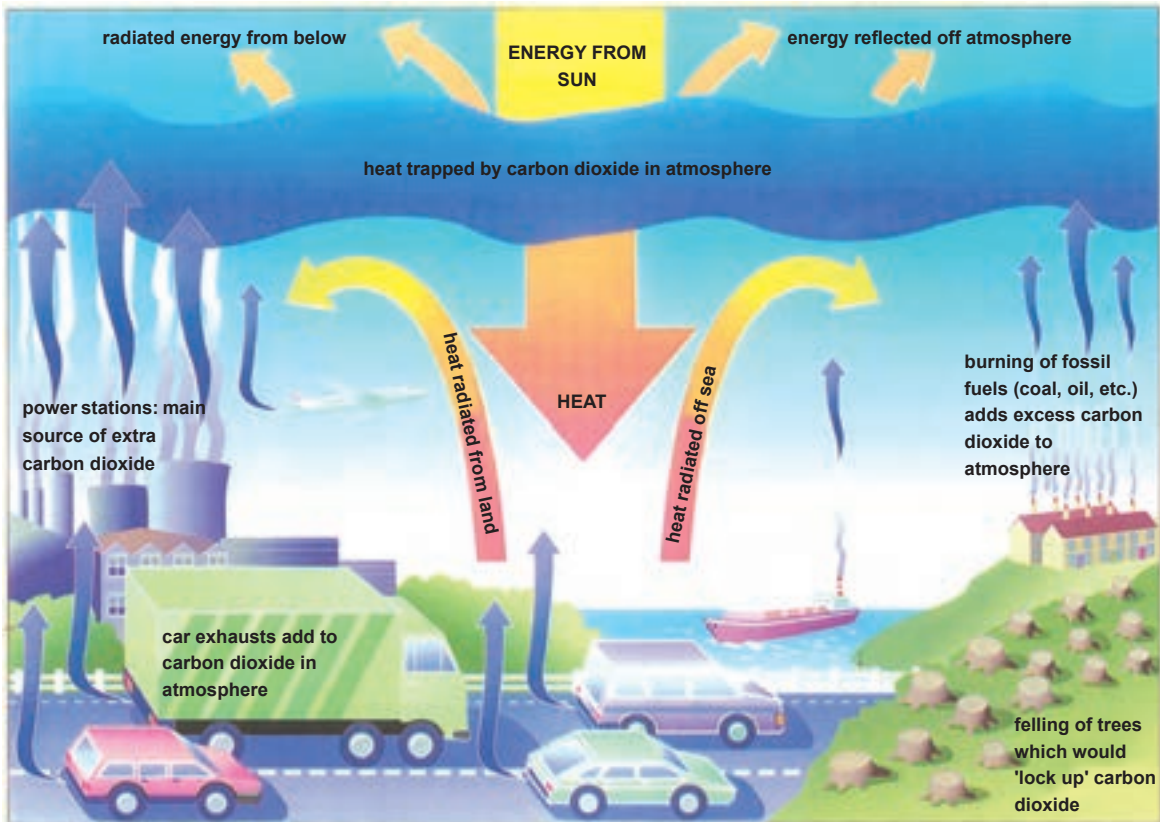


# LESSON 3

# Global Warming, Global Concern

## Before You Read



In this lesson, you will read about changes in climate, the greenhouse effect, and global warming. You will notice how human beings can make the planet warmer. You will also read about some of the ways to control this process.

**1** Answer the following questions.

1. Are you ever worried about the Earth? Why?
2. What are some of the things people do that damage the Earth?
3. How can we stop people from damaging the Earth?
4. Can you name some of the bad things that have already happened to the Earth?
5. Do you know if people around the world have done anything to control global warming?

