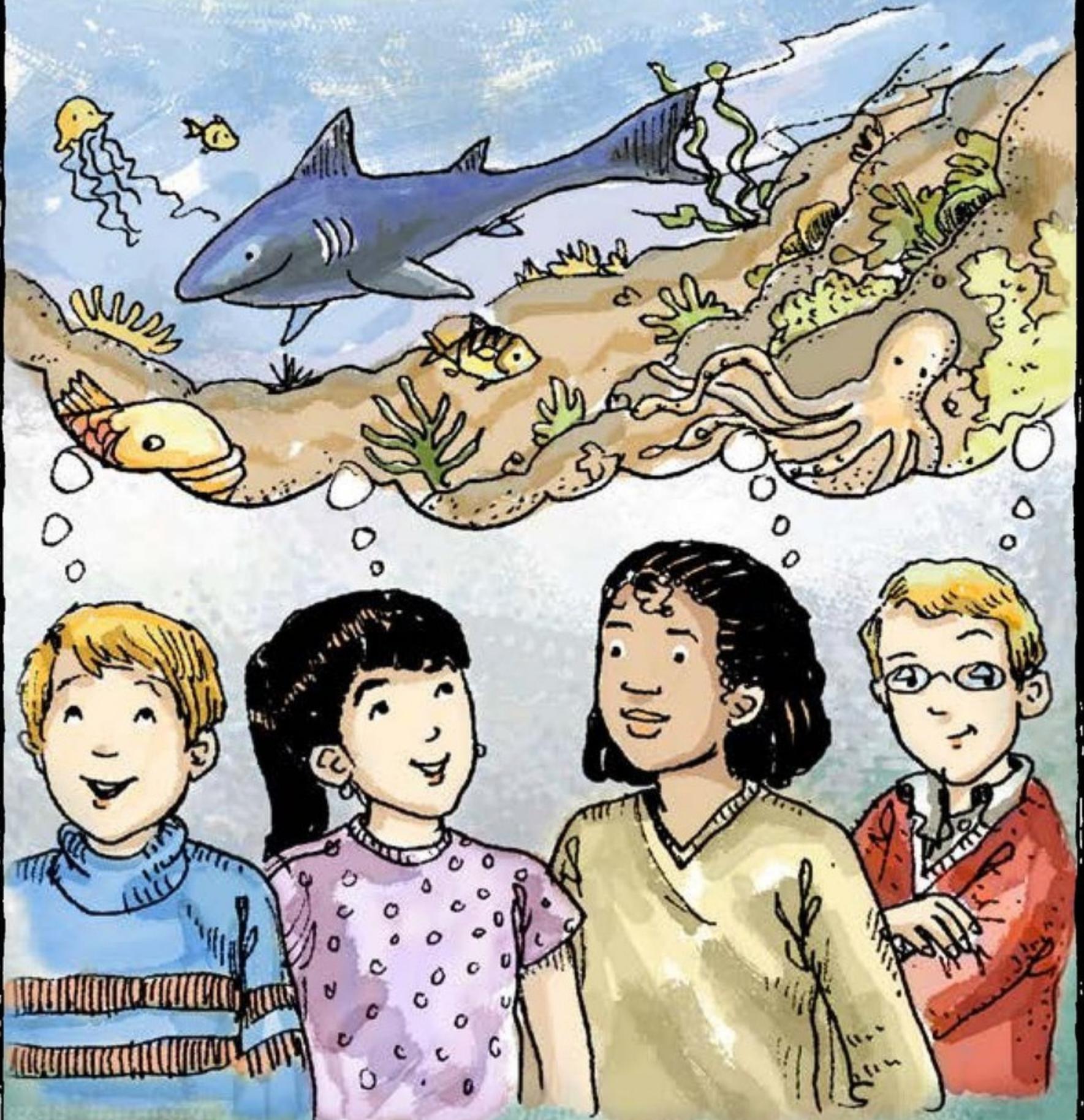


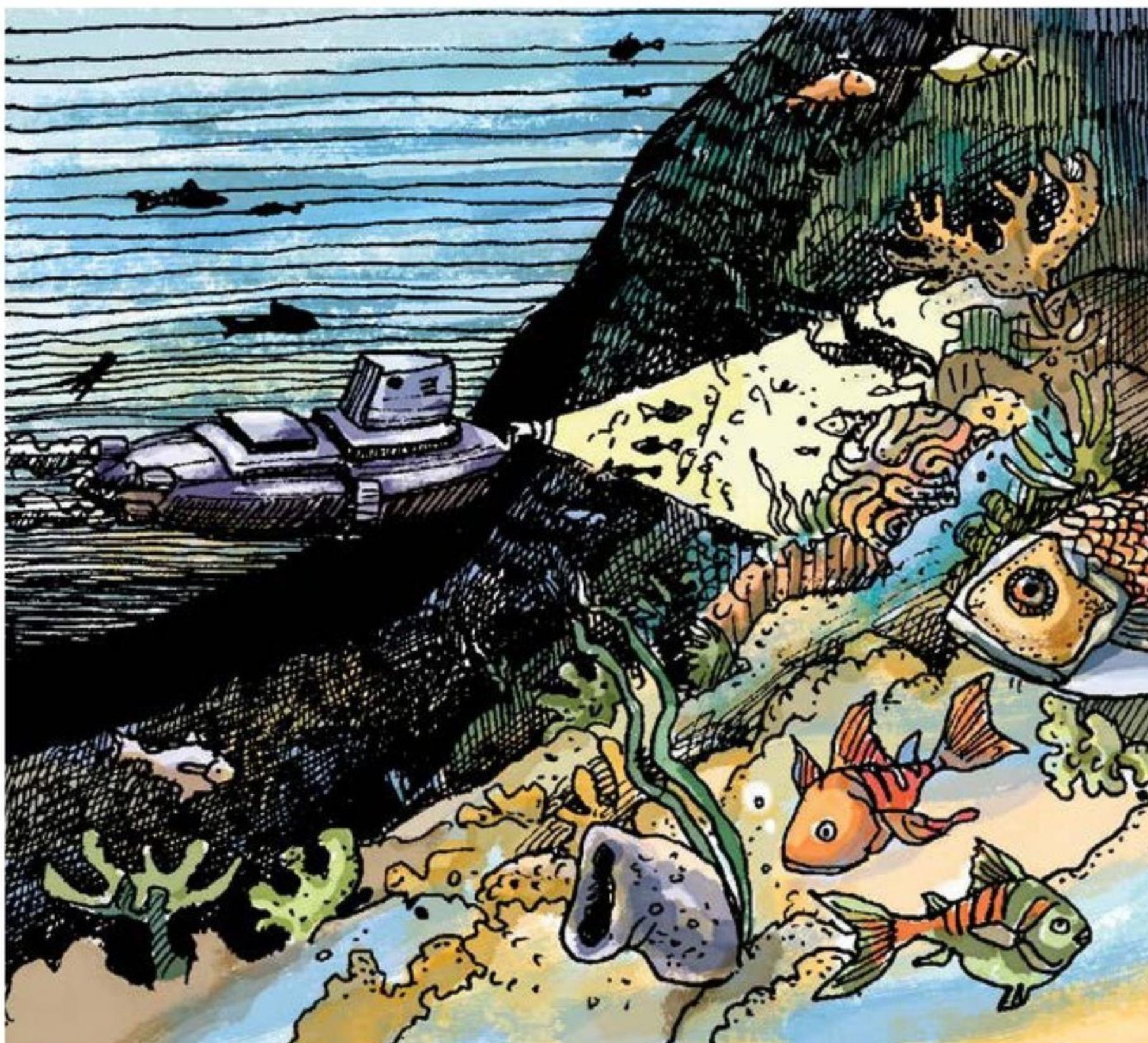
LEVELED Book • W

Ocean Quiz



Written by Penny Atcheson and Elizabeth Fox
Illustrated by Marcy Ramsey

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Chapter 1

Just as Maggie and her parents sat down for dinner, the telephone rang. Maggie sprang up to answer it, dashing into the other room and leaving a clattering fork on the floor behind her. She shouted so loudly that her parents heard every word.

"Did we make it?" she gasped, without even saying hello. "You're kidding; who else? Oh no, not that know-it-all. Well whatever, as long as you and I are on the team. I'll see you tomorrow."

Maggie hopped back into the kitchen, where her parents were smiling.

