



Unit 4

Protecting the Environment

Heaven does not speak in words. It speaks through the rotation of four seasons and the growth of all living things.

— Confucius

Getting Started

Look at the picture on the left and answer the questions.

1. What is the possible relationship between the two polar bears?
2. What might have separated them from each other?
3. What could humans do to help solve their problem?

《高中英语》（上外版）


选择性必修第三册第四单元

Protecting the Environment

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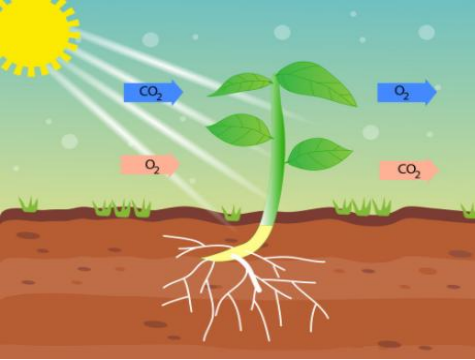
1. What is the possible relationship between the two polar bears?
2. What might have separated them from each other?
3. What could humans do to help solve their problem?

课时	授课内容
1	Getting Started/ Reading A
1	Reading A/ Vocabulary Focus
1	Reading A/ Grammar in Use
1.5	Listening, Viewing and Speaking
1	Reading B
0.5	Critical Thinking
1	Writing
1	Further Exploration/ Self-assessment

学习目标 Learning Objectives:

At the end of the lesson, you will be able to ...

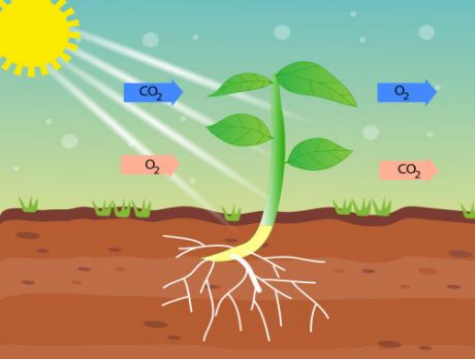
- 1.能在语境中学习和运用课文核心词汇和常用词组;
further understand the text and learn the target words while analysing functions, effects and causes of carbon dioxide through some questions based on the text;
- 2.能列举并运用与本单元主题语境相关的动词、名词及其习惯搭配和表达;
build up a web of the top-related words and expressions and learn to apply them;
- 3.能运用本单元所学的主题语境相关词和习惯搭配讨论有关全球变暖对人类生活的影响, 并有逻辑地解释它的起因。
conduct a discussion by using the topic-related words and expressions learnt in the text and explain possible causes in a logical way.



