

Reading Explorer 5 Unit 5 Lesson A

DIRECTIONS: Choose the best answer to each question.

Our Energy Diet

With a little effort, and not much money, most of us could reduce our energy diets by 25 percent or more. So, what's holding us back? Writer Peter Miller goes on a strict low-carbon diet to find out.

[A] Not long ago, my wife and I tried a new diet - not to lose weight but to answer a question about climate change. Scientists have reported that the world is heating up even faster than they predicted just a few years ago. The consequences, they say, could be severe if we don't keep reducing emissions of carbon dioxide (CO₂) and other greenhouse gases that are trapping heat in our atmosphere. But what can we do about it as individuals? And will our efforts really make any difference?

The Experiment

[B] We decided to try an experiment: For one month we tracked our personal emissions of CO₂ as if we were counting calories. We wanted to see how much we could cut back.

[C] The average U.S. household produces about 80 kilos¹ of CO₂ a day by doing commonplace things like turning on air conditioning or driving cars. This is more than twice the European average and almost five times the global average. But how much should we try to reduce?

[D] I checked with Tim Flannery, author of *The Weather Makers: How Man Is Changing the Climate and What It Means for Life on Earth*. In his book, he challenged readers to make deep cuts in personal emissions to keep the world from reaching critical tipping points,² such as the melting of the ice sheets in Greenland or West Antarctica. "To stay below that threshold, we need to reduce CO₂ emissions by 80 percent," he said. "That sounds like a lot," my wife said. "Can we really do that?"

[E] It seemed unlikely to me, too. Still, the point was to answer a simple question: How close could we come to a lifestyle the planet could handle? Finally, we agreed to aim for 80 percent less than the U.S. average: a daily diet of about 13 kilograms of CO₂. Our first challenge was to find ways to convert our daily activities into kilos of CO₂. We wanted to track our progress as we went so that we could change our habits if necessary.

[F] To get a rough idea of our current carbon footprint, I put numbers from recent utility bills into several calculators on websites. The results that came out were not very flattering. The Environmental Protection Agency (EPA) website figured our annual CO₂ emissions at 24,618 kilos, 30 percent higher than the average U.S. family with two people. The main culprit was the energy we were using to heat and cool our house. Clearly we had further to go than I thought.

The Diagnosis

[G] We got some help in Week Two from a professional "house doctor," Ed Minch of Energy Services Group in Wilmington, Delaware. We asked Minch to do an energy audit of our house. The first thing he did was to walk around the outside of the house to see if the architect and builder had created any opportunities for air to seep⁴ in or out, such as overhanging floors. Next, he went inside and used an infrared scanner to look at our interior walls. Finally, his assistants set up a powerful fan in our front door to lower air pressure inside the house and force air through whatever leaks there might be in the shell of the house.

[H] Our house, his instruments showed, was 50 percent leakier than it should be. Addressing this became a priority, as heating represents up to half of a house's energy costs, and cooling can account for a tenth. Minch also gave us tips about lighting and appliances. "A typical kitchen these days has ten 75-watt spots⁵ on all day," he said, "and that's a huge waste of money." Replacing them with compact fluorescents could save a homeowner \$200 a year. Refrigerators, washing machines, dishwashers, and other appliances, in fact, may represent half of a household's electric bill.

[I] Everywhere I looked, I saw things sucking up energy. One night I sat up in bed and counted ten little lights in the darkness: cell phone charger, desktop calculator, laptop computer, printer, clock radio, cable TV box, camera battery recharger, carbon monoxide detector, cordless phone base, smoke detector. What were they all doing? One study found that "vampire" power sucked up by electronics in standby mode can add up to 25 percent of a house's electric bill.

[J] "You can go nuts⁶ thinking about everything in your house that uses power," said Jennifer Thorne Amann, author of *Consumer Guide to Home Energy Savings*. "You have to use common sense and prioritize. Don't agonize⁷ too much, and think about what you'll be able to sustain after the experiment is over. If you have trouble reaching your goal in one area, remember there's always something else you can do."

The Results

[K] By the last week in July, we were finally getting into the flow of the reduced carbon lifestyle. We walked to the neighborhood pool instead of driving, biked to the local farmers market on Saturday morning, and sat out on the deck until dark, chatting over the sound of the crickets. Whenever possible I worked from home, and when I commuted, I took the bus and subway.

