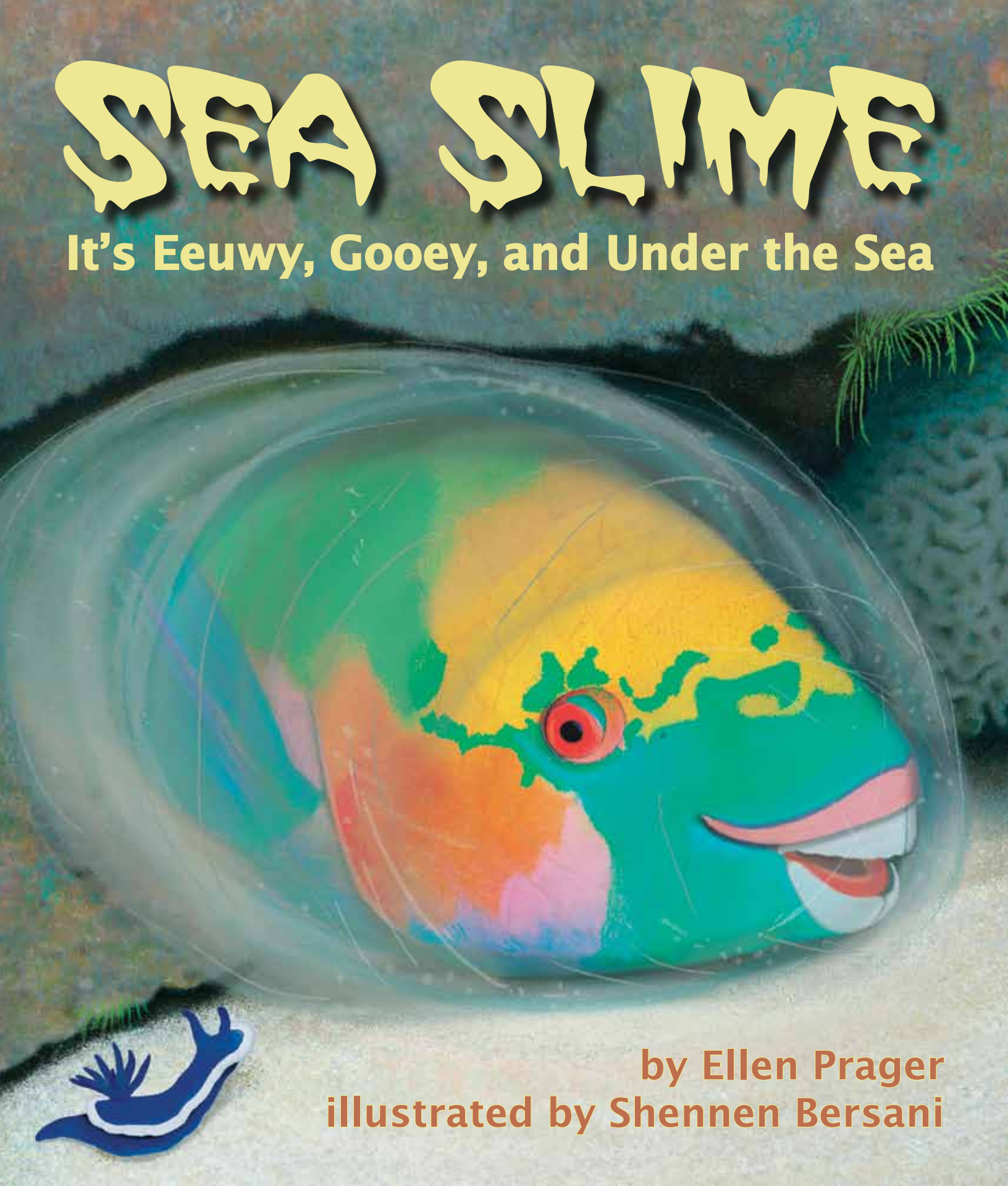
SEA SLIME

It's Eeuwy, Gooey, and Under the Sea



by Ellen Prager
illustrated by Shennen Bersani

SEA SLIME

It's Eeuwy, Gooey, and Under the Sea

Snails and sea slugs use ***Sea Slime***. But, did you know that coral and clownfish need slime too? As a marine scientist, Dr. Ellen Prager takes us deep into the sea. She introduces readers to fascinating and bizarre animals that use slime to capture their food, protect themselves from harm, or move from place to place in their underwater environment.