"Mom, Dad, we made it! Caroline and I are going to represent the school at the Kid Quiz Bowl, and we might even win a school field day at Shamu Ocean World! Even if we don't win,

the team members get out of class for an hour a day to get ready. I'm so excited—this is going to be great!"

"Slow down, Maggie, you haven't won yet," Maggie's mother laughed. "I'll bet it's going to be a lot of responsibility representing the entire school."

"And you shouldn't get so wrapped up in the contest that you neglect your other subjects," said her father.

Maggie giggled, "I'll be fine, and besides, we'll be learning as we practice for the Quiz Bowl. The topic this year is oceans, which is pretty much the whole planet, since two-thirds of the earth is covered with water. Hey, Dad, that snorkeling trip last summer will pay off—I'll be the only one on the team who's been in the ocean! May I be excused? I think I'm too excited to eat, and do you think you could drive me to the library tonight?"

Before her parents could open their mouths, Maggie bounded up the stairs, still hollering about winning the Bowl, going to Shamu Ocean World, swimming with dolphins, and kissing whales. Then her door happily slammed, and her parents shook their heads.



Chapter 2

The next day, Maggie and her team got out of math and met in the school library. Maggie and Caroline were the second ones there, and sitting at a table was Tad, leaning over a book. Caroline rolled her eyes a little.

Tad looked up. “The first order of business, I think, is for us to decide on a name. A team name is critical for defining who we are and **intimidating** our competitors,” he said. Then he looked around. “Aren’t we supposed to have a fourth team member?”

Just then, Bert rushed in, a little out of breath. “Sorry I’m late,” he said, blushing.

“Well, on to business again,” Tad said. “I nominate *Panthalassa*, which was the first giant ocean that existed before the continental plates moved and divided. In fact, *Panthalassa* still exists, when you realize that all the oceans are connected.”

“Oh, please, Tad, everyone knows that there’s the Atlantic Ocean, the Pacific, the Indian . . .” Caroline said.

“Actually, if you look at a globe, you can see how the Pacific and the Atlantic meet below South America, and the Indian joins the Atlantic south of Africa.” Tad slid the globe across the table and spun it under his thin fingers. “**Theoretically**, you could sail from one ocean to all the others without ever touching land. We simply divide the oceans for our convenience, but all the continents are just massive islands in an even larger ocean.”

“Okay, okay,” Maggie interrupted, “there’s too much information to cover for us to waste time worrying about our name. I think things will go faster if we divide up the research, so I’ve put the names of the different zones of the ocean floor in my bag. We’ll each choose one, research it, and then share what we’ve found. I’ll pick first. Continental shelf,” Maggie read.

“Ah, yes,” Tad sniffed, pushing up his glasses, “you’ll be looking into the shallowest part of the ocean where the land first **submerges**. You may as well be researching a wading pool.”

“Teamwork, Tad, we don’t have time for insults. You draw next, Caroline,” Maggie said.

“Continental slope,” Caroline read.

