

**MCA Paper Student
Readiness Tool
High School Science**

m DEPARTMENT
OF EDUCATION

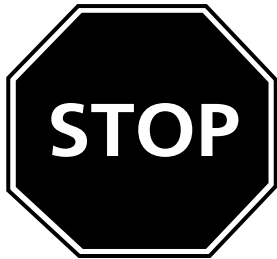
18 Point

Symbols on the Test

You will see the following symbols in your test book:



This symbol means you can continue answering questions on the next page.



This symbol means you have finished a segment. You must wait until you are told to go to the next segment.



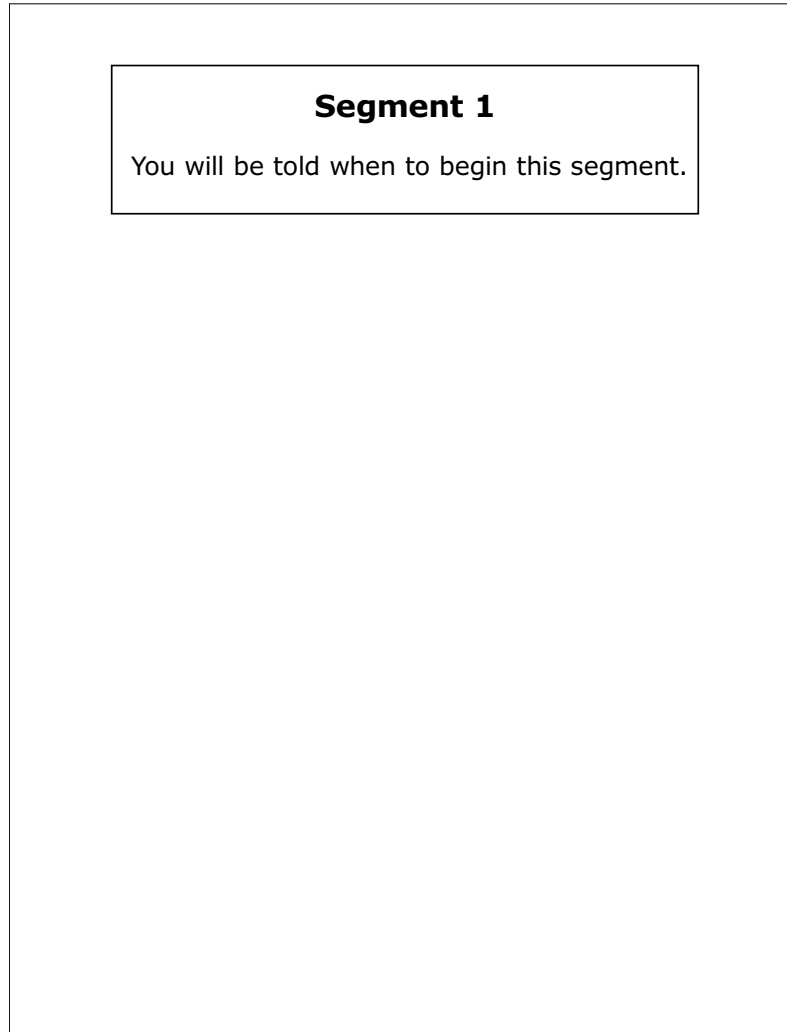
When you finish a segment of the test, raise your hand to receive a sticker from the Test Monitor. Place this sticker on the symbols to seal the segment.

A black arrow pointing to the right, enclosed in a black rectangular border. The text "Go on to the next page." is written in bold black font inside the arrow.

Go on to the next page.

Science Test General Information

- Your test will contain different segments. Segment pages look like this:



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- You can write in your test book or use scratch paper.
- You must answer each question in the test book.
- You may use a handheld calculator for some questions.
- Your science test includes scenarios and different types of diagram, graphing, and multiple-choice questions.

Go on to the next page.

For some diagram questions, you will need to circle the answer you want to choose. The sample scenario below and the sample questions on the next page show you how to do this.

