



YALE NATIONAL INITIATIVE

to strengthen teaching in public schools®

Curriculum Units by Fellows of the National Initiative
2005 Volume IV: Astronomy and Space Sciences

Why Earth? A Study of Planetary Habitability

Guide for Curriculum Unit 05.04.08, published September 2005

by Kathleen J. Thompson

Through this curriculum unit on Astrobiology, the study of existing life and the potential for new life in the Universe, middle school students can learn about biological, Earth, and physical science concepts in one integrated unit. This three-week curriculum is designed for 7th grade students, but can be adapted easily for 5th through 9th grade students. Activities include games, interactive computer simulations, and hands-on experiments, all of which can be done in a regular classroom without special laboratory facilities.

Students will develop their own definition of life, identify critical elements needed to sustain life, and then examine reasons why Earth has life and other planets in the Solar System do not. Students will investigate habitability factors such as size of a planet, distance of the planet to its star, brightness of the star, amount of energy absorbed and reflected by the planet, presence of plate tectonics and magnetic fields, and the planet's orbital and rotational motions. Students will create their own "planetary shopping list."

(Developed for Science, grade 7; recommended for Science, grades 5-9)

<https://teachers.yale.edu>

©2023 by the Yale-New Haven Teachers Institute, Yale University, All Rights Reserved. Yale National Initiative®, Yale-New Haven Teachers Institute®, On Common Ground®, and League of Teachers Institutes® are registered trademarks of Yale University.

For terms of use visit https://teachers.yale.edu/terms_of_use