

# MSU Science Zone

No. 2

## What is life?

What makes something alive? Do you think there could be life elsewhere in the universe? Life is often defined as something that grows, reproduces, "eats" things for energy, makes waste products, and responds to the environment.

Not too long ago, scientists discovered that some life thrives in places that are freezing, super hot, deep underground, or at the bottom of the ocean. These environments that are "extreme" on Earth

are similar to what is "normal" on other planets or moons. Therefore scientists think if we find life in the universe it will resemble the life on Earth living in the extreme environments (extremophiles). Extremophiles are tiny and to see them you need a microscope. Scientists at Montana State University (MSU) are researching how extremophiles from Yellowstone may help us find life on other planets.

### Did-you-know?

Scientists have found microbes living with no light or oxygen under more than 1,000 feet of ice in Antarctica.

Look carefully at the pictures and circle ones that are alive.



I roll.  
Am I alive?



I don't breathe.  
Am I alive?



I eat wood.  
Am I alive?



I need energy.  
Am I alive?



I move.  
Am I alive?

Learn about opportunities to participate in upcoming science activities and events at MSU by visiting [Montana.edu/outreach](http://Montana.edu/outreach)



Extended University  
Astrobiology Biogeocatalysis  
Research Center

Answers: porcupine, tree, ant, and microbes

Mountains & Minds