*Now ask your partner the same questions.*



**2** Read the following statements. Do you agree or disagree? Add two more statements of your own. Then discuss your ideas with a partner.

| <i>Statement</i>   | <i>agree</i> | <i>disagree</i> |
|--|--------------|-----------------|
| The Earth is getting warmer.                                       |              |                 |
| Harmful chemicals are the only cause for the warming of the Earth. |              |                 |
| Some of the things we do make the planet warmer.                   |              |                 |
| Cutting down the trees changes the conditions of the atmosphere.   |              |                 |
| We can have an active role in controlling global warming.          |              |                 |
|  |              |                 |
|  |              |                 |



## Global Warming, Global Concern\*

**1** The world is getting warmer. It has warmed by half a degree centigrade over the past 100 years. But why? And how? Well, scientists are not exactly sure. The Earth could get warmer by itself, without help from people. Many **climate** scientists think there is another reason for the change in temperature. They think that human activities like cutting down the trees, producing trash, and burning fuels like coal and oil are helping make the Earth warmer. Just because the weather has been hot for a month or two does not mean that global warming has arrived. But scientists think that as we use more gasoline and electricity, the Earth is going to get warmer. They believe that we know enough about the problem to take some action.

### *Greenhouse Effect, Climate Change, and Global Warming*

**2** The Greenhouse Effect: Scientists are sure about the greenhouse effect. They know that greenhouse gases like carbon dioxide and methane make the Earth warmer. They do so by **trapping** heat in the atmosphere.

**3** Climate Change: Climate is the average of a **region's** weather over a period of time. For example, it is possible that a winter day in a city could be sunny and mild, but the average weather tells us that its winters will **mainly** be cold and include snow and rain. Climate change is a change in these general weather **patterns**. They can become warmer or colder; amounts of rainfall or snowfall can increase or decrease each year.

**4** Global Warming: Global warming is the average increase in the Earth's temperature, which then **causes** changes in climate. A warmer Earth may have results such as changes in rainfall patterns, a rise in **sea levels**, and different effects on plants, wildlife, and humans. When scientists talk about climate change, they are concerned about global warming caused by human activities.

\* adapted from <http://www.epa.gov/globalwarming>

**concern:**  
a feeling of worry about sth

**climate:**  
general weather of a place over a period of time

**trap:**  
keep

**region:**  
a particular area or part in a country or the world

**mainly:**  
to a large degree

**pattern:**  
a usual way in which sth happens or is done

**cause:**  
make sth happen

**sea level:**  
average height of the sea/ocean

### *Why should we care?*

**5** Global warming brings with it no guarantees. We don't know exactly what will happen—what the effects will be—nor do we know exactly where or when they will make problems. But it should be said that scientists have a pretty good idea of what is going to happen. Scientists and researchers from different fields tell us that the possible effects of climate change could be big and, in some cases, would cause serious problems. Among the possible effects are increased number of human deaths, **extinction** of groups of animals and plants, and a dangerous rise in sea levels. With this in mind, we have to think of the costs of action and **weigh** them **against** the risks of inaction.

### *We can make a difference!*

**6** Global warming may be a big problem, but there are many little things we can do to make a difference. If we try, most of us can do our part to reduce the amount of greenhouse gases that we put into the atmosphere. Many greenhouse gases coming from things we do every day trap energy in the atmosphere and make the Earth warmer. The following is a list of what we can do and think about.

**7** Some things we can do:

1. Read about the importance of the **environment**.
2. Save electricity.
3. Ride a bicycle, take a bus, or walk.
4. Plant trees.
5. Talk to your family and friends about global warming.
6. **Recycle** cans, bottles, plastic bags, and newspapers.
7. Buy things that don't use much energy.

**8** Some things we can think about:

1. Solar energy — energy that comes from the sun — can be used to heat homes, buildings, water, and to make electricity.
2. Cars cause **pollution** and release many greenhouse gases into the air. Driving cars that use less fuel can help reduce the amount of greenhouse gases in the air.

