

Name: _____ Date: _____ Assigned Class: _____ CAMS

Collaborative Arts Middle School (CAMS)

7th Grade Science

Summer Packet

The purpose of these assignments is to prepare students with the content and skills necessary for success in this grade level. **All summer homework must be completed and submitted by the first day of school.** Each content teacher will collect work in his/her class.

I. Analyzing and explaining a scientific phenomenon.

Sarah’s class was studying bacteria in life science. The teacher mentioned a common bacterium called *Escherichia coli*, which is found in the intestines of humans and other animals. The teacher explained that *E. coli* bacteria help break down foods that otherwise would not be digested. They also produce beneficial materials such as vitamins.

While watching TV news, Sarah learned that people in a flooded area were being asked to boil their water. A test had shown high levels of *E. coli* bacteria in the water. She wondered why the water had been tested for *E. coli* and not for other disease- causing bacteria. Why are *E. coli* bacteria used to show that water is harmful to drink?

- Explain why are *E. coli* bacteria both harmful and helpful?**

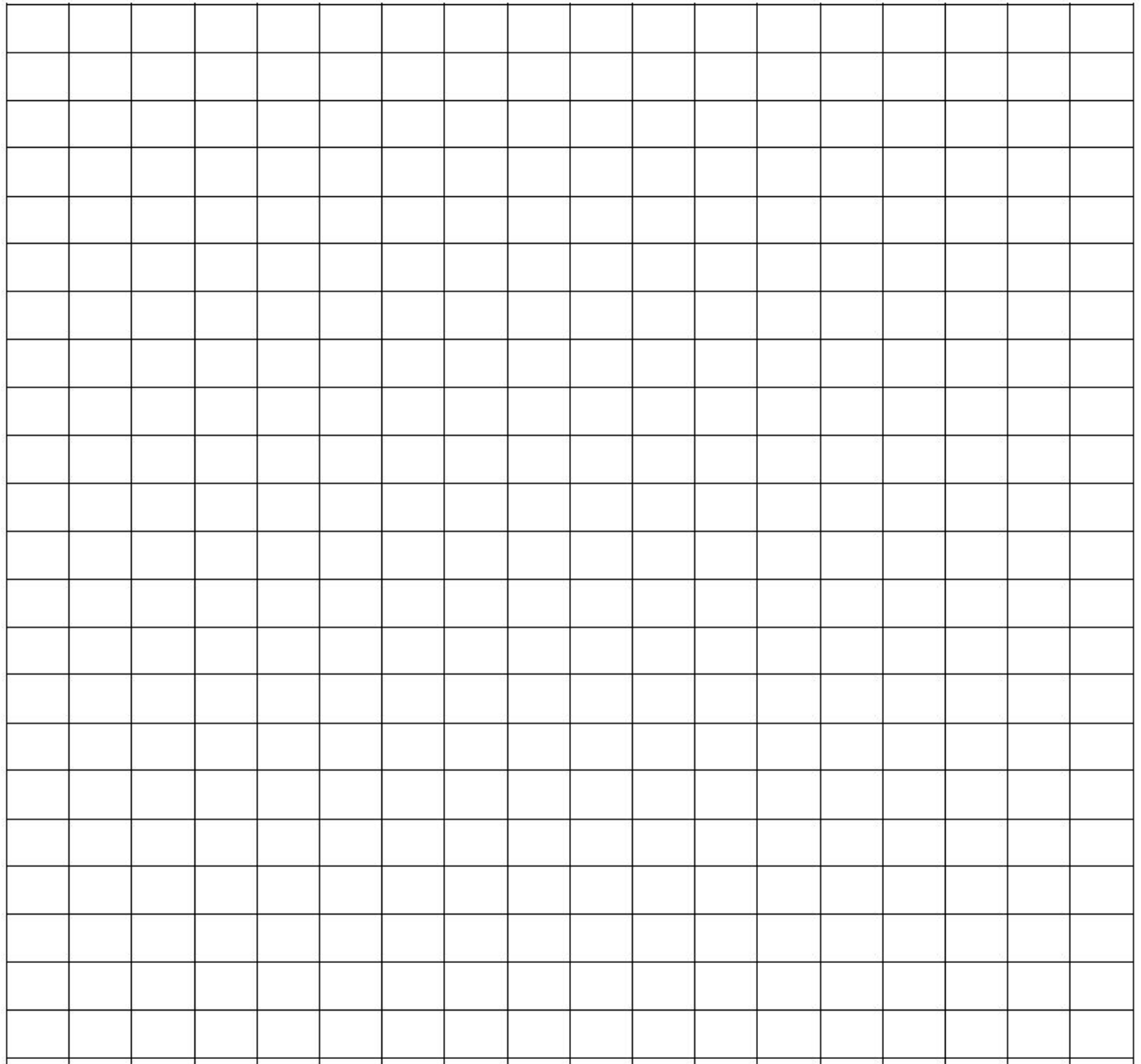
II. Graphing Data

The source of the data in the figure at the bottom is from the Mauna Loa Observatory. The observatory has been recording atmospheric CO₂ data accurately since 1969. Students should know that the data collected at Mauna Loa is not open to debate—meaning it can be taken as fact. Graph this data on a separate sheet of graphing paper, then answer the following questions about the graph. The title of the graph is “TRENDS IN CO₂ LEVELS.”

