

Learning Guide



Squid

We hope you enjoyed learning all about mysterious, bizarre, and amazing squids. Extend your learning with this print-ready Learning Guide!



What's in this Learning Guide?

Get Set to Listen

Answer TRUE or FALSE statements before and after listening to the episode.

Vocabulary

Discussion Questions

CCSS.ELA-Literacy.SL.3-8.1, SL.3-8.3

Writing Prompts and Extension Projects

CCSS.ELA-Literacy.W.3-8.1, W.3-8.2, W.3-8.3, W.3-8.4, W.3-8.7, W.3-8.8

Anatomy of a Squid

NGSS: 4-LS1-1, MS-LS1-4; CCSS.ELA-LITERACY.RI.4.4, RI.3.1

Squid Trading Cards

NGSS: 3-LS4-3, 4-LS1-1, MS-LS1-4, MS-LS4-2; CCSS.ELA-LITERACY.RI.4.1, RI.6.7, W.4.7, W.5.2, W.6.8, SL.6.2

Squid Movement Experiment

NGSS: 4-PS3-1, MS-LS1-3; CCSS.ELA-LITERACY.RI.5.7, SL.4.4, W.3.8

Ink Escape Experiment

NGSS: 4-LS1-1, MS-LS1-4, 5-PS1-4, MS-PS1-2; CCSS.ELA-LITERACY.RI.4.3, W.4.7, SL.4.1

Bioluminescent Squid Art

National Core Arts Standards: VA:Cr1.2.4a; NGSS: 3-LS4-3, 4-LS1-1, MS-LS1-4; CCSS.ELA-LITERACY.RI.5.7, W.3.8, W.4.7

Additional Resources & Book List



The Children's Hour
kids public radio

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<https://www.childrenshour.org/squid/>



Get Set to Listen

1. Before listening!

Read each statement and write TRUE or FALSE based on what you already know.



2. After listening!

Based on what the experts said in the episode, write TRUE or FALSE.



Before Listening	TRUE or FALSE?	After Listening
	1. Squid are fish.	
	2. Scientists have sent squid into space.	
	3. Squid can live in lakes and rivers.	
	4. Cephalopods have existed longer than trees have existed on Earth.	
	5. Squid have beaks similar to birds.	
	6. Scientists think squid are fairly intelligent animals.	
	7. Squid can rapidly change color.	

What did you learn?



Get Set to Listen

Answer key

1. FALSE. Squid are not fish. They are cephalopods, a group of animals that includes octopuses, cuttlefish, and nautilus. Squid do not have bones or backbones like fish.
2. TRUE. Squid were studied in space to learn how animals and bacteria work together in microgravity.
3. FALSE. Squid only live in saltwater oceans and seas, not freshwater habitats.
4. TRUE. Cephalopods have been around for about 500 million years, even before trees appeared on Earth.
5. TRUE. Squid have sharp beaks that look a little like parrot beaks and help them eat food.
6. TRUE. Squid can communicate, solve problems, and show complex behaviors, which suggests they are intelligent.
7. TRUE. Squid use special pigment cells in their skin to camouflage or communicate.



Vocabulary

Listening for Words

1. Make a four-column chart and label the columns “I don’t know,” “I’ve seen or heard, but don’t know the meaning,” “I think I know the meaning,” and “I know the meaning.”
2. Write the vocabulary word in the column that describes how well you know the meaning of the word.
3. Listen to [the episode](#). Note how the speaker uses the words.

Matching Words with Definitions

1. Print and cut apart the word and definition cards.
2. Spread out the word cards so you can see them all. One by one, attach a definition card to each word card.

Writing with New Words

After working with the words and definitions, write a one-page essay or story that uses at least three of the words.

cephalopod

A group of ocean animals that includes squid, octopuses, cuttlefish, and nautilus.

invertebrate

An animal without a backbone.



Vocabulary

adaptation

A feature that helps an organism survive.

bioluminescence

The ability to make and glow with light.

tentacles

Long stretchy limbs used to grab prey.

arms

Muscular limbs used for movement and holding food.



Vocabulary

beak

A sharp mouthpart used to bite food.

mantle

The main body section of a squid.

siphon
a.k.a. funnel

A tube-like body part squid use to shoot water and ink.

chromatophores

Special pigment cells that help squid change their patterns and colors almost instantly.



