HIDE AND SEEK

Topic
Camouflage, Adaptations

Duration
Two sessions

Vocabulary
adaptations
camouflage
changing color
concealing coloration
counter Illumination
countershading
disguise
disruptive coloration
masking
mimicry
transparency
warning coloration

STANDARDS

Practices
Developing and Using Models

Core Ideas
Natural Selection

Crosscutting Concepts
Cause and Effect

OCEAN LITERACY PRINCIPLES

OLP 5

Focus Question

What types of camouflage do ocean animals have that help them survive?

Overview

Students recall types of natural and manmade camouflage from prior knowledge. Students define the term "camouflage." Students observe photographs of organisms with different types of camouflage. Students participate in a memory game with the objective of correctly matching organisms with their types of camouflage. Students demonstrate their knowledge of cryptic coloration by participating in a game of hide and seek in which they color lobsters to blend in with their classroom backgrounds.

Objectives

Students will be able to:

- Identify the term "camouflage"
- Identify different types of camouflage that ocean creatures possess
- Explain how camouflage adaptations help organisms survive
- Participate in games which require them to demonstrate their knowledge of different types of camouflage

Materials Needed

- Camouflage Photo Cards and Definition pages (one set for the entire class, pages 101–120)
- Lobster outline (one per student, page 120)
- Colored pencils and/or crayons for each student
- Scissors for each student
- Clipboard or some other hard surface for each student
- A large brown paper bag or type of bag that is not transparent
- Invisible or masking tape

Teacher Preparation

1. Each student will need a copy of the Lobster Outline activity sheet.
2. The teacher will need to print out the Camouflage Photo Cards and Definition pages.

Teacher Tips

- Make sure students are aware that lobsters can't change color—that their camouflage is concealing coloration (lobsters can be different colors).
- Students will take a varying amount of time coloring their lobsters. Have students bring scratch paper or a book to read when they go to the perimeter of the classroom to color.
- While students seek out lobsters, encourage the other students not to look around the classroom and accidentally reveal the hidden lobsters.

Teacher Preparation (continued)

3. Prepare art supplies for each student.
4. Students will need a large space to play the memory game and the hide-and-seek game.

Background

Camouflage is the use of materials or coloration for concealment. Animals use camouflage to hide by blending in with their surroundings or by disguising themselves as something else. The purpose of animal camouflage is survival—either to hide from predators or to hide from prey.

There are several types of camouflage in the ocean animal kingdom, including the following:

- Concealing coloration—when an animal hides itself against a background of the same color.
- Disruptive coloration—when an animal has spots, stripes or patterns making it difficult for a predator or prey to see its outline.
- Mimicry—when an animal copies another animal's appearance to avoid predators.
- Transparency—when an animal has a body that is clear and hard to be seen.
- Changing color—when an animal can change their skin tone to blend in with their surroundings.
- Counter-illumination—when an animal lights up its body from the inside, so the outline of its dark body can't be seen.
- Masking—when an animal uses something in its environment to hide itself.
- Countershading—when an animal has a dark back and a light belly to hide from predators or prey.
- Warning coloration—when an animal has coloring that warns a predator that an animal is not pleasant to eat or poisonous.
- Disguise—when an animal uses its shape to blend in with its surroundings.

Some organisms residing in the rocky shore such as lobsters, crabs, and sea urchins use camouflage to survive. Lobsters and crabs have concealing coloration which allows them to blend in with their surroundings. Sea urchins use masking to hide themselves.

Procedure

Part One

1. Ask students to recall types of camouflage they are knowledgeable about.

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Extension Suggestions

- After reviewing the different types of camouflage, have students participate in the following writing prompt: "If you could choose to have one of the types of camouflage discussed today, which one would it be? Why?"
- Have students research the types of animal camouflage that exists in their own neighborhoods.
- Collect and print photographs demonstrating animal camouflage and have students observe them from far away to see if they can spot the hidden animal.

