10 Blankets of Ice

You may already know that more than a million years ago glaciers, or vast blankets of moving ice, covered nearly one third of the earth, including northern parts of Europe, Asia, and North America. You also may know that tens of thousands of years ago, the glaciers started to melt, retreating to their current positions in the Antarctic and Greenland. You might even know that glaciers also exist in all the world's great mountain regions. But do you know that glaciers cover about 6 billio square miles of the earth and store about 75 percent of the earth's fresh water?

A glacier forms in a cold climate when a winter's snow does not completely m during the following summer. Snow continues to accumulate and partially melt ye after year. As the accumulated snow becomes heavier, the lower layer crushes und the weight and changes into ice. Over time the mass of ice thickens and moves. T ice is either pulled slowly downhill by gravity—as in the valley glaciers found in t Alps, on the Alaskan coast, and in the western United States—or forced outward all directions by its own weight—as in the ice sheets and ice caps covering most o Greenland and Antarctica. During glaciation a glacier moves (usually about 3 fee per day). It picks up rock fragments that gouge and polish the land and carve out steep-sided valleys. During deglaciation a glacier recedes and often leaves large deposits of sand and gravel. This process of glaciation and deglaciation formed th Great Lakes in North America during the Ice Age.

Some scientists believe that ice ages similar to those of the past will occur, but disagree on when this will happen. Other scientists think that global warming will occur instead, melting the glaciers and flooding many coastal areas as sea levels rise. No one knows for certain which event will occur, but neither bodes well for mank

Main Idea 1

	Answer	Sc
Mark the *main idea*	M	1
Mark the statement that is *too broad*	B	
Mark the statement that is *too narrow*	N	

a. Glaciers, huge blankets of moving ice, are formed in very specific ways. ☐

b. Long ago there were many glaciers. ☐

c. Glaciation and deglaciation formed the Great Lakes. ☐

Score 15 points for each correct answer. **Score**

Subject Matter 2 This passage is mainly about
- ☐ a. the Ice Age.
- ☐ b. valley glaciers.
- ☐ c. ice sheets and ice caps.
- ☐ d. glaciers.

_____

Supporting Details 3 During glaciation a glacier
- ☐ a. covers the land.
- ☐ b. retreats.
- ☐ c. melts.
- ☐ d. floods coastal areas.

_____

Conclusion 4 If global warming occurs instead of another ice age,
- ☐ a. vast blankets of ice will cover the earth.
- ☐ b. glaciers in the Antarctic will increase in size.
- ☐ c. plant and animal life in many areas will be destroyed.
- ☐ d. a winter's snow may not completely melt during the following summer.

_____

Clarifying Devices 5 To help the reader understand how a glacier forms, the author
- ☐ a. gives a step-by-step explanation.
- ☐ b. presents a detailed example.
- ☐ c. makes a strong argument.
- ☐ d. cites careful measurements.

_____

Vocabulary in Context 6 In this passage gouge means
- ☐ a. trick or cheat.
- ☐ b. cut holes into.
- ☐ c. smooth out.
- ☐ d. raise the surface of.

_____

Add your scores for questions 1–6. Enter the total here and on the graph on page 214. **Total Score** _____

11 Archaeological Fact or Fiction?

The demolition of a downtown Miami, Florida, apartment building in 1998 uncovered an archaeological site. The site contained many artifacts and a unique circle of holes cut into limestone bedrock. The 38-foot circle formed by the holes appeared to have an east–west axis that aligned with the rising and setting of the sun on the equinox. The formation became known as the Miami Circle. Archaeologist Robert Carr speculated that the circle and its holes once supported the wall posts of a structure. Perhaps the structure was a temple or council house constructed between 500 and 700 years ago. Or was it?

Thousands of genuine artifacts found at the site helped to support Carr's theory. The artifacts are typical of the Tequesta Indians, who lived in the area before the Spanish arrived in the 1500s. There were potsherds, stone axes, and beads. Also found were a five-foot shark and a sea turtle. The shark and the sea turtle were buried with their heads to the west and tails to the east.

