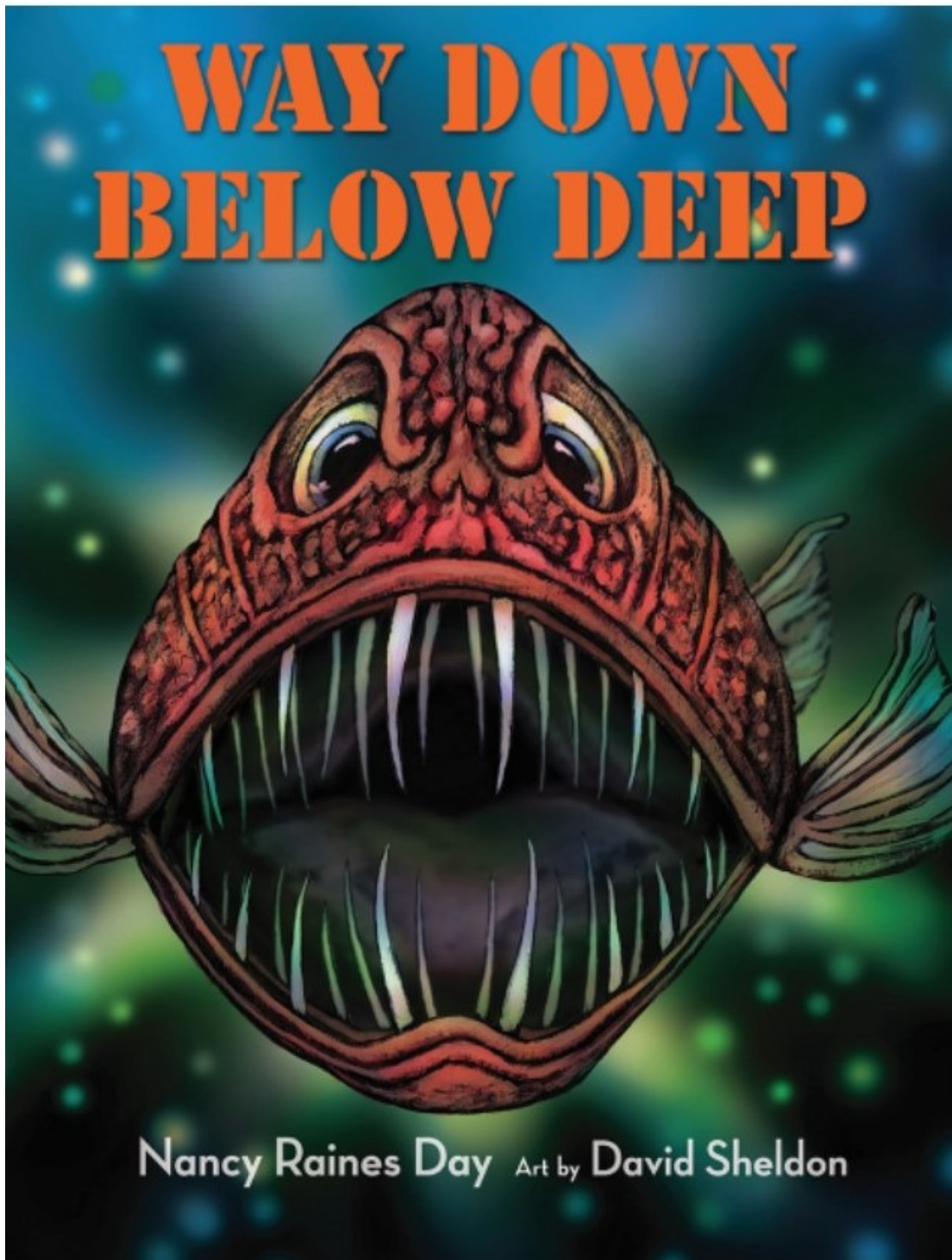


Activity Guide

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for



Activities using Way Down Below Deep for Classroom, Library, and Home

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Creatures of the Deep Card Activities

Twelve picture and twelve name cards for the deep ocean creatures featured in Way Down Below Deep make up a deck of 24 Creatures of the Deep cards. They can either be printed onto cardstock or fastened to cardboard after printing. These cards can be used for any of the activities below.

