

► Read the Vocabulary Words and their definitions. Then write the Vocabulary Word that best matches the words in each globe.

cylinder: a long tube-shaped object

transparent: able to be seen through

microscopic: so small it can't be seen without a microscope

collide: come together with force; crash

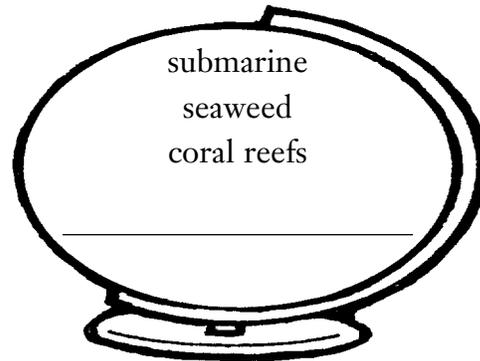
submerged: put under water

traditional: in keeping with beliefs and customs that have been accepted for a long time

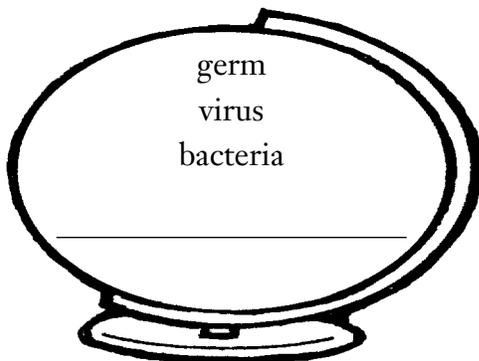
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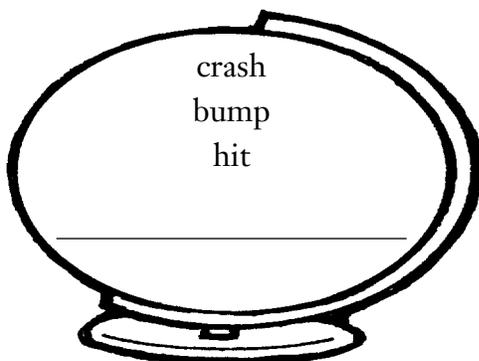
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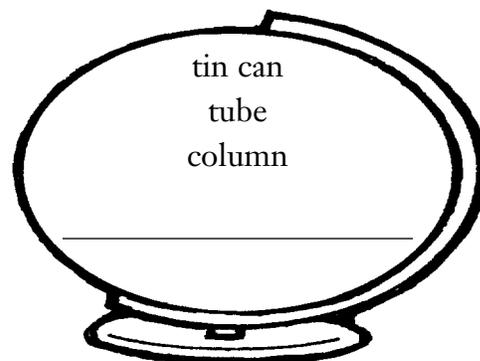
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TO THE TEACHER: Read aloud the directions and ask the students to read silently with you. Ask for volunteers to say each word and then use the word in a sentence. Explain the meaning of all the words listed in the globes. If students are unfamiliar with any group of terms, be sure to explain them in a way that clarifies what they have in common.

- Read the paragraph. Circle the letter of the best answer to each question.

Early maps ignored the fact that the Earth is a sphere. They showed it as a rectangle. Their maps showed lines of latitude and longitude as evenly spaced straight lines. And so the maps were inaccurate. Still sailors had to use them. That is why sailors could easily go off course.

Then something changed. In the 1500s, Gerardus Mercator drew a new kind of map. These flat maps showed the Earth as a sphere. His technique is called the Mercator Projection. This technique is still used today for certain kinds of maps.

- 1 This paragraph begins with _____
- A a cause
 - B an effect
 - C a simile
 - D a metaphor
- 2 Which was NOT a cause, or reason, for Mercator to make his map?
- F Early maps ignored the fact that the earth is a sphere.
 - G Early maps made sailors go off course.
 - H Early maps were ugly.
 - J Early maps did not show latitude and longitude correctly.
- 3 What is one *effect* of Mercator's work?
- A He proved that the Earth is a sphere.
 - B People still make maps like his today.
 - C Latitude and longitude are never drawn as evenly spaced lines.
 - D He proved that early maps were accurate.

 Tip

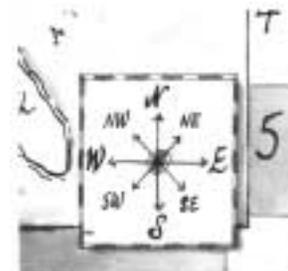
Look at the first sentence. Does it compare two things (metaphor or simile)? Does it tell about an action (cause)? Does it tell about the result of an action (effect)?

 Tip

A cause is a reason. Which answer is NOT a reason for Mercator to make his map?

 Tip

Read the answer choices. Which shows a result of Mercator's success?



TO THE TEACHER: Students will probably have no context to understand the meaning of the Mercator Projection. Show them a map that uses this technique. You can also show students a standard flat map. To give them a true appreciation for Mercator's work, allow them to compare the size of Greenland on the two maps. As you look at the maps, you can explain any unfamiliar vocabulary from the passage (such as *latitude* and *longitude*).

► Read the passage. Then circle the answer of the correct answers.

Maps can be used for different purposes. That's why they can look so different. A road map will use colored lines to show highways. Red lines might show interstate highways. Thin black lines might show local highways. The lines can be thicker for busier highways. A physical map shows geographical features, like mountains, deserts, and bodies of water. A political map is used to show borders of counties, states, or countries. A political map of California might show each county in a different color.

A map key explains the symbols and colors on the map. A map might have little tent symbols for campsites. The map key would explain that symbol. The map key gives a scale of miles, and it tells which way is north.

1. Enrico is going on a hiking trip. Why does he bring a physical map with him?

- A It will show him where to find bodies of water.
- B It will show where the highways are located.
- C It will show where the state line is.
- D It will show which way is north.

2. Which thing would NOT be shown on a map key?

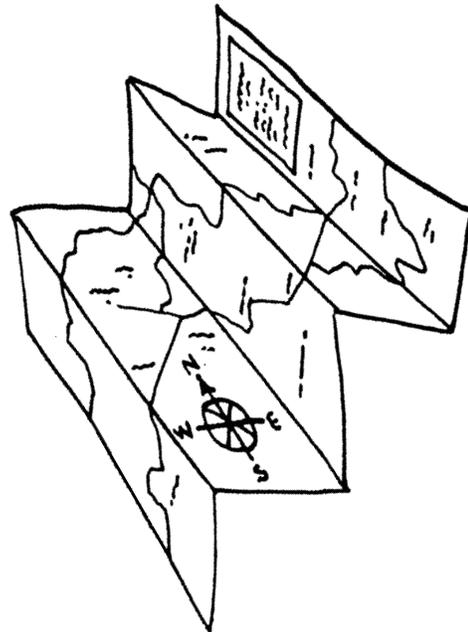
- F an airplane symbol explaining it means *airports*
- G a gray box explaining it means *parking*
- H a scale of miles
- J the Pacific Ocean

3. You are going to take a car trip from New Mexico to Utah. What type of map would you use?

- A road map
- B physical map
- C political map
- D B and C

4. Why is a scale of miles so important?

- F You need to know which way is north.
- G You want to know the height of the mountains.
- H You need to know the distance between places.
- J You want to know where one state ends and another begins.



TO THE TEACHER: Show students road maps, physical maps, and political maps. Point out the map key and discuss the symbols shown. Also explain the scale of miles. Allow students time to discuss the maps. Encourage students to make charts as they read. They can list the unique uses of each type of map in their charts. You may also wish to divide the class into groups. Assign each group a different type of map. Ask them to make up their own maps. Be sure they make map keys for their maps.