Sample Scenario and Questions Answered in Test Book:

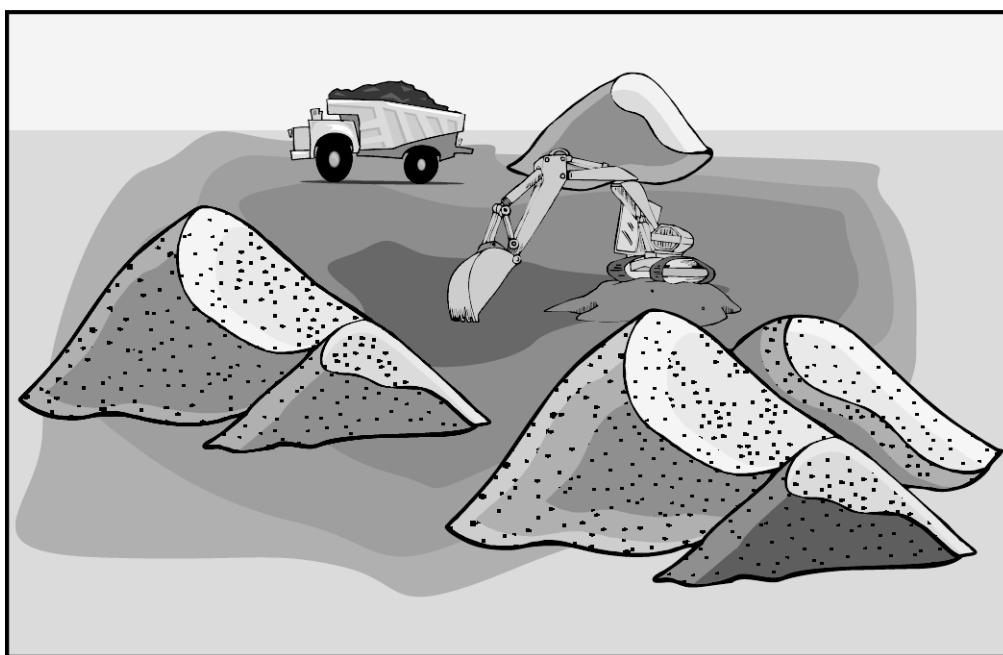
Sample Scenario

Before this area was mined, the land looked very different.

Before Mining



After Mining



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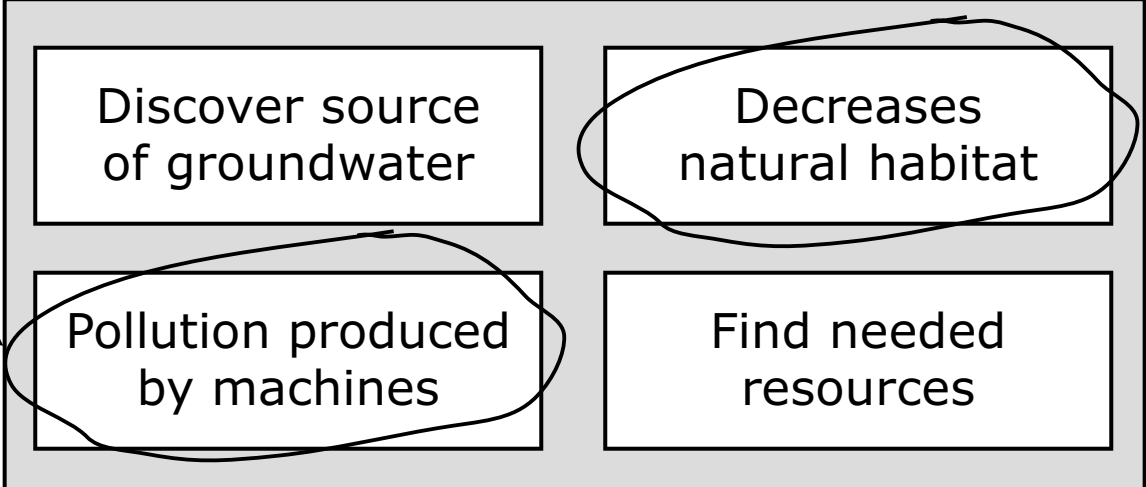
Sample Question

Mining in a forest area can have positive and negative effects. Identify 2 possible negative effects on the environment.

Circle the 2 effects you want to choose.

Possible Effects


Discover source of groundwater	Decreases natural habitat
Pollution produced by machines	Find needed resources



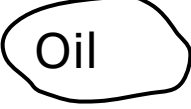
Sample Question

Natural resources are often used to supply energy to peoples' homes. Identify resources that are a source of nonrenewable energy.

Circle each resource you want to choose.