Animals in this book include clownfish, sea anemones, coral, hagfish, jellyfish, moray eels, parrotfish, sea butterflies, sea slugs, squids, and vampire squids.

It's so much more than a picture book . . . this book is specifically designed to be both a fun-to-read story and a launch pad for discussions and learning. Whether read at home or in a classroom, we encourage adults to do the activities with the young children in their lives. Free online resources and support at ArbordalePublishing.com include:

- For Creative Minds as seen in the book (in English & Spanish):
  - Slimy Animals True or False?
  - Why Slime?
  - Lifestyles of the Wet and Slimy
  - Make Your Own Slime—It's Fun and It's Messy
- Teaching Activities (to do at home or school):
  - Reading Questions
  - Language Arts
  - Math
  - Science
- Interactive Quizzes: Reading Comprehension, For Creative Minds, and Math Word Problems
- English and Spanish Audiobooks
- Related Websites
- Aligned to State, Common Core & NGSS Standards
- Accelerated Reader and Reading Counts! Quizzes
- Lexile and Fountas & Pinnell Reading Levels

eBooks with Auto-Flip, Auto-Read, and selectable English and Spanish text and audio are available for purchase online.

Thanks to Kimberly B. Ritchie, Ph.D., Senior Scientist and Manager, Marine Microbiology Program at the Mote Marine Laboratory for reviewing this book for accuracy.

Dr. Ellen Prager, a well-respected marine scientist, consultant, and author, is widely recognized for her expertise and ability to bring science to the layperson. Her books for adults include the acclaimed *Sex, Drugs, and Sea Slime: The Oceans' Oddest Creatures and Why They Matter; Chasing Science at Sea: Racing Hurricanes, Stalking Sharks, and Living Undersea with Ocean Experts; The Oceans;* and *Furious Earth: The Science and Nature of Earthquakes, Volcanoes, and Tsunamis*. In addition to ***Sea Slime: It's Eeuwy, Gooey and Under the Sea***, her other children's books include *The Restless Earth: Earthquakes and Volcanoes; SAND; Volcanoes*; and *Earthquakes*; and the upcoming middle grade fiction series, *The Shark Whisperer: Tristan Hunt and the Sea Guardians*. Dr. Prager was the chief scientist for the world's only undersea research station, the Aquarius Reef Base program in Key Largo, FL. For more information, visit her website at earth2ocean.net.

Award-winning children's book illustrator **Shennen Bersani** has two million copies of her illustrated books cherished and read by families throughout the world. In addition to ***Sea Slime: It's Eeuwy, Gooey, and Under the Sea; The Shape Family Babies; Shark Baby; Home in the Cave; The Glaciers are Melting!***, and ***Astro: The Steller Sea Lion*** for Arbordale, Shennen has illustrated a number of best-selling books, including *Snakes: Long, Longer, Longest; Sharks: Big, Bigger, Biggest;* and *Ocean Counting: Odd Numbers*. Shennen lives with her family near Boston. For more information, visit her website at shennenbersani.com.

Ellen Prager

Shennen Bersani

SEA SLIME

It's Eeuwy, Gooey, and Under the Sea

by Ellen Prager
illustrated by Shennen Bersani

Under the sea, there is something gooey. It slips, slides, and sticks. Lots of ocean animals have it. They use it to go fast and find food. Some undersea creatures even use it to avoid becoming someone else's lunch.

It's SEA SLIME!