Play Concentration

Deal a deck of 24 creature picture and name cards, face down, into 4 rows of 6. Turn over any two cards, looking for a creature picture that matches that creature's name. If it is a match, keep both cards. If it's not a match, turn them back over. Take turns with a partner until all cards have been matched. The player with the most matches wins.

Play Bingo

Deal the creature picture cards into three rows of three columns. Have someone shuffle and turn over and call creature name cards one at a time. Cover the picture cards called with markers such as buttons, jar lids, or coins. The first to fill up a row, column, or diagonal and call "Bingo" wins.

Go Fish

Use a deck of 52 creature cards, with 4 cards for each creature. (You can use 2 picture cards and 2 name cards, or 3 picture cards and 1 name card, for each.) For 2-4 players, deal 7 cards to each and put the rest face down in a pile. Players take turns asking another player by name for a creature they have in their hand. If the player asked does not have that kind of creature card, he or she says "Go Fish," and the asking player draws one card from the pile. If the player draws the creature asked for, he or she shows the other players and gets another turn. When a player collects all four creature cards of one kind, he or she lays them down. The player with the most four-of-a-kinds at the end wins.

Guess Who?

Each student pins one picture or name card onto his or her chest. Students ask each other questions to guess which creature they are and find his or her match.

Classify Deep Ocean Creatures

Lay out the picture and matching name cards of the creatures that are predators, animals that eat other animals.

Lay out the picture and matching name cards of those creatures that are bioluminescent (have their own lights). Which of these animals use light to attract a mate?

Which use light to attract prey? _____

Which use light to keep safe from predators? _____

Lay out the picture and matching name cards of the creatures that are cephalopods, boneless animals whose heads attach directly to their arms. Squids and octopuses are both cephalopods.

Put Creatures in Size Order

Use the table below to put the cards in a horizontal line starting with the smallest on the left.

