



Ocean acidification transcript

Today we will understand what ocean acidification is, understand what causes ocean acidification, understand the impacts that ocean acidification has on sea creatures and identify what you can do to help prevent ocean acidification.

What is ocean acidification? Ocean acidification is the reduction in the pH of the ocean causing it to become more acidic. pH is a scale of acidity. This is primarily caused by the uptake of carbon dioxide from the atmosphere.

For more than 200 years (or since the industrial revolution) the concentration of carbon dioxide in the atmosphere has increased.

What causes carbon dioxide to be released into the atmosphere?

Energy causes most carbon dioxide to be released into the atmosphere. Electricity & heat release 24.9%, industries involved in the production of energy release 14.7%, transportation releases 14.3%, other fuel combustion releases 8.6% and fugitive emissions (which are unintended leaks) release 4%.

Agriculture where plants and animals are grown releases 13.8%. Land use change, like changing a piece of wild land to be used for agriculture releases 12.2%. General industrial processes release 4.3% and finally waste releases 3.2% of carbon dioxide into the atmosphere.

The ocean absorbs around 30% of the carbon dioxide that is released into the atmosphere. As levels of atmospheric carbon dioxide increase, what happens to the carbon dioxide levels in the ocean? When carbon dioxide is absorbed by seawater, chemical reactions occur that result in an increased concentration of hydrogen ions and the formation of carbonic acid.

This diagram shows that atmospheric carbon dioxide dissolves and mixes with seawater which creates carbonic acid, making the sea more acidic.

Carbonate is an important building block of structures such as sea shells and corals skeletons.

Ocean acidification causes a decrease in carbonate which can make building and maintaining shells and other calcium carbonate structures difficult for a wide range of animals.

Ocean acidification can also affect the behaviour of other animals as well. Certain fish's ability to detect predators is decreased in more acidic waters. Ocean acidification can therefore have an effect on the entire food web.

How might ocean acidification affect the following animals that live in the sea? Discuss this with your teacher, friends or family.

How can we slow carbon dioxide getting in to the atmosphere?

Tell the government to act now! Time is running out to stop catastrophic climate change. Take action in your community or school and spread the word. Eat more plants, reducing the amount of meat you eat will reduce the amount of carbon dioxide entering the atmosphere. Pedal power, why not cycle when you get the chance? Get your electricity from the wind and the sun. Take the train, not a plane when travelling and try to save energy at home where you can.