TEMPERATE FOREST

All forests have lots of [trees](https://www.ducksters.com/science/trees.php), but there are different types of forests. They are often described as different biomes. One of the main differences is where they are located in relation to the equator and the poles. There are three main types of forest biomes: the rainforest, the temperate forest, and the Taiga. Rainforests are located in the tropics, near the equator. Taiga forests are located far north. Temperate rainforests are located in between.  
  
**What makes a forest a temperate forest?**

* Temperature - Temperate means "not to extremes" or "in moderation". In this case temperate is referring to the temperature. It never gets really hot (like in the rainforest) or really cold (like in the Taiga) in the temperate forest. The temperature is generally between minus 20 degrees F and 90 degrees F.
* Four seasons - There are four distinct seasons: winter, spring, summer, and fall. Each season is about the same length of time. With only a three month winter, plants have a long growing season.
* Lots of rain - There is lots of rain throughout the year, usually between 30 and 60 inches of rain.
* Fertile soil - Rotted leaves and other decaying matter provide a rich, deep soil that is good for trees to grow strong roots.

**Where are the temperate forests located?**  
  
They are located in several locations around the world, around halfway between the equator and the poles.  
  
**Types of Temperate Forests**  
  
There are actually many types of temperate forests. Here are the main ones:

* Coniferous - These forests are made up mostly of conifer trees such as cypress, cedar, redwood, fir, juniper, and pine trees. These trees grow needles instead of leaves and have cones instead of flowers.
* Broad-leafed - These forests are made up of broad-leafed trees such as oak, maple, elm, walnut, chestnut, and hickory trees. These trees have big leaves that change color in the fall.
* Mixed coniferous and broad-leafed - These forests have a mix of conifers and broad-leafed trees.

**Major Temperate Forests of the World**  
  
There are major temperate forests located around the world including:

* Eastern North America
* Europe
* Eastern China
* Japan
* Southeast Australia
* New Zealand



**Plants of the Temperate Forests**  
  
The plants of the forests grow in different layers. The top layer is called the canopy and is made up of full grown trees. These trees form an umbrella throughout most of the year providing shade for the layers below. The middle layer is called the understory. The understory is made up of smaller trees, saplings, and shrubs. The lowest layer is the forest floor which is made up of wildflowers, herbs, ferns, mushrooms, and mosses.  
  
The plants that grow here have some things in common.

* They lose their leaves - Many of the trees that grow here are deciduous trees, meaning they lose their leaves during the winter. There are a few evergreen trees as well that keep their leaves for the winter.
* Sap - many trees use sap to help them through the winter. It keeps their roots from freezing and is then used as energy in the spring to start growing again.

**Animals of the Temperate Forests**  
  
There are a wide variety of animals that live here including black bears, mountain lions, deer, fox, squirrels, skunks, rabbits, porcupines, timber wolves, and a number of birds. Some animals are predators like mountain lions and [hawks](https://www.ducksters.com/animals/red_tailed_hawk.php). Many animals survive off of nuts from the many trees like squirrels and turkeys.  
  
Each species of animal has adapted to survive the winter.

* Remain active - Some animals stay active during the winter. There are rabbits, squirrels, fox, and deer which all stay active. Some are just good at finding food while others, like squirrels, store up and hide food during the fall that they can eat during the winter.
* Migrate - Some animals, like birds, migrate to a warmer place for the winter and then return home come springtime.
* Hibernate - Some animals hibernate or rest during the winter. They basically sleep for the winter and live off of fat stored in their body.
* Die and lay eggs - Many insects can't survive the winter, but they lay eggs that can. Their eggs will hatch come spring.

**Facts About the Temperate Forest Biome**

* Many animals have sharp claws to climb trees such as squirrels, opossums, and raccoons.
* Much of the forests in Western Europe are gone due to overdevelopment. Unfortunately, the ones in Eastern Europe are now dying from acid rain.
* A single oak tree can produce 90,000 acorns in one year.
* Trees use birds, acorns, and even the wind to spread their seed throughout the forest.
* Deciduous is a Latin word that means "to fall off".
* There were no ground living mammals in the New Zealand forests until people arrived, but there were lots of varieties of birds.
* Black bears will put on a 5 inch layer of fat before going to sleep for the winter.