Historical preservationists said the Miami Circle was the only "cut-in-rock prehistoric structural footprint ever found in eastern North America." However, others questioned its authenticity. This was because embedded in the limestone circle was a 1950s septic tank. Jerald T. Milanich, curator in archaeology of the Florida Museum of Natural History, wanted to know if Carr's "pre-Columbian postholes" were actually part of a 1950s septic drain field. Before he would believe that the septic tank and the circle are just a coincidence, as Carr believed, Milanich wanted more evidence. He called for radiocarbon dating, soil samples, and examination of the tool marks on the inside of the holes. Said Milanich, "When faced with coincidences and mysteries, an archaeologist needs to eliminate alternative explanations."

Main Idea 1

	Answer	Score
Mark the *main idea*	M	15
Mark the statement that is *too broad*	B	5
Mark the statement that is *too narrow*	N	5

a. An archaeological site found in Miami may not be genuine. ☐

b. Archaeologists sometimes find unusual sites. ☐

c. Potsherds seemed to suggest that Tequesta Indians had built the site. ☐

Score 15 points for each correct answer. **Score**

Subject Matter 2 This passage is mostly about
- ☐ a. the lifestyle of the Tequesta Indians.
- ☐ b. why buildings should not be demolished in Miami.
- ☐ c. the authenticity of an archaeological site in Miami.
- ☐ d. how archaeological sites are excavated. ____

Supporting Details 3 The Tequesta Indians lived in the area
- ☐ a. before the 1500s.
- ☐ b. in the 1950s.
- ☐ c. after the 1990s.
- ☐ d. after the Spanish arrived. ____

Conclusion 4 The information in this passage is
- ☐ a. only factual.
- ☐ b. only speculative.
- ☐ c. both factual and speculative.
- ☐ d. only one person's opinion. ____

Clarifying Devices 5 Potsherds, stone axes, and beads are examples of
- ☐ a. luxury items.
- ☐ b. things found in the Caribbean.
- ☐ c. things found in the Miami River.
- ☐ d. artifacts found at the site. ____

Vocabulary in Context 6 The word aligned means
- ☐ a. became allies with.
- ☐ b. lined up with.
- ☐ c. strong.
- ☐ d. deeply carved into the earth. ____

Add your scores for questions 1–6. Enter the total here and on the graph on page 214. **Total Score** ____

12 The Golden Rectangle

One of the most commonly used geometric shapes is the rectangle—a four-sided figure with four right angles. If you start looking for rectangular shapes in the physica world, you'll find them almost everywhere, perhaps because people are attracted to th precision and order conveyed by this shape. One way to classify a rectangle is by the ratio of its length to its width; for example, a square is a rectangle in which the ratio of the length to the width is 1 to 1. A rectangle with the length-width ratio 20 to 1 would be very long and skinny; one with the ratio 1.1 to 1 would be almost square.

Are some rectangular shapes more commonly used than others? In mathematic one particular rectangle has been distinguished by being named "golden." In a golden rectangle, the length (L) and the width (W) must satisfy the proportion $W/L = L/(W + L)$. In other words, the ratio of the width to the length must be the same as the ratio of the length to the width-length sum. If W equals 1, then solving the formula for L results in approximately 1.618. Golden rectangles—rectangles with a length-width ratio of 1.618 to 1—have been found in art, architecture, and mathematical writings for more than 4,000 years, with one especially notable example being the base of the Parthenon in Athens, Greece.

Do you have golden rectangles in your home or where you work? To find out, simply divide the length of any rectangle by its width; if the quotient equals about 1.6, then you have a golden rectangle. Performing this division on a 5-by-3 index ca results in the quotient 1.666 and performing it on an 8-by-5 card gives the quotient 1.6, so both of these shapes are close to being golden rectangles. With a ruler and a calculator, you can check your computer monitor, television screen, and the other rectangular shapes in your home and probably find quite a few additional examples.