[L] Our numbers were looking pretty good, in fact, when we crossed the finish line on August 1. Compared with the previous July, we had cut electricity use by 70 percent, natural gas by 40 percent, and reduced our driving to half the national average. In terms of CO₂, we trimmed our emissions to an average of 32 kilograms a day, which, though twice as much as we'd targeted as our goal, was still about half the national average.

[M] We can do more, of course. We can sign up with our utility company for power from regional wind farms. We can purchase locally grown foods instead of winter raspberries from Chile and bottled water from Fiji. We can join a carbon-reduction club, or set up one of our own.

The Future

[N] What we really wanted to know was whether it would make any difference? Our low-carbon diet had shown us that, with little or no hardship and no major cash outlays,⁸ we could cut day-to-day emissions of CO₂ in half - mainly by wasting less energy at home and on the highway. Similar efforts in office buildings, shopping malls, and factories throughout the nation, combined with incentives and efficiency standards, could halt further increases in U.S. emissions.

[O] Yet efficiency, in the end, can only take us so far. To get the deeper reductions we need, as Tim Flannery advised, we must replace fossil fuels faster with renewable energy from wind farms, solar plants, geothermal facilities, and biofuels. We must slow deforestation, which contributes to the buildup of greenhouse gases, and we must develop technologies to capture and bury carbon dioxide from existing power plants. Efficiency can buy us time - perhaps as much as two decades - to figure out how to remove carbon from the world's diet.

[P] Not that there won't still be obstacles. Every sector of our economy faces challenges, says energy-efficiency guru⁹ Amory Lovins of the Rocky Mountain Institute. "But they all have huge potential. I don't know anyone who has failed to make money at energy efficiency. There's so much low-hanging fruit, it's falling off the trees and mushing up around our ankles."

[Q] The rest of the world isn't waiting for the United States to show the way. Sweden has pioneered carbon-neutral houses, Germany affordable solar power, Japan fuel-efficient cars, the Netherlands prosperous cities filled with bicycles. Does the U.S. have the will to match such efforts?

[R] Change starts at home with the replacement of a light bulb, the opening of a window, a walk to the bus, or a bike ride to the post office. My wife and I did it for only a month, but I can see the low-carbon diet becoming a habit. As my wife said, "What do we have to lose?"

¹ **Kilo** is an abbreviation of the word *kilogram*.

² A **tipping point** is a stage of a process when a significant change takes place, after which the process cannot be turned back.

³ Something that is **flattering** makes you look good.

⁴ If something **seeps** in or through, it leaks slowly.

⁵ The word **spots** is short for *spotlights*, or strong, focused lights.

⁶ If someone **goes nuts**, he or she goes crazy.

⁷ When people **agonize** about something, they are very worried about it.

⁸ A **cash outlay** is the amount of money that has to be spent, often at the beginning of a project, for the project or business to get started.

⁹ A **guru** is a religious teacher or leader, or an expert in a particular field.

¹⁰ If a fruit is **mushing up**, it is becoming a soft mass, a process caused by rotting.

- _____ 1. In Paragraph D, what does the phrase *deep cuts* refer to?
- a. a large portion
 - b. wounds on your body
 - c. a pit in the ground
 - d. a large reduction
- _____ 2. What did the author do first as part of the experiment?
- a. He and his wife hired an expert to do an energy audit of their house.
 - b. He figured out his current energy consumption.
 - c. The family shut off all the electronics that were in standby mode.
 - d. He took public transportation like buses and the subway to travel to work.
- _____ 3. What is the main idea of Paragraph J?
- a. Constantly check on the power consumption of your entire house.
 - b. Don't worry about using more electricity than usual.
 - c. Continue the experiment for three months for best results.
 - d. Be realistic and do not try to do everything at once.
- _____ 4. What was a change the author and his wife did NOT make by the end of July?
- a. join a carbon-reduction club
 - b. walk to the neighborhood pool
 - c. bike to the local farmers market
 - d. spend time outdoors in the evenings

_____ 5. The following sentence would be best placed at the end of which paragraph?

Next winter, we plan to turn down the heat in our house and wear warmer clothes.

- a. Paragraph E
- b. Paragraph G
- c. Paragraph M
- d. Paragraph O

_____ 6. In Paragraph N, what is suggested as the best way to cut CO₂ emissions?

- a. to spend money on energy-saving appliances
- b. to argue for federal legislation to cut fossil fuels
- c. to stop wasting energy in daily activities
- d. to reduce speed limits on major highways

_____ 7. Which of the following sentences from Paragraph O gives the main idea?

- a. Yet efficiency, in the end, can only take us so far.
- b. To get the deeper reductions we need, as Tim Flannery advised, we must replace fossil fuels faster with energy from wind farms, solar plants, geothermal facilities, and biofuels.
- c. We must slow deforestation, which contributes to the buildup of greenhouse gases, and we must develop technologies to capture and bury carbon dioxide from existing power plants.
- d. Efficiency can buy us time - perhaps as much as two decades - to figure out how to remove carbon from the world's diet.

