

Camouflage: You Can't See Me!

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Grade Level	5
Duration	1-2 class periods

Adapted from AIMS Education Foundation

National Standards

GEOGRAPHY

Element 3: Physical Systems

8. The characteristics and spatial distribution of ecosystems on earth's surface.

NEXT GENERATION OF SCIENCE STANDARDS

Ecosystems: Interactions, Energy, and Dynamics

5-LS2-1. Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment.

Earth and Human Activity

5-ESS3-1. Obtain and combine information about ways individual communities use science ideas to protect the Earth's resources and environment.

AZ Standards

SCIENCE

Life Science Standards

5.L3U1.10 Construct an explanation based on evidence that the changes in an environment can affect the development of the traits in a population of organisms.

ELA

Reading

Key Ideas and Details

5.RI.3 Explain the relationships or interactions between two or more individuals, events, ideas, or concepts in a historical, scientific, or technical text, based on specific information in the text.

Writing

Production and Distribution of Writing

5.WHST.4 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

Arizona Social Science Standards

Human-environment

interactions are essential aspects of human life in all societies.

5.G2.1 Describe how natural and human-caused changes to habitats or climate can impact our world.

SIOP Elements

Preparation

Adapting content
Linking to background
Linking to past learning
Strategies used

Scaffolding

Modeling
Guided practice
Independent practice
Comprehensible input

Grouping Option

Whole class
Small groups
Partners
Independent

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Integrating Processes	Application	Assessment
Reading Writing Speaking Listening	Hands on Meaningful Linked to objectives Promotes engagement	Individual Group Written Oral

Arizona English Language Proficiency Standards

Stage III

Reading

Comprehending Text

Standard 4:

The student will analyze text for expression, enjoyment, and response to other related content areas.

B-20: identifying content vocabulary within math, science, and social studies texts.

Writing

Standard 1: The student will express his or her thinking and ideas in a variety of writing genres. The student will express his or her thinking and ideas in a variety of writing genres, as demonstrated by:

B-4: writing an expository paragraph or a simple report containing a topic sentence, supporting details, and a concluding statement using a model.

Standard 2: The student will identify and apply conventions of standard English in his or her communications. The student will identify and apply conventions of standard English in his or her written communications by:

B-4: using capitalization for proper nouns (i.e., names, days, months), titles (including book titles)

B-5: using punctuation for: sentence endings and commas to punctuate items in a series and introductory words

Overview

An animal's ability to blend into an environment is called camouflage. Camouflage can be used for defensive or offensive purposes. A rabbit uses camouflage to hide from predators. A mountain lion uses it to hide until a prey is close enough to attack. Both color and shape can camouflage animals.

Purpose

In this lesson, students will apply what they have learned about camouflage to design their own moth that could survive in a classroom environment. Students will also learn about the Peppered Moth and how it rapidly adapted during the Industrial Revolution and then adapted again after air pollution was curbed. This lesson includes strategies for diverse learners (ELLs).

Key Vocabulary

camouflage: the ability to blend into an environment

environment: the air, water, plants, and other things that surround you

predator: an animal that kills and eats another animal

prey: any animal that is hunted for food

natural selection: the process by which plants or animals change in order to survive in their environment

evolve: to slowly change

Materials

- Moth Environment--Collage of moths on a sheet of newspaper
- Scissors
- Colored pencils
- Tape
- Internet and projector
- Moth pattern (9 paper moths per sheet to cut out and color)
- Vocabulary Cards
- Vocabulary Test and Answer Key



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Objectives

The student will be able to:

1. explain how camouflage can affect the ability of an animal to survive in its environment.

Procedures

Prior to Lesson: Create a collage of moths on a sheet of newspaper. Color and cut out 16 moths from the moth pattern provided. Color 4 moths green, 4 red, and 4 blue. The final 4 moths will be cut out of a sheet of newspaper. Randomly glue the moths onto a newspaper. Tape on the wall hidden under some construction paper.

SESSION ONE

Engage:

1. Have students view the video of the 25 most incredible camouflaged animals. (5 min)

www.youtube.com/watch?v=XpdoDBYuHIA

(Application: Promotes engagement)

2. Discuss camouflage and how it assists animals in their environment. **(Grouping Option: Whole group)**

Explore:

3. Tell students that you have a Moth Environment hidden under the construction paper on the wall. To see how effective camouflage can be, they will be testing their ability to spot camouflaged animals. They will be given fifteen seconds to study the environment looking for how many total moths and how many different colored moths they see.

(Application: Promotes engagement,

Scaffolding: Comprehensible input)

4. After fifteen seconds cover up the Moth Environment again. Have students record their observations. How many moths did they see altogether and how many different colored moths did they see? In small groups, students can discuss their observations and which moths were the easiest to see. **(Grouping option: small group; Integrating processes: Reading (observing), Writing, and Speaking)**

Explain:

5. As a whole class activity, uncover the Moth Environment and count the actual number of moths. Discuss why the newspaper print moths were not easily detected.
6. Talk about why camouflage might protect an animal from being easily seen by another animal.

Discuss what would happen to an animal if that animal's environment changed? **(Application: Linked to objectives)**

7. Distribute the Vocabulary Cards. Discuss the cards and place the vocabulary words on the word wall. Have students write the vocabulary words in their science journals.

SESSION TWO

Elaborate:

8. Give each student a paper moth to decorate/camouflage. Tell them the goal is for their moth to blend into the classroom. Remind them to consider both color and pattern for their moth. Remind them to keep their work secret from classmates. Distribute the art supplies.

(Application: Hands on)

9. Once students are done decorating/camouflaging their paper moths, have them line up outside the classroom. Have them enter the classroom, one at a time, to tape their moth in plain sight. The moth should not be hidden behind or under anything. When finished taping his/her moth, he/she will go back outside and another student will do the same procedures. As soon as all students have taped their moths, have them come back inside and sit at their desks. **(Application: Hands on)**

10. One by one, have students will take a turn at being a predator--finding a moth (prey) and "eating" it. After all students have had one chance to "eat" a moth, have the students whose moths have not been eaten show the class the moths that survived.

11. Then conduct a discussion why were these moths not eaten (natural selection) and survived in their environment. **(Application: Hands on, Promotes engagement)**

12. Show the video Evolution of the Peppered Moth. www.youtube.com/watch?v=LyRA807dJLc (2 min)

13. Discuss how the moth evolved first to save itself from predators in times of polluted air and then once pollution was curbed, it evolved again to keep itself safe from predators. **(Application: Promotes engagement)**

SESSION THREE OR HOMEWORK

Evaluate:

14. Assess students by having them take the Vocabulary Test. Assess students by having them write the following essay in their science journals. How does camouflage benefit animals in their environment?

- Describe what happened in the classroom Moth Environment activity



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- What happened to your own moth? Why was it eaten or not eaten?
- What did you learn about the Peppered Moth?

Share the Scoring Guide. (**Assessment: Individual and Written**)

Assessment

For Science, Social Studies, Reading and Writing Grades:

Students will score 24 or more points on the Essay Scoring Guide to be considered mastery.

For a Reading Grade:

Students will score 80% or higher on the Vocabulary Test to be considered mastery.

Sources

AIMS Education Foundation

Evolution of the Peppered Moth: 2 min 4 sec
www.youtube.com/watch?v=LyRA807djLc

25 Incredible Camouflaged Animals: 4:56
www.youtube.com/watch?v=XpdoDBYuHIA

Natural Selection and Speciation
Biology.clc.uc.edu/courses/bio106/nat-sel.htm



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