Grade 6
English Language Arts/Literacy
End of Year Paired Text Set

2018 Released Items

2018 Released Items: Grade 6 End of Year Paired Text Set

The paired text set requires students to read two texts that are purposely paired. Students read the texts and answer questions about each text and about the texts as a pair.

The 2018 blueprint for grade 6 End of Year Paired Text Set includes Evidence-Based Selected Response/Technology-Enhanced Constructed Response items.

Included in this document:

- Answer key and standards alignment
- PDFs of each item with the associated text(s)

Additional related materials not included in this document:

- Guide to English Language Arts/Literacy Released Items: Understanding Scoring 2015
- Guide to English Language Arts/Literacy Released Items: Understanding Scoring 2016

Release Items Answer and Alignment Document

Text Type: Paired Info		
Passage(s): Huge Magma Pocket Lurks Beneath Yellowstone Supervolcano / "What Do We Know About Volcanoes?"		
Item Code	**Answer(s)**	**Standards/Evidence Statement Alignment**
D1155	**Item Type: EBSR** **Part A:** D **Part B:** A	RI 6.4.1 RST 6.1.3
D1156	**Item Type: EBSR** **Part A:** B **Part B:** B	RST 6.1.3 RST 6.6.4
D1158	**Item Type: EBSR** **Part A:** C **Part B:** E, F	RI 6.2.1 RST 6.1.3
D1160	**Item Type: EBSR** **Part A:** B **Part B:** C	RI 6.4.1 RST 6.1.3
D1161_AB	**Item Type: EBSR** **Part A:** D **Part B:** A	RST 6.1.3 RST 6.5.3
D1163	**Item Type: EBSR** **Part A:** B **Part B:** A	RST 6.1.3 RST 6.6.4

Today you will read two articles about volcanoes. Although volcano eruptions are rare, they are memorable and often dangerous when they do occur. When a volcano erupts, hot magma, ash, and gases escape, causing destruction to the surrounding area.

Read the article "Huge Magma Pocket Lurks Beneath Yellowstone Supervolcano." Then answer the questions.

Huge Magma Pocket Lurks Beneath
Yellowstone Supervolcano

by Ker Than

The 'Grand Prismatic' hot spring in the Yellowstone National Park, home of a massive underground supervolcano.

1 The magma reservoir lurking beneath a dormant supervolcano in Yellowstone National Park far exceeds past estimates of its size, a new analysis shows.

2 "We found it to be about two-and-a-half times larger than we thought," said analysis team scientist James Farrell of the University of Utah in Salt Lake

City. "That's not to say it's getting any bigger. It's just that our ability to see it is getting better."

3 The size finding, presented at the American Geophysical Union fall meeting in San Francisco last Thursday, has big implications for the extent of the volcano's impact when it next erupts.

4 The supervolcano underneath the national park last erupted on a massive scale some 640,000 years ago, according to the U.S. Geological Survey (USGS). It is a potential supervolcano, capable of spewing more than 240 cubic miles (1,000 cubic kilometers) of magma across Montana, Idaho, and Wyoming, with global climate effects.

5 "We believe it will erupt again someday, but we have no idea when," Farrell said.

More Magma Measured

6 In the new analysis, Farrell and his team calculated the size of the volcano's magma reservoir by analyzing earthquake measurement data collected from 1984 to 2011 from about 40 seismometers installed around Yellowstone.

7 Yellowstone National Park is located in a very seismically active region and experiences between 1,500 to 2,000 earthquakes a year. Most of the temblors are too small to be felt by humans, but occasionally "you will have a large earthquake like the magnitude 7.3 one that we saw in 1959," Farrell said.

8 The team used software to calculate how long it takes for the seismic waves to travel from the epicenter of an earthquake to the surface seismometers. They next analyzed the data to find regions where the seismic waves appeared to slow down, which is a sign that the waves were traveling through magma.

9 "Seismic waves travel slower through molten material," Farrell said.

10 The team used that information to create a map of the underground magma reservoir beneath Yellowstone. Farrell likened his team's technique to the medical scanners doctors use to image inside the human body. "It's the

exact same technique. It's just that we use seismic waves, and we do it on a much bigger scale," he said.

11 The team's map revealed that Yellowstone's magma reservoir is not arranged vertically, as once thought, but rather it is tilted in a northwest to southeast direction. It's also much bigger than previously thought, measuring about 55 miles by 20 miles (90 by 30 kilometers) on each side and about 6 miles (10 kilometers) deep.

12 The new size estimate means the current magma reservoir is roughly equal to what it was when the supervolcano last erupted, about 640,000 years ago.

13 "What we're seeing now agrees with the geologic data that we have about past eruptions," Farrell said. "And that means there's the potential for the same type of eruption that we've seen in the past."

