



Meet The Microbes!

Activity 3: Extremophile Profile

NGSS Alignment

CORE IDEAS

Core Idea LS1: From Molecules to Organisms: Structures and Processes

LS1.A: Structure and Function

Core Idea LS2: Ecosystems: Interactions, Energy, and Dynamics

LS2.B: Cycles of Matter and Energy Transfer in Ecosystems

CROSS CUTTING CONCEPTS

- Patterns
- Cause and effect: Mechanism and explanation**
- Scale, proportion, and quantity
- Systems and system models
- Energy and matter: Flows, cycles, and conservation**
- Structure and function
- Stability and change

PRACTICES

- Asking questions (for science) and defining problems (for engineering)**
- Developing and using models
- Planning and carrying out investigations
- Analyzing and interpreting data
- Using mathematics, information and computer technology, and computational thinking
- Constructing explanations (for science) and designing solutions (for engineering)**
- Engaging in argument from evidence**
- Obtaining, evaluating, and communicating information

Activity 3: Extremophile Profile

In this activity students will explore some of the **craziest places** microbes can be found. Students will conduct online research to gather information about a specific **extremophile** (an organism that is able to survive in extreme conditions). Using this information, students will create a **'Profile Page'** for the extremophile. Students should be encouraged to be creative while still being factual and accurate with the information.

Time: 1 class period

Materials:

- Internet for online research
- **Activity 3: Research Notes**
- **Activity 3: Extremophile Profile**

Procedure

1. The teacher may assign or have students choose **one extremophile** to research.
2. Students should research the **Features, Conditions, Geographic Location, Habitat, Special Features, and Other Information** about their extremophile online and/or with information provided in this lesson.
3. Students take notes on their extremophile using **one Activity 3: Research Notes sheet per source**.
4. Students should fill out the **Activity 3: Extremophile Profile Page** about their extremophile with the information they gathered.



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Activity 3: Research Notes Sheet

Fill out **one** of these sheets **for every different source** used during research.

Extremophile Type: _____
Source of Information: _____
Extreme Environment: _____

Notes	
<p>Features Detailed description of appearance, shape size, color, texture, etc.</p>	
<p>Conditions What is it like where these organisms live? Describe the environment (temperature, salinity, pressure, acidity ranges, etc.)</p>	
<p>Geographic Location Where on Earth are these conditions found?</p>	
<p>Habitat Specific setting where your organism is found (under a rock, in shallow water, near the shoreline, surrounded by plants, etc.)</p>	
<p>Special Features Special adaptations that help them survive in their extreme environments (e.g., a coating of mucous to neutralize the acidity)</p>	
<p>Other interesting information</p>	

Activity 3: Extremophile Profile

Cover Photo of Extreme Environment 	
	Profile Information
 Extremophile Name <input type="text"/>	Features
 Extreme Environment <input type="text"/>	Conditions
 Geographic Location <input type="text"/>	Habitat
	Special Features
	Other Interesting Information