



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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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



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学习目标 Learning Objectives:

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

- 1.通过略读、跳读等阅读策略，了解二氧化碳的大致信息；
get the general information about the carbon dioxide in the atmosphere by skimming and scanning ;
- 2.分析全文和部分段落，理解因果链语篇模式；
figure out the causal chain pattern by analyzing the whole passage and some paragraphs ;
- 3.反思人类和温室效应的关系，并发表自己的观点。
become aware of the reflect upon the relationship between human and the greenhouse effect, and express the opinions.



In this unit, we are going to

- ▶ describe environmental problems and their possible causes, and propose solutions accordingly;
- ▶ find out how individuals, organisations and governments take action to solve environmental problems;
- ▶ evaluate whether a solution to an environmental problem is practical or not;
- ▶ explore the chain of cause and effect in a text, and write a proposal letter.

Pre-reading

Q1: What is the possible relationship between the two polar bears?

Parent and kid (Mother and kid).

Q2: What might have separated them from each other ?

They might have been separated from by the melting ice.

Pre-reading

Q1: What can you see in the picture?
Can you describe the picture briefly?

The sea level is rising and it is **splashing** against the windows along the skyscrapers.

Q2: Can you predict who is the “villain” in the atmosphere?

Carbon dioxide.

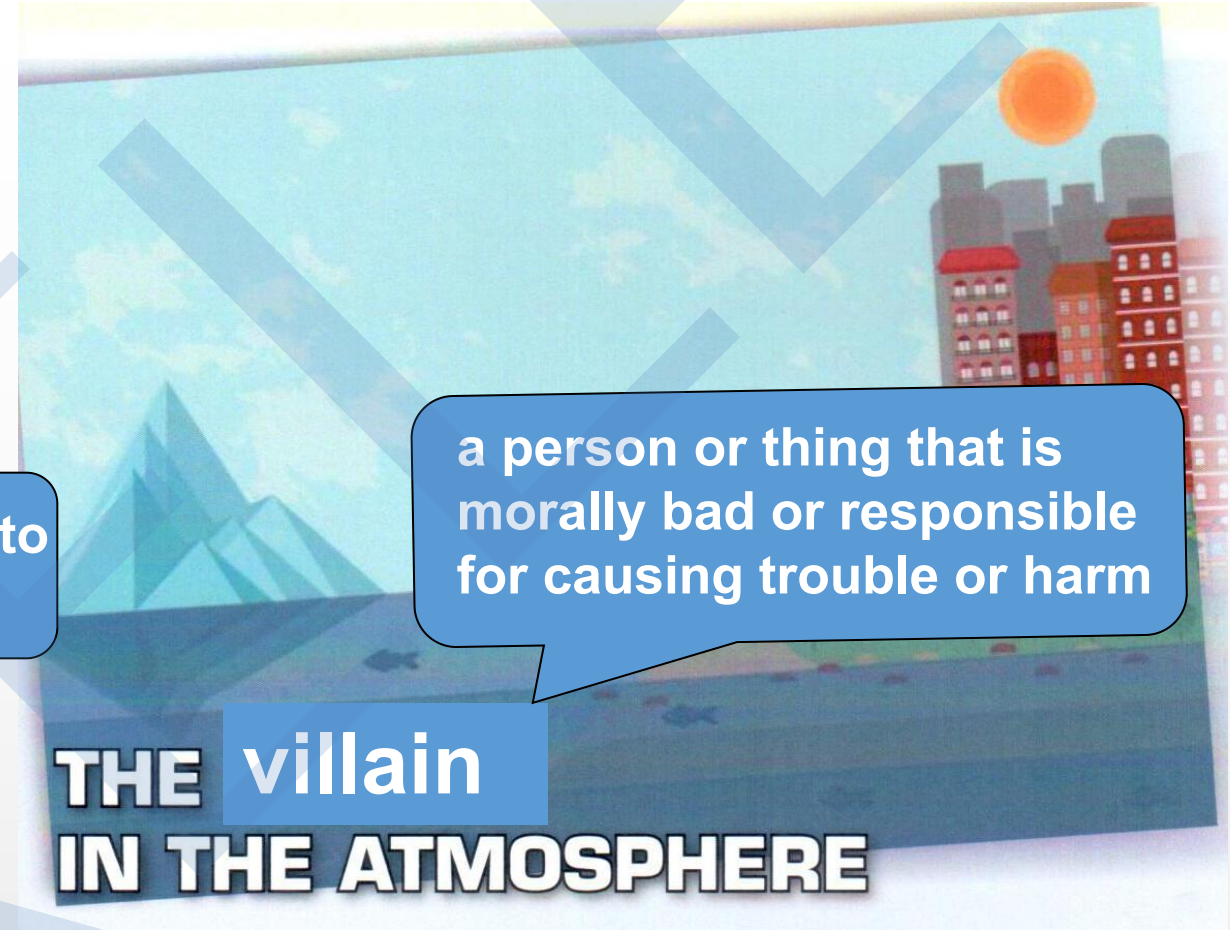
fall noisily onto
a surface

a person or thing that is
morally bad or responsible
for causing trouble or harm

**THE villain
IN THE ATMOSPHERE**

Q3: What do you expect to read in the passage from the title ?

The harmful effects of carbon dioxide and the causes of these consequences.



While-reading

1 The villain in the atmosphere is carbon dioxide.

...

4 But here is what this apparently harmless and certainly essential gas is doing to us:

...

7 And all because of carbon dioxide. But how does that come about? What is the connection?

While-reading

Skim the passage and find out the functions of Para.1, 4 and 7 and the organization of the passage.

Q1: There are some short paragraphs (e.g. Para 1, 4 and 7) in the text. What functions do they serve?

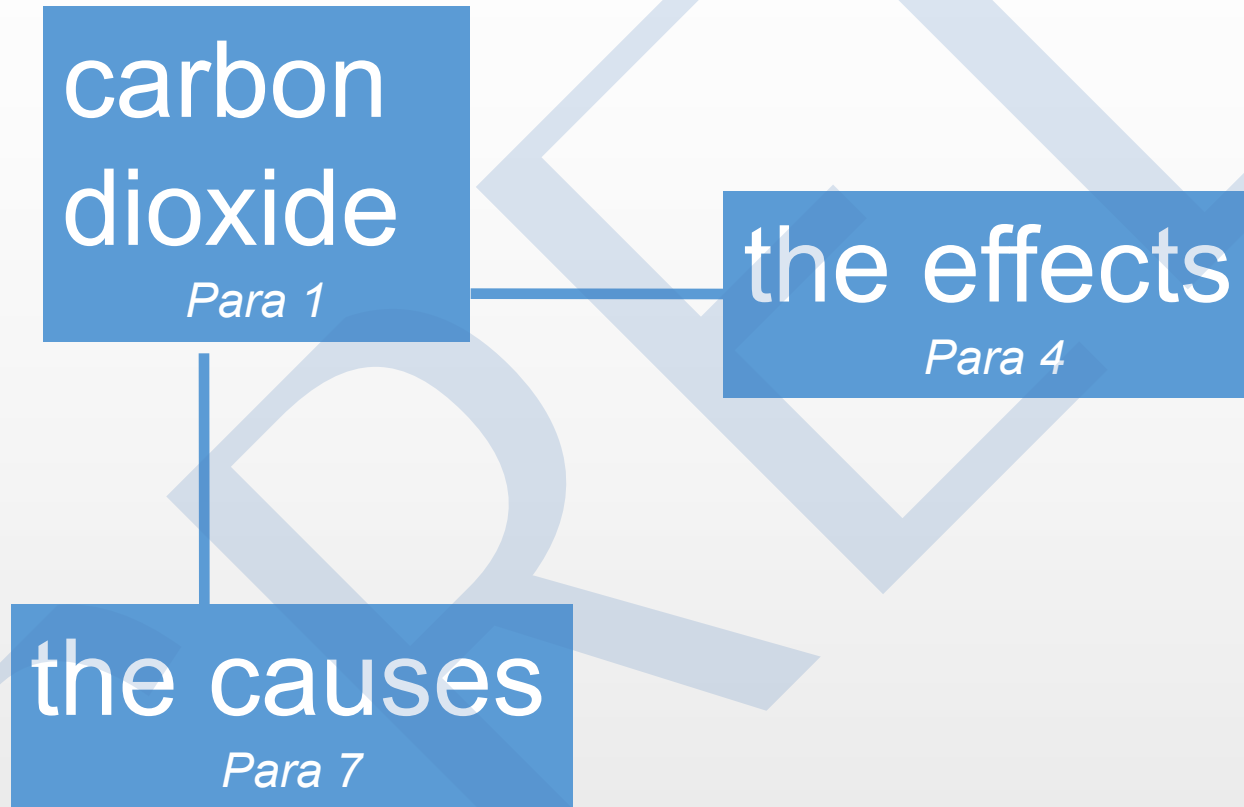
Making the structure of the text clear and easy to follow.