Books

- *Ocean Hide and Seek* by Jennifer Evans Kramer
- *Animal Camouflage True Books: Amazing Animals* by Vicky Franchino
- *High? Low? Where Did It Go? All About Animal Camouflage* by Tish Rabe

Procedure (continued)

2. Ask students to define the word "camouflage."
3. Inform students that camouflage is the use of materials or coloration for concealment.
4. Ask students why animals would need camouflage.
5. Inform students that there are many different types of camouflage, and that ocean animals, including rocky shore animals, use camouflage to survive—whether to find food or to prevent becoming food.
6. Show students, one by one, the camouflage photos. After showing each photo, ask students how they think each animal is using camouflage. After listening to student feedback, show students the name and definition of each type of camouflage.
7. Shuffle the camouflage photos and definition pages and place them face down in a large area. Have students circle around the camouflage photos and definitions. Pick one student to choose two cards, with the goal of the student to find the camouflage photo that matches the camouflage name and definition. Having students participate in a clockwise order, taking one turn at a time, continue to play the game until the class has found all the matches of the types of camouflage.

Part Two

8. Inform students that they are going to be playing a hide and seek game, except that they won't be hiding themselves, but lobsters that they are going to color.
9. Have students silently look around the room for a place that they would like to hide their lobster. Tell them to carefully consider where they would like to hide their lobster, and what colors they would need to have in order to do so.
10. Provide students with the following directions about the hide and seek game:
    a. Every student will receive a blank lobster to color after they have chosen a spot to hide their lobster.
    b. Every student will take their blank lobster, clipboard or other hard surface, coloring utensils and scissors to a spot along the perimeter of the classroom. Students must be sitting in an area in which a classmate can not view their lobster.
    c. Every student will draw their lobster with their backs against the wall of the classroom.
    d. When finished, students will cut out their lobster.

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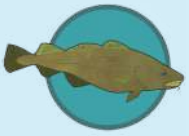


Websites

- Check out a video about animal camouflage on the SciShow Kids' YouTube Channel titled "Camouflage: Animal Hide and Seek."
- Have students participate in a variety of interactive "hidden animal games" to find and learn about animals using camouflage on the Sheppard Software website.
- Watch a BrainPOP video on camouflage and take the quiz! (Subscription required.)

Scientist Notebook

- Students can record the definition of camouflage. Students can list the different types of camouflage.

Procedure (continued)

e. When students have finished cutting out their lobster, they are to raise their hand to let their teacher know that they have completed coloring.

