



The Alien in Your Backyard: Using Exoplanetary Science to Explore the Ecosystems of Earth

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“The Alien in Your Backyard: Using Exoplanetary Science to Explore the Ecosystems of Earth” is a cross-curricular unit for third grade, though its content can easily be adapted for other grades.

This unit will explore the following big questions:

- What is life?
- What is required for life to exist and thrive on Earth?
- How do organisms, communities, and populations of living things adapt to their specific ecosystems?
- What happens when changes to an ecosystem – regardless of their origin – produce fundamental changes to the habitability of that system?

The unit culminates in a collaborative group research project and presentation. In this project, students take on the role of an alien scientist on a research mission to Earth, tasked to study and report back on how living things survive and thrive across a range of terrestrial and aquatic ecosystems. The bulk of the content background is focused on the Virginia Science Standards of Learning (SOLs), specifically the 2018 Science SOLs 3.4, 3.5, and 3.8. However, students will also engage in analysis of fictional story elements, creative writing, and mathematical computation and problem-solving activities, encompassing the 2017 English SOLs 3.2, 3.5, 3.8, 3.9, and 3.10 and 2016 Mathematics SOLs 3.3 and 3.4.

(Developed for Science, Language Arts, and Mathematics, grade 3; recommended for Science and Language Arts, grades 3-8, and Mathematics, grades 3-12)

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