Vocabulary

ink sac

A pouch that stores squid ink.

pen

A thin internal shell inside some squid.

pseudo morph

A fake body-shaped ink cloud used to confuse predators.

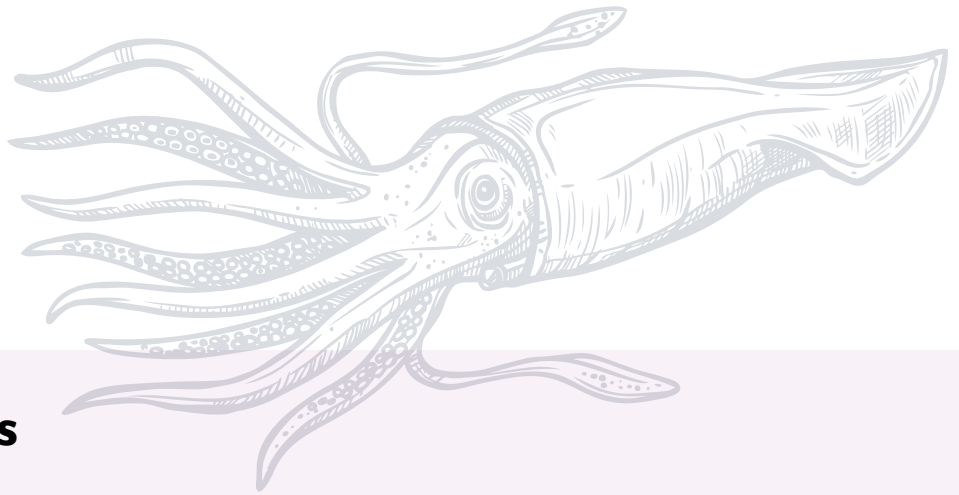
Write your own vocabulary word.

Define your vocabulary word.



Discussion Questions

1. Which squid adaptation do you think is the most useful? Why?
2. Why do you think squid have survived for millions of years?
3. How does climate change affect squid habitats?
4. What is the difference between squid arms and tentacles?
5. Why do scientists think squid are intelligent?
6. Why do myths like the Kraken probably exist?
7. Why do you think humans are fascinated by giant squid?
8. Which squid adaptation would you want to have and why?
9. Why is it important for scientists to share their research with the public?



Group Discussion Strategies

Think Pair Share:

1. Individually, student writes down their answer to a question.
2. Students pair up and tell each other their answers.
3. Teacher calls for volunteers to share with the whole class their answer (and/or their partner's answer). Teacher notes key words/phrases on board.

Round Robin:

1. Teacher poses one question (written on top of a large page) to students, who are assembled into small groups of 3 or 4.
2. Students take turns brainstorming the answers. The recorder of the group writes down all answers.
3. The leader reads the group's ideas to the entire class. Teacher moderates.



Writing Prompts

Informative Narrative Prompts

1. Write a story from the point of view of a squid living deep in the ocean. Describe how it hunts, hides from predators, and communicates with other squid.

Extension: Create illustrations or a comic strip showing three important scenes from your squid's day.

2. A young squid enters an underwater camouflage competition against octopuses and cuttlefish. Describe the challenge and how the squid solves a problem.

Extension: Invent a new cephalopod species with a unique camouflage power and describe it.

3. A group of sailors spots a giant squid near their ship during a stormy night. Write a suspenseful adventure story about what happens next.

Extension: Rewrite the story from the giant squid's perspective.

Explanatory/Expository Prompts

4. Write an essay explaining the major differences between squid and fish, including body structure, movement, and feeding.

Extension: Create a labeled diagram comparing a squid and a fish.

5. Explain the different ways squid protect themselves from predators, including camouflage and ink clouds.

6. Describe the life cycle of a squid from egg to adult.

Extension: Research another cephalopod, such as an octopus or nautilus, and compare its life cycle to a squid's.

7. Explain how some squid glow in the dark and why bioluminescence helps them survive.

Opinion/Persuasive Prompts

8. Write an opinion essay explaining whether people should or should not eat calamari. Use facts from the program to support your opinion.

Extension: Hold a classroom debate about sustainable seafood choices.