 Coal

Water

 Oil

Wind

Solar

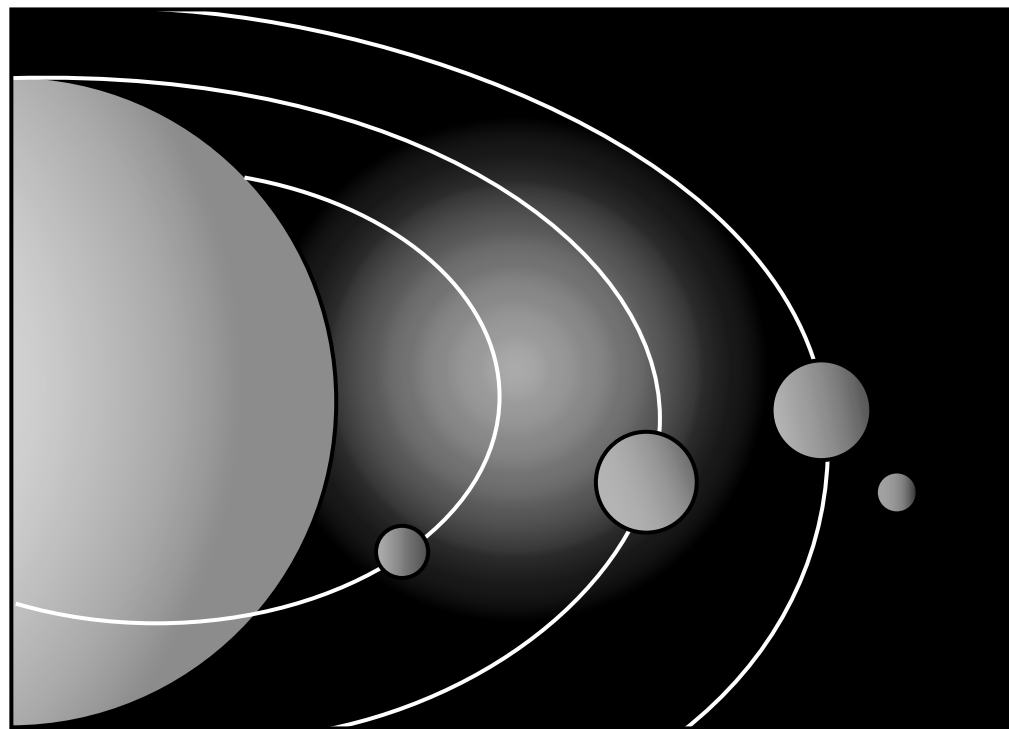
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Practice

Practice answering this diagram question by circling Moon and Earth.

Scenario

Satellites are natural or artificial objects that orbit a planet or star. The Moon and Earth are both natural satellites. For thousands of years, humans have used natural satellites and stars to determine the time of day and predict the change of the seasons.



Question

1. Satellites move in regular, predictable patterns. Identify 2 natural satellites.

Circle 2 natural satellites you want to choose.

Moon

Stars

Meteors

Earth

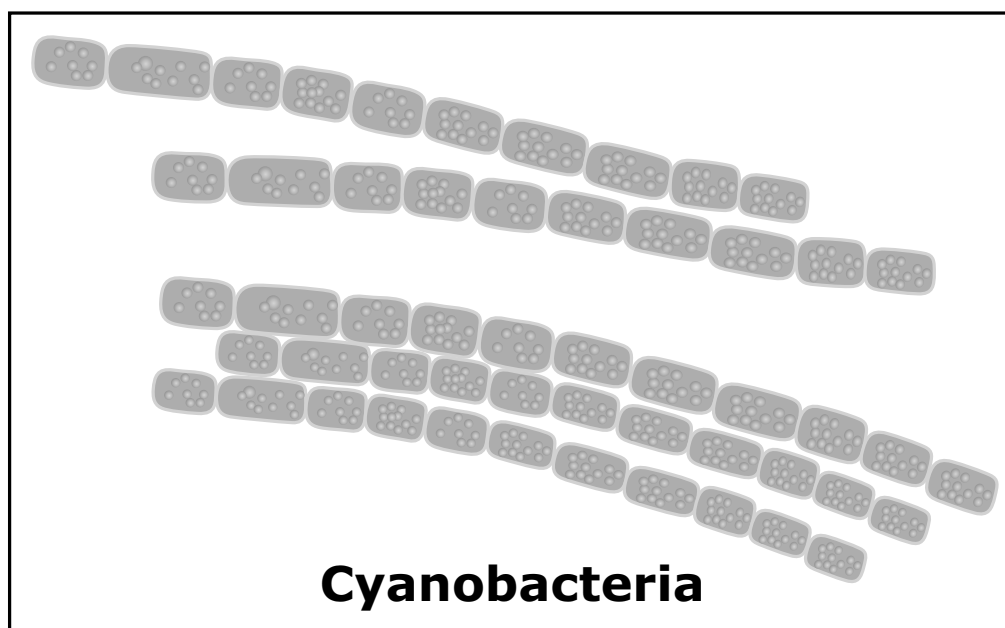
Go on to the next page.

