

• Reading Comprehension 5 Level 10

Directions: Read the passage. Then answer the questions below.

The destructive process of mountaintop removal mining (MTR) has caused permanent damage to Appalachia. Although the law requires that mining companies restore the mountaintops after the mining has been completed, the 1.5 million acres of mountains that have already been removed cannot be re-grown, re-built, or replaced. The companies do secure the rock formations to prevent erosion and landslides, but their efforts cannot recreate the once-beautiful mountain landscape. Furthermore, while companies are usually **vigilant** about securing the rock formations, they seem less interested in restoring the native vegetation. MTR operations clear enormous tracts of forest; some experts estimate that over 2000 square miles of forests in the Appalachian region will have been razed by mining companies by 2012. Instead of replanting the native trees and shrubs that have been cleared, many companies opt to plant cheap, fast-growing, non-native plants, such as ***Lespedeza cuneata***, which is officially classified by the USDA as an invasive weed.

Environmental hazards are not only created in preparing a mountaintop for mining, they also continue once the coal has been extracted. After the blast, the excess mountaintop—which miners refer to as “overburden”—is usually dumped into nearby valleys or streams. The overburden contains a variety of toxic substances, including explosive residue, silica, and coal dust. These substances are filled with sulfur, lead, mercury, and other chemicals. Over 700 miles of streams in Appalachia have been contaminated by this dumping. Although the mining companies have built structures known as “sludge dams” that are intended to contain the toxic runoff, these dams can burst or leak, sending thousands of gallons of toxic chemicals into municipal drinking water.

While the Endangered Species Act, the Clean Water Act, and other environmental protection bills can theoretically be enforced to protect Appalachia, local lawmakers have been reluctant to take action for fear of upsetting those who believe that the jobs created by MTR are vital to the community. However, instead of bringing jobs and prosperity to poor Appalachian communities, MTR companies actually bring destruction and poverty. MTR does not involve the amount of human labor required by traditional sub-surface mining. Despite the fact that coal production has increased between 1950 and 2004, the human labor force working in these mines has drastically decreased. In the 1950’s, there were approximately 130,000 people employed by the mining companies; by 2004, that number had dwindled to 16,000. Moreover, while the coal companies may make enormous profits from MTR, Appalachian communities located near the mines suffer increased rates of kidney cancer, brain cancer, lung cancer, chronic pulmonary disorders, hypertension, and vision problems. A variety of studies published in top medical journals link these health problems to the fact that the victims lived in close proximity to the mines.

Questions

- 1) This passage would most likely be found in
- A. the introduction to a larger work on the history of Appalachia
 - B. the conclusion to a study on the links between coal mining and health problems
 - C. a chapter of a coal miner's autobiography
 - D. a section providing supporting evidence in a larger work on MTR
 - E. a section evaluating the results of a previously proposed course of action in a larger work on MTR
- 2) As used in paragraph 1, which is the best antonym for **vigilant**?
- A. cowardly
 - B. frustrated
 - C. displeased
 - D. careless
 - E. annoyed
- 3) Based on information in the passage, it can be inferred that the author
- A. used to be employed by an MTR company, but left because he or she was frustrated with its environmental practices
 - B. is more concerned about the environment than he or she is about human lives
 - C. believes that MTR companies care little for the environment or for the Appalachian community
 - D. works for an environmental protection group or agency
 - E. thinks that the United States should stop relying on coal power as a source of energy
- 4) Which of the following statements from the passage represents an opinion, as opposed to a fact?
- A. "Although the mining companies have built structures known as 'sludge dams' that are intended to contain the toxic runoff, these dams can burst or leak, sending thousands of gallons of toxic chemicals into municipal drinking water."
 - B. "However, instead of bringing jobs and prosperity to poor Appalachian communities, MTR companies actually bring destruction and poverty."
 - C. "The overburden contains a variety of toxic substances, including explosive residue, silica, and coal dust."
 - D. "While the coal companies may make enormous profits from MTR, Appalachian communities located near the mines suffer increased rates of kidney cancer, brain cancer, lung cancer, chronic pulmonary disorders, hypertension, and vision problems."
 - E. "MTR operations clear enormous tracts of forest; some experts estimate that over 2000 square miles of forests in the Appalachian region will have been razed by mining companies by 2012."
- 5) In paragraph 1, the author mentions *Lespedeza cuneata* in order to
- A. provide an example of the natural vegetation that grew on the mountains before MTR companies cleared the forests
 - B. identify one type of plant that is likely to flourish on the newly-blasted mountaintops
 - C. justify the reasoning behind the MTR companies' decision to plant a non-native species where the forests once were
 - D. convince readers that the MTR companies' attempts at replanting the forests may not be perfect, but they do represent a respectable effort
 - E. argue that the MTR companies are more interested in saving money than addressing the damage they have caused to the environment

