

Name: _____ Period: _____

Ice Core Data Trends

Use the data below and the graph on the next page to graph the history of Earth's carbon dioxide levels and temperature.

1. Graph Earth's carbon dioxide concentrations first [parts per million (ppm)] using the y-axis on the left.
2. Connect the carbon dioxide dots in order of oldest to most recent.
3. Go over that line in one color. Note that color.
4. Graph Earth's temperature variance (degrees Celsius) using the y-axis on the right.
5. Connect the temperature dots in order of oldest to most recent.
6. Go over that line in another color. Note that color.
7. Decide on a title for the graph.
8. Use the graph that you created to answer the questions on the back.

Time (Years Ago)	Carbon Dioxide Concentration (ppm)	Temperature Variance (°C)
400,000	280	-2
360,000	180	-7
310,000	300	+4
275,000	220	-4
240,000	180	-7
220,000	270	-7
200,000	200	-2
190,000	250	-8
140,000	180	-8
120,000	180	+4
100,000	285	-4
50,000	220	-6
15,000	170	-8
65	300	0
Current Time	400	+1

Add a vertical line to your graph marking these points in time:

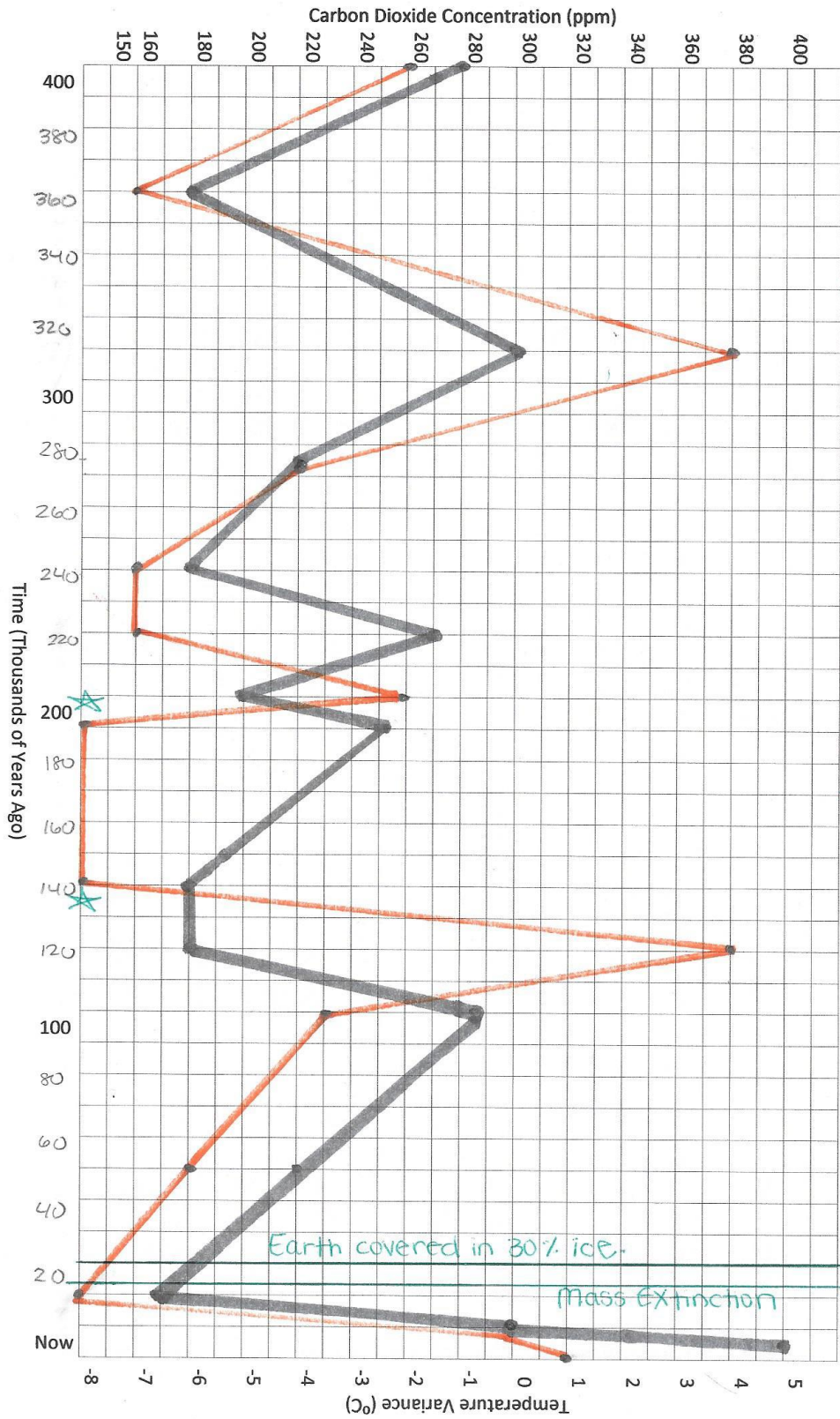
1. About 20,000 years ago, Earth was covered in 30% ice.
2. About 12,000 years ago, there was a mass extinction, possibly due to low sea levels.
3. Place a 2 stars where you believe a previous ice age may have begun and ended.

Analyze you graph:

1. What patterns do you notice between the two lines?
2. How many peaks (tops) and troughs (bottoms) can you identify?
3. Approximately how many years is it from one peak to the next?
4. Do peaks or trough represent glacial (cold) periods?

Evaluate:

1. Why are scientists worried about our future? Describe what could happen.



Grey line = CO₂
 Orange line = OXYGEN

Title: Carbon Dioxide and Earth's Temperature

Name: Key

Period:

Which is the youngest layer?

Analyze your graph:

1. What patterns do you notice between the two lines?

The lines run very close together.
As one line rises or falls, the other follows.

2. How many peaks (tops) and troughs (bottoms) can you identify?

5 peaks
4 troughs

3. Approximately how many years is it from one peak to the next?

Approximately 100,000 years
-possibly slightly more or less

4. Do peaks or trough represent glacial (cold) periods?

Troughs represent glacial periods.

Evaluate:

1. Why are scientists worried about our future? Describe what could happen.

If carbon dioxide concentrations continue to increase, the temperature of Earth may increase.

This could cause Earth's ice caps and glaciers to melt, which would change the depth of the oceans.

More advanced:

It could also affect the salinity of the oceans.