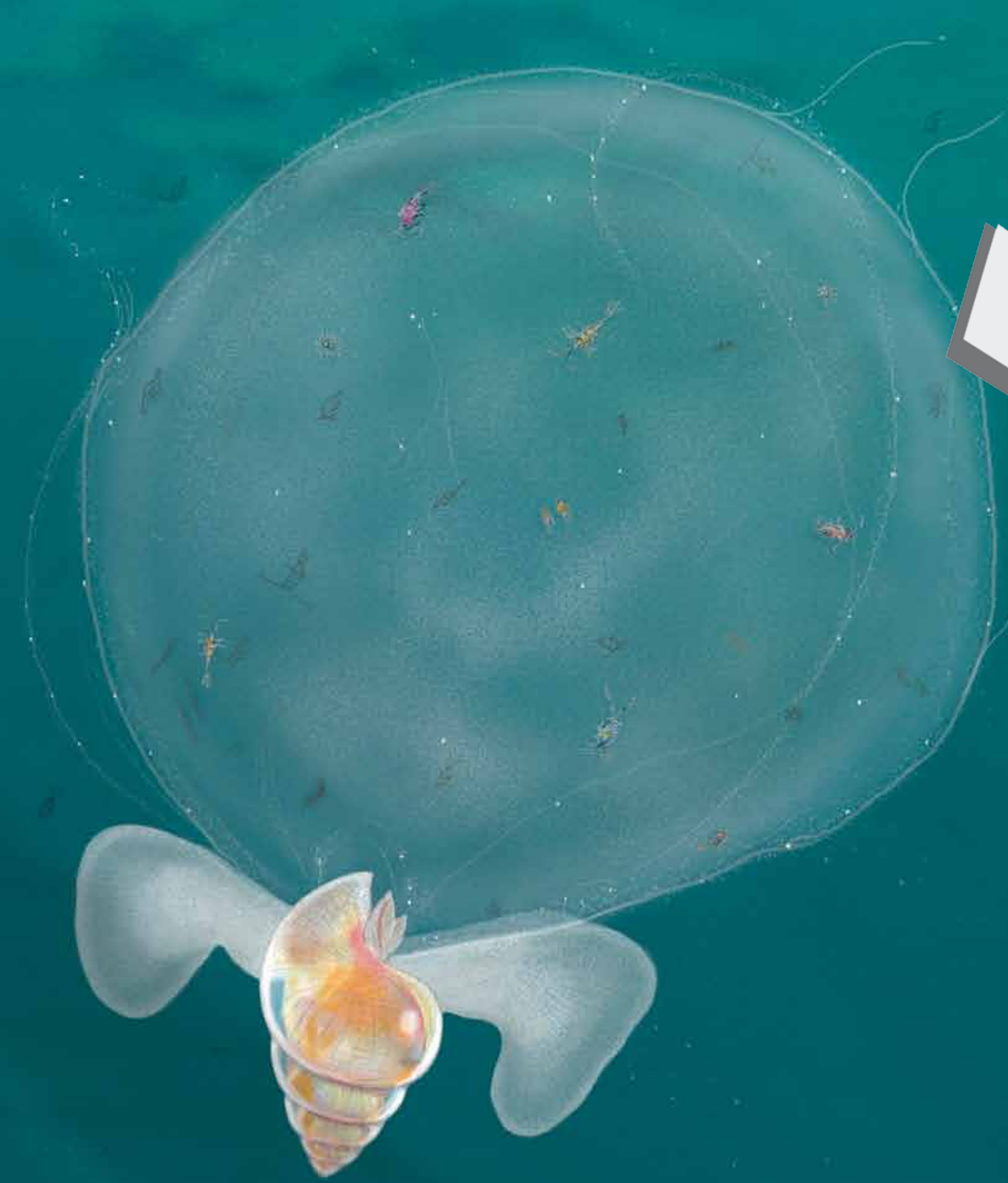
The jellyfish drifts slowly in the sea. It is shaped like an umbrella with stringy, stinging tentacles and long, frilly, feeding arms that hang down. The jellyfish is not really a swimmer; it just pumps its way up then sinks back down.

This creature does not just use ocean goo. Its whole body is see-through SLIME.

Many snails live in the ocean. Some snails swim, some float, and others crawl across the seafloor.

The sea slug mainly crawls. It is a snail with no shell. Sea slugs are very colorful creatures; some have stripes and others wear polka dots. They move slowly over sand, climb up corals, and tiptoe across ropes of algae.

To go faster, a sea slug travels over its own slippery goo. It slithers, slips, and slides across SLIME.



Swimming snails use fins like wings to fly through the sea. They are called pteropods or sea butterflies. Some sea butterflies have shells, while others do not.

They have a strange and sticky way to find food. Sea butterflies blow a bubble of mucus like a parachute of sticky goo. Drifting bits and pieces or tiny creatures get stuck to their floating bubble. For a yummy feast, these swimming snails slurp up their bubble of SLIME.

For Creative Minds

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Slimy Animals True or False?

1. Slime is bad!
2. Corals are animals.
3. Jellyfish are fish.
4. Hagfish can bite through the skin of their prey.
5. In the ocean, all snails crawl on the sea floor.
6. Moray eels have scales like fish.
7. Some animals in the ocean also use slime as sunscreen.
8. The teeth of the parrotfish are fused together so they look like a parrot's beak.
9. Slime can help prevent animals in the ocean from getting sick.
10. Many sea slugs are brightly colored to scare off predators.