For some diagram questions, you will need to write the label letters (such as A, B, C) in the boxes. The sample scenario below and the sample question on the next page show you how to do this.

Sample Scenario and Question Answered in Test Book:

Sample Scenario

Unlike most kinds of bacteria, cyanobacteria contain chlorophyll and perform photosynthesis. Because they contain chlorophyll, most cyanobacteria are green.

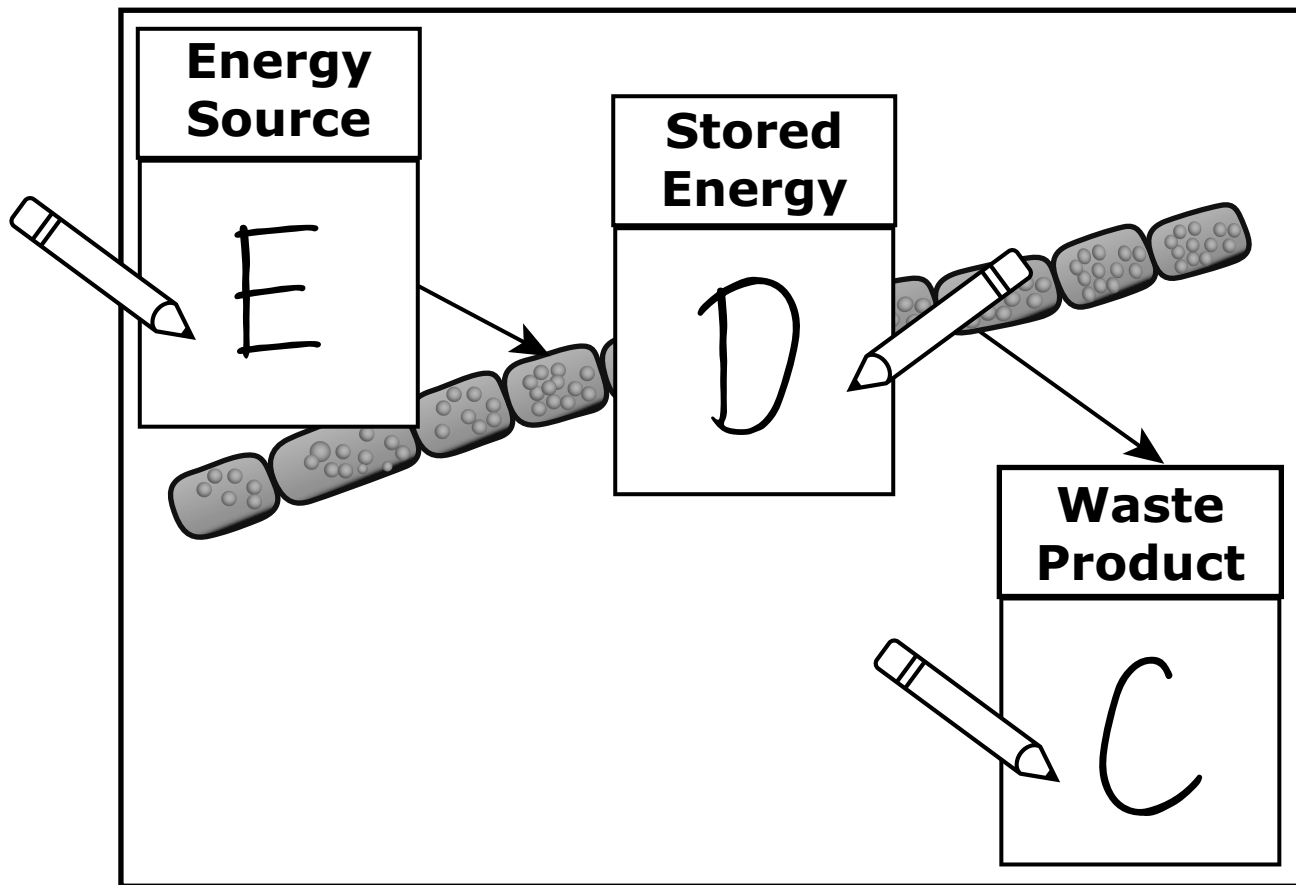


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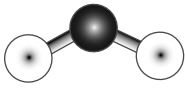
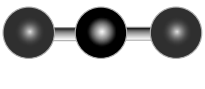
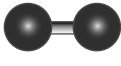
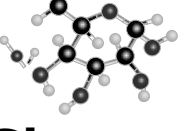
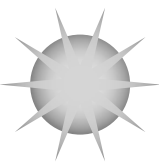

Sample Question

Identify 3 objects involved in photosynthesis.

Each object is labeled A, B, C, D, E, or F. Write the letter of the correct object in each empty box in the diagram. Three of the objects will be used.



