



THE MYSTERY OF AREA X

Overview

Book: *Annihilation* by Jeff VanderMeer

Grades 9-12

Area X seems to no longer be a welcoming environment for humans, but new creatures are beginning to form. What triggered this change in the environment? Was it man-made or natural? In this PBL, students hypothesize what might have happened in Area X.

Standards

HS-LS4-2	Construct an explanation based on evidence that the process of evolution primarily results from four factors: (1) the potential for a species to increase in number, (2) the heritable genetic variation of individuals in a species due to mutation and sexual reproduction, (3) competition for limited resources, and (4) the proliferation of those organisms that are better able to survive and reproduce in the environment.
HS-LS4-5	Evaluate the evidence supporting claims that changes in environmental conditions may result in: (1) increases in the number of individuals of some species, (2) the emergence of new species over time, and (3) the extinction of other species.
RST.9-12.1	Cite specific textual evidence to support analysis of science and technology texts.

RST.9-12.2	Determine the central ideas or conclusions of a text; provide an accurate summary of the text distinct from prior knowledge or opinions.
RST.9-12.9	Compare and contrast findings presented in a text to those from other sources, noting when the findings support or contradict previous explanations or accounts.
WHST.9-12.1 a, c, e	Write arguments focused on discipline-specific content.
W.9-12.5	Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.

Objectives

Students will research and evaluate information about environmental change and consequences.

Students will research and evaluate information about extinction.

Students will hypothesize how an environment can be changed.

Students will write an essay defending their hypothesis and include supporting statements.

Materials Required

Paper

Pencils

Access to internet and/or library

Procedure

1. Ask students to describe the current conditions found in Area X. If possible, read passages from the book that provide the description.
2. Allow time for students to research how environments change. Make sure that students look at both natural and man-made causes.
3. Have students explore some instances of extinction of a species.
4. Ask students to keep a log of the various resources they use.

5. Have students hypothesize what happened to the environment that made it become Area X.
6. Ask students to create an outline for the essay that details their hypothesis and indicates supporting evidence.
7. Have students write their essays. Provide time for editing, revising, and rewriting.

Extensions

1. Have students create a “magazine” that contains the essays written by the class. Ask students to provide an illustration or photograph that aligns to their hypothesis.
2. Write a “press release” about the changing environment in Area X.
3. Ask students to create a digital visualization about real world, current environmental changes. (deforestation, drought, global warming, etc.)
4. Have students compile a file of news articles on a real world, current, environmental change. Ask students to evaluate the validity of each article.

Rubric

RUBRIC	Exceeds (3)	Meets (2)	Partially Meets (1)	Does Not Meet (0)
Research	Student can document the use of 8 or more resources used in research	Student can document the use of 5-7 resources used in research	Student can document the use of 2-4 resources used in research	Student used fewer than 2 resources in research
Outline	Hypothesis is clearly stated and supported by 6 or more evidence statements	Hypothesis is clearly stated and supported by 4-5 evidence statements	Hypothesis is vaguely stated and supported by 2-3 evidence statements.	Hypothesis is vaguely stated and supported by only 1 evidence statement

Writing WHST.9- 12.1a	Precise claim is introduced that establishes a very clear relationship to reasons and evidence	Precise claim is introduced that establishes a clear relationship to reasons and evidence	Vague claim is introduced that does somewhat shows aWHST relationship to reasons and evidence	Vague claim is introduced that shows no relationship to reasons and evidence
WHST.9- 12.1c	Word, phrases, and clauses are used to link the major sections of the text, create cohesion, and very clearly state relationships between the claim and reasons, and between the reasons and evidence	Word, phrases, and clauses are used to link some sections of the text, create some cohesion, and state relationships between the claim and reasons, and between the reasons and evidence	Cohesion is lacking because words and phrases are not used to link relationships between the claim and reasons, and between the reasons and evidence	No cohesion between sections of text No link between the claim and reasons or between the reasons and evidence
WHST.9- 12.1e	A clear and concise concluding statement or section is provided that follows from or supports the argument presented	A concluding statement or section is provided that follows from or supports the argument presented	A clear and concise concluding statement or section is provided , but it does not follow from or support the argument presented	No concluding statement or section is provided
Total N/15				

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