Answers: 1. False. In the ocean, sea creatures use slime in lots of ways that are helpful. 2. True. 3. False. Jellyfish are not fish, but their name makes it confusing. Jellyfish are related to corals. 4. False. Hagfish do not have jaws and only have small teeth on their tongues. They cannot bite through the skin or scales of fish. 5. False. The pteropods or sea butterflies spend their entire lives swimming in the water. Their foot has evolved into one or a pair of tiny, wing-like fins for swimming. 6. False. Moray eels' bodies are coated with slippery goo. 7. True. 8. True. 9. True. 10. True. Many sea slugs are brightly colored to scare off predators. It is like a sign saying, "Don't eat me or you will be sorry."

Why Slime?

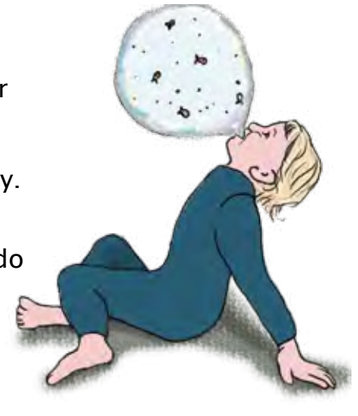
What are some reasons that YOU might want to use slime? How do those reasons compare to why animals use slime?

It is Slippery!

Which is easier and more fun to slide down, a wet or dry slide? The water makes the slide more slippery so you go down faster and smoother (and you don't get stuck). Slime makes it easier to travel over the sea floor or sand.

It is Sticky!

What would you use to trap bugs crawling on the floor, a regular piece of paper or one with glue on the surface?
The gluey one of course! Slime can be used like sticky paper or gooey bubble gum to capture things that crawl, float, or swim by.



It Floats!

If you blow air through a straw into a tall glass of water, where do the bubbles go?
They go up to the surface because air is lighter than water. Bubbles made of slime and air rises to the water's surface and help animals to stay afloat.

It Keeps Away Predators!

Shooting slime at your enemies is a good way to make them go away. Or you could fool them with a cloud of slime that looks like you, giving you a chance to slip away unnoticed.

It Protects!

Wrapping yourself in a blanket of mucus deters enemies. If you coated yourself with slime, not too many people would want to get very close. And, like the antibiotic ointment you put on cuts, slime keeps bad bacteria out.

It Cleans!

Which would work better to get mud and dirt off, a blast of air or a hose with soapy water?
Soap makes water slippery and sticky, almost like slime. Some ocean animals coat themselves with slime. When they get dirty, they just make some more slime and the old, grimy slime slides off. Slime is good for washing.

Lifestyles of the Wet and Slimy

Within the ocean there are many different types of habitats. These are the places or environments that animals call home.

A habitat can be as small as a single **sea anemone** or one blade of grass or as big as the **ocean's surface**, where the wind, sun, and waves meet.

In the ocean, seaweed and algae grow where there is enough sunlight. Some undersea animals are grazers and feed on algae and seaweed, the ocean's plants.

Coral reefs are where colonies of coral polyps grow and live together. They typically like warm, clear water with plenty of sunlight.

Kelp beds are like towering underwater forests with lots of hiding places. Kelp is a fast-growing brown algae that lives in cold, rocky areas.

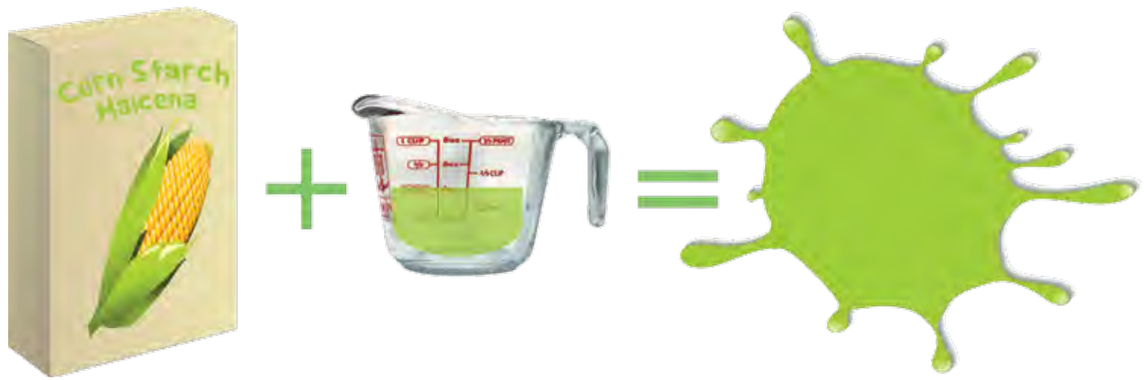
Sea grasses create undersea meadows in the shallow parts of the ocean. Lots of small fish, crabs, and other animals live among the blades of these ocean pastures.