Para.1 is the thesis of the text.

Para.4 tells the reader that what follows is the harmful effect of carbon dioxide.

Para.7 tells the reader that the next part is about the causes of these consequences.

Q2: What is the organization of the passage?



While-reading

Read Para. 2-3 and learn the function of small quantity of carbon dioxide, and then complete the mind map.

2 It does not seem to be a villain. It is not very poisonous and it is present in the atmosphere in so small a quantity — only 0.034 percent — that it does us no harm.

3 What's more, that small quantity of carbon dioxide in the air is essential to life. Plants absorb carbon dioxide and convert it into their own **tissue** which serves as the basic food supply for all of animal life (including human beings, of course). In the process they release oxygen, which is also necessary for all animal life.

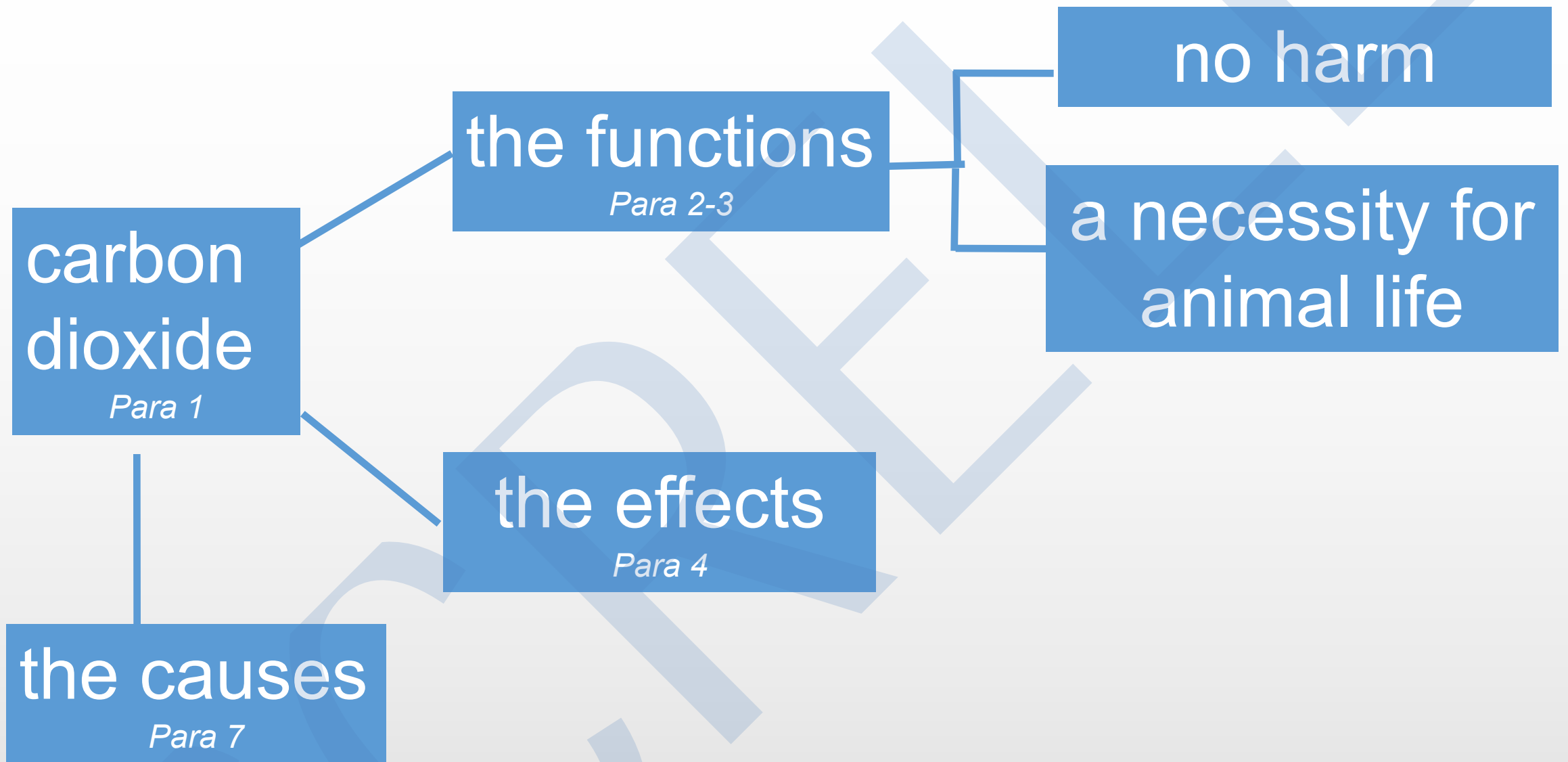
Q1: Is the small quantity of carbon dioxide a villain?

