

CARBON CYCLE MOVIE Transcript

Text reads: The Mysteries of Life with Tim & Moby.

The video shows a robot named Moby sitting next to a young man named Tim. Tim is planting a plant and Moby is holding a plant with a letter in it. Moby hands the plant with the letter in it to Tim, and Tim reads it.

TIM: Dear Tim & Moby, What can you tell me about the carbon cycle? From, Atul. Well, carbon is the fourth-most common element in the universe.

The video shows the periodic table of elements. An inset appears of the number 6 and the letter C below the 6.

TIM: It's the building block for all life on Earth—every single cell in every living thing contains some carbon.

The video shows the screen divided into four sections. In the upper left is a tan blob with an irregular shaped blob in its center. In the upper right is a fish. In the bottom left is a tree, and bottom right is the silhouette of a man and a woman.

TIM: Carbon is common in non-living matter, too: in rocks and soil; dissolved in seawater; inside the earth's mantle; and in the air, as carbon dioxide.

The video divides the screen into four sections again. Top left is a picture of rocks in the ground, top right is a picture of water in the ocean, bottom left is a cut out view of the Earth's crust with the label "mantle," and bottom right is a picture of a cloud.

TIM: Earth's carbon is constantly flowing from one of these forms to another; that's the carbon cycle.

The video shows arrows circling counterclockwise around these four pictures.

MOBY: Beep?

TIM: It's like the water cycle, only a bit more complex.

The video shows Tim and Moby outside. Moby's lights blink.

TIM: Animals add carbon dioxide to the atmosphere when they breathe.

The video shows a cross-section of the land where the edge of a water body meets the soil. On the left of the screen the ground surface covered in grass with soil below is shown. On the right is a body of water. Two cows stand next to some trees on the land. An arrow is pointing up from the cows.

TIM: And plants soak up carbon dioxide during photosynthesis, storing the carbon in their cells.

An arrow is pointing down at the trees.

The video zooms in on Moby's face.

TIM: Plants, especially trees, are known as carbon sinks because they take more carbon out of the atmosphere than they add to it. The oceans are carbon sinks, too.

The video goes back to the scene with the cows, the trees, and the body of water.

TIM: Thanks mostly to marine life, oceans soak up more carbon dioxide than they release.

The video shows two arrows pointing into the water and one arrow pointing out of the water.

TIM: When plants and animals die, the carbon contained in their bodies enters the Earth's crust.

One of the cows and one of the trees suddenly fall over and look dead. Then they both fade and arrows point into the ground.

TIM: The Earth's crust keeps carbon locked up for millions of years, eventually returning some of it to the atmosphere through volcanic eruptions.

The video shows a cross-section of a volcano. Lava forms under the volcano then flows up through it, and erupts out of it.

TIM: Normally, the carbon cycle keeps a pretty steady level of carbon dioxide in the atmosphere.

The video shows the scene of the cows, the trees, and the body of water. It has arrows that are circling around the scene counter clockwise.

TIM: Lately, the cycle seems to have been thrown out of balance; more and more carbon dioxide is entering the atmosphere every year.

The video shows a scene of skyscrapers. The bottom is labeled 1850, 1900, 1950, and 2000. A line graph appears above the year labels. At 1850 it is near the bottom, but as it approaches 2000, the line gradually increases to the top of the screen, with the sharpest increase between 1950 and 2000.

MOBY: Beep?

The video shows Tim and Moby outside. Moby's lights blink.

TIM: It is probably because of human activities.

TIM: We create tons of carbon dioxide by burning fossil fuels.

The video shows a scene with a red sky and factories in the background emitting black clouds. Cars drive across the front of the scene and produce clouds of carbon dioxide.

TIM: And the clearing of rainforests in South America and Africa makes the problem worse in two ways: first, burning the trees add carbon dioxide to the atmosphere, and second, once the trees are gone, they're not soaking up any more carbon dioxide.

The video shows a dense forest. Small flames appear across the bottom of the screen. The flames become larger until the forest can no longer be seen. The fire then dies down to show a barren landscape.

MOBY: Beep.

The video then shows Tim and Moby outside. Moby's lights blink and he frowns.

TIM: Right—carbon dioxide is a major contributor to the greenhouse effect. That's the warming-up that the earth experiences because of certain gases in our atmosphere. Gases like carbon dioxide trap heat in the atmosphere and keep the earth warm.

The video shows a zoomed-out view of Earth, with bright stars around it. The Earth glows a dull red color.

TIM: Since the start of the Industrial Revolution about 200 years ago, the carbon in the earth's atmosphere has increased by about 40 percent!

The video shows a scene with a factory producing clouds of black smoke.

TIM: Most scientists agree that this has warmed the earth up, and that the warming could have devastating effects on the environment.

Planting forests and finding alternative energy sources will help restore the balance, but we have got a long way to go.

The video shows a close-up of Tim's face.

The video shows Tim and Moby facing three small plants. Moby lifts his robot arm and zaps the trees. They instantly grow to full height.

TIM: That ... that should help, too.