

BACTERIA

By Melissa Barron



Students will have recently studied the following:

- 1) There are 6 kingdoms of living organisms
- 2) All living organisms share 4 common characteristics
 - a. Organization
 - b. Growth
 - c. Reproduction
 - d. Response to their environment and needs

The following lesson is to continue the study of the kingdom of bacteria. This lesson comes in the middle of a unit that will continue with viruses and protists. There is not a culminating assessment, as that will come at the end of the larger unit. Information will sometimes be gathered from classroom resources (text book, clips from articles/magazines/other texts, readers, etc) or the LRC when available.

Key Concepts:

1. Bacteria are single-celled organisms without a nuclei
2. Bacteria share the same 4 common characteristics of all living things
3. Bacteria play a major role in the lives of other living things.

Unit questions:

1. What are the three basic structures of bacteria?
2. How do bacteria infect cells?
3. What are both the positive and negative functions of bacteria?
4. How do bacterial diseases spread?

Day 1	<ul style="list-style-type: none">*Put "Bushwackin Bacteria" on Smart board*Have students read and then complete a "Facts and Questions" Ladder.*Get in a group of three and discuss your F/Q Ladders, then we will share with the whole class*Structure of Bacteria: Watch Brain Pop and complete a text reflection slip
Day 2	<ul style="list-style-type: none">* Work on Shapes of Bacteria assignment (due 1st thing tomorrow)*Shapes of Bacteria Slides
Day 3	<ul style="list-style-type: none">*"Bacteria Lab" Plan: Brainstorm ideas with partners, create a list of materials needed and general steps for at least 2 possible lab options.

	Check in with teacher and decide on one option. *Start: How bacteria infect a cell/spread disease 4 square
Day 4	*Set up Bacteria lab *How bacteria infect a cell/spread disease 4 square
Day 5	*Spread of disease lab activity *Collect data for bacteria lab *Finish 4 square
Day 6	*Collect data for bacteria lab *Bacteria : The Good, the Bad and the Ugly
Day 7	*Collect data for bacteria lab *Work on final lab report

Name: _____

TEXT REFLECTION – BACTERIA'S STRUCTURE

Complete one of the following:

1. Create a Venn diagram comparing bacteria to the cells of multi-cellular organisms.
2. Draw a picture of a bacterium labeling all parts.
3. Write 4 sentences or more discussing the structure of bacteria and how it compares to other cells.
4. Change the words to one of the following songs to create a jingle about the structure of bacteria:
Row, Row, Row Your Boat, Mary Had a Little Lamb, or Twinkle, Twinkle Little Star.



The Shapes of Bacteria

Use the available resources to learn about the three shapes of bacteria. Choose one of the following options to show what you know. You may work alone or with a partner.

1. Create a 3D model. You may use any of the supplies I have in the craft drawer or bring your own from home.
2. Create a mini-mural using the large sheet of butcher paper available.
3. Create a picture note.
4. Complete a power note (aka: concept map or mind map).
5. Create a cartoon or comic with at least 6 squares.

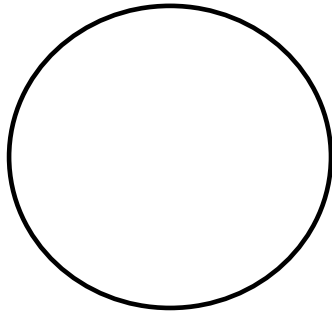


Name: _____

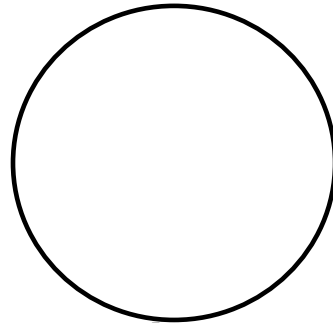
Bacteria Slides

Like other living things, bacteria come in many shapes and sizes. Examine the three basic bacteria shapes via the slides provided by your teacher. Observe each slide under low and high power, drawing pictures of each. Label the shape.

Shape: _____

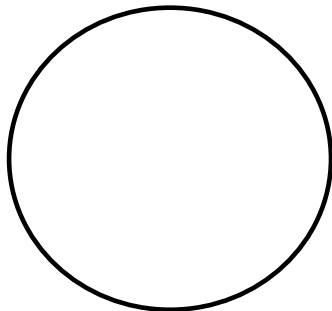


Low Power

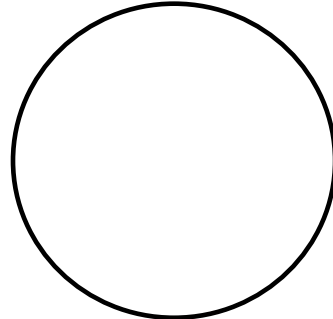


High Power

Shape: _____

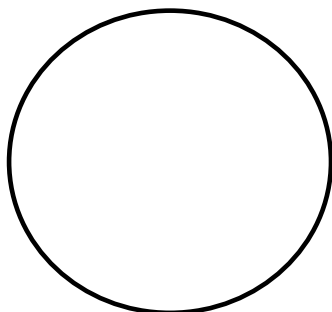


Low Power

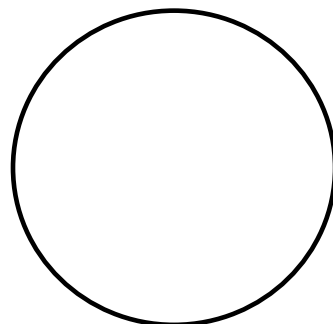


High Power

Shape: _____



Low Power



High Power

Name: _____

FACTS AND QUESTIONS



BACTERIA

F:

Q:

F:

Q:

F:

Q:

Bacteria Lab

Throughout this unit you have been learning a lot about bacteria and the way they spread diseases. You will continue to learn more through the rest of this unit and as you design your own lab.

Think about what you have learned so far and what you still want to find out regarding the spread of bacteria.

Develop a lab where you will sample bacteria from your environment and watch its growth over a 4 day period.

If it helps to get you started, you can think along the lines of the following lead questions:

Does _____ affect how much bacteria are on a surface?

Which has more bacteria, _____, _____, or _____?

Each member of your group will have to record data and complete a formal lab write up.

Name: _____

How Bacteria Infect and Reproduce

Pick one of the squares below and complete the activity in that square.

<p>CONCRETE</p> <p>Use www.inspiration.com or www.mywebspiration.com to create a mind map about bacteria.</p> <p>Be sure to include information about the way bacteria infect cells and how they reproduce.</p>	<p>INTERPERSONAL</p> <p>Create a game where bacteria and cells compete for control of the host.</p>
<p>SPATIAL</p> <p>UNDERSTANDING</p> <p>Develop the taxonomy for 4 different bacteria and explain the connection/relationship it has with another organism or the environment</p> <p>NATURALIST</p>	<p>BODILY-KINISTHETIC</p> <p>SELF-EXPRESSIVE</p> <p>Complete a RAFT from either the viewpoint of the infecting bacteria or the infected cell. Remember to clearly lay out your</p> <p><u>Role</u> <u>Audience</u> <u>Format</u> <u>Topic</u></p> <p>VERVBAL-LINGUISTIC</p>

Bacteria: The Good, the Bad and the Ugly

*These directions would be posted on the smart board at the front of the room.

1. Each student will pick one of the 6 articles from the front of the room. (Each article will be on different colored paper)
2. Read your article and complete a note card with 3 of the 4 pieces of information:

Quote

Concern

Question

Ah-Ha

3. Pass your notes and make comments.
4. Group share