Objects

A.  Water (H ₂ O)	B.  Carbon dioxide (CO ₂)	C.  Oxygen (O ₂)
D.  Glucose (C ₆ H ₁₂ O ₆)	E.  Sunlight	F.  Heat

Go on to the next page.

Practice

Practice answering this diagram question by writing letter C in the first box, letter A in the second box, and letter B in the third box.

Scenario

Athletes who increase their VO_2 max, or the maximum amount of oxygen a person can consume during one minute of intense physical effort, may improve their performance during competition.

The table shows the race times for 3 athletes before and after they trained in high altitudes.

Athletes' Race Times

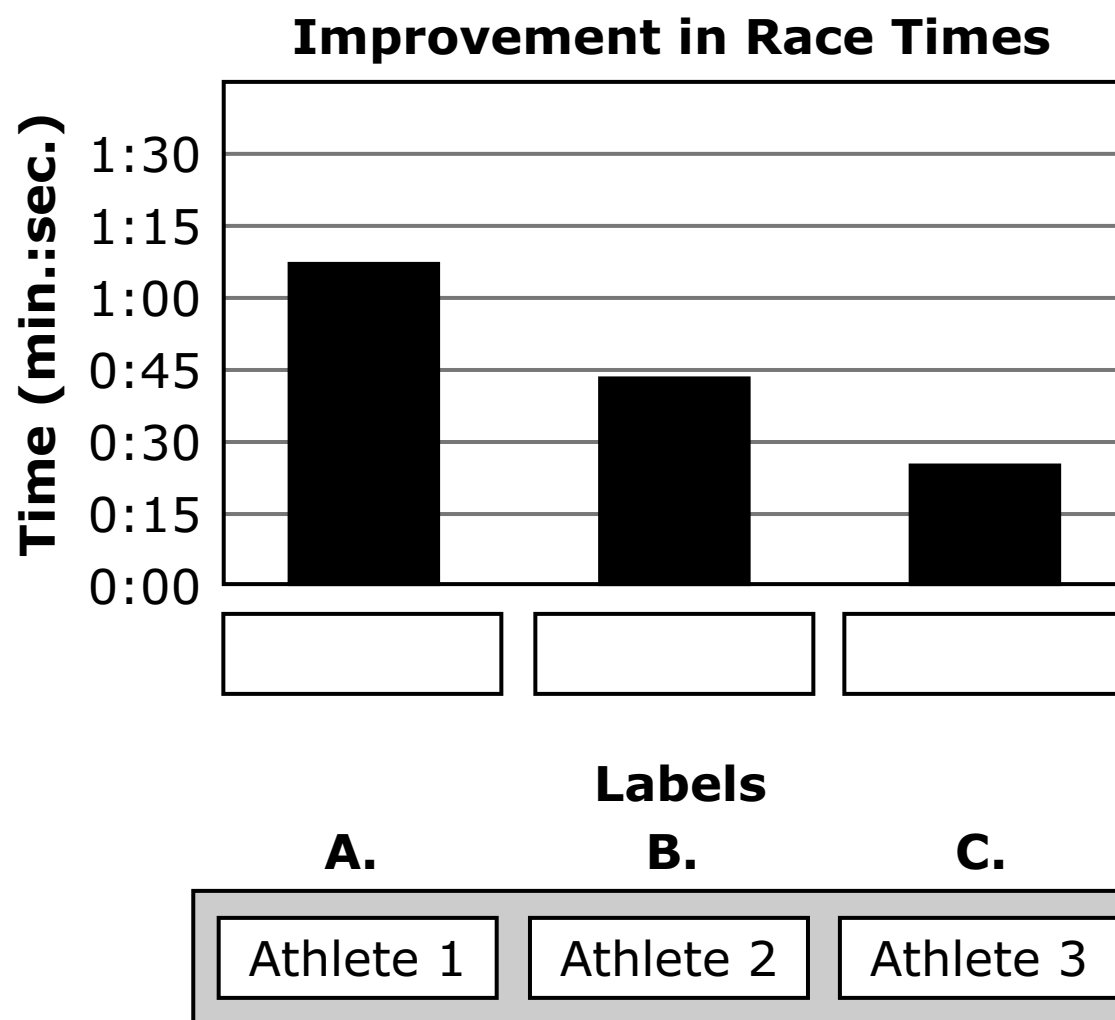
	Before Training (min.:sec.)	After Training (min.:sec.)
Athlete 1	17:46	17:02
Athlete 2	16:58	16:32
Athlete 3	17:24	16:12
Average	17:23	16:35


