

Before You Read

A Healthy Meal

A Think about answers to the following questions.

- 1 Which would you rather eat from each pair of foods below? Why?
- 2 Which are natural foods and which are processed? Which do you think is healthier? Why?



OR



OR



B Discuss your answers with a partner.

Reading Skill

Distinguishing between Main and Supporting Ideas

Every paragraph has a main idea, with supporting ideas that explain the main idea. The main idea is usually in the beginning of the paragraph—but not always! By knowing the difference between main and supporting ideas, you can understand the purpose of a passage more clearly.

A Skim each paragraph in the passage on the next page. **Circle** the sentence that describes the main idea of each paragraph.

Paragraph 1

- a Most people on the planet are omnivores.
- b People are eating more meat.

Paragraph 2

- a Raising animals for meat has changed the world for the worse.
- b Methane and carbon dioxide are greenhouse gasses.

Paragraph 3

- a Scientists are coming up with new ways to produce meat.
- b Stem cells can be used to create beef in a laboratory.

B Read paragraph 4. Write the main idea and one supporting idea.

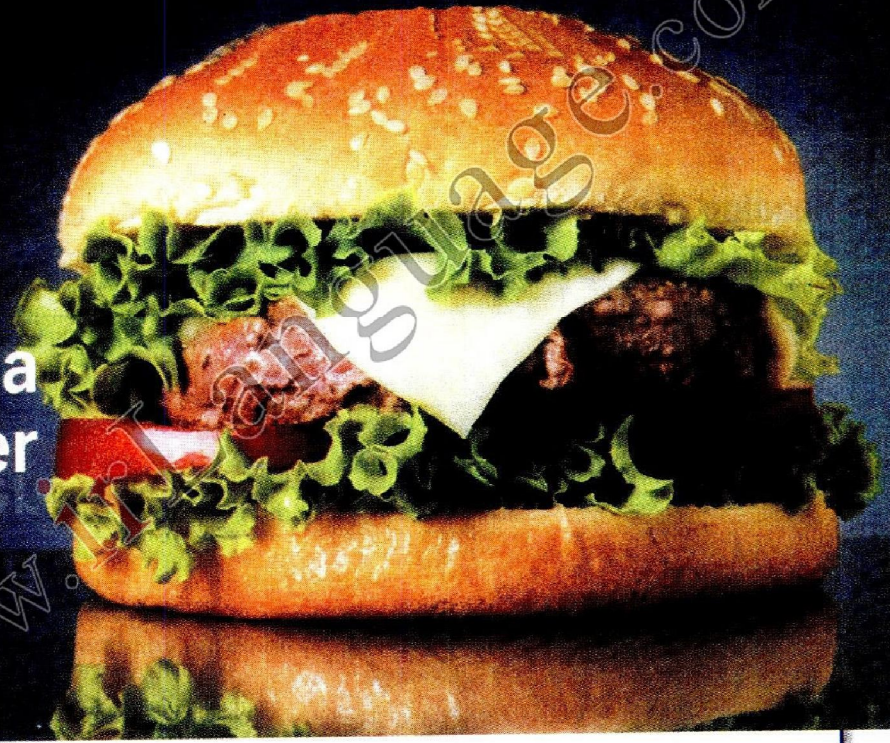
Paragraph 4

Main idea: _____

Supporting idea: _____

C Now read the entire passage carefully. Then answer the questions on page 138.

