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Science Standard
4.3.d.

Teacher's Masters

California Education and the Environment Initiative

Microorganisms and the Human World

California Education and the Environment Initiative

Approved by the California State Board of Education, 2010

The Education and the Environment Curriculum is a cooperative endeavor of the following entities:

California Environmental Protection Agency
California Natural Resources Agency
Office of the Secretary of Education
California State Board of Education
California Department of Education
California Integrated Waste Management Board

Key Leadership for the Education and Environment Initiative:

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Andrea Lewis, Assistant Secretary for Education and Quality Programs, California Environmental Protection Agency
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Key Partners:

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Contents

Lesson 1 Microorganisms Are Everywhere!

None required for this lesson.

Lesson 2 Bacteria in Our Bodies

None required for this lesson.

Lesson 3 The Battle with Bacteria

None required for this lesson.

Lesson 4 Food from Microorganisms

None required for this lesson.

Lesson 5 Clean Up That Spill!

None required for this lesson.

Lesson 6 Microorganisms in Medicine

None required for this lesson.

Assessments

Microorganisms and the Human World—
Traditional Unit Assessment Master 2

Micro-Hero Poster Instructions—Alternative Unit Assessment Master 6

Name: _____

Part 1

Instructions: Use the words in the Word Bank to fill in the blanks in the sentences below. You may only use each word once. (2 points each)

Word Bank

decomposition	bacteria	large intestine
digestion	*E. coli*	antibiotics
penicillin	yeast	molds

1. Examples of fungi are mushrooms, yeasts, and _____.
2. The biggest group of microorganisms is _____.
3. The breaking down of once living things into simpler parts is also known as _____.
4. The breaking down of food in the body is called _____.
5. One part of the body where microorganisms live is the _____.
6. When it is eaten in foods that are not washed or cooked properly, the _____ bacteria can make you sick.
7. _____ is a microorganism that is used to make bread rise.
8. _____ is made by a mold and was discovered by Sir Alexander Fleming and made into a useful drug by Sir Howard Florey.
9. Medicines that stop bacteria from growing are called _____.

Name: _____

Part 2

Instructions: Select the best answer and circle the correct letter. (2 points each)

10. Which list of three things are microorganisms?
    a. earthworms, fungi, bacteria
    b. bacteria, fungi, protists
    c. bacteria, mold, spiders
    d. earthworms, protists, yeast

11. Where do microorganisms live?
    a. in our bodies
    b. in water
    c. in food
    d. All of the above.

12. Microorganisms are harmful if they cause _____.
    a. bacteria
    b. fungi
    c. infection
    d. All of the above.

13. Microorganisms help us by _____.
    a. breaking down food
    b. killing harmful bacteria
    c. decomposing waste
    d. All of the above.

14. Yeast can break down sugar and give off carbon dioxide. What is this called?
    a. fermentation
    b. waste
    c. infection
    d. contamination

Name: _____

15. Which are ecosystem services that microorganisms provide?
    a. creating antibiotics
    b. making bread and cheese
    c. cleaning up oil spills
    d. All of the above.

Part 3

Instructions: Complete the following tasks in the spaces provided.

Ask your teacher for your **Student Workbook**. Turn to **What are Microorganisms?** (page 2). Read the answer you gave to the question on the paper. Then answer the question again, showing the new things you have learned. (5 points each)

16. What are microorganisms?

_____
_____
_____
_____
_____
_____
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_____
_____
_____
_____
_____
_____
_____

Name: _____

17. Where are microorganisms found in our world?

18. How do microorganisms affect people?

Name: _____

Instructions: In this unit you learned that not all microorganisms are harmful. Many help humans in many ways. Your job is to name one of the microorganisms as a "micro-hero" and create a poster that announces its greatness. Using words and pictures, the poster should show the following information:

1. What type of microorganism it is, what it looks like, and where you can find it.
2. What the microorganism does in nature and what processes it is part of.
3. What the microorganism does for humans. In other words, what makes it a "micro-hero?"
4. A slogan for your "micro-hero" that describes the micro-hero and what it does.

Your poster should use correct spelling and be neatly and creatively put together.

The "micro-hero" posters are due on _____.

Criteria	5 points	3 points	1 point
Describes a microorganism	Fully describes what the micro-hero looks like, what type it is, and where it is found. Uses both words and pictures.	Describes what the micro-hero looks like, what type it is, or where it is found. Uses both words and pictures.	Describes what the micro-hero looks like, what type it is, or where it is found. Uses some words, but mostly pictures.
Describes what the microorganism does in nature	Describes what the micro-hero does in nature and what ecosystem services it provides. Uses words and pictures.	Describes what the micro-hero does in nature or what ecosystem services it provides. Uses words or pictures.	Partly describes what the micro-hero does in nature or what ecosystem services it provides. Uses words or pictures. Gives some incorrect information.

Name: _____

Criteria	5 points	3 points	1 point
Describes how people depend on the microorganism	Describes some ways that people depend on the micro-hero.	Describes one way that people depend on the micro-hero.	Says that people depend on the micro-hero, but does not explain how.
Has a slogan	Has an exciting slogan that describes the micro-hero and that helps others understand the micro-hero.	Has a slogan that describes something about the micro-hero and that helps others understand the micro-hero.	Has a slogan that describes something about the micro-hero or that helps others understand the micro-hero.
Uses Key Vocabulary words, correct spelling, and is creative and neat	All words are spelled correctly. The poster is creative and neat.	All common words are spelled correctly. One or two Key Vocabulary words may be misspelled. The poster is neat.	Most common words are spelled correctly. Some of the Key Vocabulary words are spelled correctly. The poster is not creative or neat.

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