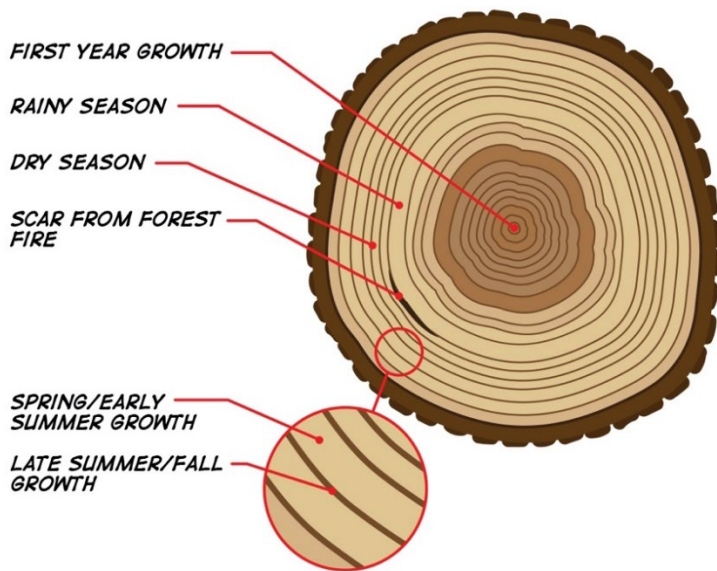


Dendrochronology

Dendro = tree, chronology = dating

Dendrochronology, or tree-ring dating, is a technique archaeologists use to determine the age and environmental conditions of a site when it was occupied. Tree rings keep a record of certain events and environmental changes during its growth. Each tree tells the story of its life!

Telling the story of climate



Every year, a tree forms a new ring around its center during the warm growing season.

Depending on the climate and environment the tree is living in, the thickness of the rings varies.

During a rainy season, a ring is thicker and during a dry season or drought, a ring is thinner.

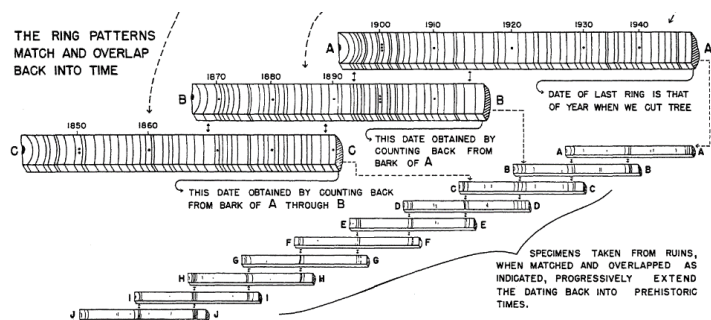
Sometimes the rings show evidence of a forest fire.

Photo: <https://climatekids.nasa.gov/tree-rings/>

Why do you think it is important for archeologists to know what the climate was like for the people of the past? What can it tell us about the way people lived?

Telling the story about age

Trees can tell us which years were dry and which years got more rain when they were growing, but they can also help archaeologists pinpoint specific numerical dates (absolute dating) when they lived. Because each year adds a new ring, as long as you have a known tree sample, you can count back the rings to see how old an unknown sample is exactly.



In the Southwest this continuous timeline goes all the way to 322 BC!

Use dendrochronology to determine these dates in history!

The strips on the following page represent core samples taken from trees. Each sample shows the growth rings for that particular tree indicated by each line. By lining up matching patterns of the undated samples with the patterns on the dated sample, you can count back and determine dates for each of the events in history labeled on the cores.

You will need:

Core samples from the following page
Scissors
Glue or tape

What to do:

1. Print and cut out all the cores on the following page. Be sure to leave on the labels when cutting.
2. Each of the cores reveal different moments in time. Overlap each strip and look for and line up matching patterns to create a timeline.
3. When all the patterns of the tree rings line up, tape/glue down each strip.
4. Once you have your timeline, count back each year on the strips to date when each event took place.

Core Sample #	Age of Tree	Year Growth Began	Year Cored
1			
2			
3			
4			

What year did each labeled event occur?