It does not seem to be a villain.

Q2: What functions does it serve?

The small quantity of carbon dioxide in the air is essential to life. Plants absorb it and convert it into a necessity for all animal life.

(人、动植物细胞的) 组织



While-reading

Read Para.4-6, answer the teacher's questions based on the text and complete the mind map.

4 But here is what this **apparently** harmless and certainly essential gas is doing to us:

5 The sea level is rising very slowly from year to year. In all likelihood, it will continue to rise and do so at a greater rate in the course of the next hundred years. Eventually the sea will reach two hundred feet above its present level, and will be splashing against the windows along the twentieth floors of Manhattan's skyscrapers. Naturally the Manhattan streets will be deep under water. Florida, too, will be gone, as will much of the British Isles, the crowded Nile valley, and the low-lying areas of China, India, and Russia.

6 Many cities will be drowned, and much of the most productive farming land of the world will be lost. As the food supply drops, starvation will be widespread.

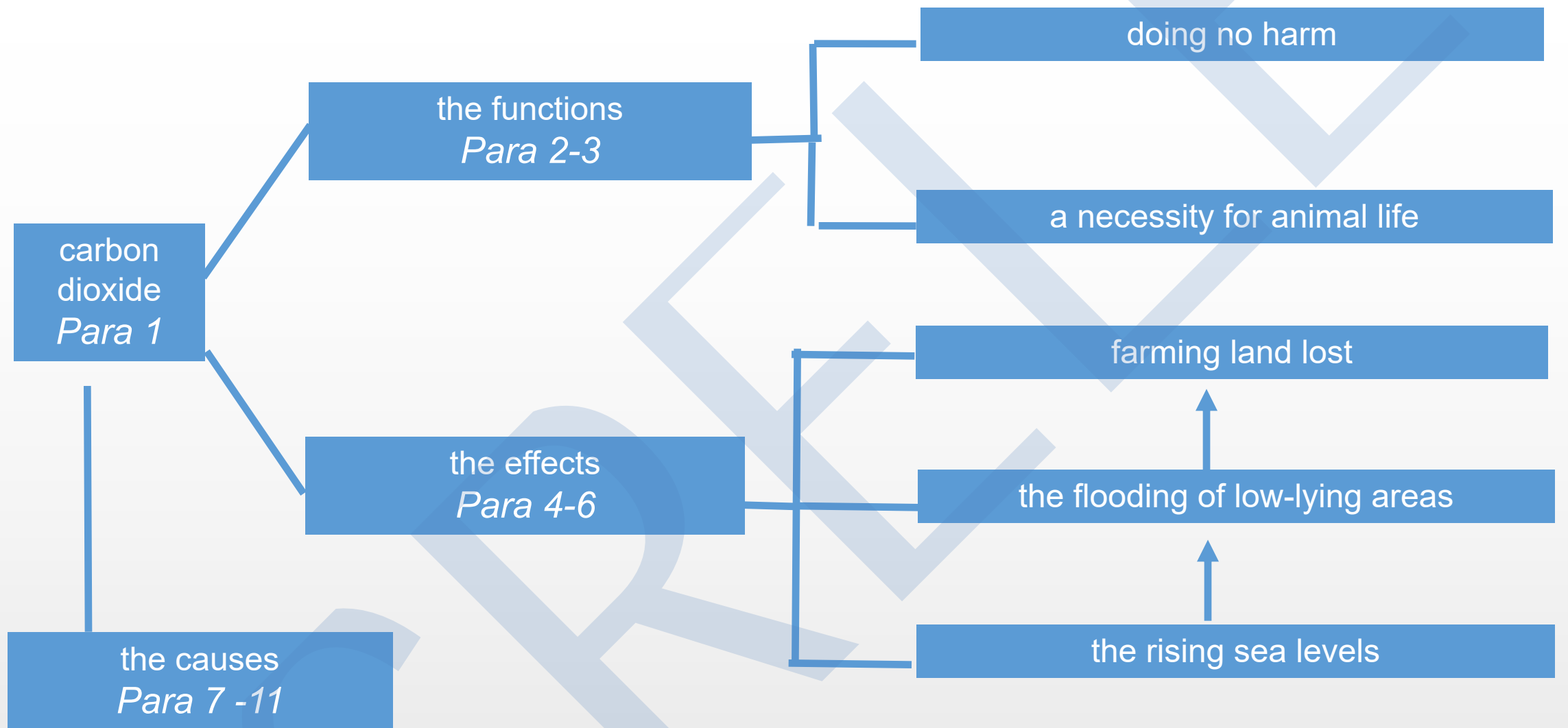
according to the way sth. appears

Q1: Why will Manhattan streets eventually be deep under water according to the author?

Because the sea level is rising very slowly from year to year.

Q2: What's the result after many cities are drowned according to the passage?

Much of the most productive farming land of the world will be lost and starvation will be widespread.



While-reading

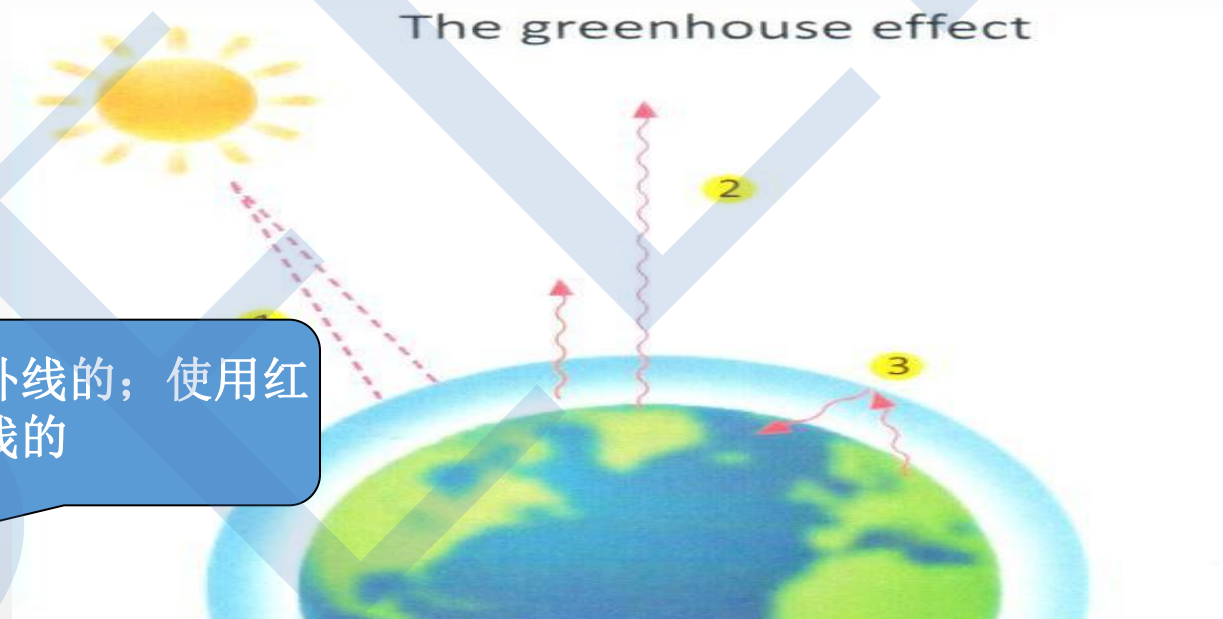
Read Para. 8 and complete the sentences corresponding to the diagram with one word for each blank.

