

Name \_\_\_\_\_ Hour \_\_\_\_\_ Date \_\_\_\_\_

TREES: RECORDERS OF CLIMATE CHANGE

**DO NOT WRITE ON, MARK, MAR, OR IN ANYWAY VANDALIZE YOUR TREE SAMPLE**

Examine your tree "cookie". Each ring consists of a light and a dark band.

1. What does each ring represent?

2. How old was the tree before it was cut down? \_\_\_\_\_

How do you know?

3. Which rings are the youngest? \_\_\_\_\_

Which are the oldest? \_\_\_\_\_

4. Why do you think each ring has a light and dark part?

5. What factors might account for differences in the thickness of the rings?

6. What do you think occurred to make some bands wider? (be as specific as you can)

7. This tree fell down in the fall of 2011. Find the ring that formed the year you were born. (make no marks on the tree sample)

How does this ring compare to the ring before it? \_\_\_\_\_

The ring after it? \_\_\_\_\_

8. Is there any evidence as to why this tree may have fallen? Look everywhere.

**PROBLEM:** Has the climate changed over the last 600 years?

**HYPOTHESIS:**

**Collect and analyze tree ring data!**

1. Measure the total length of the tree ring core at each station. Make your measurements in millimeters. Write each measurement into the "total thickness" column of the table.
2. Fill in the number of years of each time interval in the "number of years" column.
3. Divide each "total thickness" measurement by the "number of years" to get the average ring thickness for each time interval. Use at least one decimal place (example: 2.3).

Time intervals	Number of years	Total Thickness (mm)	Average ring thickness
Example	50	200	$200/50=4$
1402-1449			
1450-1499			
1500-1549			
1550-1599			
1600-1649			
1650-1699			
1700-1749			
1750-1799			
1800-1849			
1850-1899			
1900-1960			

**GRAPH YOUR RESULTS**

Answer these questions on the back of the page.

1. Based on the thickness data, can you accept your hypothesis, or do you reject it? Why?
2. Based on the ring thickness data, would you speculate that some intervals were warmer or cooler than others? If so, which was the warmest interval? Which was the coolest?
3. How certain are you of your interpretations? Would you like to see more evidence? If so, what type of evidence and from what time interval?
4. Doing research often brings up more research questions. What sort of questions would you want to look into for future research? List at least two.
5. Why do climatologists need at least 30 years of data to describe climate?