Engineering a Better Burger



- 1 Humans have traditionally been omnivores, with a diet of both meat and vegetables. But lately it seems we've become a society of meat eaters. According to the United Nation's Food and Agriculture Organization (FAO), global demand for meat has increased over 500 percent in the past 50 years. Two things explain this: the Earth's population is rising rapidly, and people with higher incomes tend to consume more meat. With the population expected to reach nine billion people around 2050, and with developing countries getting richer, this trend won't stop any time soon.
- 2 If meat production rises to match demand, the **consequences** could be **devastating** for the planet. Thirty percent of Earth's entire land surface—a massive 70 percent of all land available for agricultural use—is used for raising livestock. And more land is required each year as farmers 10 **struggle** to meet the rising demand, which comes at the cost of rain forests and other valuable land. Reports by FAO show that meat production is responsible for 70 percent of the Amazon deforestation in South America. Large factory farms are also big consumers of energy and cause a lot of pollution. It's clear that our hunger for meat, and the way we produce it, is not **sustainable** in the long run.
- 3 15 Fortunately, food scientists have been **anticipating** this need for change. They are working on some interesting **alternatives** to current methods of meat production. A group of Dutch scientists are engineering meats that can be grown in laboratories. This involves using cells taken from cows to grow "muscle" that can be mixed with other things to make beef. They say that this process could reduce the amount of energy and land needed to raise cattle by about 40 percent. 20 Other scientists from the United States and China are working to create "meaty" flavors from mushrooms, which could be used to flavor foods. They feel people can detect **chemical** flavors, and that natural flavors are better for the body.
- 4 For now, lab-grown meat is not a threat to traditional farming. Although scientists say that their beef could be ready for testing (and eating) soon, large-scale manufacturing won't be possible for another ten years. It's far too expensive to develop in large quantities—the Dutch team will spend over \$200,000 making enough meat for one burger—and not everyone will be **keen** on the idea of eating lab-grown meat. While the general public isn't quite ready to accept "fake" meat, the day will come when we may not have a choice.

Reading Comprehension

Check Your Understanding

A Read the following sentences. Check (✓) true (T) or false (F).

	T	F
1 People with more money usually eat less meat.		
2 Most of Earth's usable land goes to livestock farming.		
3 Some scientists are trying to make mushrooms taste like meat.		
4 Lab-grown meat costs more than normal meat.		
5 Lab-grown meat will be sold in supermarkets very soon.		

B Complete the following summary with words or phrases from the passage.

Global demand for meat has risen by (1) _____ in the last 50 years, partly because the population has grown, and also because people are generally getting (2) _____. This rising demand has a huge effect on the environment. Livestock farms already occupy (3) _____ of all agricultural land, and (4) _____ are being destroyed to create even more land for this purpose. Raising large numbers of livestock also consumes a lot of (5) _____ and causes a lot of (6) _____. But science may have a solution. Some scientists are trying to make meat in a (7) _____ by taking (8) _____ from cows to grow (9) _____. However, it will take at least ten years to produce meat in large quantities, because it is (10) _____ to manufacture. Other scientists are creating "meaty" flavors from (11) _____; they believe these (12) _____ flavors taste better and are healthier. In the end, though, a lot depends on whether the public can accept these meat alternatives.

Critical Thinking

C Discuss the following questions with a partner.

- 1 Would you rather eat foods that are created in a lab or grown naturally? Why?
- 2 Can you think of any meat alternatives that are already available to the public?

Vocabulary Comprehension

Odd Word Out

A Circle the word or phrase that does not belong in each group. The words in blue are from the passage.

- | | | | |
|----------------|-------------|--------------|-------------|
| 1 struggle | relax | rest | calm down |
| 2 ask | consequence | demand | request |
| 3 attracting | polluting | damaging | devastating |
| 4 anticipation | feeling | emotion | mood |
| 5 limitation | choice | alternative | option |
| 6 support | keep up | limit | sustain |
| 7 interested | curious | keen on | disgusted |
| 8 chemical | fake | manufactured | natural |

B Complete the following sentences with the words in blue from A. You might have to change the form of the words.

- 1 He does not have enough customers to _____ his business.
- 2 Many people _____ to lose weight. The problem is they are _____ to diet and exercise but never really follow through.
- 3 Cycling is a good _____ to driving.
- 4 The boxer _____ his opponent's punch and moved out of the way.

A Look at some examples of where adverbs are placed in a sentence.

Many adverbs can be placed either before or after the verb they describe.

She spoke *confidently* about her new project.

She *confidently* spoke about her new project.

Some adverbs appear at the very beginning of a sentence and describe the entire sentence. Some adverbs describe a clause within the sentence.

Suddenly, it started raining, but *luckily* I had my umbrella with me.

Sometimes adverbs appear at the end of a sentence. If a sentence has more than one verb, we avoid putting the adverb at the end.

~~X~~ The boys sang the songs that they had prepared in class *loudly*.

✓ The boys *loudly* sang the songs that they had prepared in class.

B Write the adverb form of these adjectives.