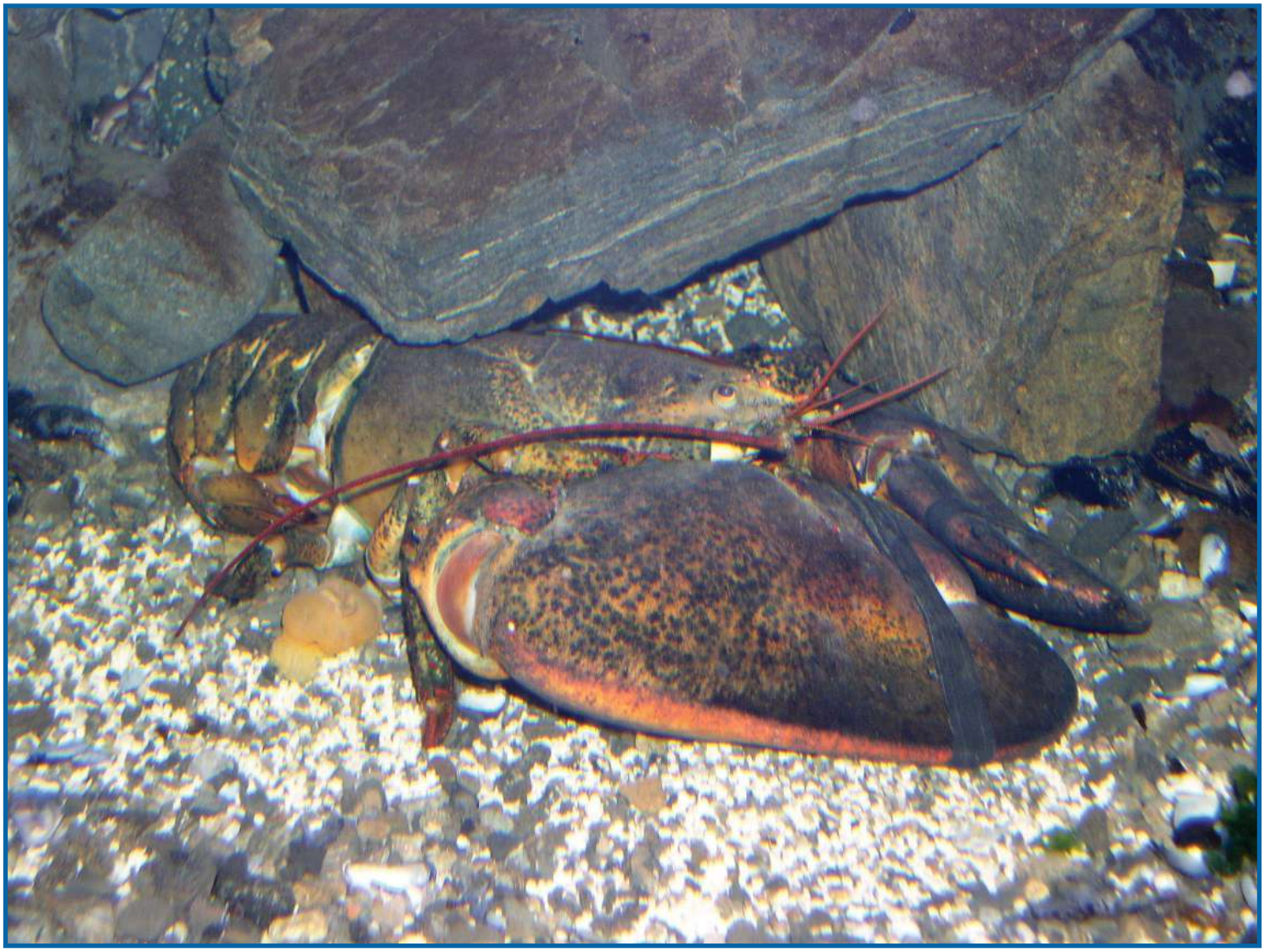
f. After the student has written their name on the back of the lobster, the teacher will collect the lobster in a paper bag or a bag that is not transparent.

11. Once students have completed coloring, cutting out their lobsters and turning them into their teacher, half of the students are to hide their lobsters while the other half of the students are to either close their eyes or wait outside of the classroom. The teacher will need to assist students in taping the lobsters to classroom backgrounds.
12. Once all lobsters are hidden, allow students to seek them out for five minutes. Inform students they are to remain silent as they search and find the lobsters. Once the five minutes are up, have students share which lobsters they found.
13. Repeat steps 11 and 12 with the other half of the class hiding their lobsters and the rest of the class seeking them out.

Wrap-up

- Ask students to identify the term "camouflage."
- Ask students to recall the different types of camouflage ocean animals use to survive.
- Ask students to recall the different types of animals that use camouflage at the rocky shore.
- Students may bring their lobsters home, or the lobsters can remain camouflaged throughout the classroom during the rocky shore unit.

Camouflage Photo Card 1
Lobster



Concealing Coloration

An animal hides itself against a background of the same color.