Main Idea 1

	Answer	Score
Mark the *main idea*	M	15
Mark the statement that is *too broad*	B	5
Mark the statement that is *too narrow*	N	5

a. Many common objects are rectangular. ☐

b. A 5-by-3 index card is almost a golden rectangle. ☐

c. Golden rectangles have a particular length-width ratio. ☐

Score 15 points for each correct answer. **Score**

Subject Matter 2 This passage is mainly about
- ☐ a. identifying shapes that contain right angles.
- ☐ b. describing the proportions of golden rectangles.
- ☐ c. learning the sizes of index cards.
- ☐ d. solving formulas about rectangles.

_____

Supporting Details 3 The ratio of the length to the width of a square shape is
- ☐ a. equal to that of a golden rectangle.
- ☐ b. 1 to 20.
- ☐ c. 20 to 1.
- ☐ d. 1 to 1.

_____

Conclusion 4 Golden rectangles are found frequently in art and architecture because
- ☐ a. their proportions are pleasing to the eye.
- ☐ b. people think they bring wealth or good luck.
- ☐ c. they can substitute for squares.
- ☐ d. they can be drawn without right angles.

_____

Clarifying Devices 5 To find out if a rectangle is "golden," the writer suggests
- ☐ a. using the formula $W/L = L/(W + L)$.
- ☐ b. measuring a shape and then using division.
- ☐ c. comparing it to the shape of the Parthenon.
- ☐ d. comparing it to the shape of a square.

_____

Vocabulary in Context 6 In this passage the word notable means
- ☐ a. recorded.
- ☐ b. well-proportioned.
- ☐ c. important or worthy of notice.
- ☐ d. beautiful.

_____

Add your scores for questions 1–6. Enter the total here and on the graph on page 214. **Total Score** _____

13 A New Kind of Play

In the late 19th and early 20th centuries two European playwrights produced wo that closely examined the lives, characters, and motivations of middle-class citize They were the Russian Anton Chekhov and the Norwegian Henrik Ibsen.

Chekhov, the younger of the two, did not begin his career writing introspectiv drama; in fact, many of his earliest plays were short comic farces designed to pleas wide audiences. Additionally, Chekhov wrote many short stories, for which he is ju as well known as his plays. But several carefully crafted dramas have helped to form his reputation as an innovative playwright. These include *Uncle Vanya, The Seagull, Three Sisters,* and *The Cherry Orchard,* all of which deal in some way with the tragi of everyday living. In *Uncle Vanya,* for instance, the title character realizes his life's work has been useless but fails in his violent attempt to change things. In *Three Si* the Prozorov sisters try unsuccessfully to leave their country home for the excitemen of Moscow. Plays such as these were not well understood when first introduced.

In contrast to Chekhov, Ibsen was a dramatist throughout his entire career. Though he declined to live in Norway through most of his playwriting years, his major works were all produced there. In general, they created a furor because the looked beneath the facades of middle-class society. *A Doll's House* shows how a d ful wife responds when she realizes that her husband considers her to be nothing more than a foolish child. *Ghosts* examines the effects of syphilis, as well as a fam hypocrisy, on a young man. And *Hedda Gabler* is a character study of a selfish, amoral woman. These and other plays established Ibsen's reputation as a writer w was unafraid to portray life as it really existed.

Main Idea 1

	Answer	Sco
Mark the *main idea*	M	15
Mark the statement that is *too broad*	B	5
Mark the statement that is *too narrow*	N	5

a. Ibsen and Chekhov wrote plays about middle-class beliefs and values. ☐

b. Many plays have been written about the middle class. ☐

c. Plays like *A Doll's House* questioned typical views of women. ☐

Score 15 points for each correct answer. **Score**

Subject Matter 2 This passage deals mainly with
- ☐ a. 19th century theater.
- ☐ b. the works of Chekhov and Ibsen.
- ☐ c. how women were presented in plays.
- ☐ d. definitions of drama and farce. ____

Supporting Details 3 In *Ghosts* a young man has
- ☐ a. a bossy mother.
- ☐ b. an impoverished father.
- ☐ c. an unsatisfying job.
- ☐ d. syphilis. ____

