



Gold Seal Lesson

Author(s): Denise Comins			Lesson Title: Bacteria Growing Everywhere!			
Grade Span			ICLE Application Model			
K-4	5-8 X	9-12	A	B X	C	D

Instructional Focus:

Writing

Students write for a variety of purposes and audiences with sophistication and complexity appropriate to the grade level.

Statistics and Probability

Students use statistics and probability to analyze given situations and the results of experiments. Students communicate the reasoning used in arriving at a conclusion.

Unifying Concepts and Processes

Students recognize patterns and processes, making connections in terms of systems and subsystems that explain the interrelationships of the natural and designed world.

Science as Inquiry

Students demonstrate knowledge and skills necessary to perform scientific inquiry.

Habits of Mind

Students develop habits of mind including curiosity, open-mindedness and persistence.

Performance Task

Students will be divided into small groups of 3 or 4. Each group will be given a set of 4 cups, a cup of dried beans, water, and markers. The students will divide the beans between the 4 cups, and add about ¼ c of water to each cup. Students will be asked to label each cup with the following labels; warm/light, warm/dark, cool/light, and cool/dark. Each of these cups will be placed around the room in corresponding areas (you could use the closet, coolers, refrigerators, radiators etc). The students will check each of their cups each day, obtain a sample of material on a slide and examine the bacterial specimens. They will then write a log listing descriptions of any changes, and any sketches of the changes, for 10 days.

At the end of the ten days, the students will examine their samples and results. They will then make a report on their conclusions including which location was most conducive to bacterial growth, which one was the least, how they made those conclusions based on their experiment, and finally, apply it to real life situations. What types of items in everyday life are most conducive to bacteria growth, what are the least etc?

ICLE Essential Skills

Draft a report that engages an audience and is concise, clear, well-organized, accurate, and informative. (ela 12)
Use writing as a tool for learning in formats such as learning logs, laboratory reports, note-taking, journals and portfolios. (ela 40)
Understand and use a variety of organizational formats such as compare/contrast, cause/effect, inductive/deductive, most important to least important, and least important to most important. (ela 50)
Understand and use graphs, charts, and visuals to enhance informational writing and oral presentations. (ela 29)
Present information in well-organized fashion that will be clear to the target audience. (ela 11)
Understand and use graphics such as graphs, charts, visual aids, white space, bold print, headers and other graphics to enhance meaning. (ela 56)
Participate in peer editing groups. (ela 87)
Understand the importance of accuracy in final drafts. (ela 33)
Exhibit good data management skills by collecting, organizing, and graphing data. (s 19)
Identify parts of a compound light microscope, perform functions, and focus in low and high power. (s 76)
Know the characteristics and roles of simple organisms (i.e., viruses, bacteria, fungi, algae, and protozoa). (s 21)

Scoring Guide:

4 Points-

- Report corresponds with results of experiment
- Students attach all notes and sketches to report
- Students have a good topic sentence with supporting details
- Students have few mechanical errors
- Students' report flows smoothly

3 Points

- Report corresponds with the results of the experiment
- Students attach most notes and sketches
- Students have a topic sentence with some supporting details
- Students have some mechanical errors
- Students' report flows smoothly

2 Points

- Report corresponds with most of the results of experiment
- Students attach some notes and sketches to report
- Students attempt a topic sentence with few details
- Students have many mechanical errors
- Report confusing to the reader in places
- Students' report has few sentences that flow smoothly

1 Point

- Report doesn't correspond with information collected during experiment
- Students attach few sketches to report
- Students have no topic sentence
- Students have many mechanical errors
- Students' report difficult to read and understand

Keywords

English Language Arts	Mathematics	Science
Reading	Algebra	Earth Science
Writing Capitalization Compare/Contrast Conventions Draft Grammar Journals Editing Mechanics Note Taking Organization Peer Review Punctuation Technical Writing Integration	Geometry	Life Science Biology Environment Germ Theory Health Micro Organisms Scientific Inquiry
Communications	Statistics	Chemistry
Literature	Calculus	Physics
Other	Trigonometry	Other
	Other	