

Lesson 5: *We Choose Space!*

Design of a lifetime

Standard: Investigate how organisms and populations in an ecosystem depend on and may compete for biotic and abiotic factors such as quantity of light, water, range of temperatures, or soil composition.

Objective: Students will investigate and understand how organisms depend on and compete for biotic and abiotic factors in an ecosystem by studying International Space Station experiments.

Procedures:

1. Class discussion – Review the parts of an investigation with students including: indentifying the problem, independent and dependent variables, abiotic and biotic factors, and results.
2. Independent practice – Students should use http://www.nasa.gov/mission_pages/station/research/experiments/Expedition.html to research and summarize at least 2 investigations that have been conducted on the International Space Station. Students should fill out the worksheet associated with their research.

Assessment – Students will complete a verbal design project

Name _____

Directions: Use

http://www.nasa.gov/mission_pages/station/research/experiments/Expedition.html to research experiments that have been conducted on the International Space Station. You must identify the parts of 3 experiments.

Name of experiment: _____

Problem: _____

Dependent Variable: _____

Independent Variable: _____

Biotic Factors: _____

Abiotic Factors: _____

Results: _____

Name of experiment: _____

Problem: _____

Dependent Variable: _____

Independent Variable: _____

Biotic Factors: _____

Abiotic Factors: _____

Results: _____

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Now that you have learned about the parts of an experiment and how organisms and populations depend on and may compete for biotic and abiotic factors, I would like you to use your imagination to design an experiment to be conducted on the International Space Station. You are only designing an experiment: **you are not actually going to conduct the experiment.** With that in mind, you may investigate anything that you can possibly dream of. Please use this page as a rough draft to identify all the proper portions of an experiment. Your final proposal must be typed and turned in.

Total 25 points- 15 for content and originality, 10 for proper scientific design

Title of Experiment: _____

Problem: _____

Materials: _____

Hypothesis: _____

Procedures: _____
