

Grading Rubric for Class Leader

name Steve

date today

General

- Arrives five minutes before class (1 pt)
- Music selected & started (1 pt)
- Greeting of the day selected (1 pt)
- Ready as time-keeper; *i.e.*, has gong (1 pt)
- Checks that the attendance sheet and stickers are ready to be distributed (1 pt)
- Brings copy of this form to class (5 pts)
- Staples this form, the article analysis form, and the article together (in order; 2 pts)

Quote

- Quote of the day (*write it here*; 5 pts):

...a traveler should be a botanist, for in all views plants form the chief embellishment.
Charles Darwin
Voyage of the HMS Beagle

- Quote written on board by start of class (1 pt)
- Quote Quality (*i.e.*, pertains to course and/or inspirational) (3 pt)

Reference

- Reference quality (appropriate source, pertinent to topic; timely; 3 pts)
- Reference of the day written on board or overhead (1 pt)
- Brings copy of article to class (5 pts)
- Article Analysis (15 pts) - append completed form

_____ Total (45 pt)

Name Steve

Article Analysis

1. Citation (full citation, proper format; 3 pts):

Wilf, P (1997) When are leaves good thermometers? A new case for leaf margin analysis. *Paleobiology* 23: 373 - 390.

2. Background/Research Problem (Provide some background to put the study into perspective; 2 pts):

Some plants have leaves with smooth, or entire, margins. The leaves of other species have teeth or serrations. Several studies have shown that the proportion of plants growing in an area with smooth leaf margins is directly correlated with the mean annual temperature (MAT) of that area. In other words, the more plants that have entire leaf margins the warmer it is.

3. Question (What question/s was the author trying to answer?; 2 pts):

How accurate are climate models that use just leaf margins compared to those climate models that rely on other features as well?

4. Methods (Briefly, what did the author do?; 2 pts):

The author collected data from leaves of woody plants from many locations around the globe and compared it to the mean annual temperature of the area. Mathematical equations were developed to correlate the assorted variables.

5. Results (What did the author discover?; 2 pts):

This study showed that a climate model using leaf margins and many other leaf features was no more accurate for determining MAT than a simple analysis using just leaf margins. This study also showed that it is important to use an adequate number of species in the analysis or else the result will be biased and the MAT will not be accurate.

6. Conclusion (What conclusions can you draw from this study?; 2 pts):

The relationship between leaf margin and climate provides an important tool with which to reconstruct past climate. Paleobotanists can estimate climate in the geological past by simply analyzing the frequency of smooth and toothed leaf margins in a collection of

fossils.

7. Why did you choose this particular article? What did you find interesting about it? (2 pts)

I chose this article because I'm fascinated by ecophysiology - how plants respond to their environment. This article shows that MAT is one factor that impacts leaf structure. I am also interested in learning what impact this will have on the future of woody plants that are able to grow in Minnesota if global climate changes.

_____ Total (15 pts possible)