Camouflage Photo Card 2
Fairy Basslet

Disruptive Coloration

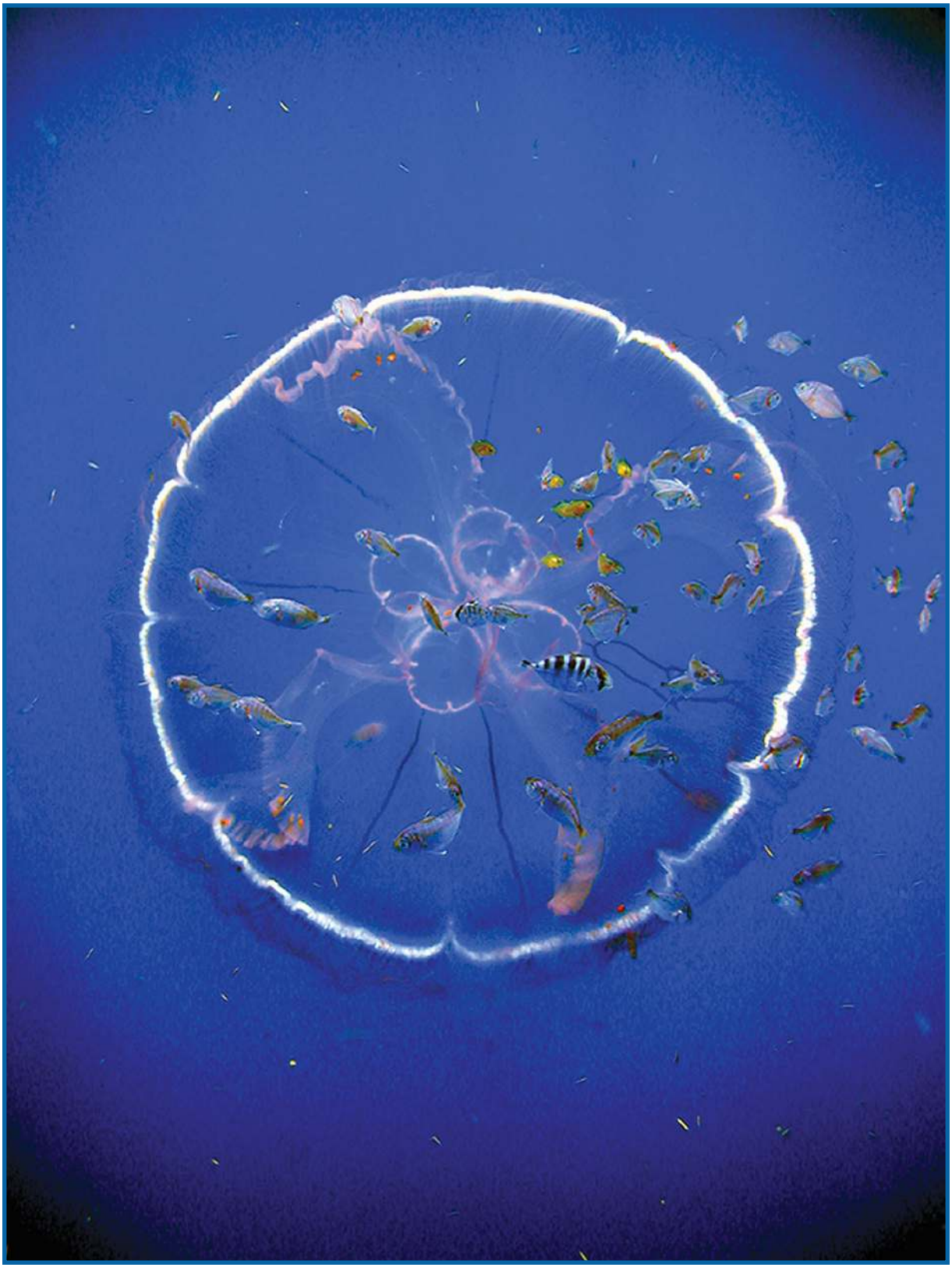
An animal has spots, stripes or patterns making it difficult for a predator or prey to see its outline.

Camouflage Photo Card 3
Mimic Octopus

Mimicry

An animal copies another animal's appearance to avoid predators.