As the ocean gets deeper, there is less and less sunlight. There is just a little bit of light in the area called the **twilight zone**.

In the **deep sea** there is no light. Animals that live here must find a way to adapt to and live in total darkness.

Animals in the ocean live in a variety of habitats. Many animals stay in their home habitats all their lives, but other creatures may swim or crawl from one habitat to another.

Make Your Own Slime—It's Fun and It's Messy



What You Will Need:

- box of cornstarch (16 oz.)
- measuring cup
- water
- food coloring (optional, but fun)
- large bowl
- large spoon and small hands
- newspaper, plastic tablecloth, or good cleaning supplies

Here's How:

- First, cover your workspace with newspaper or a plastic tablecloth.
- Measure 1/2 cup of water into a bowl. If you want to make colored slime, add food coloring to the water now.
- Measure 1 cup of cornstarch.
- Slowly add the cornstarch to the water in the bowl, mixing as you go.
- Add additional cornstarch until you have the thickness of slime you desire! Dive right in with your hands for better mixing and to test the slime factor.
- Dig in and feel the **SLIME!** How does it feel in your hands? Pass it back and forth, or drip it into the bowl—have some fun!
- When you are finished, put the slime in the trash. Do not dump the slime down the drain or you might have to call a plumber.

Food for thought:

- How would you describe your slime?
  - What does it look like?
  - What does it feel like?
- Are there things at school or around your house that might be slimy? If so, what?
- Why do you think those things might be slimy?
- What could you do with your slime?

While doing research for the illustrations, I flew into Monterey, CA, drove to Mystic, CT, and returned to Boston. I want to thank Jim Fuller at the Monterey Bay Aquarium, again. Jim and the aquarium staff opened their doors wide to me, allowed me to go behind the scenes, and truly helped make my illustrations possible. I've held squid, jellyfish, sea slugs, oh my! I also stopped by to see Astro and his slimy pals at the Mystic Aquarium, and I watched the Giant Ocean Tank be renovated at the New England Aquarium. My deepest thanks also go out to Alienor Fratoni. Ali traveled where I dare not go, circumventing the globe, emailing me photos of the ocean along her way. *Merci beaucoup*!—SB

Thanks to Kimberly B. Ritchie, Ph.D., Senior Scientist and Manager, Marine Microbiology Program at the Mote Marine Laboratory for reviewing this book for accuracy.

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"Ocean goo is good! ***Sea Slime*** is both a fun and educational book. Dive in and discover how animals use slime (aka mucus) in the sea. It's real science and gooey great."
—Kimberly B. Ritchie, Ph.D., Senior Scientist and Manager, Marine Microbiology Program at the Mote Marine Laboratory

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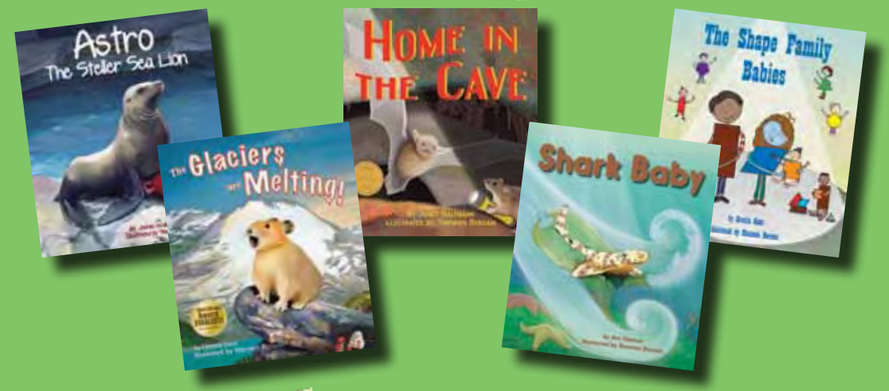

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