Essential Life Cycles

Video Transcript

Imagine you have a friend coming over for a sleepover. That evening, they bring over a game for you to play, and they return a movie that they borrowed. You fill up an air mattress from a pump for your friend to sleep on, and when they leave the next day, your mom sends your friend off with some homemade brownies.

Everything on this planet is made up of essential atomic elements. However, these elements don’t stay in one place for very long. Just like the movie, the air in the mattress, and the brownies, we have atomic elements that are constantly moving from place to place as they are needed. In this lesson, we will be talking about the biogeochemical cycles of water, nitrogen, and sulfur although there are many more biogeochemical cycles, including carbon, phosphorus, and oxygen.

If you think about it, all matter on this planet has always been here — it just moves in a cycle! For example, water is evaporated into the air as molecules and then rained down to the earth. Oxygen is inhaled by animals and exhaled by plant life. All of this organic, essential matter is just moving through our ecosystems!

The water cycle is probably the most well known and well remembered of the essential life cycles. Water molecules can be evaporated, ingested, rained, or come in the form of condensation or in the form of rivers, lakes, streams, and other bodies of water. There are many ways that water is cycled throughout the biosphere.

Though less well known, the nitrogen cycle is more prevalent in your life than you might realize. Did you know that a large majority of our air is made up of nitrogen? Bacteria use nitrogen and convert it into a
usable form for plants, and as living organisms decompose, bacteria convert this decomposed organic material into nitrogen and release it back into the air.

The sulfur cycle is also very important to the balance of ecosystems. The sulfur cycle is pretty complicated as it has many processes and takes place mostly in the atmosphere. The sulfur cycle begins as it is released from volcanoes.

Let's look into the processes of the biogeochemical cycles of water, nitrogen, and sulfur in greater detail.

About this transcript:

• Transcript title: Essential Life Cycles
• Corresponding Lesson: Biogeochemical Cycles: Water Nitrogen, and Sulfur
• Author and curator: Rob Reynolds Ph.D. for The TEL Library.
• Creative Commons License: CC BY NC SA