CO ₂ in the Atmosphere				
Year	CO ₂ Level (ppm)		Year	CO ₂ Level (ppm)
1970	325		1986	347
1972	328		1988	351
1974	330		1990	354
1976	332		1992	356
1978	335		1994	358
1980	338		1996	363
1982	341		1998	367
1984	344		2000	369

2. Graph the data from the chart.

- Years on the x-axis
- CO₂ Level of the y-axis



3. Assuming the trend in your curve will continue, extrapolate (draw in a line predicting the continuing trend) from your graph with a dashed line from the last year for which you have data to the year 2050.

4. Make the following predictions based on your graph:

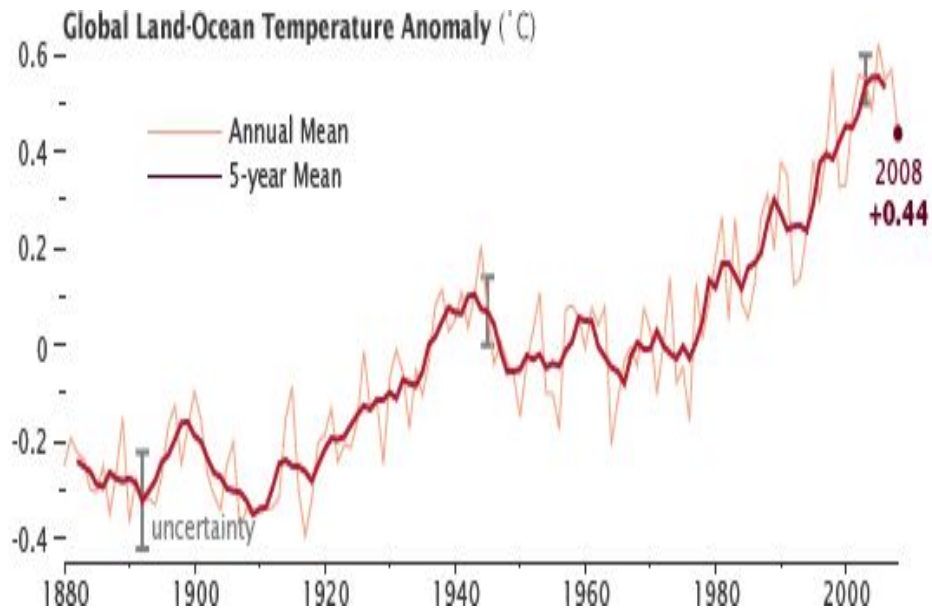
a. What does your graph indicate about the general change in CO₂ levels since 1970?

b. Based on your extrapolation, predict CO₂ levels for following years

i. The year 2005: _____

ii. The year 2020: _____

5. Compare your graph to the average global temperature graph below and interpret your results in terms of what you believe the relationship between CO₂ and temperature is.



PERFORMANCE CHARACTERISTICS AND SCORING SCALE

Performance Characteristics

The following characteristics guide the scoring of responses to the written assignment.

Purpose:	Fulfill the charge of the assignment.
Application of Content:	Accurately and effectively apply the relevant knowledge and skills.
Support:	Support the response with appropriate examples and/or sound reasoning reflecting an understanding of the relevant knowledge and skills.

Scoring Scale

Scores will be assigned to each response to the written assignment according to the following scoring scale.

Score Point	Score Point Description
4	<p>The "4" response reflects a thorough command of the relevant knowledge and skills.</p> <ul style="list-style-type: none"> • The response completely fulfills the purpose of the assignment by responding fully to the given task. • The response demonstrates an accurate and highly effective application of the relevant knowledge and skills. • The response provides strong support with high-quality, relevant examples and/or sound reasoning.
3	<p>The "3" response reflects a general command of the relevant knowledge and skills.</p> <ul style="list-style-type: none"> • The response generally fulfills the purpose of the assignment by responding to the given task. • The response demonstrates a generally accurate and effective application of the relevant knowledge and skills. • The response provides support with some relevant examples and/or generally sound reasoning.
2	<p>The "2" response reflects a partial command of the relevant knowledge and skills.</p> <ul style="list-style-type: none"> • The response partially fulfills the purpose of the assignment by responding in a limited way to the given task. • The response demonstrates a limited, partially accurate and partially effective application of the relevant knowledge and skills. • The response provides limited support with few examples and/or some flawed reasoning.
1	<p>The "1" response reflects little or no command of the relevant knowledge and skills.</p> <ul style="list-style-type: none"> • The response fails to fulfill the purpose of the assignment. • The response demonstrates a largely inaccurate and/or ineffective application of the relevant knowledge and skills. • The response provides little or no support with few, if any, examples and/or seriously flawed reasoning.