

Name: _____ Date: _____ Assigned Class: _____ CAMS

Collaborative Arts Middle School (CAMS)

6th 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.

Directions: Use the information provided and your knowledge of science to help you answer the questions.

Each year, many NYC school children miss school because they get sick from bacteria and viruses that are left behind by their classmates at school. Bacteria and viruses are living organisms that cause diseases, like the common cold or influenza. They are so small that you would need a microscope to see them. Bacteria and viruses can travel through the air, and they get into the air easily. When someone sneezes or coughs, tiny water or mucous droplets filled with viruses or bacteria to spread quickly. Inhaling (breathing in) these viruses or bacteria can spread coughs, colds, and flu.

Warm, crowded conditions with poor air circulation can promote (cause) the spread of bacteria and viruses. Some bacteria and viruses thrive (live longer) and circulate through overheated and poorly maintained building ventilation systems. Warm, damp, and humid air can increase the survival rate of viruses indoors.

Most often, the human occupants of a home or school are the source of infectious diseases like the cold and flu. Effective ventilation, or air flow, may help keep bacteria, viruses and other pollutants out of the indoor air. Research shows that air flow and ventilation can affect how diseases spread indoors. Keeping a room cooler by opening the windows may limit the growth of bacteria and viruses because most types of bacteria and viruses like it warm. The more stagnant (still) and warm the air is, the more likely diseases are to spread.

Ventilation, or opening windows so air can flow, can also limit moisture. Damp indoor spaces allow the growth and spreading of viruses and bacteria. Controlling moisture indoors can limit the spread of these infectious diseases and also limit mold, dust mite and cockroach growth.

Because of this knowledge of how bacteria and viruses spread, some teachers keeps the windows open in their classroom.

1. Using evidence from the text explain how the conditions in the classroom can affect how many students get sick.

In an effort to determine what makes bacteria grow, the following experiment and corresponding data were obtained.

Procedure:

1. Record the temperature and humidity levels in room 222 when the windows are open.
2. Record the temperature and humidity levels in room 219 when the windows are closed.
3. Using a clean cotton swab, rub the surface of 4 desks in room 222. Rub each cotton swab on a different petri dish. Make sure to label these petri dishes “222.”

4. Using a clean cotton swab, rub the surface of 4 desks in room 219. Rub each cotton swab on a different petri dish. Make sure to label these petri dishes “219.”
5. Store the petri dishes in a warm, dark place for 1 week.
6. After 1 week, count the number of bacterial colonies that grow in each petri dish.

Table 1:

Room, temperature, and humidity level	Number of Bacterial Colonies				Average number of colonies
	Desk 1	Desk 2	Desk 3	Desk 4	
222	3 bacterial colonies	5 bacterial colonies	2 bacterial colonies	3 bacterial colonies	3.3 bacterial colonies
Temperature: 65 F Humidity: 30%					
219	6 bacterial colonies	8 bacterial colonies	10 bacterial colonies	15 bacterial colonies	9.8 bacterial colonies
Temperature: 80 F Humidity: 40%					

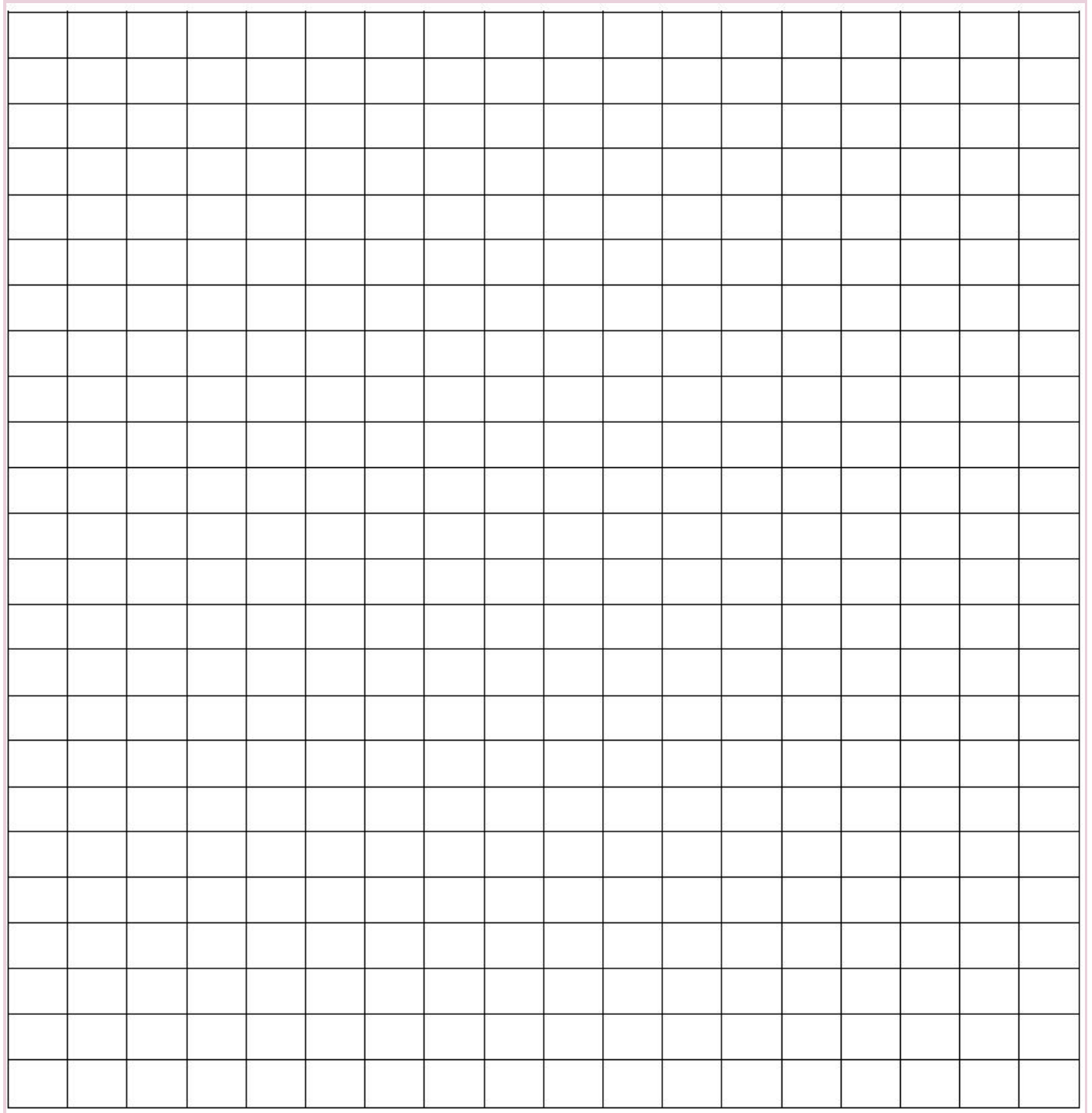
2. What can you conclude about the number of bacterial colonies in each location? Use evidence from the data table and graph to explain your answer?

3. Why do you think there were different number of colonies in each location? Use evidence from the text to explain your answer?

4. Use the data in Table 1 to construct a bar graph that shows the relationship between the number of bacterial colonies and the location the bacteria was taken from.

a. Be sure to:

- i. Mark the scale numbers on the
- ii. Create the bars on the graph.



5. Use evident to support or refute the claim that bacteria grow more in classrooms that are hot and humid.

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.