Anatomy of a Squid

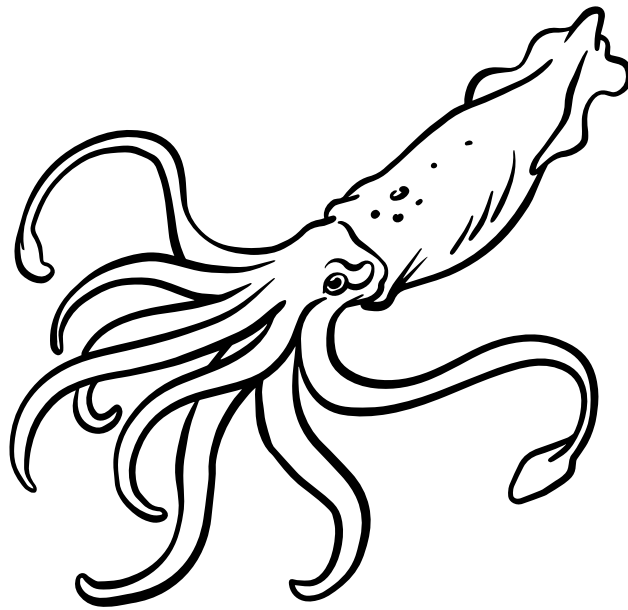
Listen

to [The Children's Hour, "Squid" episode](#), "What Makes a Squid a Squid?" (segment 8:28-13:10).

Diagram

Use the vocabulary cards to make your own squid diagram with all its body parts and their functions. Draw your own squid, or label the one on this page.

- | | | | |
|---------------|----------|----------|------------------|
| • 8 arms | • mantle | • siphon | • ink sac |
| • 2 tentacles | • pen | • beak | • chromatophores |



Extension

Build-a-Squid! Create a squid using paper, clay, or recycled materials.

Reflect

What role does each body part play in the survival of the squid?
How is squid anatomy different than fish anatomy?



Squid Trading Cards

Research

Read

[13 Types of Squid Species: Masters of Mystery](#)

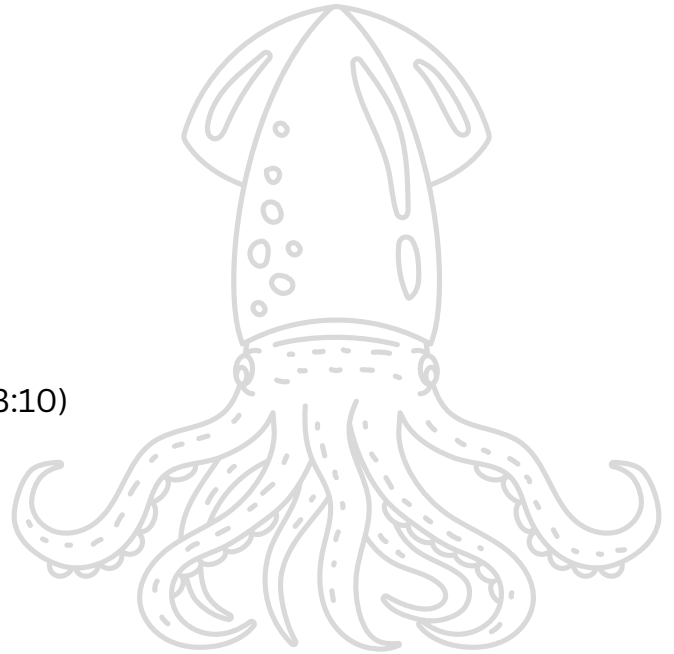
Listen

to [The Children's Hour, "Squid" episode](#)

- "Squid Facts" (segment 42:38-43:50)
- "What Makes a Squid a Squid?" (segment 8:28-13:10)
- "Smart Squid" (segment 21:54-27:26)
- "Squid: Then & Now" (segment 30:56-37:17)

Watch

[10 Most Beautiful Squids in the World](#)



NAME _____

HABITAT _____

SIZE _____

DIET _____

SPECIAL ADAPTATIONS _____

DEFENSE MECHANISM _____

ILLUSTRATION



Squid Movement Experiment

Squid are among the fastest swimmers in the ocean because they use jet propulsion. They pull water into their bodies and then force it out through a tube called a siphon. This allows them to quickly dart away from danger. Learn more about how it works in this activity!

