



Cycles are processes that can be repeated continuously without degrading the ability of other processes to continue. Cycles in an ecosystem intersect with larger regional and global cycles. We find many cycles in nature: seasons, diurnal cycles, particles, elements.

Seasonal cycles are a dominant pattern in our annual weather taking place over 12 months. They are consistent cycles in that we experience similar variations in weather each year. Seasonal cycles can be seen in ecology, for example through certain species that only flower in the conditions of a given season.

The basic chemical **elements** of all life are carbon, hydrogen, oxygen, phosphorous, sulphur and nitrogen. By bonding with each other their characteristics change, for example, when two hydrogen atoms combine with one oxygen atom the new properties of H₂O are created. Critically when they are separated their original properties return. This is true of the elements in nature, they combine to create complex entities but also break back down to their original elements again.

A **diurnal cycle** is any pattern that recurs every 24 hours as a result of one full rotation of the Earth cycles, for example the rising and setting of the sun.

In cycles nothing is **created or destroyed**. Nutrients in a cycle cascade from one process to the next. The leaves from a tree become food for soil organisms, which in turn produce nutrients taken in by tree roots.

Particles wink in and out of existence. They are protons, neutrons and electrons held together by positive and negative forces but are mostly empty space. They behave both as solid entities and as waves when merging together. Ultimately, particles are everything and nothing.