

Activity 1.4 Grading the Finding a Trend Worksheet

*Use this worksheet to grade student responses. At this point, students can be held accountable for correct answers. If students are still struggling with these concepts, you may want to revisit parts of the Lesson they are finding difficult. General characteristics of correct responses are in **bold blue italics**.*

Red italics suggest ways to grade student responses by giving them points for correct or partially correct answers. There are 8 points total on this worksheet.

1. Look at your arctic ice graph from the last activity. Using words, try to describe the general trend that you see in the graph. What does it look like is happening overall?

Answers may vary. They may recognize a trend (a negative trend, or a decrease in sea ice), but they may not. Without a trend line, the data are still fairly noisy and difficult to interpret due to all of the short term variation.

1 point for response.

2. Look at this different graph of maximum ice cover on Lake Superior. Does this have a positive trend, a negative trend, or no change? Let's practice drawing a trend line.

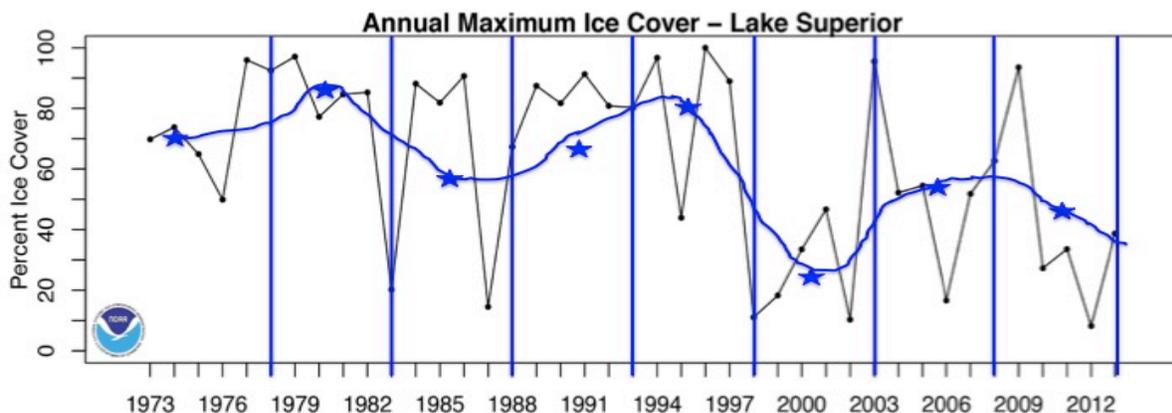
Step 1: Connect the dots (this is already done below).

Step 2: Divide the picture into sections by drawing vertical lines on the graph every five years.

Step 3: Calculate the average of the data points within each five year time periods.

Step 4: Place one dot in each section that shows the average for that time period.

Step 5: Draw a line to connect the new dots.



Credit: NOAA <http://www.glerl.noaa.gov/data/pgs/ice.html>

1 point for each correct step. 5 points total.

Use this space to make notes and calculations if needed:

3. Look at the trend line on the graph above to determine if the trend is positive (goes up from left to right), negative (goes down from left to right), or if there is no change (stays flat). Is there a positive trend, a negative trend, or no change? How do you know?

There is a negative trend. I know that because the line is higher on the left side of the graph, and then goes downward toward the right side.

1 point for correct response.

4. What does this trend line tell you about what is happening to ice on Lake Superior? Write a description here in your own words.

The negative trend tells me that percent cover of ice on Lake Superior has been decreasing over time since 1973. Even though there is short-term variation in some years, the long-term trend is that ice cover is decreasing.

1 point for correct response.