Watch

[How Do Squids Move Around?](#)

Materials

- Balloon
- String
- Straw
- Tape
- Clothespin

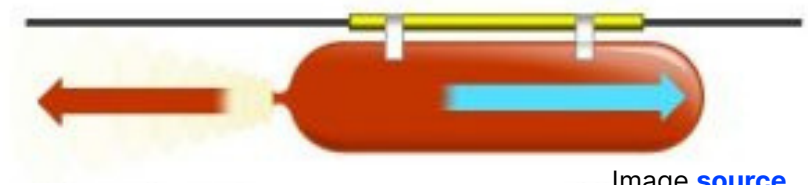


Image [source](#)



Watch [this video](#) to see how to make a jet-propelled balloon “squid”.

Directions

1. Thread a long piece of string through a straw.
2. Tie the string tightly between two chairs or poles.
3. Blow up a balloon, twist the end and secure with clothespin.
4. Tape the balloon to the straw with the opening facing backward.
5. Count down: “3...2...1...Release!”
6. Let go of the balloon and watch it zoom across the string like a squid swimming through the ocean.

Observe

- *What happened when the air rushed out?*

Reflect

- *How does pushing air out move the balloon forward?*
- *Where did the balloon get its energy? What happened when the air ran out?*
- *How is squid jet propulsion similar to rockets or jet engines?*



Ink Escape Experiment

Squid can squirt ink from a tube called a siphon to confuse predators and escape. Sometimes they create a dark “smoke screen,” and sometimes they make a blob called a pseudomorph that looks like a fake squid!

Materials

- 2 Clear containers or aquarium filled with water
- Food coloring or washable black ink
- Eye dropper or turkey baster
- Watered down glue and food coloring mixture
- *Optional: Small toy fish or “predator” figure*

Directions

Part 1: Smoke Screen

1. Fill the clear container with water.
2. Place the toy predator in the water.
3. Use the dropper to squirt food coloring or ink into the water.
4. Watch how the dark cloud spreads through the water.

Observe

- How fast did the “ink” spread?
- Could the predator still “see” through the water?
- How might this help a squid escape?

Part 2: Pseudomorph Model

1. Use the dropper to squirt the colored watery glue mixture into another container of water.
2. Compare it to the spreading cloud from Part 1.

Observe

- How did the “pseudomorph” ink blob compare to the “smoke screen” ink blob?
- How could a fake “ink squid” confuse a predator?
- When might a squid use a pseudomorph over a smoke screen? Vice versa?

Discuss

- How does ink help squid survive?
- Why are quick escape tricks important in the ocean?

Extensions

- Time how long the “ink cloud” stays visible.
- Try warm water vs. cold water.
- Draw a comic showing a squid escaping a predator.

Listen

to [The Children’s Hour, “Squid” episode](#), “Smart Squid” (segment 21:54-27:26)

Watch

[this video](#) about pseudomorphs





Bioluminescent Squid Art

Research

Learn about how deep-sea dwelling squids use bioluminescence to hunt, defend themselves, and communicate with one another.

Listen

to [The Children's Hour, "Squid" episode](#), "Squid Facts" (segment 42:38-43:50)

Watch

- [Fluorescence in the Deep-Sea Squid Histiotteuthis](#): Scientists at the Monterey Bay Aquarium Research Center observe deep-sea animals.
- [Humboldt Squid Communicate with Light](#): This video from BBC Earth explores how some squid communicate with bioluminescence.
- [The Deep Sea Squid that Uses Light to Erase Itself](#): Meet the glass squid, and learn how they use bioluminescence to defend themselves from predators.
- [Facts: The Firefly Squid](#): Learn about one of the most visually stunning bioluminescent squids.

Create

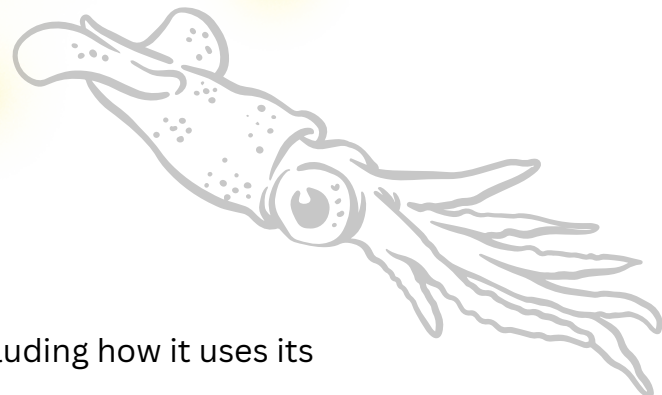
Make your own glowing squid artwork inspired by this amazing adaptation! Use what you've learned to choose a bioluminescent squid, such as histiotteuthis, the vampire squid, firefly squid, glass squid, or Humboldt squid.

