19 Can the Earth Feed Its People?

In 1950 the world population's reached almost 2.5 billion, and predictions were by the year 2000 there would be more than 5 billion people. Some experts were convinced that the world was on the verge of widespread famine.

One reaction to the problem was the green revolution of the 1960s. Th effort multiplied agricultural yields in poor countries by introducing new high- grains. India, for example, doubled its wheat crop in just six years. The food su increased faster than demand, and the price of staple foods fell. One result of t green revolution was that global food production today remains sufficient to p every person with an adequate diet. Yet the problem of hunger remains—abou percent of the developing world's population is undernourished.

The immediate cause of world hunger has less to do with food production with food distribution. For example, millions of acres in Africa, Asia, and Lati America once supported subsistence farming. Now the lands are used to raise such as coffee, tea, chocolate, bananas, and beef for export. The subsistence fa have been relocated to urban areas, where there is often no employment, or to unsuited for farming. Small farmers and poor countries did not benefit from t green revolution because they could not afford the expensive seeds and chemi that make agriculture productive. Despite falling food prices, hundreds of mil of people cannot afford a balanced diet. It is estimated that in the United Sta alone 30 million people—mostly elderly, children, and the working poor—ar gry. The answer to the question seems to be that yes, the world can provide e food, but it is up to people to find a way to distribute the food so that everyo an adequate food supply.

Main Idea 1

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

a. The green revolution increased agricultural yields in poor countries. ☐

b. Hunger is a world problem. ☐

c. World food production has increased, but people are still hungry. ☐

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

Subject Matter 2 This passage is mainly about
- ☐ a. the history of world hunger.
- ☐ b. world hunger in the 1950s and 1960s.
- ☐ c. one nation's story.
- ☐ d. problems of and solutions to world hunger. ____

Supporting Details 3 The percent of the developing world population that continues to be undernourished is
- ☐ a. 2.5 billion.
- ☐ b. 20 percent.
- ☐ c. 30 million.
- ☐ d. 6 percent. ____

Conclusion 4 One reason for the early concern about worldwide hunger was
- ☐ a. the green revolution.
- ☐ b. rapid worldwide population growth.
- ☐ c. farmers unwilling to plant every year.
- ☐ d. people not wanting to eat healthful foods. ____

Clarifying Devices 5 The third paragraph is mainly developed through
- ☐ a. examples.
- ☐ b. comparison and contrast.
- ☐ c. a persuasive argument.
- ☐ d. a description. ____

Vocabulary in Context 6 The word <u>famine</u> means
- ☐ a. population explosion.
- ☐ b. excessive enthusiasm.
- ☐ c. danger.
- ☐ d. a lack of food. ____

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

20 Can We Get Rid of Some Zeros?

What's the largest number you can think of? For most people, a number in the t lions is about the largest quantity they will ever encounter. One trillion is 1 follo by 12 zeroes, or, written out in numerals, a trillion is 1,000,000,000,000. Becau numbers this large are awkward to write out, they are usually abbreviated in som manner. Often a decimal and a word form are used: 3.2 trillion means 3.2 times one trillion, or 3,200,000,000,000.

You might assume that everyday people could never do calculations with nu bers this large; after all, an ordinary calculator displays only eight digits. You cou not even enter 3.2 trillion into such a device. Even using a calculator with a 12-d display, a person doing calculations in the trillions would quickly run out of disp space. It would seem that people working with numbers this large would need expensive computers for their work.

However, there are methods for doing computations with huge numbers that employ pocket-sized calculators and even paper-and-pencil techniques. The key to manipulating numbers of this sort involves writing them in a form called scientific notation. Scientific notation eliminates the need for writing out all the numerals i very large numbers and, what is even more useful, it provides a way to do comput tions with these quantities. In scientific notation 3.2 trillion is written as 3.2×10 with the exponent 12 representing the 12 zeros in one trillion. Multiplying numbe in scientific notation requires adding exponents. If 3.5 million people each got a t refund of $2,000, the computation would be 3.5×10^6 times 2.0×10^3, which equals 7×10^9. For anyone who works with really enormous quantities frequently the effort required to learn scientific notation is more than offset by the ease and accuracy this form of numeral writing can provide.

