Microbes are a BLAST worksheets and questions:

Pre-Test Questions:

1) **Determine** which characteristics were the most helpful in classifying the microbes.

2) **Create and explain** a classification system using the microbe sorting cards.

3) **Observe and record** information about microbes.

4) **Draw conclusions** to **communicate** the various ecological roles that microbes play in the ocean.

Post-Test Questions:

1) **Determine** which characteristics were the most helpful in classifying the microbes.

2) **Create and explain** a classification system using the microbe sorting cards.

3) **Observe and record** information about microbes.

4) **Draw conclusions** to **communicate** the various ecological roles that microbes play in the ocean.

LAB ACTIVITY HANDOUT:

Read and follow the directions carefully.

* You will be assigned a group to work with for this project.
* You will need your lab notebooks to record your observations.

1) Each group will receive a set of 12 microbe cards.

2) Sort the microbes into groups or classifications. Create no fewer than 4 and no more than 8 different classifications.

3) With your group, decide what characteristics you want to consider for the classifications. Write down the list of characteristics your group is using for the classifications.

4) In your lab notebook enter the name of the classification you created, which microbes you placed in that classification, the characteristics you used to create that classification and your reasoning for using those characteristics. Your lab notebook entry should look like the following:

Name of Classification Microbes characteristics reasoning

Ex: Blueman group cyanobacteria blue in color They are the only

Martian moss microbes with that color.

5) Obtain a dichotomous key from the teacher to see if your classifications match those of scientists.

6) As a group, discuss the following question. Write the question and answer in your lab notebook.

What differences did you note between your classifications and the dichotomous key? Why do you think there were differences?

7) As a group, discuss the following question. Write the question and answer in your lab notebook.

Would scientists sort/classify the microbes in the same way? Why or why not?

8) As a group, discuss the following question. Write the questions and your answer in your lab notebook. You may use your textbook or other resource to answer this question.

What characteristics might scientists use to classify microbes?

9) As a group, discuss the following question. Write the question and answer in your lab notebook.

What characteristics were most helpful in classifying microbes? Why were these the most helpful?

ENRICHMENT ACTIVITY:

Students, using the internet or other resources, can look up the microbes from the cards, and give a brief description about them. Descriptors might include, type of microorganism, what part of the ocean they live in (deep, shallow, near shore, etc.), their food source, and/or the role they play in the environment

END OF CLASS QUIZ

1) Define a microbe: Is a microbe the same or different from a microorganism?

a microscopic organism, especially a bacterium, virus, fungi or protozoa

2) Why can’t microbes be classified by pictures only?

Answers will vary. Looking for answers along the lines of, pictures don’t show functional traits.

3) Briefly explain what a classification system is?

the action or process of classifying something according to shared qualities or characteristics.

4) What characteristics of a microbe were you not able to observe in the lab?

Answers will vary: Movement, feeding, reproduction, habitat

5) How are prokaryotes and eukaryotes different?

Looking for: prokaryotes do not have a nucleus and eukaryotes do.

HOMEWORK: To be used as a summative assessment.

Question: Based upon the lab activity, what conclusions can you draw about the ecological roles the microbes play in the ocean? Use complete sentences and scientific terminology. Write at least 1 sentence for each classification your group created. You may use your lab notebook as a reference. Turn in both the homework and your lab notebook at the beginning of the next class period.