Materials

- black paper
- neon chalk
- glow paint
- fluorescent markers

Write

Write a description of your bioluminescent squid, including how it uses its bioluminescence to survive.





Additional Resources

[13 Types of Squid Species: Masters of Mystery](#)

Learn about some amazing squids in this fact-filled article.

Videos

[10 Most Beautiful Squids in the World](#)

Prepare to be both informed and amazed by this 6-minute video.

[Squid for Kids](#)

Learn all about these inky sea creatures from Learn Bright. Lesson plans for grades 3-5 available from [learnbright.org](https://www.learnbright.org).

[Squid Chromatophores](#)

Learn about the pigment cells in the skin of squid that allow them to change patterns and colors almost instantly.

[How Do Squids Move Around?](#)

Take an up-close look at a squid specimen and learn how squids use jet propulsion to quickly propel themselves through water.

[Ink Impostors](#)

This video from the Monterey Bay Aquarium Research Institute explains the ghostly ink clouds that impersonate animal-look-alike shapes known as pseudomorphs.

[Fluorescence in the Deep-Sea Squid *Histioteuthis*](#)

Scientists at the Monterey Bay Aquarium Research Center observe deep-sea animals.

[Humboldt Squid Communicate with Light](#)

This video from BBC Earth explores how some squid communicate with bioluminescence.

[The Deep Sea Squid that Uses Light to Erase Itself](#)

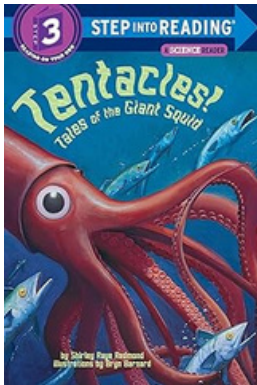
Meet the glass squid, and learn how they use bioluminescence to defend themselves from predators.

[Facts: The Firefly Squid](#)

Learn about one of the most visually stunning bioluminescent squids.



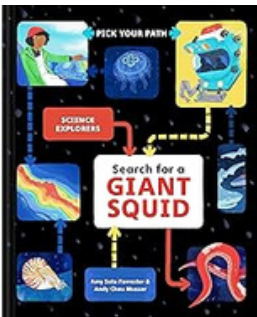
Book List



Tentacles! Tales of the Giant Squid

by Shirley Raye Redmond, illustrated by Bryn Barnard

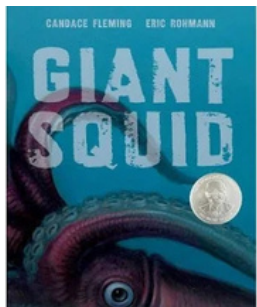
A Step into Reading Level 3 book that explores sailor myths and scientific facts about this mysterious deep sea creature.
ages 3-6



Search for a Giant Squid: Pick Your Path

by Roger Priddy

Early readers will love this comic book style choose-your-own-adventure book that teaches about different deep-sea marine life.
ages 5-8



Giant Squid

by Candace Fleming, illustrated by Eric Rohmann

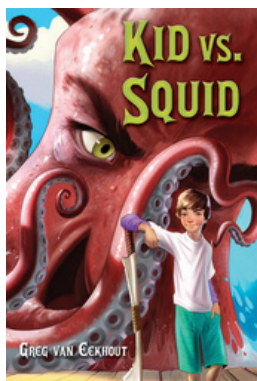
An award-winning, beautifully illustrated nonfiction picture book explores the mysterious life of the giant squid and how scientists uncovered clues about this elusive deep-sea creature.
ages 6-10



Giant Squid: Searching for a Sea Monster

by Mary M. Cerullo

This award-winning book from the Smithsonian series unravels the mysteries of this real-life sea monster.
ages 9-11



Kid vs. Squid

by Greg Van Eekhout

This hilarious novel follows a bored boy whose summer job becomes an adventure when a mysterious girl turns out to be a princess of the lost city of Atlantis whose people have been cursed by an evil witch.
ages 8-12