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. A trillion is 1 followed by 12 zeroes. ☐
b. Exponents have many uses in math. ☐
c. Scientific notation is a short way of writing very large numbers. ☐

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

Subject Matter 2 This passage is mostly concerned with
- ☐ a. explaining what exponents are.
- ☐ b. the names for very large numbers.
- ☐ c. why scientific notation is needed.
- ☐ d. being accurate when using calculators. ____

Supporting Details 3 Multiplying of very large numbers is usually done
- ☐ a. on an eight-digit calculator.
- ☐ b. on an twelve-digit calculator.
- ☐ c. on a very large computer.
- ☐ d. with scientific notation. ____

Conclusion 4 Which of these professions would most likely involve using scientific notation for numbers?
- ☐ a. treasurer of a local block club
- ☐ b. law enforcement
- ☐ c. building construction
- ☐ d. astronomy ____

Clarifying Devices 5 The writer shows that numbers in scientific notation can be multiplied by
- ☐ a. demonstrating how to multiply two large numbers.
- ☐ b. explaining the steps on a calculator.
- ☐ c. writing long numbers in shorter forms.
- ☐ d. explaining how many zeroes are in a trillion. ____

Vocabulary in Context 6 In this passage <u>everyday</u> means
- ☐ a. done frequently.
- ☐ b. ordinary.
- ☐ c. poorly educated.
- ☐ d. routine. ____

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

21 A Little Book of Poetry

When Walt Whitman first published his thin volume of poetry *Leaves of Grass* in 1855, it was severely criticized by many prominent writers of the day. One called it "a gathering of muck"; many found it crude. In fact, Whitman had to print the work himself because no publishing house wanted to take it on. And yet today many consider *Leaves of Grass* to be the most influential poetry collection in American literature. Why was Whitman's work so roundly rejected at one point, only to be revered not too many years later?

What Whitman had done in writing the 12 untitled poems in his book was to go against most of the poetic conventions of the day. There were no American poets, for example, writing unrhymed lines with irregular meter or no meter as Whitman did. There were no poets writing extremely long lines, occasionally interspersed with very short ones, as Whitman did. There were few poets writing sympathetically about everyday American life, using the language of ordinary people. And there were no respected poets who dared to include some of the frank imagery that Whitman used.

Despite the generally negative response, Whitman kept writing. He put out several more editions of *Leaves of Grass*, adding new poems and revising the existing ones. And gradually critical opinion changed. The long, flowing lines of free verse that Whitman produced were recognized as revolutionary. By opening up poetry from the constraints of rhythm, rhyme, and delicate subject matter, Whitman had great influence on poets of his own time and especially on those who followed him. Today he is widely regarded as the father of modern American poetry.

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. Whitman's poems were criticized for both style and subject matter. ☐

b. *Leaves of Grass* was first despised, then revered. ☐

c. Poetry began to change in the 1800s. ☐

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

Subject Matter

2 Another good title for this passage would be
- ☐ a. Walt Whitman's Master Work.
- ☐ b. Poetry in the 1800s.
- ☐ c. Using Rhyme and Rhythm.
- ☐ d. A Description of Free Verse.

Supporting Details

3 *Leaves of Grass* was published
- ☐ a. only once.
- ☐ b. in 1854.
- ☐ c. in several different editions.
- ☐ d. by Walt Whitman's father.

Conclusion

4 The early response to *Leaves of Grass* suggests that
- ☐ a. most people appreciate new writing styles.
- ☐ b. people distrust anything that is different.
- ☐ c. Whitman would have done better using a regular publisher.
- ☐ d. praise will often come if one is patient.

Clarifying Devices

5 The second and third paragraphs in the passage
- ☐ a. briefly summarize Whitman's life and work.
- ☐ b. quote from some of Whitman's most famous poems.
- ☐ c. answer the question at the end of the first paragraph.
- ☐ d. are intended to convince the reader of Whitman's bravery in publishing his poems.

Vocabulary in Context

6 In this passage <u>conventions</u> means
- ☐ a. large business gatherings.
- ☐ b. customs or practices.
- ☐ c. surprises.
- ☐ d. collections of writings.

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

22 The Earth's Blankets

You may watch those fluffy white formations floating across the sky for fun, bu scientists watch them in hopes of accurately forecasting and eventually controll modifying the weather. Clouds are one visible element of a day's weather. They formed when the sun heats the earth, which then radiates thermal energy to the in its atmosphere. Since warm air is less dense than cool air, the heated air crea "thermal updrafts" that rise up and away from the earth. The temperature in th atmosphere's lower layer decreases with altitude, so as the warm air rises, it coo the water vapor in it condenses into tiny droplets of water or particles of ice, de ing on the altitude. These liquid or ice particles are visible as cloud.

Clouds affect the earth's weather and climate in that, acting as sort of a bla between the sun and the earth, they shield sunlight from reaching and warming earth and block the amount of infrared radiation, or radiating heat, escaping fr earth into outer space. Thus, weather observers know that a cloudy day will be than a clear day and that a cloudy night will be warmer than a clear night.

