



Imaginary Worlds Inspired by Nature

Subject: Biomimicry

Grade Level: 5-8

Topic: Unique Plants and Animals

Time: 80 minutes

Learning Objectives

Students will:

- analyze images, videos, and examples from films and media to identify nature-based inspirations.
- ask questions about how imaginary plants and animals might function based on real organisms.
- create conceptual models of imaginary worlds that reflect real biological principles.

Materials

Computer, whiteboard or screen, computer for students, sticky notes,

Procedure

Engage: To promote student curiosity, Show a clip from the movie, “Avatar”.

🌐 [Avatar: The Way of Water | Official Trailer](#)

Watch again and be ready to list real-world plants or animals that may have inspired imaginary ones.

Explore: Help students build understanding by having students work in teams to explore other examples of imaginary worlds. Students can explore images from movies and rides from amusement parks, cartoons etc., that take their inspiration from nature. (Examples: Journey of Water in EPCOT, BON Luxury Theme Park, VidantaWorld Nuevo Vallarta, A Bugs’s Life, Antz, SpongeBob, Spider Man, etc.)

Explain: Have students begin to show what they have learned by giving each student a sticky note. Have each student write down one example of a connection they found between an imaginary and real-world

plant or animal. Once all notes are posted. Have the class work together to organize the ideas that were shared. Have students decide on how to organize or classify the answers.

Elaborate: Have students use their new knowledge by having students work in groups of 2-3 to create “a world” using the ideas shared by their classmates. Students will write down a description of the world they imagine. The world should include nature-inspired features including the examples they found during their exploration.

Assessment

Evaluate: Evaluate student learning by having students present their “worlds” to the class. If time permits, try to create “a world” that incorporates all student group ideas.

Extension Activities

- Have student illustrate their worlds and create stories to go along with their worlds.
- Have students share their worlds with younger students in the school or group.
- Take students outside and identify plants, animals and insects that could inspire buildings in their worlds.

NGSS Alignment

MS-LS1-4 - Use argument based on empirical evidence to support explanations about how structures affect functions.

MS-ETS1-1 - Define design problems that can be solved using inspiration from natural systems.

3-5-ETS1-2 - Generate and compare multiple possible solutions to a problem based on criteria and constraints.



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