

SCIENCE OF THE SPRINGS:

Astrobiology in Yellowstone National Park – Powerpoint

OVERVIEW

In this presentation, students learn the same general information that is presented in the *Science of the Springs* booklet. The Powerpoint gives a general overview of astrobiology and explains why NASA researchers are studying Yellowstone. Topics include extremophiles, Yellowstone National Park thermal sites important to research, and habitability.

AGE RANGE

Grades 6-12

TIME REQUIRED

30 minutes

LEARNING OBJECTIVES

- Students will be able to define astrobiology.
- Students will be able to describe an analog to an environment.
- Students will be able to analyze an environment for the kinds of extreme conditions it may have.
- Students will understand the value of thermal features in Yellowstone to scientists.
- Students will be able to define habitability and judge its importance to the field of astrobiology.

BACKGROUND KNOWLEDGE

Students will need to know a little bit about microbes and something about the difference between acidic, basic and neutral. Students will also need some knowledge of geysers and thermal features.

PRESENTATION

- Presentation notes are given in paragraph form below each slide. These can be used by the presenter directly, or as a guide.
- The *Science of the Springs* reading guide can accompany or follow this presentation. The additional reading on extremophiles and the activity in the *Science of the Springs* reading guide can be used as an auxiliary activity with this Powerpoint, but the direct reading questions would need to be modified for use with this presentation (since the presentation does not go into as much detail as the *Science of the Springs* booklet).

EXTENSIONS

This Powerpoint presentation can be used in conjunction with other astrobiology learning activities available at <http://eu.montana.edu/outreach/resources/>