



*Trees give us evidence about the climate in the past! Take a look at the tree “cookie” sample and practice the work of a dendroclimatologist.*

## Try This!

**Step 1:** Pick up the tree “cookie” samples and a magnifying glass.

**Step 2:** Count the rings! How many rings does the tree “cookie” sample have? Use the magnifying glass to see closer. How old is your tree cookie?

**Step 3:** Do you notice any patterns that tell us about the past climate? Use the key for help.

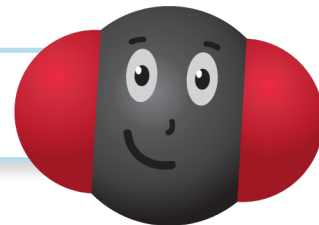
### KEY

- **Number of rings = age of sample**
- **Thick rings = longer or faster growing season**
- **Thin rings = shorter or slower growing season**

## Climate Connection

**Tree rings provide clues to long term weather patterns, or climate, up to thousands of years ago. Wider rings indicate warmer temperatures and/or more water availability. Tree rings are one of several important tools used by scientists to study past climate conditions.**

**Fun Fact:** *The oldest living tree is 9,550 years old. That is almost ten thousand years old!*



**Turn the page over to learn more!**

## What's Happening?

*Scientists also use ice cores to learn about past climates. An ice core is a sample of snow and ice that collected over thousands of years. Scientists look at the trapped air bubbles in the ice cores to learn about the atmosphere that existed thousands of years ago.*

The rings show the layers of growth of each year the tree has lived. Each pair of light and dark rings marks one year of the tree's life. Thicker rings indicate a longer or faster growing season. This means that the temperature was high for a longer time and allowed the tree to grow more. Smaller rings show shorter or slower growing seasons which means either the temperature was low or the tree didn't have enough water to grow very much.

Tree rings can also tell us about the environmental conditions that the tree was growing in. **Dendroclimatologists** use tree rings to study patterns of climate changes over time. **Climate** refers to the conditions of a region over long periods of time. Weather, on the other hand, is the current or short-term conditions of a given place.



Another technique dendroclimatologists use is taking a core sample. Take a look at the image of a core sample. In core samples, the tree rings show up as stripes!

## Climate Detective Challenge

**What can tree rings tell us about past climates?**

*Find the answer to this question on the Activity Map!*

