

Lesson 6

Read Aloud: Pancakes For Breakfast!

Chloe woke up early, smelling blueberries being poured into pancakes and sizzling on the griddle, and her mouth began to water even before she could untangle her nightgown from the sheets wrapped up around her. Gracie's weight imprint had sunken down into the mattress but her little sister was out of bed and perched on the edge of the rocking chair, watching the little beta fish flickering back and forth.

"Auntie said I cud feed it," Gracie said, poking one finger into the gelatin-like surface of the water and watching the fish disappear behind the fake seaweed. Gracie cackled and her golden hair fell into her eyes no matter how many times her chubby hands pushed it away. "He's playin' peeky boo!" she burbled, and Chloe grinned as she struggled out of her nightgown and pulled on a soft cotton T-shirt and a pair of culottes. "Why is he swimmin' away when I put my finger in?" Gracie asked, leaning back in the rocking chair, tipping it so far that it bumped against the wall.

Chloe crouched down to pull her hairbrush out of her plastic bathroom bag and swept her tangled sandy orange hair away from her forehead, stepping in bare toes over to the beside table. "You mean why does he swim away from your finger when you put it in?"

Gracie nodded. "He doesn't even lookit me!"

"Fish have special lines in their sides called lateral lines, and it helps them to sense when things are in the water near them, sort of like how a cat uses his whiskers. Some fish, down in the darkest parts of the ocean, use their lateral lines to find their prey because it's black and they wouldn't be able to see anything. You remember the books from the library that Mom let you get about fish, and it had all those pictures of strange fish in the ocean floor level? You know how all the pages were dark and the fish that glowed in the dark?" Gracie nodded at the slow question, forehead wrinkling as she tried to understand it, remembering the stack of library books about the ocean she had come home loaded with after their biweekly trip. "What sorts of fish do you remember from those books?" Chloe asked as she wrapped her wavy hair up into a ponytail and shoved on her flip-flops, then turned Gracie around and braided hair down the back with quick, deft fingers.

“Dere’s a creepy fish with eyes like dis!” Gracie turned around, her hands cupping either side of her face, and Chloe chuckled, turning the little Goldilocks head around. It was good to giggle and distract herself; the startled spray of apprehension had covered her when she’d seen the figure standing on himself by the beach. It had taken her a good long while to settle her heartbeat enough to even think about sleeping, her arm laid protectively over Gracie’s warm shoulder, snuggling up close to the soft little body. “What else?” Chloe asked, tying the braid off with a pink ribbon and helping Gracie get out of her pink nighty.

“An eel! It’s long and” she took a long breath “eats things! Swallows ’em whole!” The excitement made Gracie almost fall over laughing. “And a fish with a lights on his head! So he can see.”

“God did a good job making sure that those fish were provided for, didn’t He?” asked Chloe.

Gracie thought for a long while, smoothing the front of her purple dress with one hand and putting her finger to her chin, brow puckering, then nodded as though she had just decided. “You’re smart as Auntie,” Gracie beamed up at her.

Blushing a little at the praise, knowing she could never possibly comprehend as much about marine biology as her aunt, Chloe turned on her heel and grabbed up a light sweater for the nippy Maine afternoon before clattering down the stairs after her little sister.

“The natives cometh!” Matthew quipped as the sisters came slipping on the braided rug and landed in the kitchen where Judith, still bleary-eyed and wrapped in her pink bathrobe, was flipping pancakes. She grinned over her shoulder as both girls clamored about the surprise and held up one hand.

“I have an announcement. I do indeed have a surprise for you all, but since I’m naughty, the surprise will be withheld.” she said around a groggy sip of her steaming black coffee. “I figured everyone was so tired, I would wait until tonight. There’s going to be an extra special surprise tonight on the beach, but first sit down, have some breakfast, and let me shower, and then we’ll go open the hamburger stand.”

The siblings clustered around the small wooden table, eating the good blueberry pancakes and joking about picking riper, better blueberries later that summer, drinking in the salt and oil smell of the house they had been missing all spring.

Nick slathered some butter onto his stack of blue-flecked pancakes and turned to Matthew, whose brown hair was sticking straight up in a couple places from tossing on his pillow.