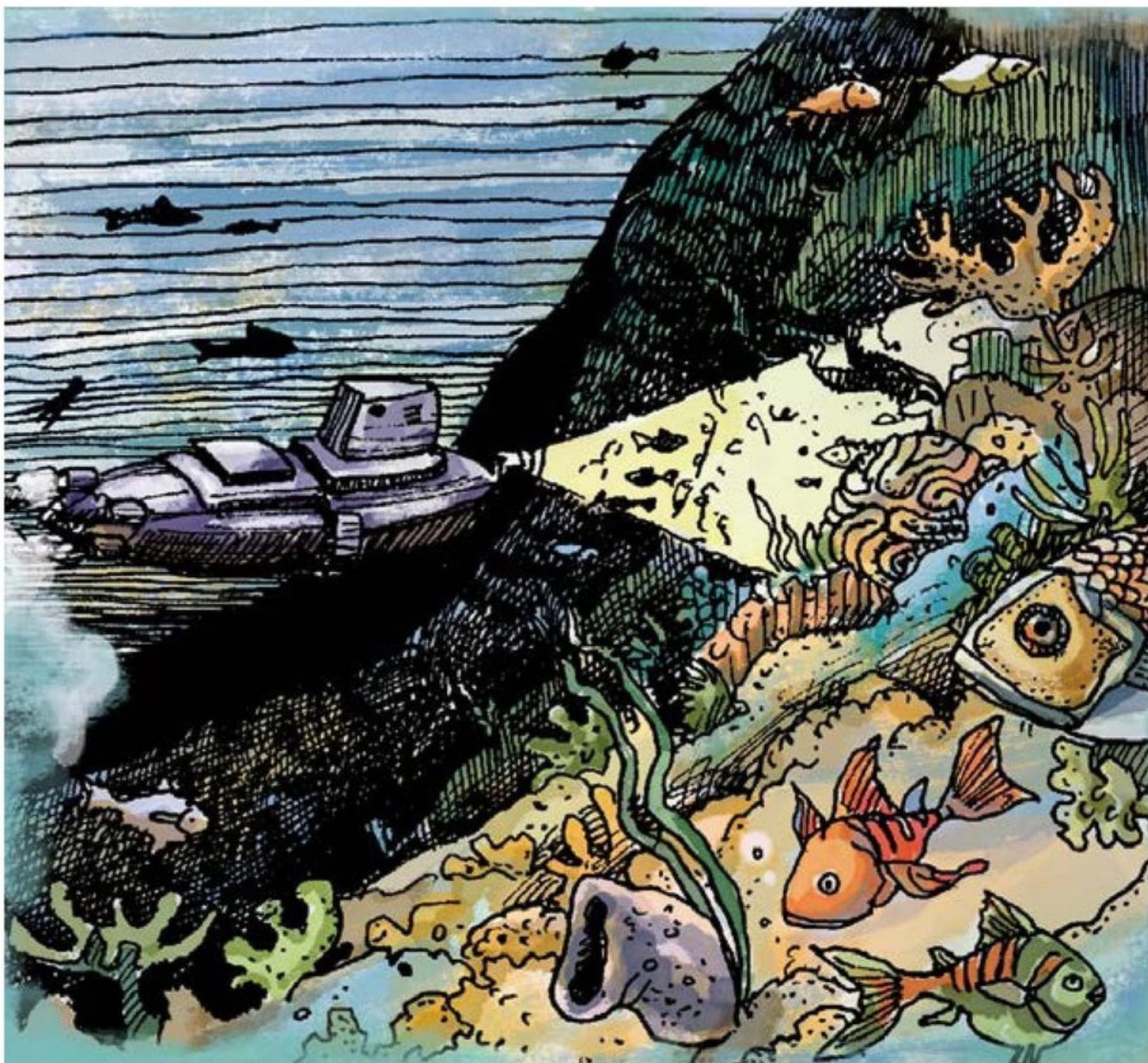
“Another easy one,” Tad said. “The slope is the cliff-like boundary between the continental shelf and the deep ocean floor. And now for my topic . . . the **abyssal** plain. I’ll be covering the entire ocean floor, including mountain ranges, valleys, hills, faults, and even **seamounts**, which are undersea volcanic mountains higher than the Himalayas.”

“Save it for the Quiz Bowl,” Caroline grumbled. Bert reached in and drew the last piece of paper.

“Ocean **trenches**,” he said.

“Bert, I envy you; you’ll be studying the most recent discoveries about the deepest and darkest places in the ocean. Trade with me,” said Tad.

“No trades,” Maggie insisted. “We don’t have time. There are only three weeks until the Kid Quiz Bowl, so we all need to get to work.”