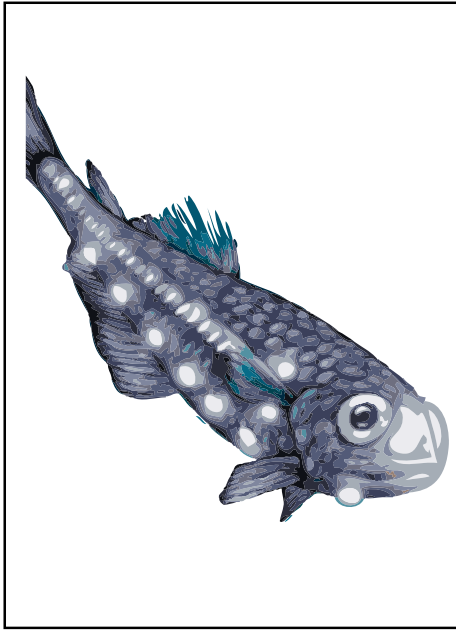
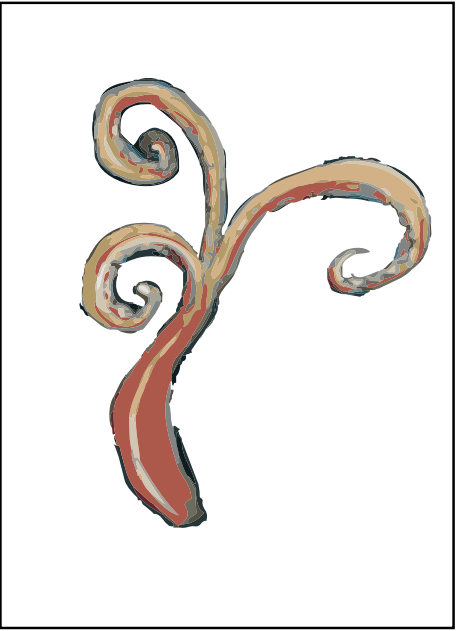
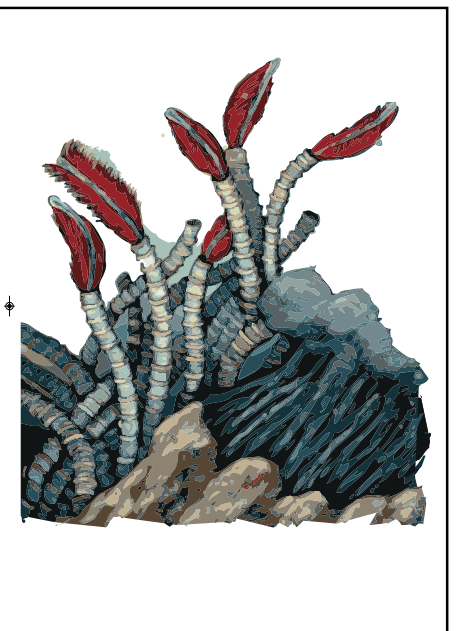
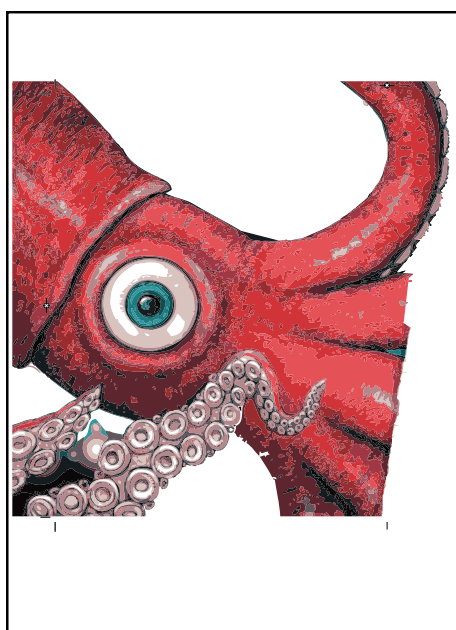
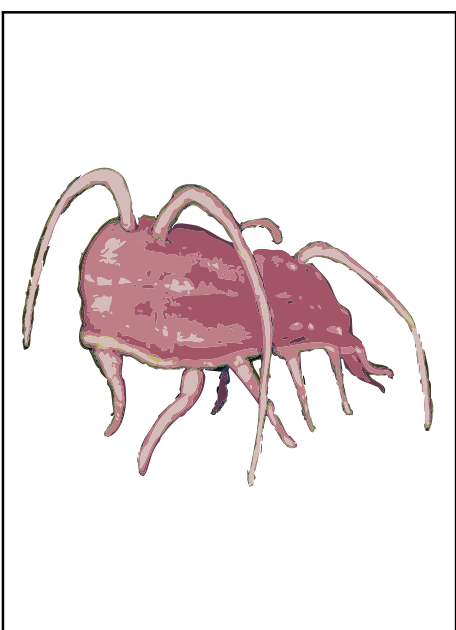
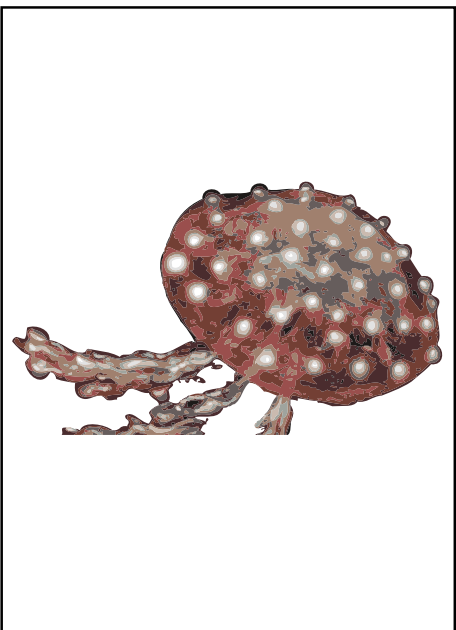
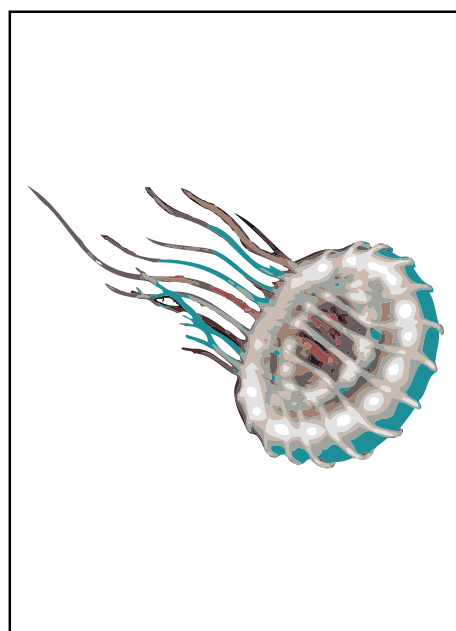
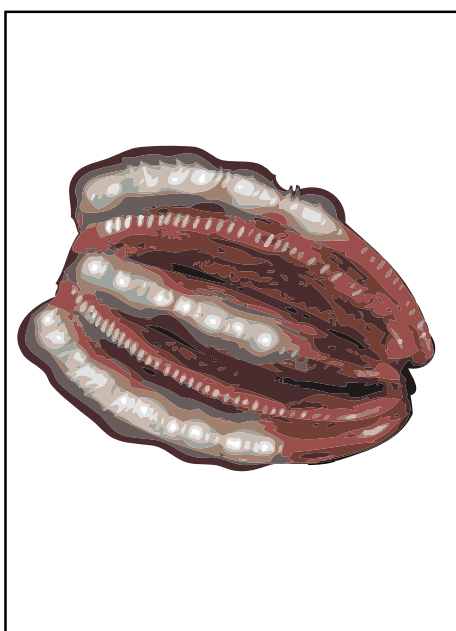
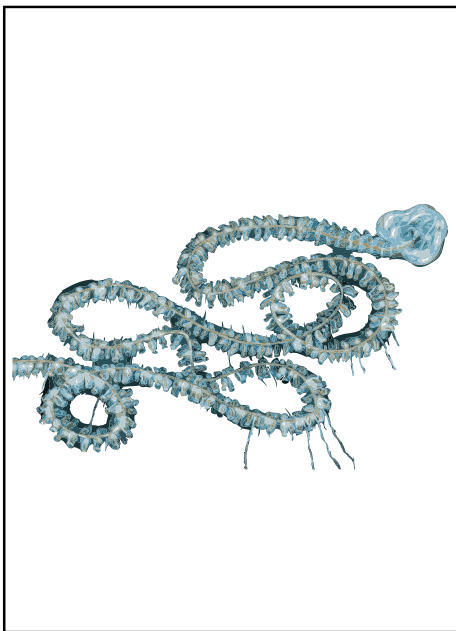
Creature	Grow up to
Giant squid	43 feet
Fangtooth	7 inches
Lanternfish	12 inches
Anglerfish (females)	8 inches
Glowing sucker octopus	20 inches
Vampire squid	12 inches
Whale worms (females)	2.5 inches
Tube worms	8 feet
Sea cucumbers	6.5 feet
Siphonophores	130 feet
Comb jellies	5 inches
Atolla jellyfish	25 inches
Medusa jellyfish (white-spotted)	28 inches across umbrella

