer to Part A?

Ⓐ ". . . Mesa Verde had become a civilization that survived through cooperation." (paragraph 7)

Ⓑ ". . . learned to craft beautiful pottery, jewelry, and woven items." (paragraph 8)

Ⓒ "Where did they go? And why?" (paragraph 8)

Ⓓ "Every item tells a part of the story of the Ancestral Puebloan people." (paragraph 10)

12. Part A

Which statement describes the main reason that the Mesa Verde settlements were excellent sources of information about the Puebloans?

Ⓐ The Puebloans changed the environment in which they lived.

Ⓑ The Puebloans began creating more durable objects.

Ⓒ The Puebloan possessions were well preserved.

Ⓓ The Puebloan society lasted hundreds of years.

Part B

Which detail from the passage **best** supports the answer to Part A?

Ⓐ "They used simple tools to create farms on the mesa top." (paragraph 4)

Ⓑ "The Ancestral Puebloan people managed to build a stable year-round community with a thriving culture. . . ." (paragraph 8)

Ⓒ "Archaeologists look for things that early people left behind, such as dwellings, clothing, pottery, baskets, rock paintings, and etchings. . . ." (paragraph 9)

Ⓓ "The dry climate keeps artifacts from rotting and molding." (paragraph 10)

13. The passage claims that when the Puebloans settled in the Four Corners area, they changed their way of life to survive there.

Write an X in the box to show whether each detail from the passage supports or does not support the claim.

Details from the Passage	Supports the Claim	Does Not Support the Claim
They transported their food and supplies.		
They learned how to weave baskets.		
They developed farming techniques.		
They built homes on Mesa Verde.		
They worked on specific jobs.		

This is the end of Item Set 2.

ITEM SET 3

Read the passage from *Electronics: MP3s, TVs, and DVDs*. Then answer questions 1 through 5.

from *Electronics: MP3s, TVs, and DVDs*

by Chris Oxlade

Speed of change

1 Just a few years ago, devices that we take for granted today, such as digital music players and cameras, did not exist, or they were too expensive for most people to buy. This shows how incredibly quickly electronics are changing. This happens because people always want the latest, fastest, smallest, most powerful, most feature-filled gadgets, and technology companies continue to produce them. When a device appears in stores, companies are already designing a new, improved version to take its place a few months later. This makes it hard to predict the future of electronics. In fact, the only thing we can be sure of is that things will change very quickly!

Electronic history

2 The first electronic component was invented at the start of the 20th century. It was a valve that allowed one electric current to control another. All electronic devices, such as radios and televisions, used to use bulky valves until the late 1940s. Now, almost every modern device contains one or more microchip. The microchip was developed in the 1950s. Since then, manufacturers have found ways to fit more and more components onto microchips. This allows very complex electronic circuits to be fitted into a tiny space.

Make the connection

What are electronics?

3 An electronic device works using electricity, but it is different from an electric device. For example, a flashlight is an electric device. When you turn it on, electricity flows from the battery through the bulb. When you turn it off, the electricity stops. Other examples of electric devices are toasters, hair dryers, and electric heaters.

4 Electronic devices work using electric signals that represent something else, such as sound, for example. The devices can change, or process, the signal. A radio is an electronic device. It takes the electric radio signal, processes it, and turns it into the sound you hear. All the devices and gadgets in this [passage] are electronic devices.

Representing information

5 In all the devices in this [passage], electricity represents information (such as sound or images). For example, in a CD player, electricity represents sound; in a television, electricity represents moving pictures. The electricity that represents the information is called an electric signal.

6 There are two types of electric signal: analog and digital. In an analog signal, the strength of the electricity varies. If you take an analog signal that represents a sound wave, the changing strength of the electricity represents the changing shape of the sound wave.

7 In a digital signal, the electricity is either on or off. A sequence of ons and offs represents the ones and zeros of binary numbers. In a digital signal representing a sound wave, these numbers represent the differing strength of the sound wave.

8 The numbers are recognized and processed by digital devices. For example, when a digital sound signal is processed, the numbers it contains are turned into sound.

9 Most devices in this [passage] contain both analog and digital circuits.

Going digital

10 During the last [several] decades, there has been a switch from analog electronics to digital electronics. This change is sometimes known as the digital revolution. But why has it happened? What are the advantages of digital electronics over analog electronics?