Camouflage Photo Card 4
Moon Jellyfish



Transparency

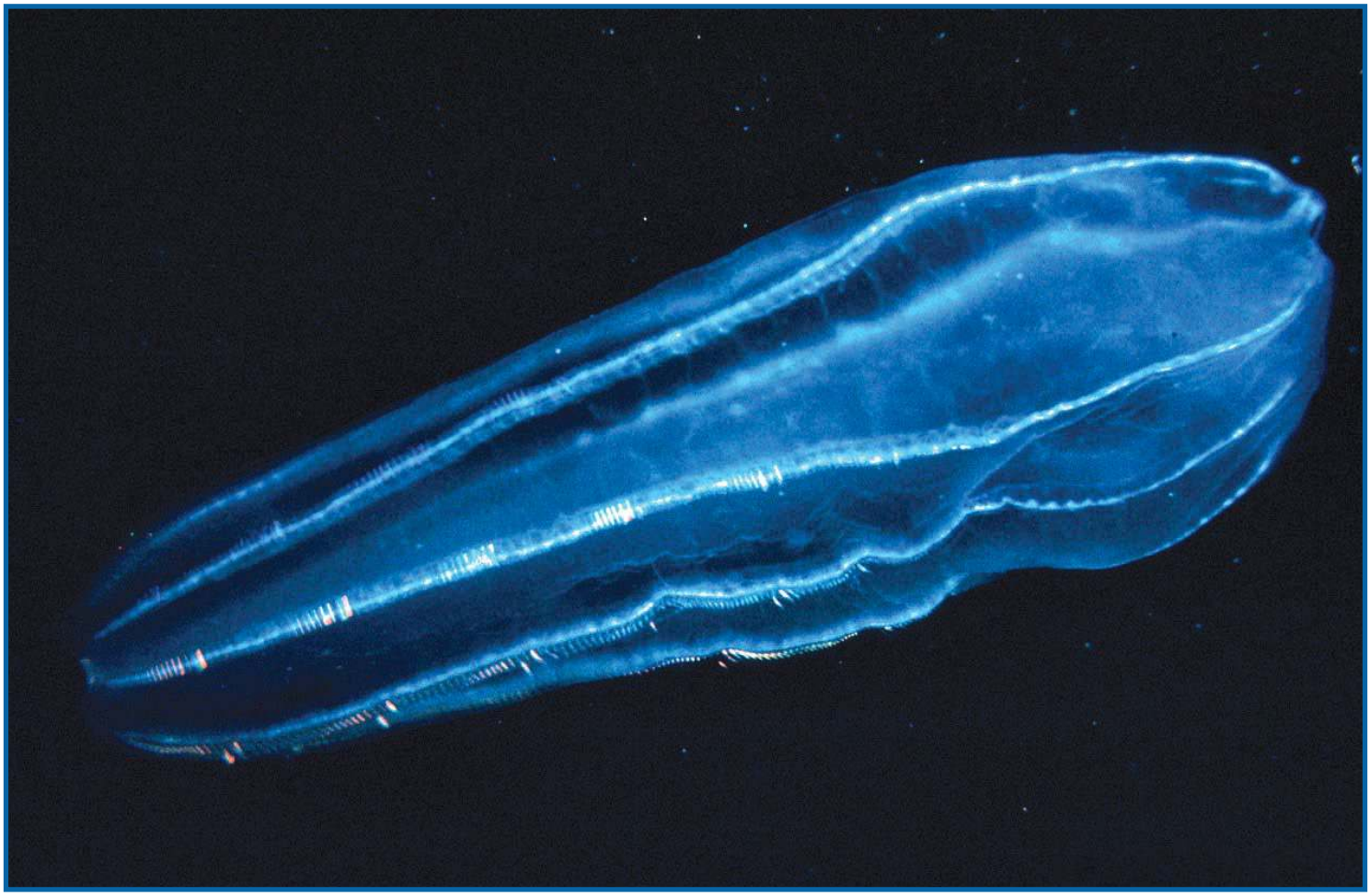
An animal has a body that is clear and hard to be seen.

Camouflage Photo Card 5
Cuttlefish

Changing Color

An animal can change its skin tone to blend in with its surroundings.

Camouflage Photo Card 6
Zooplankton



Counter-illumination

An animal lights up its body from the inside
so the outline of its dark body can't be seen.

Camouflage Photo Card 7
Green Sea Urchin

Masking

An animal uses something in its environment to hide itself.