Conclusion 4 Theatergoers of Chekhov's and Ibsen's time were
- ☐ a. not comfortable with plays about women.
- ☐ b. not comfortable with plays about feelings and issues.
- ☐ c. adventurous and forward-looking.
- ☐ d. not happy with lighthearted comedies. ____

Clarifying Devices 5 The writer deals with each playwright by
- ☐ a. summarizing major events in his life.
- ☐ b. discussing some of his major works.
- ☐ c. comparing his work with the other playwright's.
- ☐ d. listing all of his dramas. ____

Vocabulary in Context 6 <u>Amoral</u> means
- ☐ a. not caring about right or wrong.
- ☐ b. very good and proper.
- ☐ c. the main point or theme of a story.
- ☐ d. struggling to follow the rules. ____

Add your scores for questions 1–6. Enter the total here and on the graph on page 214. **Total Score** ____

14 In or Out of the Water?

Frogs and toads, salamanders and newts, and the little-known caecilian are amphibians, a word derived from the Greek *amphibios,* meaning "double life." The name is a good one to describe these animals that live part of their lives in water and part on land.

Structurally the groups of amphibians are very different. Frogs and toads, for example, are tailless. They have short, thick bodies, two short forelegs, and two long, powerful hind legs. Salamanders and newts have long tails, lizard-shaped bodies, and two pairs of equal-sized limbs. Caecilians may have short, pointed tails.

Although amphibians are structurally diverse, they have many similar characteristics. All amphibians are vertebrates, or animals with backbones that give the body shape and provide for movement. Amphibians have a circulatory system consisting of blood vessels and a three-chambered heart that moves the blood to and from all parts of the body. Amphibians also possess a well-developed nervous system that lets them receive and react to messages from their surroundings. Amphibians are cold-blooded, meaning that their body temperature changes with their surroundings. Amphibians also have a thin, moist skin with no surface scales, hair, or feathers.

Reproduction usually occurs in water, where female amphibians lay eggs with a jelly coating but no protective shell. Male amphibians fertilize the eggs by spreading sperm directly over them in the water. A characteristic of most amphibians is the metamorphosis, or series of body changes, that they undergo. After hatching from eggs, most young amphibians continue to live in water, taking in oxygen from the water as it flows over their gills. As amphibians change into adults, however, most develop lungs and reside on land at least part of the time. Those adult amphibians that live on land can also <u>respire</u> through their skin if they return to the water.

Main Idea 1

	Answer	Score
Mark the *main idea*	M	15
Mark the statement that is *too broad*	B	5
Mark the statement that is *too narrow*	N	5

a. Amphibians have thin, moist skins with no surface scales, hair, or feathers. ☐ ___

b. Amphibians are a type of animal. ☐ ___

c. Amphibians are structurally diverse but have a number of similar characteristics. ☐ ___

		Score 15 points for each correct answer.	Score
Subject Matter	2	This passage focuses primarily on ☐ a. caecilians. ☐ b. frogs and toads. ☐ c. salamanders and newts. ☐ d. qualities of amphibians.	____
Supporting Details	3	During metamorphosis, most amphibians ☐ a. develop backbones. ☐ b. form a circulatory system. ☐ c. replace gills with lungs. ☐ d. reproduce by laying eggs with a jelly coating.	____
Conclusion	4	The last sentence of this passage suggests that amphibians are ☐ a. unable to stand change. ☐ b. adaptable. ☐ c. large. ☐ d. noisy at certain times in their lives.	____
Clarifying Devices	5	The word *Although* at the beginning of the third paragraph signals ☐ a. a contrast. ☐ b. a similarity. ☐ c. an additional piece of information. ☐ d. a choice.	____
Vocabulary in Context	6	The word respire means to ☐ a. grow. ☐ b. reproduce. ☐ c. swim. ☐ d. breathe.	____
Add your scores for questions 1–6. Enter the total here and on the graph on page 214.			**Total Score** ____