_____ 8. In Paragraph P, what does Lovins mean by *low-hanging fruit*?

- a. locally grown fruit instead of imported
- b. goals that are easily attainable
- c. recycling damaged goods and spoiled produce
- d. fruit that is in season and plentiful

_____ 9. What is the purpose of Paragraph Q?

- a. to give examples of what other countries are doing to reduce CO₂ emissions
- b. to suggest that federal governments support the manufacture of fuel-efficient cars
- c. to encourage builders to create carbon-neutral houses that use solar power
- d. to promote bicycle lanes and roadways as the Netherlands does

_____ 10. What is the main idea of Paragraph Q?

- a. Sweden has pioneered carbon-neutral houses.
- b. Germany uses affordable solar power.
- c. Japan has started producing fuel-efficient cars.
- d. Many countries have developed ways to reduce their carbon emissions.

DIRECTIONS: Complete the sentences using the words in the box.

appliances	audit	commonplace	commutes	compact
incentive	mode	obstacle	threshold	utility

11. At the turn of the 21st century, cellphones became _____.
12. Physicists think that experiments from the Large Hadron Collider are on the _____ of discovering how particles really work.
13. _____ bills include gas, electric, water, and telephone bills.
14. The company does a monthly _____ to keep track of its finances.
15. Typical household _____ include washing machines and refrigerators.
16. _____ cars are gaining popularity because of their size.
17. When you are watching a movie in the cinema, make sure your cellphone is on silent _____.
18. He _____ to work by train.
19. He trained jumping hurdles in a(n) _____ course.
20. The government is offering additional tax rebates for working parents as a(n) _____ to have children.

Reading Explorer 5 Unit 5 Lesson A

Answer Section

1. ANS: D PTS: 1 REF: Pages 97-101
OBJ: Unfamiliar Vocabulary TOP: Energy Choices
2. ANS: B PTS: 1 REF: Pages 97-101
OBJ: Sequence TOP: Energy Choices
3. ANS: D PTS: 1 REF: Pages 97-101
OBJ: Main Idea TOP: Energy Choices
4. ANS: A PTS: 1 REF: Pages 97-101
OBJ: Negative Detail TOP: Energy Choices
5. ANS: C PTS: 1 REF: Pages 97-101
OBJ: Cohesion TOP: Energy Choices
6. ANS: C PTS: 1 REF: Pages 97-101
OBJ: Understanding Cause and Effect TOP: Energy Choices
7. ANS: B PTS: 1 REF: Page 104
OBJ: Distinguishing Main Ideas and Supporting Information TOP: Energy Choices
8. ANS: B PTS: 1 REF: Pages 97-101
OBJ: Figurative Language TOP: Energy Choices
9. ANS: A PTS: 1 REF: Pages 97-101
OBJ: Purpose TOP: Energy Choices
10. ANS: D PTS: 1 REF: Page 104
OBJ: Distinguishing Main Ideas and Supporting Information TOP: Energy Choices
11. ANS: commonplace

PTS: 1 REF: Page 105 OBJ: Vocabulary TOP: Energy Choices
12. ANS: threshold

PTS: 1 REF: Page 105 OBJ: Vocabulary TOP: Energy Choices
13. ANS: Utility

PTS: 1 REF: Page 105 OBJ: Vocabulary TOP: Energy Choices
14. ANS: audit

PTS: 1 REF: Page 105 OBJ: Vocabulary TOP: Energy Choices
15. ANS: appliances

PTS: 1 REF: Page 105 OBJ: Vocabulary TOP: Energy Choices
16. ANS: Compact

PTS: 1 REF: Page 105 OBJ: Vocabulary TOP: Energy Choices
17. ANS: mode

PTS: 1 REF: Page 105 OBJ: Vocabulary TOP: Energy Choices
18. ANS: commutes

PTS: 1 REF: Page 105 OBJ: Vocabulary TOP: Energy Choices

19. ANS: obstacle

PTS: 1

REF: Page 105

OBJ: Vocabulary

TOP: Energy Choices

20. ANS: incentive

PTS: 1

REF: Page 105

OBJ: Vocabulary

TOP: Energy Choices