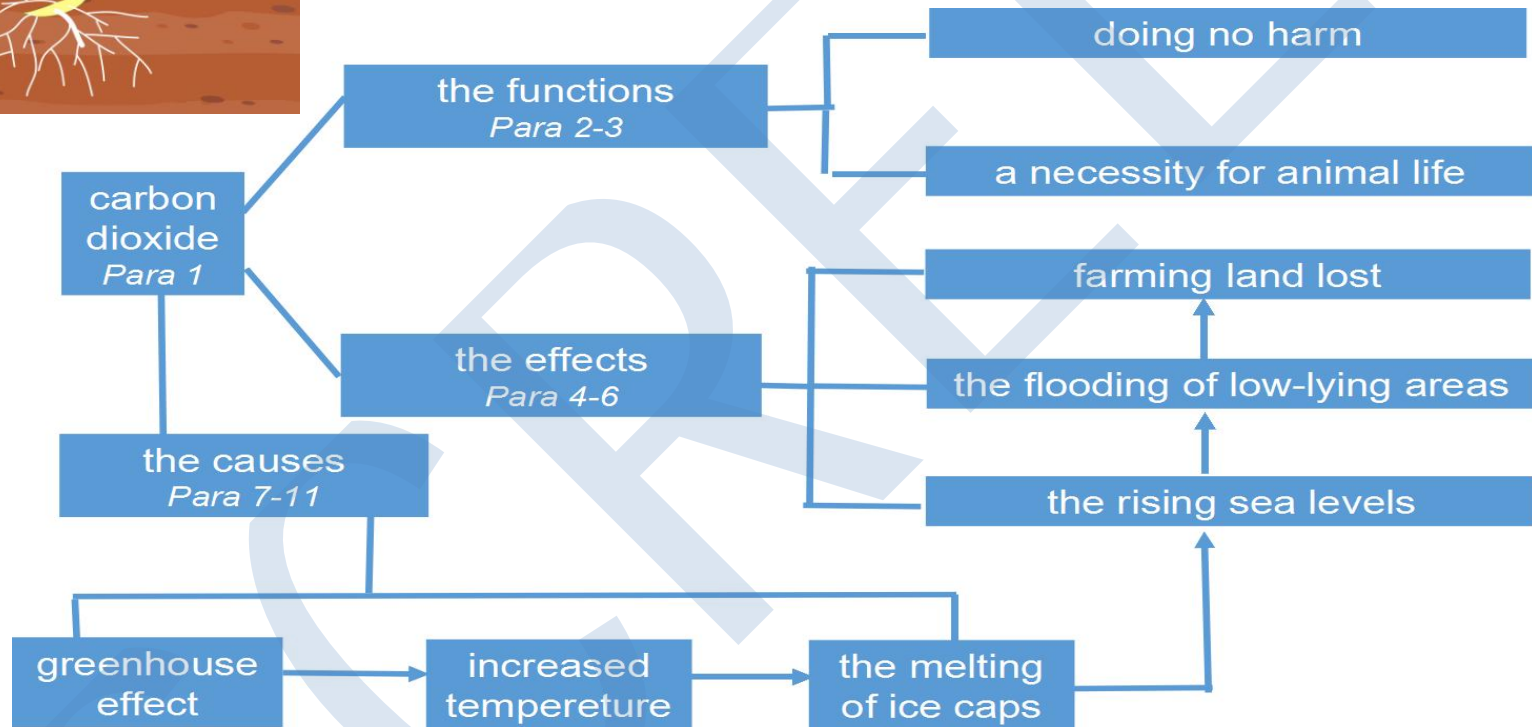
Review the main idea and organization of Reading A.

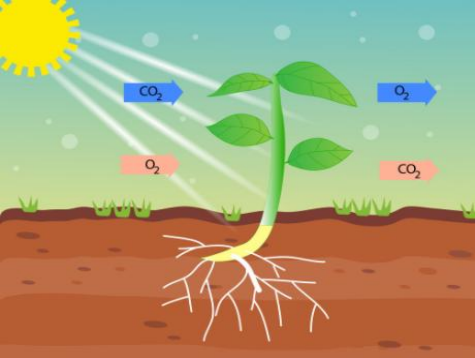
What is the theme of the text?

The writer describes the functions of small quantity of carbon dioxide, harmful effects of carbon dioxide, and the causes of these consequences to make the public aware of the serious results of global warming.



What is the organization of the text?





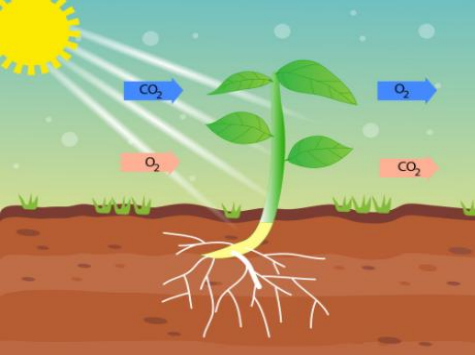
Review and analyse the functions of small quantity of carbon dioxide in Para. 2-3.

Can you identify the connector that links the two functions of carbon dioxide in Para. 2-3?

What's more.

1) what's more

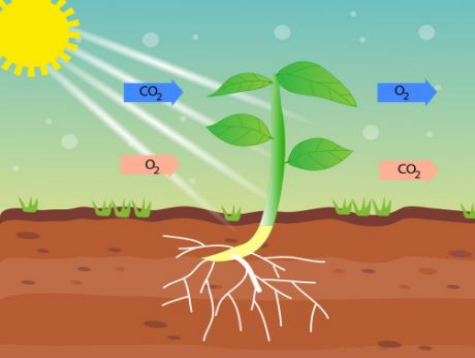
to add more information that emphasizes what you are saying
更为甚者；更为重要的是



Review and analyse the functions of small quantity of carbon dioxide in Para. 2-3.

- 空气中少量的二氧化碳对我们没有害处，更为重要的是它对生命很重要。(what's more)

A small quantity of carbon dioxide in the air does us no harm , and what's more it is essential to life.



