Nature At Home

We hope to inspire kids of all ages to learn about the natural world and discover new connections to nature.

With support from the Morning Star FOUNDATION

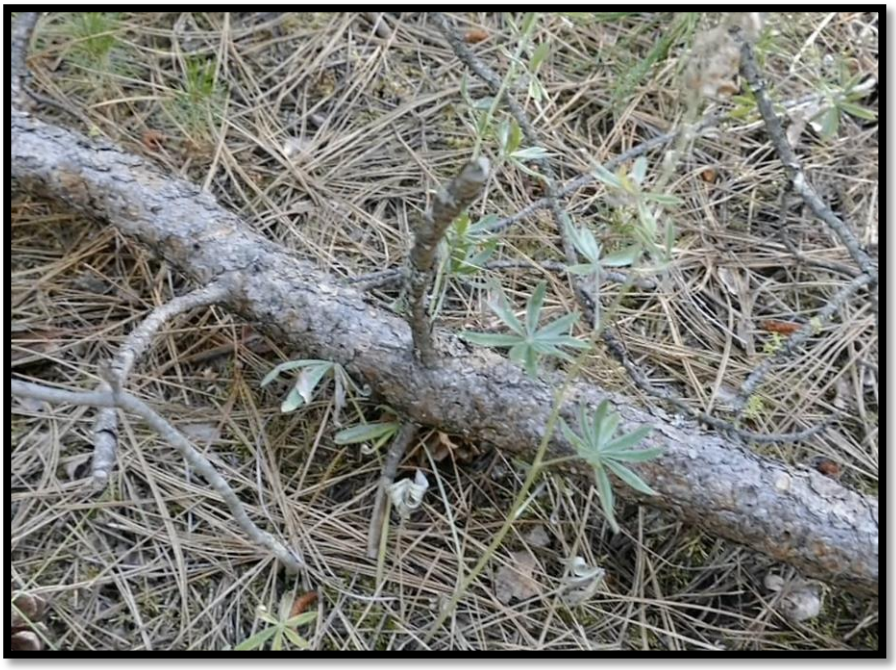
Ponderosa Pine Life Cycle – Part Two

View the video at DishmanHills.org/Nature-At-Home

In **Ponderosa Pine Life Cycle - Part One** you learned about the challenges this tree *species* has to overcome to grow from a tiny seedling to a mature giant with its *crown* in the sky.

How long an individual Ponderosa pine lives is determined by several factors. In **Part One** you learned about the *Laws of Life: Light, Air, Water, and Soil.* They determine the overall health of each tree. When everything is just right, this pine can live to be 500 years. For the first 150 years their bark is a dark blackish-brown. When you see a pine with a more reddish orange bark, you know that it is older than 150 years.

Let's take a look at what happens when a Ponderosa pine is not able to get what it needs from its environment.



This tree was about 20 years old when it died. Maybe its needles could no longer collect enough sunlight to convert water (H_2O) collected by its root system and carbon dioxide (CO_2) from the air to make the food it needed to survive. Or, it could not compete with the root systems of the larger trees around it for water and nutrients. Too little water can stress any size pine. This weakens the tree and allows insects like pine bark beetle to attack the tree.

This tree still has an important role to play in the life cycle of a Ponderosa pine.
Look around at the forest floor the next time you take a walk in nature. You may see tree limbs on the ground or *dead fall*, a tree lying on the ground that now plays a new role in the life of the forest. It's role at this point is to begin a long, slow process of breaking down, decaying and recycling all its nutrients back into the soil. You can learn more about this process in Nature's Recycling: The Decomposers in the Science Concepts section of NATURE AT HOME.

You can see in this photo bits of other pine trees. Here's a limb off a big pine tree. The tree has shut the flow of food and water to the limb, because it's needles can no longer reach the sunlight to produce food for the tree.

Needles are replaced and fall to the ground. As they decompose the needles turn the soil slightly *acidic*. It doesn't bother the growth of the new Ponderosa pine seedlings. Only flowers and shrubs that have *adapted* to the acidic *soil chemistry* created by the decaying needles can live here.

Everything the pine tree deposits affects what will live on the *forest floor* around the pines. It also creates conditions that will ensure that newer generations of ponderosa pine will thrive and grow in this slight change of soil chemistry.

If you have any questions, or anything you would like to share you can e-mail us at Education@DishmanHills.org