

## Camouflage Colors and Shapes

Grade: K-2	Implementation Practice: Whole Class - Small Group - Individual	
Subject Areas: Science - camouflage; Language - adjectives; Math - 2D and 3D shapes	Estimated Duration: two, 45 minute session - Opening Discussion & Part 1: 45 minutes - Part 2 & Cumulative Review: 45 minutes	
<b>Objective(s):</b> Students will: <ul style="list-style-type: none"> <li>● understand that animals have needs that must be met for survival.</li> <li>● recognize that camouflage helps some animals survive.</li> <li>● use adjectives to describe living things that use camouflage.</li> <li>● write complete sentences with proper capitalization and punctuation.</li> <li>● recognize, compose, and compare two-dimensional and three-dimensional shapes.</li> </ul>		

### Standards Addressed

<b>NGSS</b>	In support of Performance Expectations		
	K-LS1-1. Use observations to describe patterns of what plants and animals (including humans) need to survive.	1-LS1-1 Use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs.	2-LS4-1. Make observations of plants and animals to compare the diversity of life in different habitats.
	Disciplinary Core Idea(s)		
	<ul style="list-style-type: none"> <li>● LS1.C: Organization for Matter and Energy Flow in Organisms</li> <li>● LS1.A: Structure and Function</li> <li>● LS1.D: Information Processing</li> <li>● LS4.D: Biodiversity and Humans</li> </ul>		
	Cross Cutting Concepts(s)		
<ul style="list-style-type: none"> <li>● Patterns</li> <li>● Structure and Function</li> </ul>			
Science and Engineering Practice(s)			
<ul style="list-style-type: none"> <li>● Analyzing and Interpreting Data</li> <li>● Constructing Explanations and Designing Solutions</li> <li>● Obtaining, Evaluating, and Communicating Information</li> </ul>			

<b>CCSS</b>	<b>English Language Arts</b>	<b>Mathematics</b>
	<p>Conventions of Standard English</p> <ul style="list-style-type: none"> <li>● Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.</li> </ul> <p>Vocabulary Acquisition and Use</p> <ul style="list-style-type: none"> <li>● Determine or clarify the meaning of unknown and multiple-meaning words and phrases by using context clues, analyzing meaningful word parts, and consulting general and specialized reference materials, as appropriate.</li> </ul>	<p>Geometry</p> <ul style="list-style-type: none"> <li>● Identify and describe shapes.</li> <li>● Analyze, compare, create, and compose shapes.</li> <li>● Reason with shapes and attributes.</li> </ul>

### Vocabulary and Skills

Key Terms		Key Skills
adaptation	predator	cause and effect
blend	prey	compare and contrast
camouflage	survival	observe
environment		recognize shapes
		recognize patterns

### Teacher Background Information

Living things have needs that must be met in order for them to survive. Animals use Earth's natural resources to meet these needs. Animal needs include food, water, air, and shelter. Our world has a large diversity of living things in many different types of environments. Animals live in environments where they can meet their individual needs.

Animals have adaptations that help them meet their needs and survive in their environment. Animal adaptations include a monkey's tail, a giraffe's neck, an elephant's trunk, and a leopard's spots. Camouflage is a special adaptation that some animals use to increase their chances of survival.

Camouflage allows an animal to blend in with its surroundings, making it less likely that it will be noticed by other animals. Predators use camouflage to surprise their prey and catch a meal, and animals that would be prey use camouflage to avoid being noticed so they are less likely to get eaten.

### Essential Question(s):

- What adaptations do animals have that help them meet their needs for survival?
- What types of words can be used to describe objects?
- What are the similarities and differences between two-dimensional and three-dimensional shapes?

### Advance Preparation

- Preview the video, images, and facts within the Camouflage Explorer Series.
- Set up a computer to project the teacher's screen to the class.
- Gather materials:
  - chart paper and marker, for the teacher
  - student printable, *Recognizing Shapes*, for each student or pair of students
  - modeling clay, for each student
  - toothpicks or other wooden craft sticks, a handful for each student
  - crayons or colored pencils, enough for each student

### Potential Misconceptions

- All living things have the same capabilities.
- All living things meet their needs in the same ways.
- Living things cannot change their color or shape.

### Lesson Plan

#### Opening Discussion (10 - 15 min)

1. Activate prior knowledge of relevant background information.

Ask students to:

- list the needs of living things.
  - describe the different ways that animals meet these needs.
  - compare the needs of living things that live in different environments.
2. Explain to the students that they will be adding to what they know about the needs of living things and the different ways animals meet those needs by learning more about camouflage.

3. Activate prior knowledge about camouflage. Record their responses on chart paper to hang in the classroom for reference.

Ask students to:

- explain what they know about the concept of camouflage.
  - name examples of animals that they think use camouflage.
  - explain why they think animals use camouflage.
4. State Objectives: Tell students that they will be completing a two part lesson about camouflage.
    - In the first part of the lesson, they will use adjectives to describe the shape and color of the camouflaged animals.
    - In the second part of the lesson, they will recognize, compose, and compare two- and three-dimensional shapes.