It begins with sunlight. Sunlight travels through miles of the atmosphere to reach the earth's surface, where it is absorbed. In this way, the earth is warmed. At night, the earth cools by radiating heat into space in the form of **infrared**

radiation As the earth gains heat by day and loses it by night, it maintains a balance. However, carbon dioxide tends to block such radiation. This is called the "greenhouse effect" of carbon dioxide.

红外线的；使用红外线的

辐射；放射线



1. In the daytime, sunlight travels through miles of the atmosphere to warm the Earth's surface.
2. At night, infrared radiation is sent into space, which cools the earth.
3. Because of the existing carbon dioxide in the atmosphere, the radiation tends to be blocked, and less heat is lost at night.

While-reading

Read Para.7-11, and tick what has been mentioned and then complete the chain of cause and effect.

7 And all because of carbon dioxide. But how does that **come about**?
What is the connection?

8 It begins with sunlight...This is called the “greenhouse effect” of carbon dioxide **浓度, 含量**

9 We can be thankful that carbon dioxide is keeping us comfortably warm, but the **concentration** of carbon dioxide in the atmosphere...it **make up** only 0.0316 percent of the atmosphere...
It is estimated that by 2020 the concentration will be about 0.0660 percent.

10 This means that in the coming decades...the glaciers will **retreat** and the polar ice caps will begin to melt.

11 It is the melting of the ice caps that is the worst change and it is this that demonstrates the villainy of carbon dioxide...If these ice caps begin to melt, the sea level will rise, with the result that I have already described.

happen, occur

What does "make up" mean according to the underlined sentence?

to form as a whole

to move away or back

While-reading

Read Para.7-11 ,and tick what has been mentioned and then complete the chain of cause and effect.

10 This means that in the coming decades, the earth's average temperature will go up slightly. Winters will grow a bit milder on the average and summers a bit hotter. Little by little, the **glaciers** will retreat, and the polar **ice caps** will begin to melt.