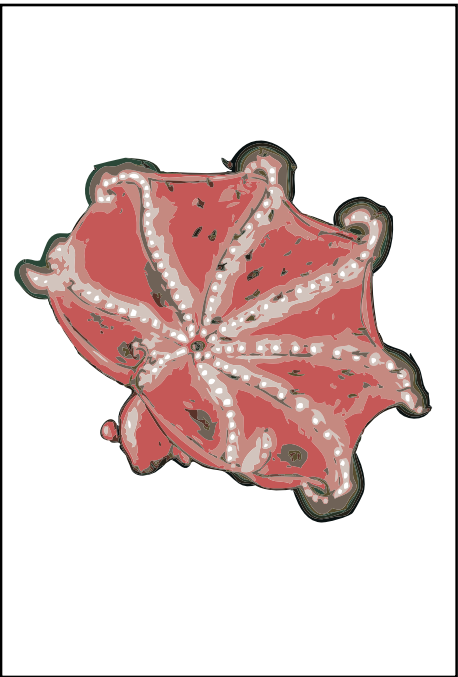
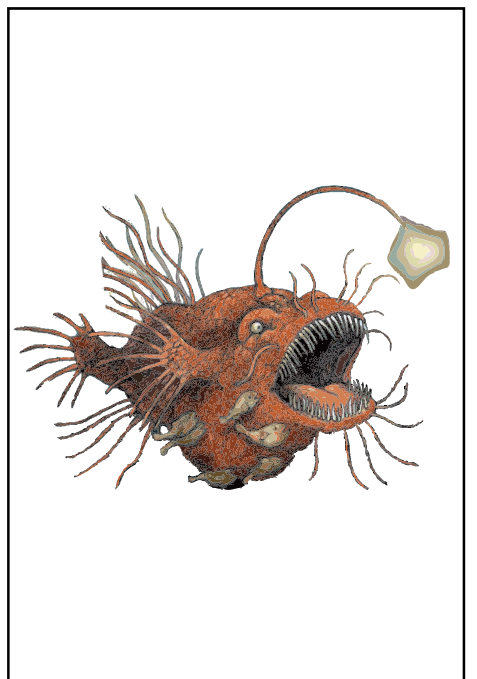
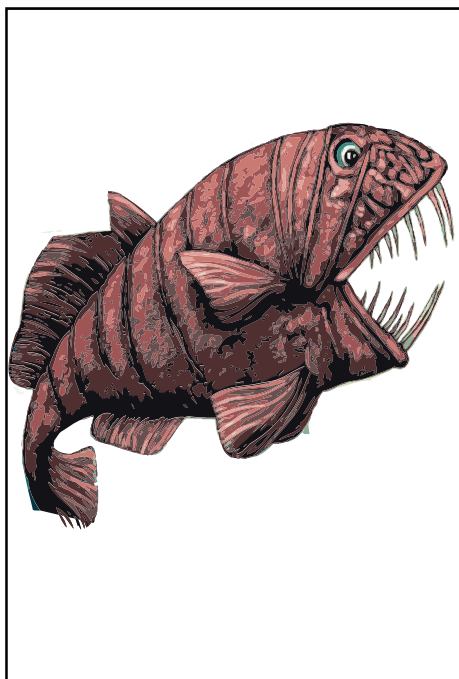
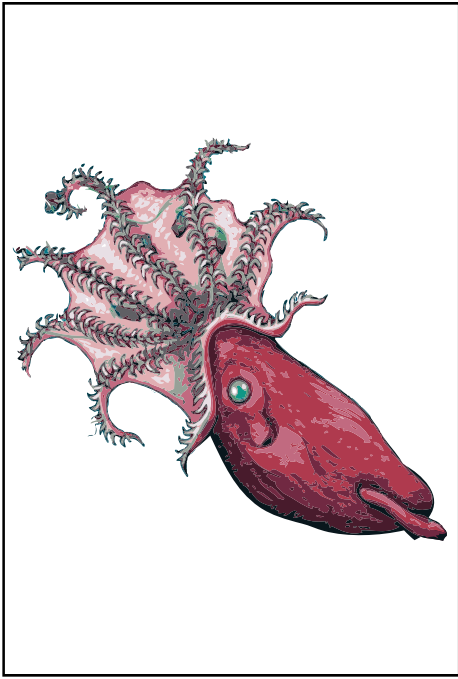
Challenge: Make up a bar graph showing and comparing the size of all the creatures measured in inches above. Make another bar graph for all the creatures measured in feet above.