14 Scientists think that after each eruption, the magma reservoir is emptied, and it takes a long time for it to refill again.

Global Catastrophe

15 Scientists predict that when the Yellowstone supervolcano does erupt, it will have global consequences. Large amounts of ash and pulverized rock from the eruption will get lofted into the atmosphere and then fall back slowly to Earth.

16 "You'll get ashfall as far away as the Great Plains, and even farther east," Farrell said.

17 Furthermore, volcanic material and gases that linger in the atmosphere will block sunlight, resulting in a global temperature decrease.

18 There will be nothing humans can do to prevent the eruption from happening, Farrell said, but at least with the instruments in place there should be ample warning before the volcano erupts. The Yellowstone Volcano Observatory partnership of state, federal, and academic experts regularly monitors the volcano.

19 "I think we'll have anywhere from weeks to months of warning that magma is moving up into the shallow crust and [that] something is going on," Farrell said.

20 As catastrophic as an eruption of the Yellowstone supervolcano would be, Farrell said it's not an imminent threat, nor the one people should be focusing on. The USGS puts the annual odds of a super-eruption at 1 in 730,000.

21 "The most likely hazard in Yellowstone is from large earthquakes," he said. "A lot of people say that the Yellowstone volcano is overdue to erupt, but there's no evidence that it is overdue. We can't say when the next eruption is going to happen."

1. Part A

What is the meaning of the word **catastrophic** in paragraph 20 of "Huge Magma Pocket Lurks Beneath Yellowstone Supervolcano"?

A. beautiful and awe inspiring
B. slow moving and steady
C. ready to happen
D. resulting in disaster

Part B

Which evidence from paragraph 20 provides a clue about the meaning of **catastrophic**?

A. "threat"
B. "should be"
C. "focusing on"
D. "odds"

2. Part A

Why does the author of "Huge Magma Pocket Lurks Beneath Yellowstone Supervolcano" include the following information in paragraph 12?

> The new size estimate means the current magma reservoir is roughly equal to what it was when the supervolcano last erupted, about 640,000 years ago.

A. to explain that there is less magma under the volcano in Yellowstone than previously thought

B. to show that the volcano in Yellowstone could erupt again

C. to persuade people to avoid visiting Yellowstone National Park

D. to describe the characteristics of magma underneath supervolcanoes

Part B

Which evidence supports the answer in Part A?

A. "The team's map revealed that Yellowstone's magma reservoir is not arranged vertically, as once thought. . . ." (paragraph 11)

B. "'. . . that means there's the potential for the same type of eruption that we've seen in the past.'" (paragraph 13)

C. ". . . after each eruption, the magma reservoir is emptied. . . ." (paragraph 14)

D. ". . . when the Yellowstone supervolcano does erupt, it will have global consequences." (paragraph 15)

3. Part A

What conclusion can be made about the volcano in Yellowstone National Park, according to "Huge Magma Pocket Lurks Beneath Yellowstone Supervolcano"?

A. The amount of magma under the volcano is cause for alarm and immediate action by scientists.

B. Scientists should spend more time studying supervolcanoes because they are wonders of nature.

C. Although there is a large amount of magma under the volcano, people should not worry about the threat of a supervolcano eruption.

D. The data collected by Farrell and his team were only helpful in figuring out the arrangement of the magma, not its size.

Part B

Which evidence from the article supports the answer in Part A? Choose **two** answers.

A. "'It's just that our ability to see it is getting better.'" (paragraph 2)

B. "'Seismic waves travel slower through molten material,' Farrell said." (paragraph 9)

C. "'It's the exact same technique. It's just that we use seismic waves, and we do it on a much bigger scale'. . . ." (paragraph 10)

D. "'You'll get ashfall as far away as the Great Plains, and even farther east,' Farrell said." (paragraph 16)

E. ". . . Farrell said it's not an imminent threat, nor the one people should be focusing on. The USGS puts the annual odds of a super-eruption at 1 in 730,000." (paragraph 20)

F. "'A lot of people say that the Yellowstone volcano is overdue to erupt, but there's no evidence that it is overdue.'" (paragraph 21)

Read the article "What Do We Know About Volcanoes?" Then answer the questions.

What Do We Know About Volcanoes?

by Montana Bureau of Mines and Geology

1 Volcanoes are commonly divided into three basic types, although not all fit neatly into one of these categories. These are shield volcanoes, composite cones, and calderas.

2 Shield volcanoes are low and rounded, shaped like a warrior's shield. They get this shape because the lavas that form them are relatively hot and fluid compared to other lavas. Because the lavas flow easily, they do not pile up to form steep-sided cones, but instead may flow for miles or tens of miles before they cool. Although these volcanoes produce some ash and coarser materials, lavas usually dominate. Any volcano is dangerous, but shield volcanoes are generally the least dangerous.

