Grade 6
English Language Arts/Literacy
End of Year M/L Informational Text

2019 Released Items

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2019 Released Items: Grade 6 End of Year M/L Informational Text Set

The medium/long (M/L) informational text set requires students to read an informational text and answer questions.

The 2019 blueprint for the grade 6 M/L informational 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:

- Sample scored student responses with annotations and practice papers
- Scoring Rubric for Prose Constructed Response Items
- Guide to English Language Arts/Literacy Released Items: Understanding Scoring

Release Items Answer and Alignment Document ELA/ Literacy: Grade 6

Text Type: M-E Info		
Passage(s): from "Radios: Build Your Own!"		
Item Code	**Answer(s)**	**Standards/Evidence Statement**
DD607602936	**Item Type: EBSR** **Part A:** A **Part B:** B	L 6.4.1 RI 6.1.1 RI 6.4.1
DD607705958	**Item Type: EBSR** **Part A:** B **Part B:** C	RI 6.1.1 RI 6.5.2
DD607601903	**Item Type: TECR** **Part A:** C **Part B:** 	RI 6.1.1 RI 6.2.2

DD607639040	**Item Type: EBSR** **Part A:** B **Part B:** C	RI 6.1.1 RI 6.4.1
DD607704304	**Item Type: TECR** "You've probably listened to music or sports on the radio." (paragraph 8) Reasoned Judgment "Tom Sullivan is an electrical and computer engineering professor at the Pittsburgh school." (paragraph 4) Fact "The antenna's job is to grab radio waves from the air." (paragraph 12) Fact "As these students learned, people can fairly easily make their own battery-powered AM radios." (paragraph 16) Speculation	RI 6.1.1 RST 6.8.4
DD607703017	**Item Type: EBSR** **Part A:** C **Part B:** A	RST 6.1.3 RST 6.5.3
DD607684996	**Item Type: EBSR (additional item)** **Part A:** C **Part B:** C, E	RST 6.1.3 RST 6.5.3
DD607663290	**Item Type: EBSR (additional item)** **Part A:** A **Part B:** C	RST 6.1.3 RST 6.6.4
DD607653400	**Item Type: TECR (additional item)** Place the steps the students followed to build a radio in the correct order according to the passage. Examine an electrical diagram to know where to place parts of the radio kit on the circuit board. Use a soldering iron to attach parts to the circuit board. Add flux to ensure parts are securely connected. Connect the antenna, tuner, and microchip to the circuit board. Push a 9-volt battery into the radio.	RST 6.1.3 RST 6.3.4

Read the passage from "Radios: Build Your Own!" Then answer the questions.

from "Radios: Build Your Own!"

by Kathiann Kowalski

Young researchers build their own radios as part of the 2015 Broadcom MASTERS International program.

1 You've probably listened to music or sports on the radio. Teenage and tween-age researchers from around the world did more than just listen to the radio this past May. They built one!

2 All were middle-school delegates to the 2015 Broadcom MASTERS International program. To be chosen, each had earlier exhibited an outstanding research project in science, technology, engineering or mathematics. These are the so-called STEM fields. And like STEM, MASTERS also is an acronym. It stands for "Math, Applied Science, Technology and Engineering Rising Stars."

3 Broadcom Foundation sponsors both a U.S. competition and this companion international program. Projects by this year's international delegates covered topics as varied as slime molds, running shoes and spacecraft. The young researchers convened in Pittsburgh, Pa., at the Intel International Science and Engineering Fair, or ISEF. (The Society for Science & the Public runs the Broadcom MASTERS, Broadcom MASTERS International and Intel ISEF. It also publishes *Science News for Students*.)

4 Two-dozen international MASTERS delegates built radios during a visit to Carnegie Mellon University. Tom Sullivan is an electrical and computer engineering professor at the Pittsburgh school. Working in his lab, each young researcher received a kit with a circuit board, wires, electronic components and instructions. Graduate student Alexei Colin explained how to use the kit. Then the budding engineers got to work.

5 A radio does three basic things. First, it harvests radio waves. Those waves are part of the electromagnetic spectrum, which is all around us. Second, the radio changes the signal from a selected station into an electric current.

The force of that current, or its voltage, varies based on the sound information coded in the electrical signal. Finally, the radio converts that varying voltage into sound waves that we can hear. To make all that happen, the Broadcom MASTERS students each built their very own radio.