Go on to the next page. 

Question

2. The graph shows the improvement in race times (min.:sec.) for each of the 3 athletes. Complete the graph by putting labels on the x-axis.

Each label is marked A, B, or C. Write the letter of the correct label in each empty box. You may use each letter 1 time.



Go on to the next page. 

For some graphing questions, you will need to write a “+” above each bar where the top of the bar should be. The sample below shows you how to do this.

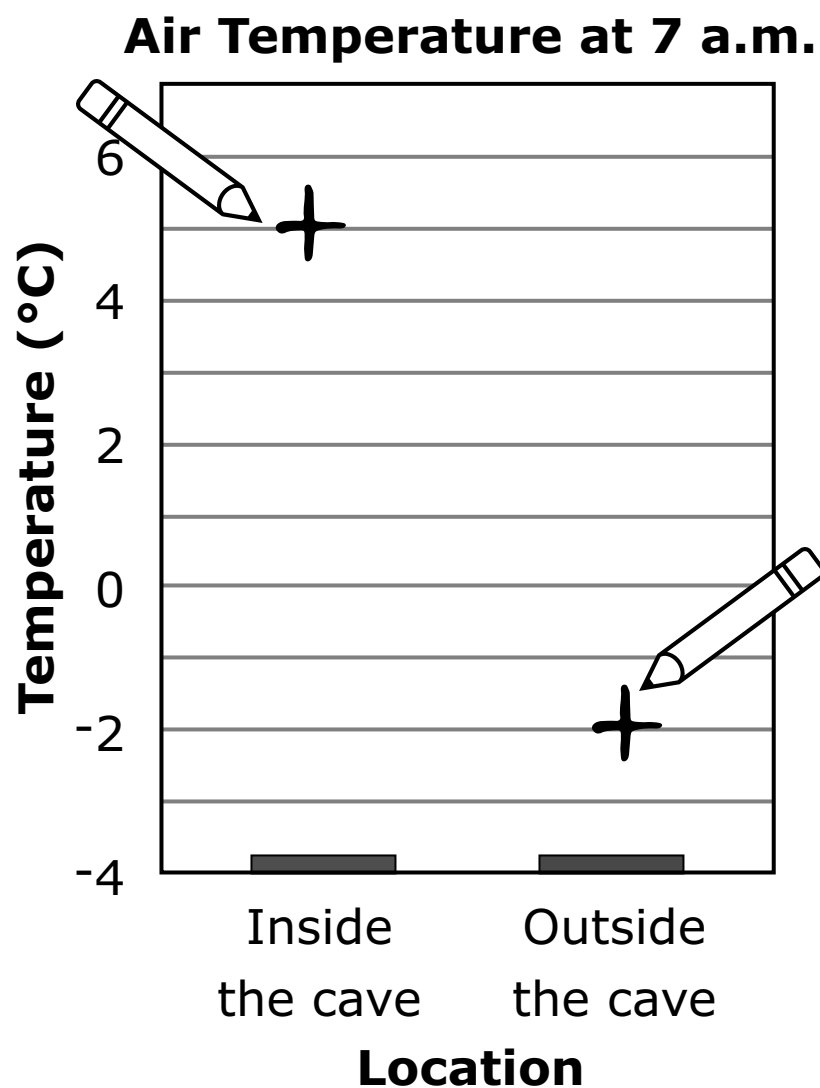
Sample Question Answered in Test Book:

Make a graph of the air temperatures inside and outside of a cave at 7 a.m.