3 Composite cones are some of the most spectacular and famous volcanoes, for example Mt. Vesuvius, Mt. Rainier, or Mt. St. Helens (which was our last big eruption in the United States). The lavas that form composite cones are not as hot or as fluid as the lavas that form shield volcanoes. Therefore, they tend to pile up and make the classic, and beautiful, volcanic cone with steep sides rather than spread out for many miles.

4 These volcanoes can be very explosive, and therefore dangerous. They are much less predictable than shield volcanoes. Even though Mt. St. Helens was being monitored very carefully prior to its eruption in 1980, the way it erupted was a surprise, and dozens of people were killed. Another hazard associated with composite cones is landslides (most commonly mudflows). The steep sides of the volcanic cone combined with lots of fairly loose volcanic ash and debris created by explosive eruptions can create massive mudflows when saturated with water. These mudflows may travel down canyons at tens of miles per hour, overwhelming everything in their path. Large mudflows sometimes kill thousands of people where towns have been built in their path.

5 Calderas are the champions of volcanoes, and are generally the least-recognized. Yellowstone National Park owes its spectacular geysers, steaming fumaroles, and hot springs to a caldera-forming eruption that happened about 600,000 years ago. If you visit Yellowstone, it does not look like a volcano. That's because it is so big (the caldera is about 25 miles by 45 miles across), and it did not form a big volcanic cone like Mt. Rainier.

6 In these highly explosive volcanoes the magma has a high resistance to flow, and also contains a large amount of gases (mostly steam). As the magma nears the earth's surface, the pressure from the overlying rocks is no longer sufficient to hold the gases inside the magma. As a result, the gases literally blow the magma apart, creating great volumes of volcanic ash and coarser debris. This material forms very hot, dense clouds that move along the earth's surface at speeds that may exceed 100 miles per hour. It was a cloud of this type that did much of the damage when St. Helens erupted in 1980.

7 Imagine taking a bottle of soda pop and shaking it up as you hold your thumb over the top of the bottle. When you remove your thumb, the insides of the bottle come foaming out, spurting into the air and flowing down the side of the bottle. This is similar to what happens in an explosive volcanic eruption. In fact, so much magma is blown out as ash that the overlying crust collapses, leaving a hole at the surface that may be over 10 miles across and a mile or more deep. This hole is the caldera. In large calderas this hole commonly fills with the volcanic ash being erupted.

8 Many calderas have formed in the geologic past, but we have never witnessed a large caldera-forming eruption since man first began writing down history. We probably don't want to! The large eruptions would be capable of altering the earth's climate for several years, and the ash erupted could destroy human habitation over an area that could easily cover several states.

Courtesy of the Montana Bureau of Mines and Geology.
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Photo: Mark Ralston, AFP/Getty Images

4. Part A

What is the meaning of the word **fluid** in paragraph 2 of "What Do We Know About Volcanoes"?

A. heavy, weighted
B. moving freely, like water
C. cloudy, smoky
D. covering completely, like dust

Part B

Which evidence from paragraph 2 provides support for the meaning of **fluid**?

A. "low and rounded"
B. "relatively hot"
C. "flow easily"
D. "produce some ash"

5. Part A

How does paragraph 3 from "What Do We Know About Volcanoes?" contribute to the reader's understanding of volcanoes?

A. by explaining what causes a shield volcano to erupt

B. by suggesting that today's volcanoes are more damaging than those in the past

C. by describing ways people can safely live near composite cones

D. by showing differences between composite cones and shield volcanoes

Part B

Which statement from paragraph 4 contributes to the reader's understanding in the same way as in Part A?

A. "They are much less predictable than shield volcanoes."

B. "Even though Mt. St. Helens was being monitored very carefully prior to its eruption in 1980, the way it erupted was a surprise, and dozens of people were killed."

C. "These mudflows may travel down canyons. . . ."

D. "Large mudflows sometimes kill thousands of people. . . ."

6. Part A

Why does the author of "What Do We Know About Volcanoes?" include the description of the soda bottle demonstration in paragraph 7?

A. to show how lava slowly flows along the sides of a caldera

B. to show how a caldera builds up pressure and then erupts

C. to show how wide the opening of a caldera is

D. to show how calderas and composite cones are similar

Part B

Which evidence in paragraph 7 supports the answer to Part A?

A. "This is similar to what happens in an explosive volcanic eruption."

B. "In fact, so much magma is blown out as ash . . ."

C. ". . . the overlying crust collapses, leaving a hole at the surface that may be over 10 miles across. . . ."

D. "In large calderas this hole commonly fills with the volcanic ash being erupted."

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