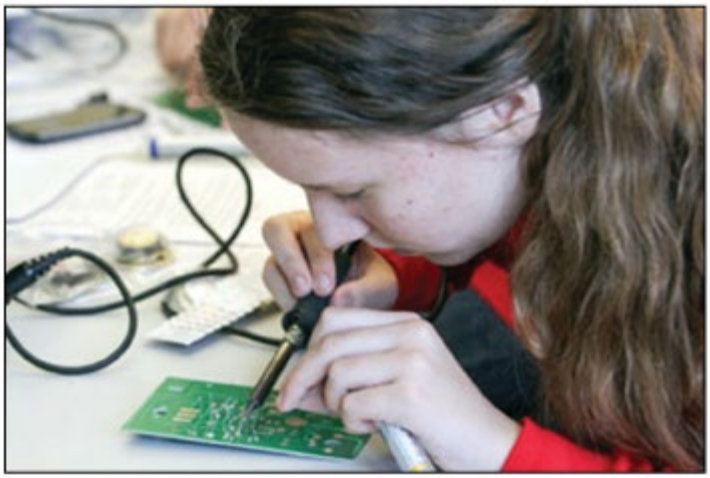
Step by Step

6 An electrical diagram told the young researchers where to place each of the kit's parts on the circuit board. The students had to make sure they connected some pieces to the circuit board in the right direction. If any of these went in backward, the radio might not work. Or worse. If the parts were assembled incorrectly, the electric current might damage the radio's parts.

7 The do-it-yourself kits included diodes. These work like one-way gates for an electric current. On each diode, a black band denoted its negative end, or cathode. To work properly, it had to go into a hole marked with a vertical line on the electrical diagram.

8 Additional parts perform other jobs. Those functions make electronic circuits work in radios—and lots of other electronic devices. Resistors, for instance, reduce the flow of current. And capacitors (kuh-PASS-it-terz) temporarily store energy.

9 The radio's pieces didn't just snap into place. Each had to be soldered (SAAH-derd) to the circuit board. Solder is a metal that melts easily. It is used to join together metal pieces. To attach a component to the circuit board, the students used a device called a soldering iron, which preheats parts to be joined. They also added a bit of a gooey compound. Then they melted a bit of solder between the parts. The rosin-based goo, called flux, helped the solder flow around the hole in the circuit board where the piece was to be joined. This ensured a good contact.



Isabella O'Brien of Dundas, Canada, patiently tries not to get burned as she solders components onto her circuit board.

10 The students patiently soldered parts in place. Even so, the process was sometimes tricky. "Trying not to burn myself was really hard," noted 13-year-old Isabella O'Brien of Canada.

11 Getting everything into place at the same time got awkward, too. "I had a couple of parts that weren't physically touching the board," says 13-year-old Raghav Ganesh of San Jose, Calif. "It's like you needed some sort of third arm to make it easier." Without physical contact, current can't flow through the radio within a closed circuit. In other words: The radio wouldn't work.

12 The radio builders eventually connected larger parts to the circuit board. The antenna was an iron rod with wire coiled around it. The antenna's job is to grab radio waves from the air. A tuner let the system select—tune into—different radio stations. A microchip served as an amplifier. It made the radio's sound louder as it came out through a speaker. And a 9-volt battery powered the radio.

13 Even squeezing the battery into its plastic holder proved a challenge. "You have to push really hard," said Jack Pollock, 14, of the United Kingdom, as he helped Kristyna Bednářová, 13, of the Czech Republic.

Making Connections

14 The students built AM radios. These letters stand for amplitude and modulation. That means the sound information decoded by the radio is a reflection of the strength, or amplitude, of the electromagnetic waves that it picks up.

15 AM carried the first commercial radio broadcasts. Today, FM radio is more popular in many areas. FM stands for frequency modulation. FM radio decodes sound information from slight changes in the frequency of the waves.

16 Yet AM radio is still important. For one thing, emergency broadcast systems use AM radio. An AM station can broadcast over a bigger area than an FM station can. An AM radio is also simpler and cheaper than an FM one. As these students learned, people can fairly easily make their own battery-powered AM radios. "It's very easy to grab a couple of household items and build something that will receive AM frequencies," notes Sullivan, the Carnegie Mellon professor.

Glossary

diodes = electronic devices that allow electric current to flow in one direction only

DD607602936

1. Part A

What is the meaning of the word **converts** as it is used in paragraph 5 of the passage from "Radios: Build Your Own!"?

A. transforms
B. collects
C. develops
D. increases

Part B

Which detail from paragraph 5 supports the answer to Part A?

A. ". . . harvests radio waves."
B. ". . . changes the signal . . ."
C. ". . . force of that current . . ."
D. ". . . built their very own radio."

DD607705958

2. Part A

How do paragraphs 14–16 help the reader understand how information is transmitted?