Review and analyse the functions of small quantity of carbon dioxide in Para. 2-3.

2) absorb /əb'sɔ:b / vt.

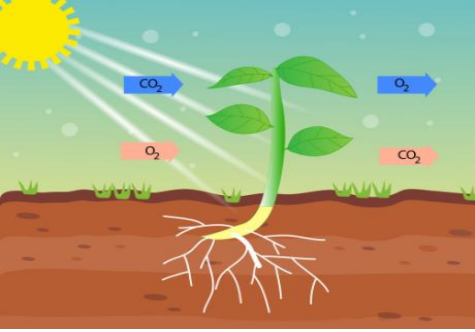
to take in liquid, gas, or another substance from the surface or space around something 吸收（液体、气体等）

absorb heat/carbon dioxide/water/knowledge

sb. be absorbed in one's work

absorption /əb'sɔ:pʃən / noun

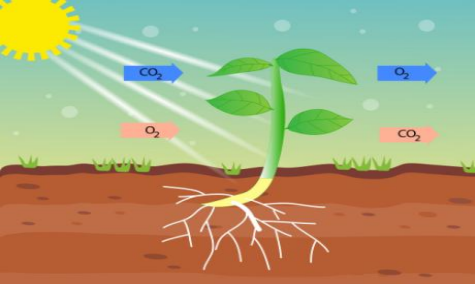
absorbent /əb'sɔ:bənt / adjective



Review and analyse the functions of small quantity of carbon dioxide in Para. 2-3.

Choose the word and phrases mentioned above and fill in the blanks in proper forms.

1. The scientists are absorbed in their work on plants' absorption of carbon dioxide.
2. To sell recognized that these qualities might make it useful as an absorbent material for removing carbon dioxide.



Review and analyse the functions of small quantity of carbon dioxide in Para. 2-3.

Could you list the words and expressions related to the function of CO_2 in Para. 2-3?

be converted into their own tissue

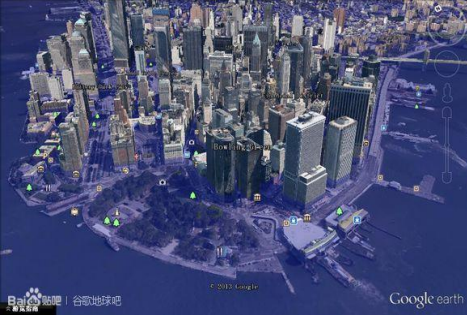
do no harm

functions

be absorbed by plants

serve as the basic food

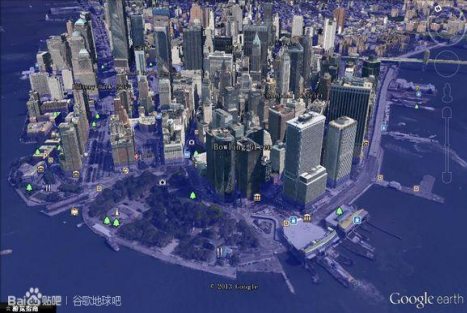
release oxygen



Review and analyse the harmful effects of CO₂ in Para. 4-6.

Why is this apparently harmless and certainly essential gas harmful to us?

The sea level is rising very slowly and in all likelihood, it will continue to rise and do so at a greater rate in the course of the next hundred years.



Review and analyse the harmful effects of CO₂ in Para. 4-6.

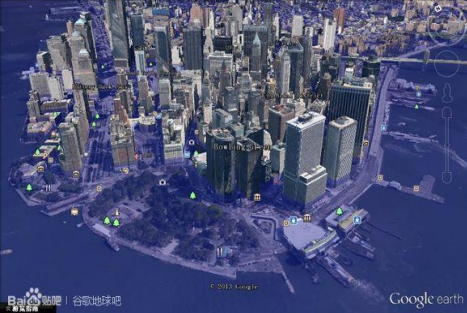
3) likelihood /'laɪklihʊd/

n. the chance of sth happening; how likely sth is to happen
可能；可能性

adj. & adv. likely

sb./sth. be likely to do sth.

It's likely that...