glaciers

冰川



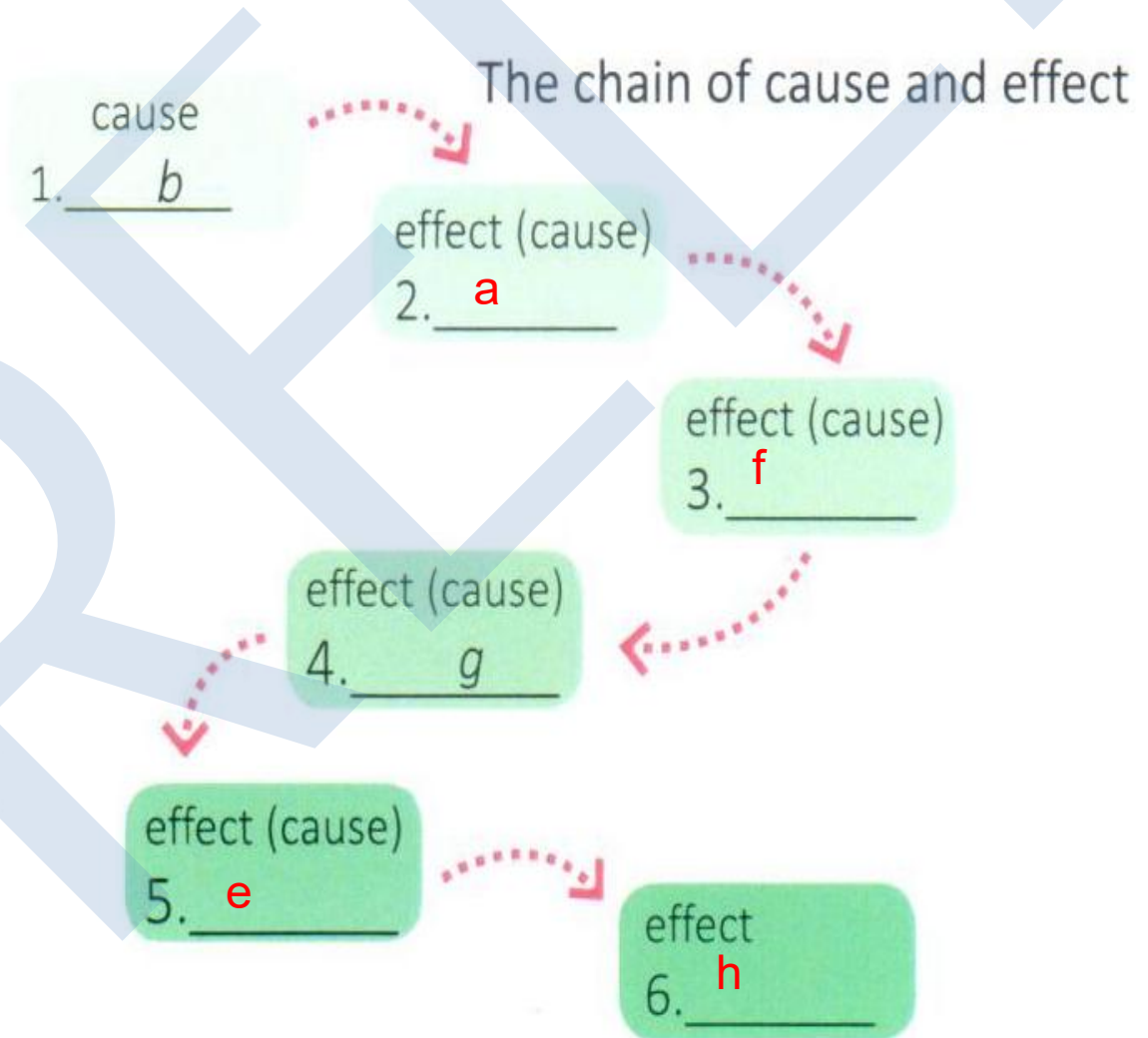
ice caps

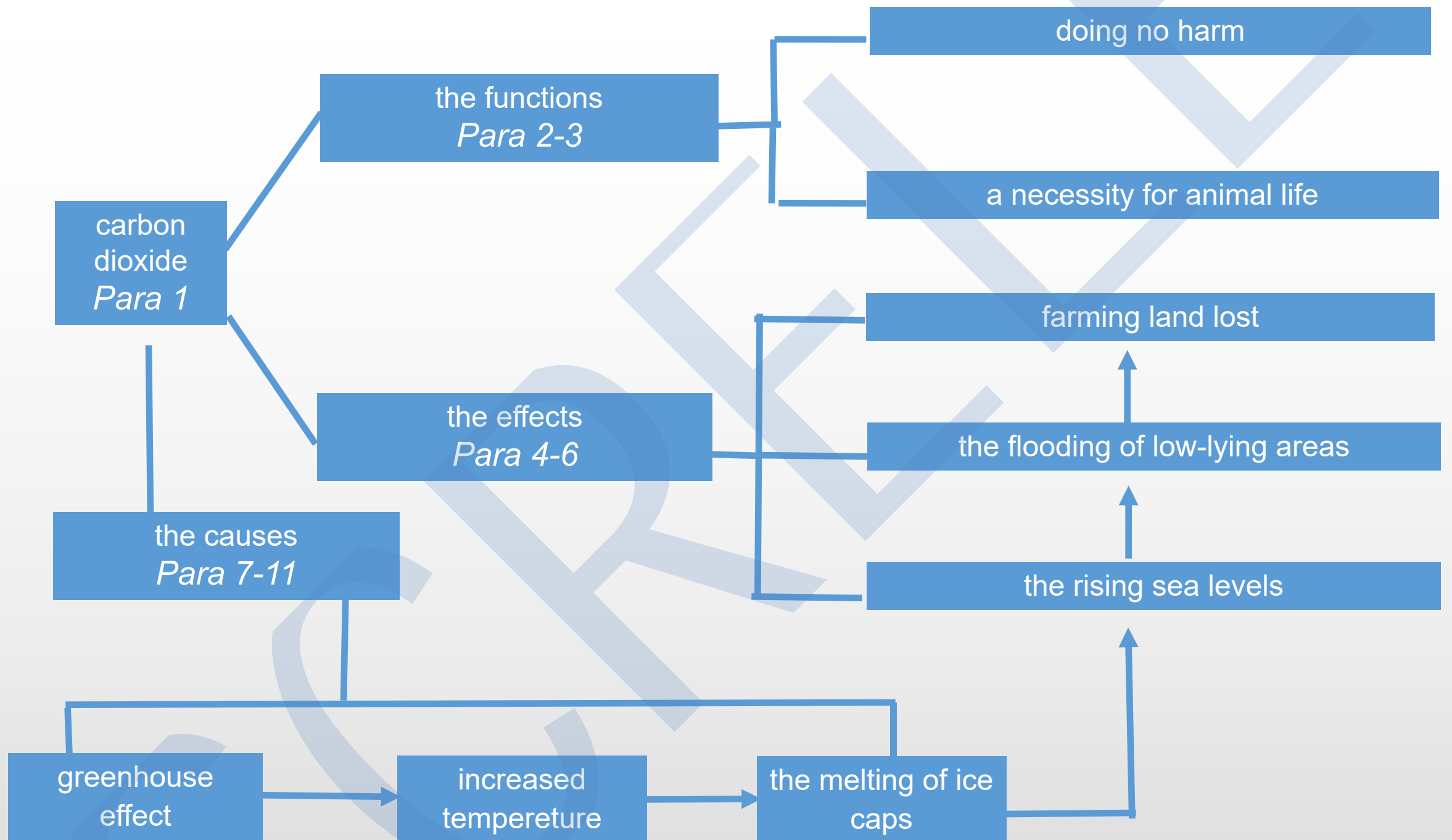
冰盖

While-reading

Read Para.7-11, and tick what has been mentioned and then complete the chain of cause and effect.

- ☒ a. greenhouse effect
- ☒ b. carbon dioxide
- ☐ c. oxygen
- ☐ d. urban heat island effect
- ☒ e. the rising sea level
- ☒ f. increased temperature
- ☒ g. the melting of ice caps
- ☒ h. the flooding of low-lying areas
- ☐ i. changeable weather
- ☐ j. hydrogen





Post-reading

Summarise the passage according to the mind map of the text.

Checklist

- ☐ Do you begin with a topic sentence that states the writer's opinion clearly?
- ☐ Do you cover the writer's main points?
- ☐ Do you use your own words?
- ☐ Do you use proper transitional words?
- ☐ Do you stick to original opinions?
- ☐ Do you limit the summary to 100 words?

Post-reading

Work in pairs and discuss the aim of the passage and the writer's attitude to the villain in the atmosphere.

1. What is the writer's attitude to the villain in the atmosphere?
Is he indifferent/ concerned/ delighted/ frightened?

By referring to harmful effects on people's daily life, the writer shows his deep concern about the condition of atmosphere.

2. What is the writer's purpose in writing this passage?
To entertain/warn/complain/inform...?
Has the writer achieved his/her purpose?

The aim of the passage is to make the public of the serious consequences of global warming.
Yes.

Homework

1. Read aloud the passage three times.
Pay attention to your intonation, pronunciation and stress.
2. Build up a word bank related to the functions, the harmful effects and the causes of these consequences about CO₂.



Thank you!