A. by explaining how the two ways of transmitting information were developed

B. by showing differences between the two ways of transmitting information

C. by sharing why one way of transmitting information was more important than the other

D. by demonstrating why one way of transmitting information was more complicated than the other

Part B

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

A. "AM carried the first commercial radio broadcasts." (paragraph 15)

B. "Today, FM radio is more popular in many areas." (paragraph 15)

C. "An AM station can broadcast over a bigger area than an FM station can." (paragraph 16)

D. "'It's very easy to grab a couple of household items and build something that will receive AM frequencies,' notes Sullivan, the Carnegie Mellon professor." (paragraph 16)

3. Part A

What is a central idea of the passage from "Radios: Build Your Own!"?

A. Building an AM radio creates an untidy workplace.
B. Building an AM radio takes some drawing and design ability.
C. Building an AM radio requires patience and careful attention.
D. Building an AM radio involves a great deal of background knowledge.

Part B

Select **three** sentences from paragraphs 6–11 that support the answer to Part A.

Step by Step

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7 The do-it-yourself kits included diodes. These work like one-way gates for an electric current. On each diode, a black band denoted its negative end, or cathode. To work properly, it had to go into a hole marked with a vertical line on the electrical diagram.

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10 The students patiently soldered parts in place. Even so, the process was sometimes tricky. "Trying not to burn myself was really hard," noted 13-year-old Isabella O'Brien of Canada.

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4. Part A

What is the meaning of the word **amplifier** as it is used in paragraph 12 of the passage?

A. object that chooses information
B. object that increases something
C. object that makes energy available
D. object that causes parts to move

Part B

Which detail from paragraph 12 supports the answer to Part A?

A. ". . . connected larger parts to the circuit board."
B. ". . . let the system select . . ."
C. ". . . made the radio's sound louder . . ."
D. ". . . battery powered the radio."

DD607704304

5. The sentences in the passage may present facts, reasoned judgments, or speculations. For each sentence, select the correct description from the drop-down menu.

"You've probably listened to music or sports on the radio." (paragraph 1)

Choose...

- fact
- reasoned judgment
- speculation

"Tom Sullivan is an electrical and computer engineering professor at the Pittsburgh school." (paragraph 4)

Choose...

- fact
- reasoned judgment
- speculation

"The antenna's job is to grab radio waves from the air." (paragraph 12)

Choose...

- fact
- reasoned judgment
- speculation

"As these students learned, people can fairly easily make their own battery-powered AM radios." (paragraph 16)

Choose...

- fact
- reasoned judgment
- speculation

6. Part A

How do paragraphs 2–4 contribute to the development of ideas in the passage?

A. They explain how the supporting organization decided what to name the program.

B. They describe why the program continues to be held each year.

C. They provide information about the skills of the participants in the program.

D. They suggest why Carnegie Mellon University is a suitable location for the program.

Part B

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

A. ". . . exhibited an outstanding research project in science, technology, engineering or mathematics." (paragraph 2)

B. "And like STEM, MASTERS also is an acronym." (paragraph 2)

C. "It also publishes Science News for Students." (paragraph 3)

D. ". . . Alexei Colin explained how to use the kit." (paragraph 4)

7. Part A

How does the **Step by Step** section **mainly** contribute to the reader's understanding of the topic in the passage?

A. It explains to the reader why using a soldering iron is so difficult.

B. It provides the reader with the specific instructions needed to build a radio.

C. It helps the reader understand how much work is involved in building a radio.

D. It supplies the reader with instructions for how best to work with other students.

Part B

Select **two** details from the passage that support the answer to Part A.

A. "An electrical diagram told the young researchers where to place each of the kit's parts. . . ." (paragraph 6)

B. ". . . do-it-yourself kits included diodes." (paragraph 7)

C. ". . . pieces didn't just snap into place." (paragraph 9)

D. ". . . used to join together metal pieces." (paragraph 9)

E. "'It's like you needed some sort of third arm. . . .'" (paragraph 11)

F. ". . . as he helped Kristyna Bednářová, 13, of the Czech Republic." (paragraph 13)

DD607663290

8. Part A

What is the author's purpose in paragraph 5?

A. to provide a scientific explanation of building a radio

B. to clarify how readers can further study building a radio

C. to provide insight into the experiences of students who are building a radio

D. to show how readers can produce the same results when building a radio

Part B

What paragraph serves a similar purpose as paragraph 5?

A. paragraph 2

B. paragraph 6

C. paragraph 12

D. paragraph 13

DD607653400

9. In the passage, students followed specific steps to build a radio. Rearrange the steps the students followed in the correct order.

Push a 9-volt battery into the radio.

Use a soldering iron to attach parts to the circuit board.

Examine an electrical diagram to know where to place parts of the radio kit on the circuit board.

Connect the antenna, tuner, and microchip to the circuit board.

Add flux to ensure parts are securely connected.

STOP