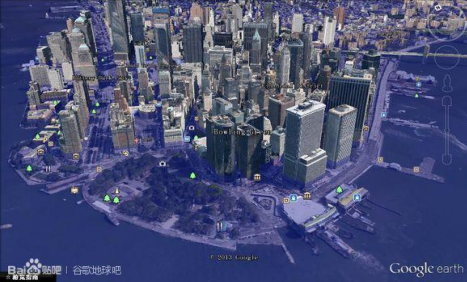


Review and analyse the harmful effects of CO₂ in Para. 4-6.

e.g. In all likelihood, the sea level will continue to rise and do so at a greater rate in the course of the next hundred years.

➡ The sea level will be likely to continue to rise and do so at a greater rate in the course of the next hundred years.

➡ It's likely that the sea level will continue to rise and do so at a greater rate in the course of the next hundred years.



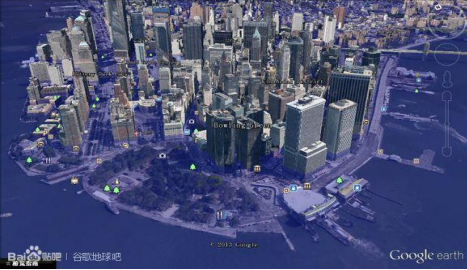
Review and analyse the harmful effects of CO₂ in Para. 4-6.

- 随着海平面的每年上升，许多城市很可能被淹没，引起了世界上很多耕地丢失。

As the sea level is rising from year to year, in all likelihood, many cities will be drowned, causing much of the most farming land of the world to be lost.

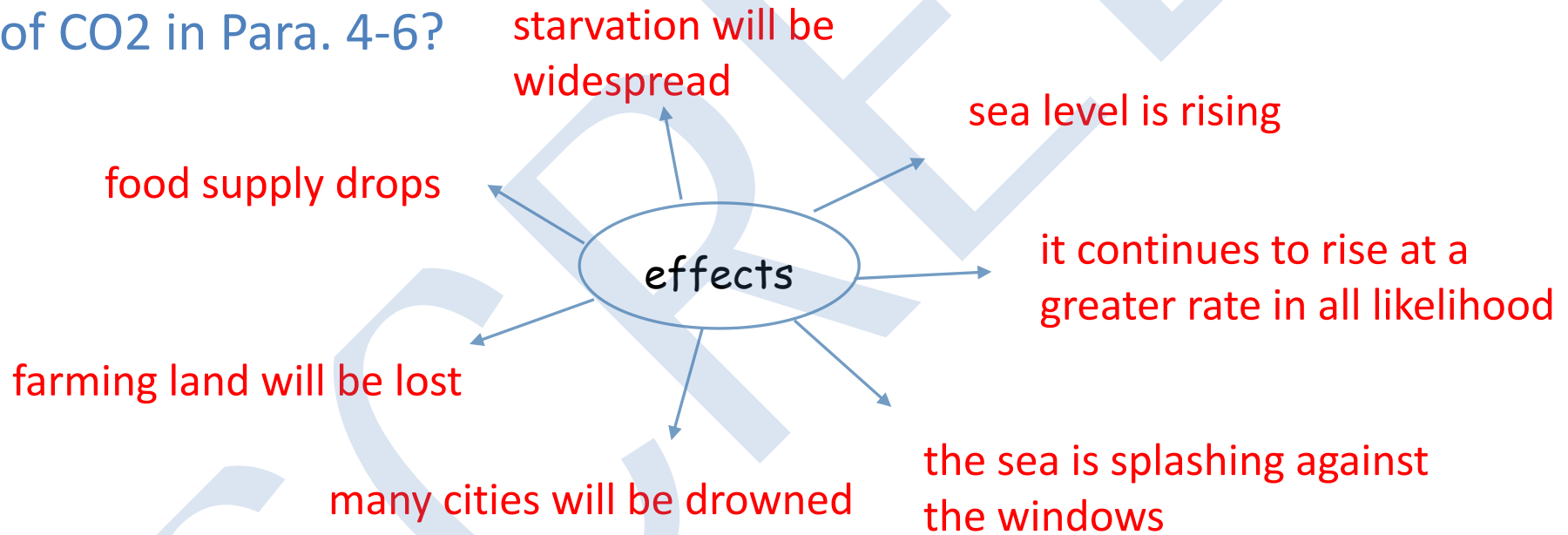
As the sea level is rising from year to year, many cities are likely to be drowned, causing much of the most farming land of the world to be lost.