Scientist have divided clouds into three main classes—cirrus, cumulus, and tus. *Cirrus,* a Latin word meaning "curl," describes white, wispy clouds stretch across the sky at high altitudes. *Cumulus,* a Latin word meaning "heap," chara piles of flat-based, cottonlike clouds at low altitudes. *Stratus,* derived from a L word meaning "spread out," identifies layers of flat, gray clouds spreading acro sky at low altitudes. Scientist use these three classes to specify the numerous c nations of clouds that exist. Masses of gray and white clouds rolling across the stratocumulus. The Latin word *nimbus,* meaning "rain cloud," is added to a pr ing cloud. Cumulonimbus describes cumulus clouds producing thunderstorms

Main Idea 1

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

a. Cloudy days are cooler than sunny ones. ☐

b. Clouds are fluffy white formations floating across the sky. ☐

c. Clouds, which affect the earth's weather, come in three main classes. ☐



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oss the sky are
to a precipitat-
torms.

Score
15
5
5

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

Subject Matter 2 This passage is mainly about
- ☐ a. the importance and classification of clouds.
- ☐ b. how thermal updrafts produce weather.
- ☐ c. precipitation and why it occurs.
- ☐ d. why condensation occurs in the atmosphere. ____

Supporting Details 3 Clouds are
- ☐ a. a weather forecaster's nightmare.
- ☐ b. infrared radiation escaping the atmosphere.
- ☐ c. visible liquid or ice particles in the air.
- ☐ d. a source of thermal energy. ____

Conclusion 4 We can conclude that a cloudy night will be warmer than a clear night because
- ☐ a. clouds trap the earth's heat in the area between the ground and the clouds.
- ☐ b. infrared radiation escapes into outer space.
- ☐ c. there will be few or no stars visible.
- ☐ d. clouds prevent much of the sun's heat from reaching the earth. ____

Clarifying Devices 5 The Latin definitions in the third paragraph are intended to help you
- ☐ a. spell the names of clouds correctly.
- ☐ b. visualize the various types of clouds.
- ☐ c. see that there are only three types of clouds.
- ☐ d. memorize the names of clouds. ____

Vocabulary in Context 6 Altitude means
- ☐ a. width.
- ☐ b. height.
- ☐ c. depth.
- ☐ d. circumference. ____

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

23 The Family

The structure of a family takes different forms around the world and even in th same society. The family's form changes as it adapts to changing social and ecor influences. Until recently, the most common form in North America was the n family, consisting of a married couple with their minor children. The nuclear fa is an independent unit. It must be prepared to fend for itself. Individual family bers strongly depend on one another. There is little help from outside the famil emergencies. Elderly relatives of a nuclear family are cared for only if it is possi the family to do so. In North America, the elderly often do not live with the fa they live in retirement communities and nursing homes.

There are many parallels between the nuclear family in industrial societ such as North America, and of families in societies such as that of the Inuits, w live in harsh environments, The nuclear family structure is well adapted to a lif mobility. In harsh conditions, mobility allows the family to hunt for food. For Americans, the hunt for jobs and improved social status also requires mobility.

The nuclear family was not always the North American standard. In a mo agrarian time, the small nuclear family was usually part of a larger extended fa This might have included grandparents, mother and father, brothers and siste uncles, aunts, and cousins. In North America today, there is a dramatic rise in number of single-parent households. Twice as many households in the United are headed by divorced, separated, or never-married individuals as are compri nuclear families. The structure of the family, not just in North America, but throughout the world, continues to change as it adapts to changing condition

Main Idea 1

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

a. North American family forms are influenced by the conditions people live under. ☐

b. The nuclear family form was once the most common in North America. ☐

c. Families take different forms. ☐

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

Subject Matter 2 Another good title for this passage would be
- ☐ a. What Makes a Family?
- ☐ b. The Life of the Inuits.
- ☐ c. Living with Hardship.
- ☐ d. The Failure of the Nuclear Family. ____

Supporting Details 3 A nuclear family is defined as
- ☐ a. a married couple with their minor children.
- ☐ b. a single father with minor children.
- ☐ c. parents, grandparents, and children.
- ☐ d. parents, children, and aunts and uncles. ____

Conclusion 4 The information in this passage would most likely be found in
- ☐ a. an anthropology textbook.
- ☐ b. a biology textbook.
- ☐ c. a mathematics textbook.
- ☐ d. a geography textbook. ____

Clarifying Devices 5 The information in the first paragraph is presented mainly through
- ☐ a. listing statistics.
- ☐ b. telling a story.
- ☐ c. pointing out similarities.
- ☐ d. pointing out differences. ____

Vocabulary in Context 6 The word mobility means
- ☐ a. money.
- ☐ b. readiness to move.
- ☐ c. organization.
- ☐ d. skill. ____

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