#### **extinction:**

when all the animals and plants of a particular type die

#### **weigh sth against sth:**

judge which of two things is more important

#### **environment:**

the air, water, or land in which living things live

#### **recycle:**

change old materials to use them again

#### **pollution:**

damage caused to water, air, etc by harmful materials

## After You Read

### Comprehension Check

**1** Check your understanding. Are these statements True (T) or False (F)? If they are not mentioned in the text, write (N).

- ..... 1. The greenhouse effect can be dangerous for the planet.
- ..... 2. Scientists believe that human activities are the only reason for global warming.
- ..... 3. It takes a long time for the climate to change.
- ..... 4. If global warming is not stopped, human beings might think about living on other planets.
- ..... 5. You can help control global warming by using public transportation.

*Compare your answers with a partner's.*

**2** A) Put the number of these sentences under the right column in the following box.

- 1) Scientists think that there will be a rise in sea levels.
- 2) It usually rains in Rasht.
- 3) Tomorrow it will be 15 c in Tehran.
- 4) Some of the plants are in danger of extinction.
- 5) Manjil is often windy.
- 6) It will be cloudy this evening.

| <i>describing weather</i> | <i>describing climate</i> | <i>effects of global warming</i> |
|---------------------------|---------------------------|----------------------------------|
|                           |                           |                                  |

B) Somewhere in paragraph 1, the writer says that the danger of global warming is known and that people should start to do something about it. Can you find the sentences? Copy them down here.

.....  
.....

C) What do you think "trapping heat in the atmosphere" in paragraph 2 means?

.....

*Complete the following sentence.*

Greenhouse gases like CO<sub>2</sub> and methane.....  
.....by trapping heat in the atmosphere.

*Compare your answers with a partner's.*

**3** Discuss the following questions in class.

1. What have you already done to help protect the environment?
2. What do you do to help recycling?
3. If you wanted to talk to your family and friends about global warming, what would you say to them?
4. What can our government/people do to reduce pollution?

## Sentence Functions

*Look at the following sentences from the text.*

- Climate is the average of a region's weather over a period of time.
- Global warming is the average increase in the earth's temperature, which then causes changes in climate.

**1** The meanings of the following words are given in the text. Find them and complete the sentences.

- a. Climate change .....
- b. Solar energy .....

**2** Now define the following words. You can use a dictionary if you want.

- a. forest: .....
- b. researcher: .....
- c. trash: .....

*Compare your answers with a partner's.*

## Reading Skills

یکی از مهارت‌های خواندن، درک روابط میان بخش‌های مختلف متن، از طریق شناسایی ضمائر و مراجع آن‌ها است. تمرین زیر به تقویت این مهارت می‌پردازد.

**1** Refer to the text and complete the following table.

| Pronoun /<br>Adjective | Paragraph &<br>Line Number | Check if it refers to<br>something |       | Copy down what it<br>refers to |
|------------------------|----------------------------|------------------------------------|-------|--------------------------------|
|                        |                            | before                             | after |                                |
| itself                 | P1, L 3                    |                                    |       |                                |
| another                | P1, L4                     |                                    |       |                                |
| its                    | P3, L3                     |                                    |       |                                |
| they                   | P4, L5                     |                                    |       |                                |
| this                   | P5, L8                     |                                    |       |                                |

*Compare your answers with a partner's.*

کلمه‌ها یا عبارت‌های نشان‌دهنده تضاد (contrast)، مانند though ، although ، even though ، whereas ، while و but و استفاده از کلمه‌های اطراف واژه ناآشنا (surrounding words) شما را در پی بردن به معنی آن کلمات، یاری می‌کند.

**2** Look back at the text and guess what the following words mean.

| Word     | Paragraph and<br>Line No. | Meaning |
|----------|---------------------------|---------|
| global   | title                     |         |
| mild     | P3, L3                    |         |
| save     | P7, L3                    |         |
| decrease | P3, L6                    |         |
| reduce   | P6, L2                    |         |
| solar    | P8, L2                    |         |
| inaction | P5, L9                    |         |

*Compare your answers with a partner's.*

## Vocabulary Review

Choose a pair of words having a similar relationship as the pairs in each item.