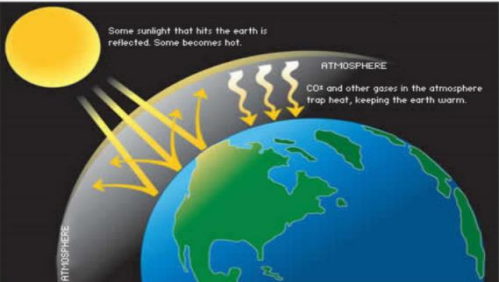
As the sea level is rising from year to year, it's likely that many cities will be drowned, causing much of the most farming land of the world to be lost.



Review and analyse the harmful effects of CO₂ in Para. 4-6.

Could you list the words and expressions related to the harmful effects of CO₂ in Para. 4-6?





Review and analyse the causes of consequences of CO₂ in Para.7-11.

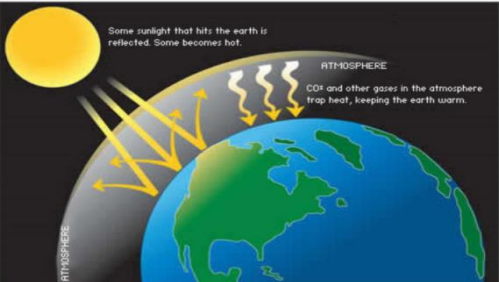
What does the greenhouse effect mean?

It means an increase in the concentration of carbon dioxide in the atmosphere that leads to an increase in the planet's average temperature.

4) **concentration** / ,kɒnsən'treɪʃən /

n. the amount of a substance contained in a liquid or in another substance 浓度; 含量

n. the ability to direct all your effort and attention on one thing, without thinking of other things 专心; 专注



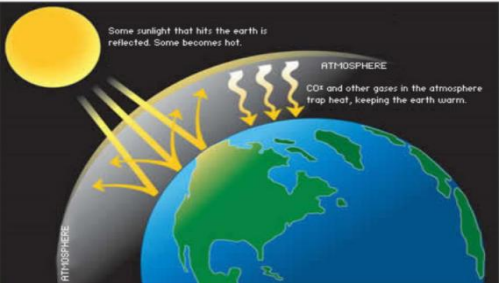
Review and analyse the causes of consequences of CO₂ in Para.7-11.

vt. concentrate 集中于；专注

concentrate one's efforts/attention/energy/mind etc on something
全神贯注于；集中于

在这节课上, 生物老师将着重讲温室效应是怎样形成的。(concentrate)

In this class, the biology class shall **concentrate (his attention) on** how the greenhouse effect comes about.



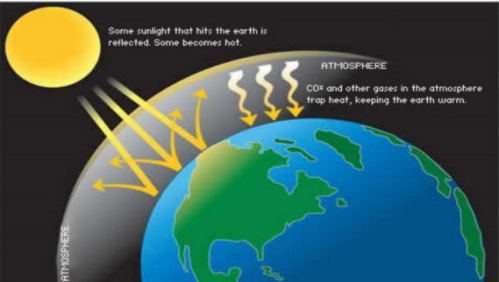
Review and analyse the causes of consequences of CO₂ in Para.7-11.

- 随着温室气体浓度的下降，地球开始再次变冷，最终又将回到冰河时代。
(concentration)

Gradually as the concentration of greenhouse gases goes down , Earth starts to cool again, and eventually you slip back into an Ice Age.

- Human beings need powers of concentration to stop the concentration of carbon dioxide from moving upwards to avoid the greenhouse effect. (英译中)

为了避免温室效应，人类必须集中精力阻止二氧化碳的浓度上升。



Review and analyse the causes of consequences of CO₂ in Para.7-11.

What is it that demonstrates the villainy of carbon dioxide?

It is the melting of the ice caps that demonstrates the villainy of carbon dioxide.

5) demonstrate /'demənstreɪt /

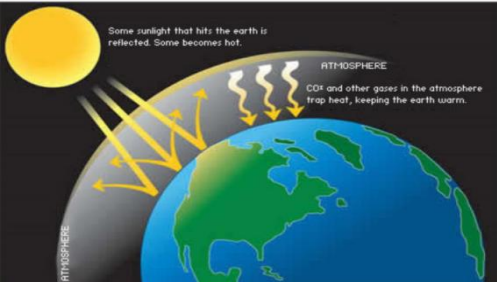
v. to show sth clearly by giving proof or evidence

证明；证实；论证；说明

~ sth (to sb)

~ that /how/what/why etc

n. demonstration



Review and analyse the causes of consequences of CO₂ in Para.7-11.