“Anyway, as you were saying, I would love to help you branch out your thesis paper,” he told Matthew, who brightened around his own cup of coffee loaded with half-and-half.

“Great!” he grinned. “I don’t think I have enough information on coral reefs, and since that’s so important to the whole study of oceans, I really need some more facts.”

“What’s that?” Gracie piped up, her mouth smeared with butter that Judith leaned over to wipe off the flushed cheeks.

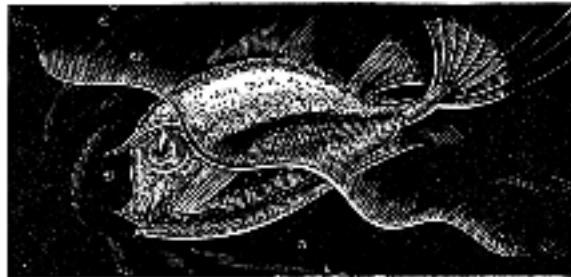
“Corals are built up from the stony skeletons of coral polyps, which live on the surface of corals. Whenever they die, fresh polyps grow in their place. A coral polyp uses its tentacles to sting animal plankton, then shove them into its mouth. Most coral polyps live inside their skeletons during the daytime and feed at night. Over time, they can collect to form a reef. The largest reef, the Barrier Reef, is near Australia. In fact, reefs can form whole islands. They start growing around the tip of an undersea volcano and when the seabed sinks, taking the volcano with it, the offshore barrier reefs form a circle of coral islands called atolls. The sea inside is called a lagoon. Coral reefs are beautiful, full of color; I’ll have to show you a couple of good pictures I got while I was scuba diving in college. I never got rid of those photos.”

Breakfast cleared away, Chloe was squirming and wrestling with herself as she watched Judith rinse out her coffee cup and put it back into the cabinet. Should she tell her aunt about the figure on the beach? The odd happenstance was festering inside her brain like a splinter buried in her forefinger...but then Judith was breezing off to the shower and Nick was telling them all to follow him into the basement where yet another surprise was waiting. This summer was certainly cracking up to be stuffed with them, Chloe thought, and hoped that from now on, they would be all good ones...unlike the dark surprise on the beach the night before.

Lesson 6

Lateral Lines on Fish Bodies

Find out exactly HOW a fish's lateral lines help it to "see" in the dark, and record your findings below.

This image shows a blank sheet of white paper with horizontal ruling lines. The lines are evenly spaced and extend across the width of the page. There are no margins, text, or other markings on the paper.

Lesson 6

God's Provisions for Fish in Deep Oceanic Ranges

In the deep ocean, God has provided for the creatures that live there in ways that are different for shallow water fish. Find out how God provides for these fish in the ways listed below, and write your answers.

Food:



Shelter:



Protection:



Lesson 6

Taxonomy of Coral

Most corals are made up of many small polyps which live together in a large colony. Polyps consist of a tube shaped body with a mouth which is surrounded by tentacles. These polyps produce hard, bone-like skeletons made of calcium carbonate at their base.

The polyp's tentacles each have small nematocysts, or stinging cells, which are able to shoot poisonous spears at passing zooplankton (see lesson 2 for definition of zooplankton), which are then pulled into the polyp's mouth.

With taxonomy, which you read about in lesson 1, we learn how living things are classified according to their similarities and differences. In order to classify any living thing, we must first place it into one of the five main kingdoms:

Animalia (includes all animals, including insects)

Plantae (includes all plants)

Fungi (includes all funguses, no matter what they grow on. This includes everything from mushrooms to fungus infections of the skin.)

Protista (includes creatures that have both plant and animal like features)

Monera (includes mostly single celled organisms, like bacteria)

Choose one species of coral (there are many to choose from!), and research its scientific classification. Fill in the blanks below.