1. increase: decrease

a. raise: lower

b. produce: keep

c. cause: create

2. extinction: death

a. pattern: region

b. importance: occasion

c. concern: worry

3. coal: fuel

a. bicycle: bus

b. electricity: energy

c. climate: change

4. risk: danger

a. fear: death

b. reduce: decrease

c. save: lose

5. researcher: laboratory

a. professor: university

b. doctor: medicine

c. scientist: school

*Compare your answers with a partner's.*

### *Focus on Grammar*

#### Adjective Phrases



Read the following sentences carefully.

1. All over the world, there are people **who pollute the environment**.

2. All over the world, there are people **polluting the environment**.

3. Energy **which comes from fuels like coal and oil** is used to heat and light our homes.

4. Energy **coming from fuels like coal and oil** is used to heat and light our homes.

5. In some countries, people **who produce trash** are punished.

6. In some countries, people **producing trash** are punished.



**Is the meaning of the two sentences in each pair the same or different?  
Can you explain how the first sentence can be changed into the second one?**

**2** Now read the following set of sentences.

1. Most plastics **which are made from oil** are difficult to recycle.
2. Most plastics **made from oil** are difficult to recycle.
  
3. Heat **which is trapped in the atmosphere** causes the Earth to get warmer.
4. Heat **trapped in the atmosphere** causes the Earth to get warmer.
  
5. The photographs **which were taken of the Earth** were wonderful.
6. The photographs **taken of the Earth** were wonderful.

**Is the meaning of the two sentences in each pair the same or different?  
Can you explain how the first sentence can be changed into the second one?**

### *Grammar Practice*

**1** Underline the correct word.

1. The teacher advised us to read the article (writing/written) about the greenhouse effect.
2. The scientists (studying/studied) the causes of climate change have made a lot of progress.
3. I met a group of scientists (concerning/concerned) about environmental problems.
4. The book (writing/written) about global warming became very popular.
5. The cars (releasing/released) greenhouse gases into the air are a danger to the environment.

*Compare your answers with a partner's.*

**2** Rewrite the following sentences with the reduced form of the underlined parts.

1. The cars which release greenhouse gases into the air are a danger to the environment.

.....

2. The scientists are talking about another problem which is caused by human beings.

.....

3. Anyone who is interested in healthy living should exercise regularly.

.....

4. The plastic bags which are produced in this factory are recyclable.

.....

5. The cars which make a lot of noise pollution must be stopped by the police.

.....

*Compare your answers with a partner's.*

**3** Use the information in parentheses to make adjective phrases and complete the following sentences.

1. Acid rain destroys forests. (Acid rain is created by burning of gas, oil and coal.)

.....

2. Factories help increase pollution. (Factories burn coal and oil.)

.....

3. The greenhouse effect is dangerous for the planet. (The greenhouse effect is enhanced by human activities.)

.....

4. Trash can be burned to produce energy. (Trash is believed to be useless.)

.....

5. Farming produces another greenhouse gas. (The greenhouse gas is called methane.)

.....

*Compare your answers with a partner's.*

1. Adjective clauses with an active structure are reduced to adjective phrases through an - ing form.

- The men **who work in this area** are in danger.
- The men **working in this area** are in danger.
  
- Anyone **who touches that wire** will get an electric shock.
- Anyone **touching that wire** will get an electric shock.

2. Adjective clauses with a passive structure are reduced to adjective phrases through a past participle form.

- Most of the people **who were invited to the party** were old friends.
- Most of the people **invited to the party** were old friends.
  
- The cars **which are produced in this factory** use a lot of fuel.
- The cars **produced in this factory** use a lot of fuel.