



Subject: Biomimicry

Grade Level: 5-8

Topic: Unique Plants and Animals

Time: 30-45 minutes

Learning Objectives

Students will:

- will research unique facts about animals and plants.
- will use these unique characteristics to create traits for a human superhero.

Materials

computers, paper, pencils, crayons, colored pencils or colored markers, **Mimic Makers– Biomimicry Inventors Inspired by Nature** by Kristen Nordstrom, piece of velcro, microscope or magnifying glass

Procedure

Engage: To promote student curiosity, tell students they have been hired by Marvel to create a superhero whose superpowers mimic something from nature. To get students engaged share some interesting plant and animal facts.

🌐 [16 weird plants that seem more supernatural than natural | Natural History Museum](#)

🌐 [101 Greatest Animal Facts That Will Blow Your Mind - Fact Animal](#)

59 Unusual Animals On Earth That You Probably Don't Know Of

Explore: Help students build an understanding by doing research on the computer about current superheroes and the special powers they have. Have comics available if possible or at least pages from comics with superheroes. *Ask: "Do any of their powers imitate something in nature? Why do you think their creators decided to mimic or imitate nature?"* Read **Mimic Makers–Biomimicry Inventors Inspired by Nature** by Kristen Nordstrom. Also, have students look at a piece of Velcro under a microscope to see what it looks like. This gives them a chance to see a biomimicry connection.

Explain: Have students begin to show what they have learned by having each student share at least one interesting animal/plant fact connection they found during their research. *Ask: How has this inspired you to learn more? What plants/animals interest you and why?"*

Elaborate: Have students use their new knowledge by continuing their research on plants and animals to find something they can mimic to create a new superhero. After they have researched and collected ideas, have students create a superhero. The superhero must have a super power that mimics nature. They can either do hand drawings, or they can use a Powerpoint or Google slide to put together traits of their superhero. Also, have students write a paragraph about how the trait(s) mimic something from nature. Explain why a particular trait was selected and what plant/animal has that trait.

Assessment

Evaluate: Evaluate student learning by having each student share their superhero and see if other students can guess what animal or plant the traits come from. *Ask: How could you use the ideas you gained to create superheroes in space?* Discuss.

Extension Activities

- If time and classroom supplies allow, have students make a model of their superhero from recycled material.
- Have students create comic strips about their superheros.

NGSS Alignment

Middle School

MS-LS1-4 - Use argument based on empirical evidence and scientific reasoning to support an explanation for how characteristic animal behaviors and specialized plant structures affect the probability of successful reproduction of animals and plants.

MS-LS4-4 - Construct an explanation based on evidence that describes how genetic variations of traits in a population increase some individuals' probability of surviving and reproducing in a specific environment.

MS-ETS1-1 - Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution.

MS-ETS1-2 - Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.



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