- 6) According to the passage, the way in which MTR companies dispose of the overburden is hazardous because
- I. the mining companies continue extracting coal from the overburden, thus putting additional pressure on the environment
 - II. the sludge dams are not a failsafe containment system
 - III. MTR companies often dump toxic waste directly into the municipal water supply
- A. I only
 - B. II only
 - C. I and II only
 - D. II and III only
 - E. I, II, and III
- 7) Which piece of evidence, if true, would best strengthen the author's argument in the final paragraph?
- A. Mining counties in West Virginia are some of the poorest in the nation.
 - B. Less than 8% of the coal produced in the United States of America comes from MTR operations in the Appalachian Mountains. More than 400 mountaintops in Appalachia have been destroyed for this coal.
 - C. MTR is a wholly unsustainable process; the reserves of coal located in the Appalachian Mountains will likely last less than 20 more years.
 - D. The Appalachian forests are home to one of the highest concentrations of biodiversity in North America; animals that call Appalachia home include flying squirrels, freshwater mussels, and more different types of salamanders than can be found in one place anywhere else on earth.
 - E. Explosives detonated at strategic points along the summit can remove up to 400 vertical feet of mountain tops to reveal the rich coal seams below.

Answers and Explanations

1) **D**

In this passage, the author provides evidence that MTR operations harm the environment and cause health problems for people living near MTR sites. These pieces of evidence are likely being used in a section to support a larger argument about MTR, such as that it is dangerous for the environment and human beings. Therefore **(D)** is correct. If this passage were found in an introduction, it would likely focus more on introducing the topic and providing background information instead of on providing specific evidence. Also, the history of Appalachia is a very broad topic. This passage focuses more narrowly on MTR. This means **(A)** is incorrect. If this passage were found in a conclusion, it would likely do more to give closure on the topic, such as providing a restatement of the thesis, a synthesis of the main ideas, and then a final call to action or further thought. Also, although the author mentions the links between coal mining and health problems, the author is equally concerned with the links between coal mining and environmental damage. This makes **(B)** incorrect. There are no personal or autobiographical details that would suggest this to be an excerpt from an autobiography, so **(C)** is incorrect. There is no evaluation of results of a previously proposed course of action in this passage, so **(E)** is incorrect.

2) **D**

vigilant (*adjective*): watchful and alert, especially to guard against danger or errors; cautious or observant.

In paragraph 1, the author notes that “while companies are usually vigilant about securing the rock formations, they seem less interested in restoring the native vegetation.” Based on this information, we can understand that the author recognizes that the companies make sure they secure the rock formations in a careful manner, but he or she criticizes them for not showing the same amount of care in restoring the vegetation. Since *vigilant* means careful, a good antonym is *careless*. Therefore **(D)** is correct. *Cowardly* means lacking courage. The author does not suggest that the companies are courageous, only that they are careful. This means **(A)** is incorrect. *Frustrated* means not satisfied or defeated. The author does not suggest that companies are satisfied with the results of securing the rock formations, but rather that they are interested in and therefore careful about securing them. This makes **(B)** incorrect. *Displeased* means not pleased or happy. The author does not suggest that the companies are pleased with the results of securing the rock formations, but rather that they are interested in and therefore careful about securing them. This makes **(C)** incorrect. *Annoyed* means irritated or discontent. The author does not suggest that the companies are content with the results of securing the rock formations, but rather that they are interested in and therefore careful about securing them. Therefore **(E)** is incorrect.

3) **C**

Throughout the passage, the author depicts MTR companies as so focused on making profits that they ignore the damage they have done to the environment and the dangers they are posing to human health. In paragraph 1, the author writes that MTR companies have “caused permanent damage to Appalachia.” As an example of the companies’ disregard for the environment, the author notes that instead of restoring the native vegetation to the mountains, “many companies opt to plant cheap, fast-growing, non-native plants, such as *Lespedeza cuneata*, which is officially classified by the USDA as an invasive weed.” From this information we can infer that the author believes that the companies would rather plant something cheap and convenient than something native that would sustain the natural ecosystem of the area, and thus he or she believes these companies care little for the environment. In paragraph 3, the author claims that the MTR companies do not provide many jobs to local residents, and that “while the coal companies make enormous profits from MTR, Appalachian communities located near the mines suffer increased rates of kidney cancer, brain cancer, lung cancer, chronic pulmonary disorders, hypertension, and vision problems.” Based on this information, we can infer that the author believes that the MTR companies care little for the Appalachian community. Therefore **(C)** is correct. The author obviously cares about the environment, but there is no evidence in the passage that he or she worked at a MTR company. This means **(A)** is incorrect. The author is concerned about the environment, but he or she demonstrates equal concern for human lives in paragraph 3 by discussing the health problems and economic issues affecting those who live near MTR sites. This eliminates **(B)**. The author obviously cares about the environment, but there is no evidence in the passage that he or she works for an environmental group. This makes **(D)** incorrect. The author may indeed think the United States should stop relying on coal power as a source of energy, but he or she never mentions or implies this in the passage. Therefore **(E)** is incorrect.