### Part 1 (30 - 35 min)

1. Explain to students that they will be viewing a lesson online that will teach them more about camouflage. Tell them to pay attention and look to confirm what they thought to be true and also look for new facts about camouflage that will add to their understanding.
2. As a group, view the video and the five slides with images of camouflaged animals. Discuss how the animals use their body parts to blend into the environment. Point out the different colors and shapes that are used by the animals to camouflage themselves.
3. Ask students to name one fact that was confirmed in the video or images and one new fact that they learned from the video or images.
4. Read the slide, Five Facts about Camouflage. As needed, elaborate to explain the facts to meet the students at their level.
5. Check for Understanding: As a group, discuss unfamiliar vocabulary (as appropriate for the level of the students and as time allows.) Discuss orally or record on chart paper if desired. Repeat questioning as needed with additional words from the vocabulary list. Ask students to:
  - name any words they know that sound like or remind them of the word *blend*.
  - think about how the word *blend* is used in the lesson.
  - explain what they think the word *blend* means.
  - give an example of an animal from the lesson that was *blending* into its surroundings.
  - wonder of the animals would be able to blend in if they were in a different environment.
6. Build on Knowledge: Create a two column table on chart paper. Label the left column, *Color*, and the right column, *Shape*. In the left column, write an adjective that describes color. In the right column, write an adjective that describes shape. Ask students to:
  - use a word that describes the color of one of the animals from the lesson.
  - use a word that describes the shape of one of the animals from the lesson.Refer back to the slides as needed. Add student responses to the table.
7. As a group, write complete sentences that use some of the adjectives from the list. Emphasize proper capitalization and punctuation.

### Part 2 (35 - 40 min)

1. Review what was learned in Part 1 about:
  - a. animal needs.
  - b. camouflage.
  - c. words that describe color.
  - d. words that describe shape.
2. Activate prior knowledge about two- and three-dimensional shapes. Ask students to:
  - a. explain what they know about the words *two-dimensional* and *three-dimensional*.
  - b. name examples of two-dimensional shapes.
  - c. name examples of three-dimensional shapes.

3. Tell students that in this part of the lesson they will be recognizing, composing, and comparing two- and three-dimensional shapes.
4. As a group, rewatch the video and view the images from the lesson again. Comment on the shapes the animals use to help them blend into their surroundings. Trace the outline of the shapes with your finger on the projected image or with a dry erase marker if projecting onto a white board.  
Check for Understanding: Call students up to trace and name the shapes they recognize.
5. Distribute materials:
  - a. student handout, *Recognizing Shapes*.
  - b. rulers
  - c. crayons or colored pencils
  - d. modeling clay
  - e. toothpicks or wooden craft sticks
6. Students should work independently or with partners as appropriate to complete the student handout, *Recognizing Shapes*. (Circulate and assist as needed, or project the student handout and complete as a group.)
7. Students use clay and craft sticks to build a three-dimensional model of an animal that uses camouflage. Give students an opportunity to share models with peers and explain how the shape of the animal helps it blend into its environment.
8. Lead a discussion that allows students to share examples of the two-dimensional shapes they found in the images and the three-dimensional shapes they made with clay. Discuss the similarities and differences.

#### Overall Review (5 - 10 min)

1. Lead a class discussion that reviews the key science, language, and math concepts that were practiced during the lesson. Remind students that:
  - a. animals have needs that must be met in order for them to survive.
  - b. animals have adaptations that help them meet their needs.
  - c. the shape and color of an animal can help it blend into its environment.
  - d. by blending into its environment, an animal can increase its chances of survival.

#### Extension Ideas

##### Read More:

To further increase student awareness of different animals that use camouflage to increase their chance of survival, read and discuss the picture book, *What Color is Camouflage?* written by Carolyn B. Otto and illustrated by Megan Llyod.

##### Step it Up:

Design a solution to a human problem that can be solved by mimicking camouflage. Imagine a problem that camouflage could help solve. Explain the problem and show how camouflage would help. As time and material allows, draw or build a solution. Present final product orally to peers. Use at least one adjective to describe the shape of the model and at least one adjective to describe it's color. Explain how the shape and color of the model helps to solve the problem.

### Step it Back:

For students who may need extra assistance and/or repeated exposure to the concepts presented in the lesson:

- Allow students extra time to view the Camouflage Explorer Series lesson on individual devices.
- Use chart paper to create a word bank of adjectives that describe shape and color. Display the chart during Part 1 of the lesson for the whole class, or create copies to give to individual students.
- During Part 2 of the lesson, from the teacher's computer, project the student handout, *Recognizing Shapes*, and complete it as a group, calling students up to trace the shapes they see in the video and images.

## Recognizing Shapes - KEY

Trace the shapes you recognize in the images. **Answers will vary. Example responses shown.**

Octopus



Shrimp



Name the shapes you traced:

circle

rectangle / circle

Ghost Pipefish



Stonefish



Name the shapes you traced:

rectangle

triangle / circle

Name \_\_\_\_\_

Date \_\_\_\_\_

## Recognizing Shapes

Trace the shapes you recognize in the images.

Octopus



Shrimp



Name the shapes you traced:

\_\_\_\_\_

\_\_\_\_\_

Ghost Pipefish



Stonefish



Name the shapes you traced:

\_\_\_\_\_

\_\_\_\_\_