Adjective	Adverb	Adjective	Adverb
1 tradition		6 sincere	
2 aggressive		7 passionate	
3 virtual		8 persuasive	
4 previous		9 loyal	
5 essential		10 natural	

C Read the sentences below. Circle the adverb. Then, underline the word, phrase, clause, or sentence that the adverb describes.

- 1 The lion in the cage roared aggressively.
- 2 Frankly, I'm not bothered about what he thinks.
- 3 The president argued for lower taxes very persuasively.
- 4 Many dogs follow their owner loyally and listen to their commands.
- 5 The James family traditionally go to France for Christmas.

Vocabulary Skill

Adverbs

In this chapter, we saw the words *traditionally* and *easily*. These are examples of adverbs. Adverbs can be used to describe verbs in a sentence; they tell us how something is done. An adverb usually appears right before or after the verb it describes, but it can also appear at the beginning or the end of a sentence.

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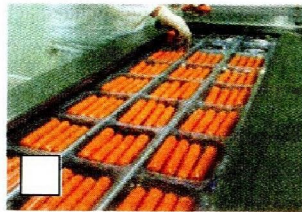
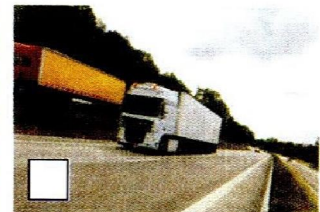
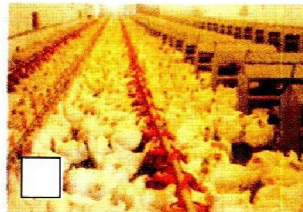
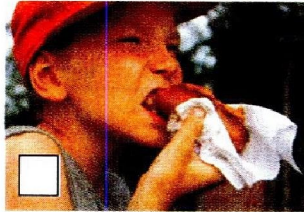
UNIT 11

CHAPTER 2 Is Your Diet Destroying the Environment?

Before You Read

Problems from Food

A Think about answers to the following questions.



- 1 How do foods get from the farm to our table? Number the images (1-5) based on the stages in the process.
- 2 What problems to the Earth could each stage cause?

B Discuss your answers with a partner.

Reading Skill

Understanding Cause and Effect

Sometimes a reading is organized around the causes and effects of a problem or situation. Understanding these cause and effect relationships will help you to understand the author's main idea.

A The following sentences are from the passage on the next page. Write the cause and the effect.

- 1 Some adopt a vegetarian diet as the ethical alternative to eating meat, because they believe killing animals is wrong.

Cause some people believe killing animals is wrong

Effect these people become vegetarian

- 2 Animals such as cows, pigs, and sheep release methane—a greenhouse gas that causes global warming—when they pass wind.

Cause _____

Effect _____

- 3 A vegan diet may deprive us of vitamins and minerals that are essential to our health.

Cause _____

Effect _____

B Read the entire passage carefully. Then answer the questions on page 142.



Is Your Diet Destroying the Environment?



- 1 People become vegetarian for different reasons. Some **adopt** a vegetarian diet as the **ethical** alternative to eating meat, because they believe killing animals is wrong. People who are concerned about their health see it as a good way to keep slim and lower their risk of various diseases. Lately, more people are replacing meat with vegetables because of the **vital** role this plays in protecting the environment. 5
- 2 Researchers from the Union of Concerned Scientists in the U.S. released a report on the **impact** of consumer behavior on the environment. Their study showed that meat consumption is one of the main ways that humans can damage the environment, second only to the use of motor vehicles.
- 3 But how will **modifying** our diets make a difference? We can compare the amount of resources needed to produce meat and crops¹. For example, we need almost 20,000 liters of water to produce a kilogram of beef, whereas only 150 liters of water is needed to produce a kilogram of wheat. Similarly, one hectare (or 10,000 square meters) of farmland that is used for raising livestock produces about 227 kilograms of beef, but the same amount of farmland can produce 13,600 kilograms of carrots, 18,000 kilograms of potatoes, or 22,700 kilograms of tomatoes. It's clear that we can make more efficient use of land and water if we produce crops instead of meat. 10 15
- 4 Raising livestock also contributes to rising global temperatures. Animals such as cows, pigs, and sheep release methane—a greenhouse gas that causes global warming—when they pass wind, with one cow producing an **estimated** 500 liters of methane each day. A 2006 report by the Food and Agriculture Organization (FAO) says that livestock farming **accounts for** 37 percent of all methane production, and warns that methane may have a more damaging effect on the atmosphere than carbon dioxide. 20
- 5 There is growing support for vegetarianism. For example, schools across England and the U.S. hold “Meat Free Mondays” to show students how easy it is to eat less meat. Some people go one step further and eat a vegan diet, which excludes all animal products such as cheese, eggs, and milk. However, some nutritionists believe that a vegan diet may **deprive** us of vitamins and minerals that are essential to our health. 25
- 6 One does not have to become vegan or fully vegetarian to help save the environment. Whether it's just being vegetarian for one day a week—or just eating less meat—a small effort on our part can go a long way.

