

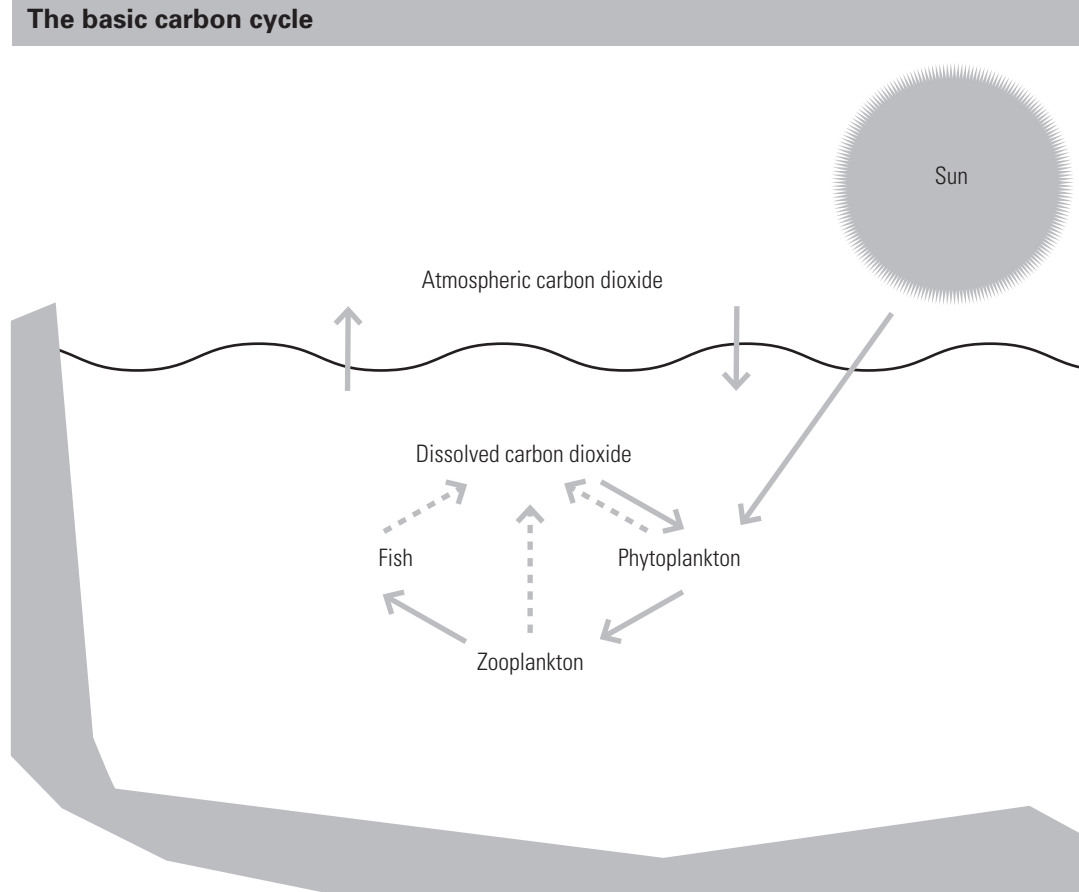
Activity I

The oceanic carbon cycles



Watch video clip 7
Plankton and global
warming.

Look at the picture on
the right. It shows some
of the steps in the basic
carbon cycle.



Question 1

Phytoplankton take carbon dioxide from the water and convert it into glucose. What is this process called?

Question 2

The dotted arrows show carbon going back into the water as carbon dioxide. What is this process called?

Question 3

On the diagram label the processes from questions 1 and 2. Use green arrows for this basic carbon cycle.

Question 4

a How long does this basic carbon cycle take?

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The deep ocean carbon cycle

Watch the video clip again. Look for the section on the deep sea carbon cycle.

Question 5

- a** Add these items to your diagram beneath zooplankton.
 - Deep sea fish*
 - Dead remains*
- b** Join them with red arrows to show the deep ocean carbon cycle.
- c** Label the arrows with these processes:
 - Respiration*
 - Bacterial action*
 - Sinking*

Question 6

- a** How long does this deep ocean carbon cycle take?
- b** Add the red arrows to your key. Include the time scale in the key.

Question 7

The deep ocean holds 50 times as much carbon dioxide as the atmosphere. Use this information to work out about what proportion of the world's carbon dioxide is held in the deep ocean.

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The geological carbon cycle

Watch the video again. Look out for the section on the geological carbon cycle. Some dead remains are buried in the seabed. The carbon is built into the structure of the rock on the seabed. It has become part of the geological carbon cycle. This lasts millions of years.

Question 8

- a** Add these items to your diagram (under the seabed):
- Buried remains*
 - Oil and gas*
 - Carboniferous rocks*
 - Volcano*
- b** Join them up with brown arrows (you will need two separate lines).
- c** Label the arrows with these processes:
- Heat and pressure*
 - Movements of rocks*
 - Volcanic eruption*

Question 9

Since the middle of the twentieth century, people have extracted oil and gas from under the seabed.

- a** Add an oil platform to your diagram to show this.
- b** Over 75% of known oil reserves have been extracted. How long has this taken?

Question 10

- a** What has happened to the oil and gas that has been extracted?
- b** Where is the carbon that it contained?
- c** What effect has this had on
- i** the geological carbon cycle
 - ii** the basic carbon cycle