11 The main advantage is that once information is in digital form, it can be stored as files in memory, on hard drives and on CDs and DVDs. . . . It can then be transmitted over digital networks and processed by computers. Sounds, photographs, and video clips can all be handled in the same way and on the same machine.

12 Before digital electronics, you needed lots of different machines, since sounds were stored on audiotape, photographs were stored on film and video was stored on videotape.

13 Digital circuits also mean that data can be reduced to a smaller size. This is called compression. It allows information to take up less storage space and to be sent from place to place more quickly. The information must be returned to its original size afterward. For example, MP3 and WMA are two popular formats for storing sound. JPEG is a format for storing photographs.

Make the connection

14 Bandwidth is a common word in the world of communications. It means the speed that information can be sent along a communications link, such as a cable or an optical fiber. You can think of a communications link carrying information as being like a pipe carrying water. A wider pipe can carry more water, just as a link with greater bandwidth can carry information faster. Also, many more digital signals than analog signals can fit down a link. The word broadband describes a communications system that can carry a very high number of digital signals.

Convergence

15 Convergence is one of the buzzwords of electronics. It means that one or two state-of-the-art devices can do the jobs that were done by many different devices in the past. For example, in the 1980s you needed a camera to take photographs, a cassette player to listen to music, and a telephone to make calls. Now a cutting-edge cell phone can do all of these jobs. This is possible because all the different types of information are handled in digital form.

1. Part A

What is the meaning of the phrase **take for granted** as it is used in paragraph 1 of the passage?

Ⓐ produce efficiently

Ⓑ fail to appreciate

Ⓒ use extensively

Ⓓ refuse to buy

Part B

Which detail from paragraph 1 **best** supports the answer to Part A?

Ⓐ ". . . digital music players and cameras . . ."

Ⓑ ". . . too expensive for most people . . ."

Ⓒ ". . . always want the latest . . ."

Ⓓ ". . . the only thing we can be sure of . . ."

2. Part A

What effect did digital circuits have on how people communicate with one another?

Ⓐ The amount of bandwidth needed to record music increased.

Ⓑ The number of devices needed to take pictures increased.

Ⓒ The amount of time needed to send messages decreased.

Ⓓ The number of wires needed to transmit data decreased.

Part B

Which detail from the passage **best** supports the answer to Part A?

Ⓐ “Sounds, photographs, and video clips can all be handled in the same way . . .” (paragraph 11)

Ⓑ “. . . you needed lots of different machines, since . . . photographs were stored on film . . .” (paragraph 12)

Ⓒ “It allows information to . . . be sent from place to place more quickly.” (paragraph 13)

Ⓓ “. . . information can be sent along a communications link, such as a cable or an optical fiber.” (paragraph 14)

3. Circle the correct word or phrase in each box to complete the sentences.

Inventors developed microchips because valves were too _____.

large
outdated
simple
slow

The microchip allowed inventors to develop devices that _____.

make it difficult for electronic circuits to communicate
fit more electronic circuits into a small space
have more values than analog electronics
work as well as the older electronics

So one device can now_____.

cause long delays in receiving messages
use more electricity than analog signals
use less bandwidth to carry information
eliminate the need for multiple devices

4. Part A

Why did the author include the section **What are electronics?**

Ⓐ to argue that certain devices cost more than others

Ⓑ to address the differences between two concepts

Ⓒ to explain important events from the past

Ⓓ to describe the appearance of electronics

Part B

Which other section has the same purpose as **What are electronics?**

Ⓐ **Speed of change**

Ⓑ **Electronic history**

Ⓒ **Representing information**

Ⓓ **Make the connection**

5. Part A

How does the passage develop its central idea about electronics?

Ⓐ by including examples of how electronics have changed over time

Ⓑ by including a description of how electronics worked in the past

Ⓒ by providing an explanation of how digital electronics work

Ⓓ by providing details of how electronics collect data

Part B

Which detail from the passage **best** supports the answer to Part A?

Ⓐ ". . . work using electric signals that represent something else . . ." (paragraph 4)

Ⓑ ". . . the information is called an electric signal." (paragraph 5)

Ⓒ ". . . been a switch from analog electronics to digital electronics." (paragraph 10)

Ⓓ ". . . it can be stored as files in memory, on hard drives . . ." (paragraph 11)

This is the end of Item Set 3.

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