¹ **Crops** are plants such as wheat and potatoes that are grown in large amounts for food.

Reading Comprehension

Check Your Understanding

A Choose the correct answers for the following questions.

- Which is NOT mentioned as a reason people become vegetarian?
 - They think meat is too expensive.
 - They think eating meat is morally wrong.
 - They think eating meat is bad for health.
- What do you think “Meat Free Mondays” is about?
 - Meat is free for students on Mondays.
 - Students try not to eat meat on Mondays.
 - Students take classes on environmental issues.
- What does *go one step further* in lines 23–24 mean?
 - travel more
 - learn more
 - do more

B Which amount is larger? Circle the correct item in each pair.

- the damage done to the environment by (eating meat / driving)
- the amount of global warming caused by (methane gas / carbon dioxide)
- the water needed to produce a kilogram of (meat / vegetables)
- the amount of (meat / vegetables) you can produce on a piece of land
- the vitamins in a (vegan / vegetarian) diet

C Discuss the following questions with a partner.

- Can you think of any disadvantages of being vegetarian?
- Do you agree with the final sentence of the passage—that a small effort can go a long way?



Critical Thinking

Vocabulary Comprehension

Definitions

A Choose the best answer. The words in blue are from the passage.

- When you adopt something, you _____ it.
 - accept
 - reject
- Something that is ethical is seen as _____.
 - right
 - wrong
- Which would account for traffic accidents?
 - more traffic lights
 - careless driving
- _____ is vital to your health.
 - Exercising
 - Smoking
- If something has an impact on your life, it _____.
 - has changed you greatly
 - means very little to you
- If you estimate a number, you think of an _____.
 - exact number, like 338
 - approximately correct number, like 300

Real Life Skill

Understanding Units of Measure

Most of the world uses the metric system to measure things like length and weight. Some countries, though, use non-metric measures, or a combination of both. The metric system uses prefixes to indicate the size of the number. The most common prefixes are *milli* (0.001), *centi* (0.01), and *kilo* (1,000). For example, one kilometer is equal to 1,000 meters, while one meter is equal to 100 centimeters.

- A** Review the comparisons in the chart. What does each measure? Complete the chart using the words from the box below. One word is used twice.

weight temperature distance
 volume length area

Measures	Non-metric vs. Metric
weight	1 pound (lb) = 453.592 grams
	1 foot (ft) = 0.3 meters (m)
	1 inch (in) = 2.5 cm
	1 gallon = 4.5 liters (l)
	1 mile = 1.6 kilometers (km) = 1600 meters (m)
	32 Fahrenheit (°F) = 0 Celsius (°C) To convert Celsius to Fahrenheit: [number in Celsius] x 1.8, add 32.
	1 hectare = 2.47 acres = 4046.86 square meters (sq ²)

- B** Use the correct form of the words below to compare each set of measurements. Not all the words will be used.

big cold heavy hot less light long more short small

- One pound is lighter than one kilogram.
- One inch is _____ than one centimeter.
- One gallon contains _____ liquid than one liter.
- One kilometer is _____ than one mile.
- 50° F is _____ than 50°C.
- One hectare is _____ than one acre.

What do you think?

- Would you change your eating habits to help the environment? Why, or why not?
- How do you think our diet will change 10 or 20 years from now? Why?
- Do you think everyone in the world should use the same measurement system? Why do you think some people use the metric system and others use a non-metric system?