4) **B**

A fact is something known to exist or be true as a result of experience or observation. Facts can be proven. An opinion is a belief or judgment that rests on grounds insufficient to produce complete certainty, such as an emotion or personal bias. Opinions cannot be proven true or false. For example, it is a *fact* that roses are flowers, but an *opinion* that roses smell nice. The author claims in paragraph 3: “However, instead of bringing jobs and prosperity to poor Appalachian communities, MTR companies actually bring destruction and poverty.” The belief that MTR companies bring “destruction and poverty” is a judgment that rests on the author’s interpretation of the facts. A proponent of MTR could dispute this opinion, claiming that MTR companies bring “jobs and prosperity.” Since this statement is an opinion, not a fact, **(B)** is correct. Choices **(A)**, **(C)**, **(D)**, and **(E)** all contain facts based on experience or observation. These statements can be proven. Therefore they are incorrect.

5) **E**

In paragraph 1, the author argues that while MTR companies have secured the rock formations to prevent erosion, they have not done enough to restore the destroyed vegetation. The author states that “instead of replanting the native trees and shrubs that have been cleared, many companies opt to plant cheap, fast-growing, non-native plants, such as *Lespedeza cuneata*, which is officially classified by the USDA as an invasive weed.” The author argues that by planting a cheap, fast-growing, invasive weed on the mountaintop instead of the native plants they have destroyed, the MTR companies have shown that they are more interested in saving money than actually replacing the forests. Therefore **(E)** is correct. *Lespedeza cuneata* is not a plant that naturally grew on the mountains before MTR companies cleared the forests, so **(A)** is incorrect. Although the author states that companies “opt to plant” *Lespedeza cuneata*, and that it is “fast-growing,” that does not indicate that this plant is likely to flourish, or grow very well, on the newly-blasted mountaintops. This means **(B)** is not the best choice. The author implies that the MTR companies decide to

plant a non-native species because it is “cheap” and “fast-growing,” but the author criticizes this reasoning rather than justifies it. This means **(C)** is incorrect. The author is critical of the MTR companies' attempts at replanting the forests, so he or she does not imply that they represent a respectable effort. This eliminates **(D)**.

6) **B**

The author does not suggest that the mining companies continue extracting coal from the overburden, which eliminates **option (I)**. In paragraph 2, the author writes that the overburden, which is filled with toxic chemicals, often ends up in nearby valleys or streams. The companies attempt to contain this material through “sludge dams,” but these dams can burst or leak, releasing the toxins into the municipal water supply. This means that the sludge dams are not a failsafe containment system. This supports **option (II)**. The author does not suggest that the MTR companies intentionally dump the waste into the city's drinking water. This eliminates **option (III)**. Therefore **(B)** is correct.

7) **A**

The author's primary argument in paragraph 3 is that “instead of bringing jobs and prosperity to poor Appalachian communities, MTR companies actually bring destruction and poverty.” The author states that contrary to what proponents of MTR claim, these companies do not actually provide “jobs and prosperity.” To support this argument, the author could include a piece of evidence stating that mining counties in West Virginia are some of the poorest in the nation. One might ask: If MTR companies claim to boost the economy in places where they operate, then why are the West Virginia mining communities among the poorest in the nation? This piece of evidence would discredit the argument that MTR companies bring “jobs and prosperity” to poor Appalachian communities, thus strengthening the author's own argument that the companies bring “destruction and poverty.” Therefore **(A)** is correct. The primary argument in paragraph 3 is about destruction to communities, not destruction to the environment, so **(B)** is incorrect. The author does not argue in paragraph 3 that MTR is unsustainable as a practice, so **(C)** is incorrect. The primary argument in paragraph 3 is about destruction to communities, not destruction to the environment, so **(D)** is incorrect. The primary argument in paragraph 3 is about destruction to communities, not the logistics of MTR. This makes **(E)** incorrect.