Your Chosen Species of Coral:

Kingdom:

Phylum:

Class:

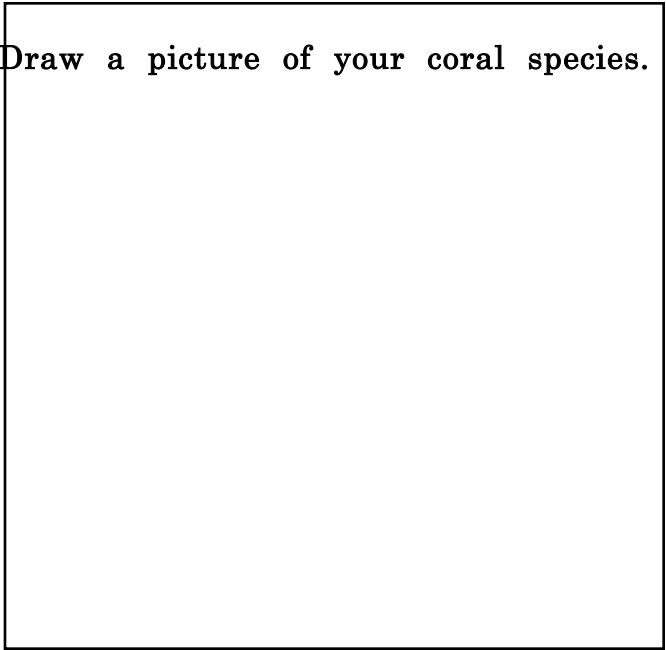
Order:

Family:

Genus:

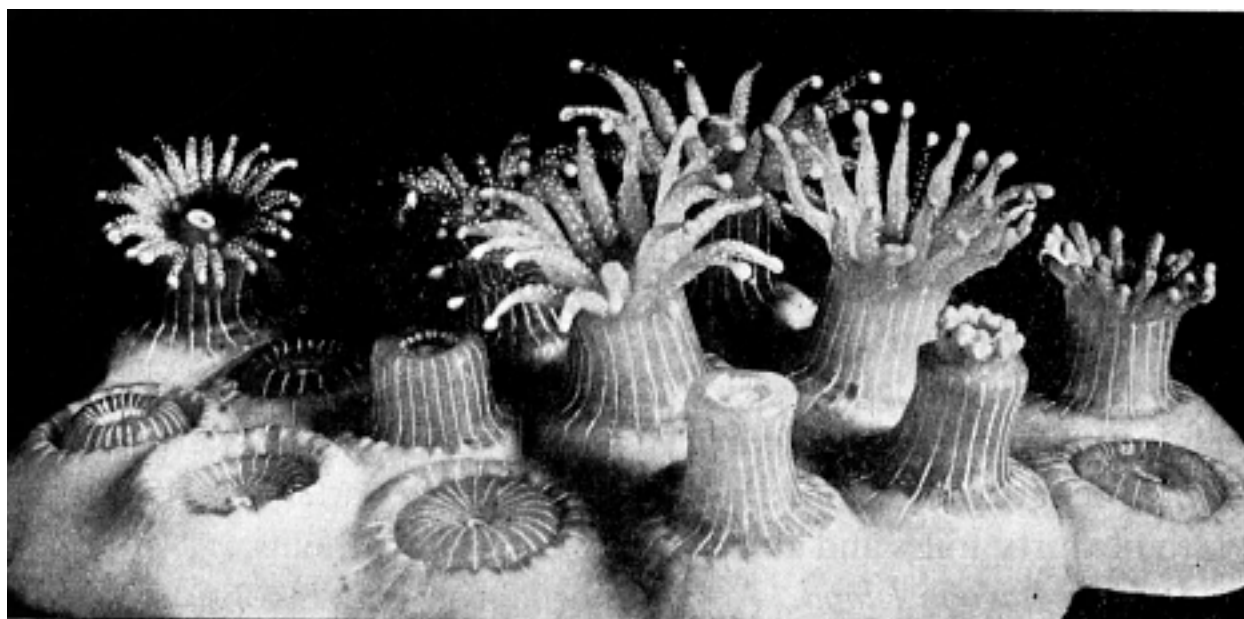
Species:

Draw a picture of your coral species.



Lesson 6

Coral Reefs



Describe daily life in a coral reef, including details of the species of life forms found there. Attach additional paper if necessary.

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