Women achieved the right to vote: _____

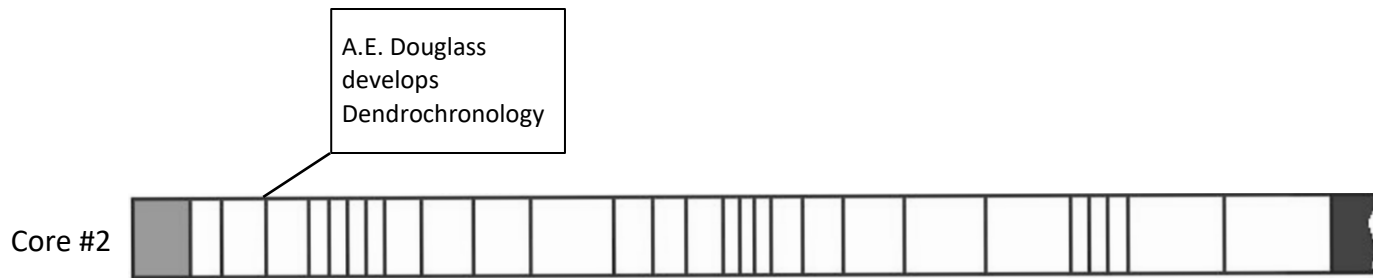
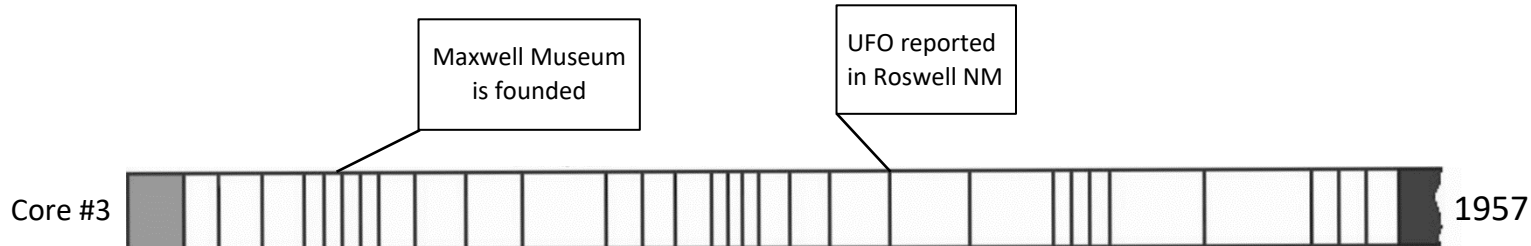
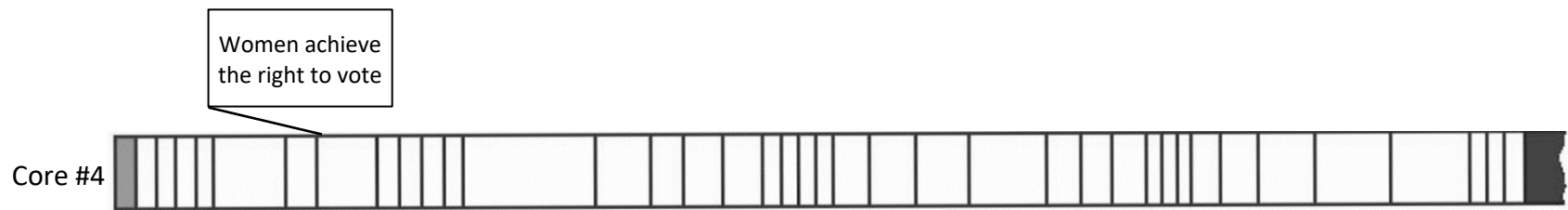
New Mexico became a state: _____

Maxwell Museum of Anthropology was founded: _____

A.E. Douglass develops Dendrochronology: _____

Roswell UFO Incident: _____

Check the key below for answers.



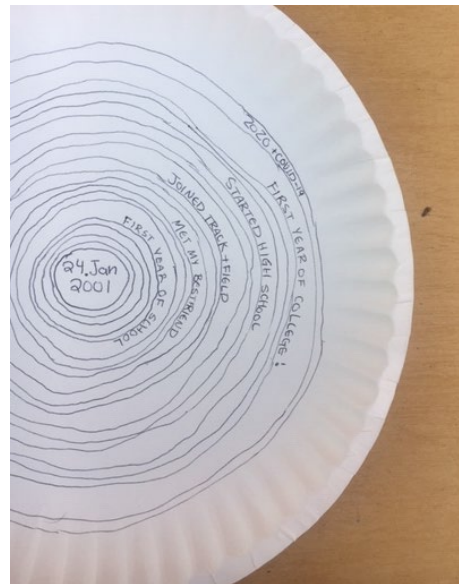
Tree of Life

The story of a tree's life is told in its rings and for this activity you are going to make your very own tree rings to tell your story and show what your growing seasons look like!

You will need:

A paper plate
A pen

1. To begin, draw a circle in the middle of your plate and write your first year growth/the year you were born.
2. Add 1 ring around the center for every year you've been alive. Years you don't have much memory of or have bad memories of are dry years. Years with good memories which were full of growth are rainy years. The better a year, the thicker the ring.
3. Write landmarks which stand out between the lines. For example: the first day at school, winning an award, moving houses, etc.
4. Continue to add rings until you have reached your current year.



Discussion Questions:

- How was your tree impacted by your environment?
- How does your tree compare with others in your environment?

Key



Women achieved the right to vote: 1920

New Mexico became a state: 1912

Maxwell Museum of Anthropology was founded: 1932

A.E. Douglass develops Dendrochronology: 1929

Roswell UFO Sighting: 1947

Core Sample #	Age of Tree	Year Growth Began	Year Cored
1	24	1910	1934
2	28	1926	1954
3	31	1926	1957
4	38	1914	1952

Resources:

Dendrochronology from PBS Time Team America

<http://www.pbs.org/time-team/experience-archaeology/dendrochronology/>

Dendrochronology from Crow Canyon Archaeological Center

<https://www.crowcanyon.org/index.php/dendrochronology>

Tree Rings Simulation – Dendrochronology from UCAR Center for Science Education

<https://scied.ucar.edu/interactive/tree-ring>

Life as a Tree from Scishow Kids

<https://www.youtube.com/watch?v=MwNJC-IRgPE>

What Can Trees Tell Us About Climate Change? From Climate Kids - NASA

<https://climatekids.nasa.gov/tree-rings/>

Dendrochronology from Southwestlearning.org, NPS

https://www.nps.gov/tont/learn/nature/upload/Dendrochronology_Overview-Copy-2.pdf

Dendrochronology: What Tree Rings Tell us About Past and Present, from
Environmentalscience.org

<https://www.environmentalscience.org/dendrochronology-tree-rings-tell-us>



Lulu grateful for all that trees give us (especially paper!) PLANT A TREE!