Deep, Deeper, Deepest

The ocean floor is deeper some places than others. The deepest ocean on the planet is in the Mariana trench, which is about 6 miles below sea level. On the way down, the water gets dark first, then lacking in oxygen, then cold (within a few degrees of freezing)—except near hot vents (where water is superheated)—with water pressure the greatest where it is deepest.

The creatures featured in Way Down Below Deep are loosely arranged from those that live deep to deeper to deepest in the ocean. Use the book to help arrange the cards in a vertical line, with the deepest creature at the bottom.





siphonophore

comb jelly

atolla
jellyfish

medusa
jellyfish

sea
cucumber

giant squid

tube worms

whale worms

lanterfish

vampire squid

fangtooth

anglerfish

glowing
sucker
octopus

Math from the Deep

It takes animals like sharks and crabs 10 years to eat all a whale's meat. It can take **whale worms** up to 100 years (10 times as long) to devour the whale's bones. How long could it take altogether for a whale's body to be completely consumed? _____

Every kind of squid and octopus has 8 tentacles. If you lined up a **giant squid**, a **vampire squid**, and a **glowing sucker octopus**, how many tentacles would these 3 creatures have altogether? _____

A **vampire squid** that is 1 foot long can swim 2 feet in 1 second.

A **siphonophore** that may be up to 130 feet long can swim 1 foot in 1 minute.

Which creature is faster? _____

Challenge: How many times faster is it? _____

William Beebe and Otis Barton invented the first **submersible**, called the bathysphere, and were the first humans to travel 3,000 feet deep in 1934. How many years ago was that? _____



Science from the Deep

Research the history and development of submersibles. Make a timeline showing milestones along the way.

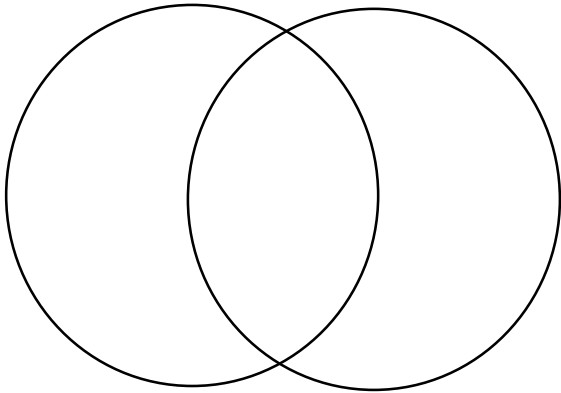
What tools do scientists use to observe and study deep ocean creatures? (Hint: Look at the opening and closing pages of the book.)

Make your own drawing and journal note for a deep ocean creature below. (It may or may not be one in the book.) Research a fun fact about your creature that is NOT in the book. If you do your research on the internet, try to use websites that end in .edu, .org, or .gov rather than .com to get more accurate information. Also, use the most recent information you can find. Scientists continue to find out more about deep ocean creatures every day!

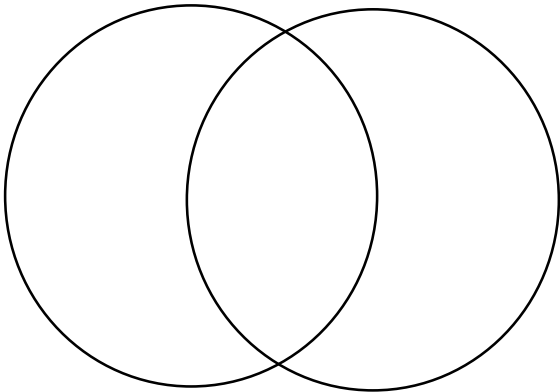
Language Arts from the Deep

What character is writing and drawing the journal notes about each creature?

How are the journal drawings the same and different from the illustrations on the same pages?



How are the journal notes the same and different from the poetry on the same pages?



Find words that appeal to the senses. Write examples below.

Find word pairs or phrases that use alliteration and write them below.

Write examples of strong, active verbs from the text below:

_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

What rhymes surprised or delighted you? Write two below.

Look at this video (or another) of a vampire squid.

<http://www.youtube.com/watch?v=X8oWnbcLI40>

Describe some of the ways it moves. What does it remind you of? Use words that appeal to the senses.

Diving Deeper

Websites to explore:

Monterey Bay Aquarium and Research Institute

For more about deep ocean creatures, as well as deep ocean crafts and games: <http://www.montereybayaquarium.org>

For news about deep ocean discoveries, videos of deep ocean creatures, and logs from expeditions: <http://www.mbari.org> and <http://www.youtube.com/user/MBARIVideo>

National Geographic

For a photo gallery of deep sea creatures:

http://ocean.nationalgeographic.com/ocean/photos/deep-sea-creatures/#!/deep-sea04-fangtooth_18164_600x450.jpg

Smithsonian Institute's Ocean Portal

For videos about deep ocean creatures and exploration:

<http://ocean.si.edu/ocean-life-ecosystems/deep-sea>