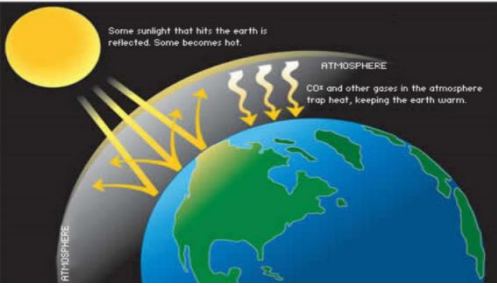
- 这些结果有力地证明，空气中的坏人是二氧化碳。

(demonstrate)

These results demonstrate convincingly that the villain in the atmosphere is carbon dioxide.

- 冰盖的融化清楚的说明了全球的气候变暖。(demonstration)

The melting of the ice caps is a clear demonstration of global warming



Review and analyse the causes of consequences of CO₂ in Para.7-11.

Could you list the words and expressions related to the causes of these consequences in Para.7-11?

demonstrate the villainy of CO₂

the glaciers will retreat, the Polar ice caps will melt

make up only 0.0316 percent

the villainy comes in

causes

begin with sunlight

radiate heat in the form of infrared radiation

concentration of CO₂ goes up steadily

List the topic-related words and expressions.

The Villain in the Atmosphere

1. Functions of carbon dioxide

do no harm,
be absorbed by plants,
release oxygen,
serve as the basic food,
be converted into their
own tissue
...

2. Harmful effects of carbon dioxide

sea level is rising,
in all likelihood,
it continues to rise at a
greater rate,
splash against the windows,
many cities will be drowned,
farming land will be lost,
food supply drops,
starvation will be
widespread ...

3. Causes of these consequences

begin with sunlight,
radiate heat in the form of
infrared radiation,
concentration of CO₂ goes up ,
the villainy comes in,
make up only 0.0316 percent
the glaciers will retreat,
the Polar ice caps will melt,
demonstrate the villainy of
CO₂...

Fill in the blanks with the appropriate forms of the given words and expressions to complete the dialogue. Note that there are two more options than you need.

widespread	atmosphere	estimate	quantity	release
do harm to	at a rate of	come about	absorb	concentration

A: Do you know anything about carbon dioxide?

B: Carbon dioxide is a gas. We breathe in oxygen and breathe out carbon dioxide.
And plants **1 absorb** carbon dioxide.

A: So carbon dioxide is not really harmful?

B: Well, carbon dioxide itself does not **2 do harm to** the environment, but the **3 concentration** of it in the atmosphere causes the “greenhouse effect.”

A: What is the “greenhouse effect” ?

B: It is the process by which radiation from the sun is blocked by the greenhouse gases and not reflected back into space. The **4 atmosphere** retains more heat than necessary.

A: How does that **5 come about** ?

Fill in the blanks with the appropriate forms of the given words and expressions to complete the dialogue. Note that there are two more options than you need.

widespread

atmosphere

estimate

quantity

release

do harm to

at a rate of

come about

absorb

concentration

B: In the last few centuries, coal, oil and natural gas have been burned for energy at a rapidly increasing rate. The carbon contained in these fuels is being 6 released in the form of carbon dioxide and poured into the atmosphere.

A: And the forests, once 7 widespread, have been disappearing rapidly in the last couple of centuries.

B: Exactly. It is 8 estimated that tropical forests are now disappearing 9 at a rate of about 13 million hectares per year.

A: I see. The burning of fuel adds more carbon dioxide to the atmosphere, and as the forests disappear, less carbon dioxide is being removed by plants.

B: As a result, the 10 quantity of the carbon dioxide in the atmosphere is going up year by year.



Group discussion

What aspects of your daily life have been affected by the global warming?

Requirements:

- a. introduce the effects of the global warming.
- b. explain possible causes in a logical way.
- c. use as many words and expressions learnt in the text as possible.



Homework

1. Complete Ex II on P55-P56;
2. Write a short passage (at least 100 words) on “what aspects of your daily life have been affected by the global warming?”

Requirements:

- a. introduce the effects of the global warming.
- b. explain possible causes in a logical way.
- c. use as many words and expressions learnt in the text as possible.

Thank you!