Camouflage Photo Card 8
Great White Shark

Countershading

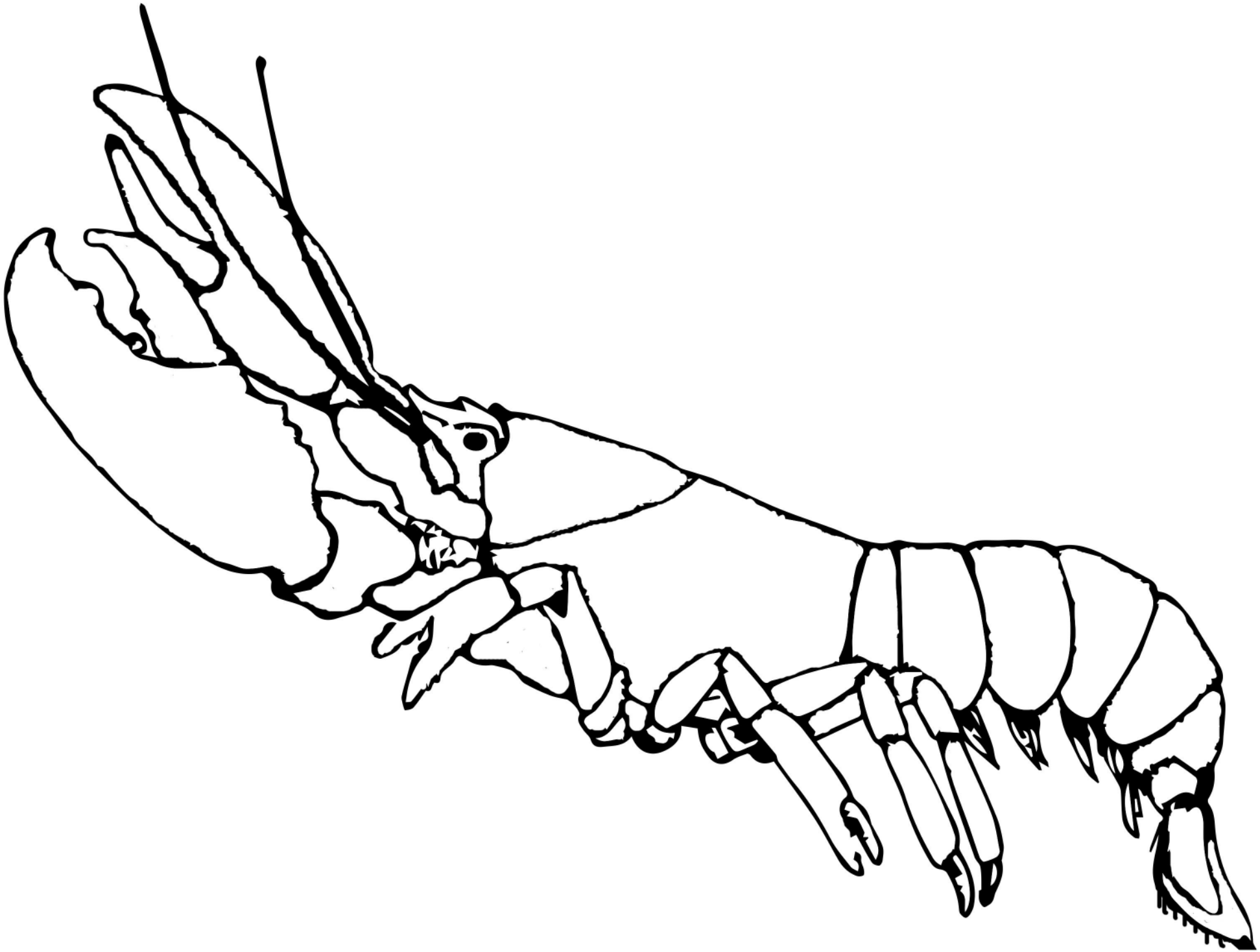
An animal has a dark back and a light belly to hide from predators or prey.

Camouflage Photo Card 9
Lionfish

Warning Coloration

An animal has coloring that warns a predator that an animal is not pleasant to eat or poisonous.

Camouflage Photo Card 10
Leafy Seadragon

Disguise

An animal uses its shape to blend in with its surroundings.