Air Temperature

	Inside	Outside
7 a.m.	5°C (41°F)	-2°C (28°F)

Write a “+” above each bar where the top of the bar should be.



Go on to the next page.

Practice

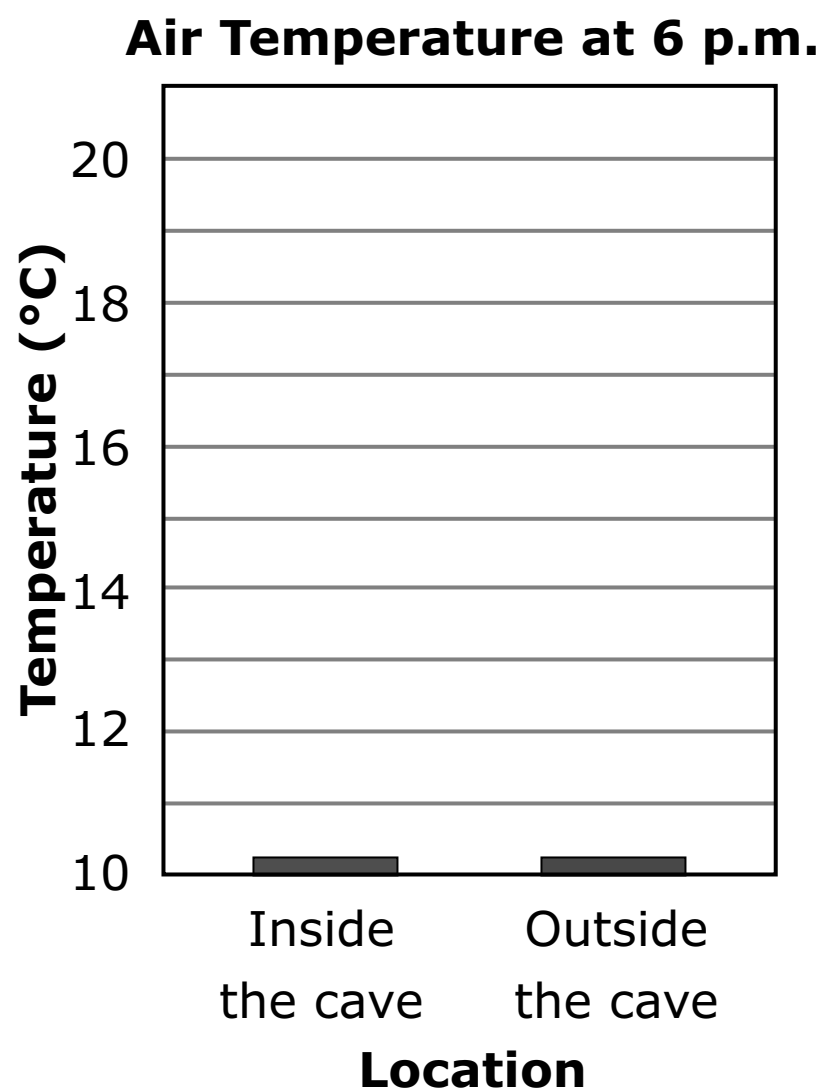
Practice answering this graphing question by writing a “+” above “Inside the cave” at 13°C and a “+” above “Outside the cave” at 18°C.

3. Make a graph of the air temperatures inside and outside of a cave at 6 p.m.

Air Temperature

	Inside	Outside
6 p.m.	13°C (55°F)	18°C (65°F)

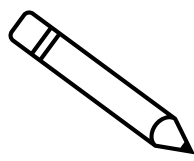
Write a “+” above each bar where the top of the bar should be.



Go on to the next page.

For multiple-choice questions, circle the answer in your test book. The sample below shows you how to do this.

Sample Question Answered in Test Book:



Which of the following is a renewable resource?

- A.** Wind
- B.** Coal
- C.** Natural Gas
- D.** Oil

Go on to the next page.

Practice

Practice answering this multiple-choice question by circling option C.

4. What happens when water evaporates?
- A. The water gets hotter.
 - B. The water changes color.
 - C. The water turns into a gas.
 - D. The water turns into a solid.

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