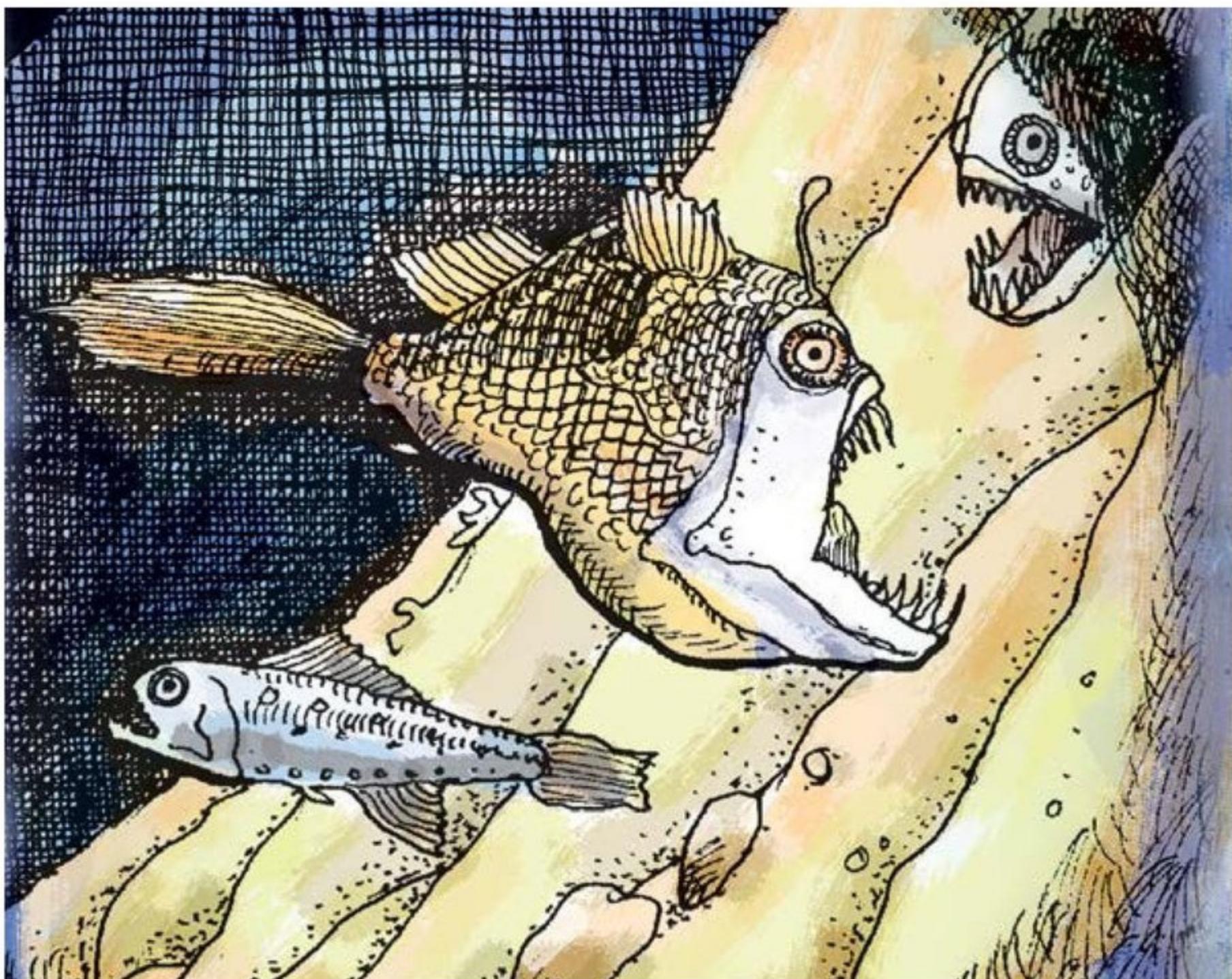
Chapter 3

Caroline flopped down in a chair in front of a library computer. She logged on to the Internet and typed “continental slope” into a search engine. The search brought back hundreds of hits, and Caroline sighed. She started searching for Web sites about movie stars. Then she saw Tad browsing the shelves behind her, and she quickly went back to oceans. *Research is annoying*, she thought, taking a look around the library. She spied a sign on the ceiling that pointed to another room. “Videos,” it read.

The librarian helped Caroline find a stack of tapes about the oceans, even stuff on animals and fishing and things that she didn't think she'd need. She chose one about deep ocean submarines that explore the continental slope, popped it in the VCR, and began to take notes.

The continental slope was like an underwater cliff, sometimes dropping from 200 meters (660 ft) down to 5,000 meters (3 mi). At the top of the slope was Maggie's area, the continental shelf. Rivers deposited **sediment** onto the shelf until the sediment pushed to the edge of the slope and rained down the cliff wall. The sediment landed at the bottom, forming a soft, sloping pile called the continental rise. The rise could stretch across the ocean floor for 1,000 kilometers (600 mi).

In the video, scientists launched the submarine in the water above the continental slope. Once it got to the edge of the slope, it began to descend, shining a floodlight on the cliff wall. All along the slope grew the sun-loving ocean plants and animals Caroline was familiar with. She spotted brain coral and sea pens, sea urchins, anemone, shrimp and lobster, even an octopus. Sharks and other fish swam by.



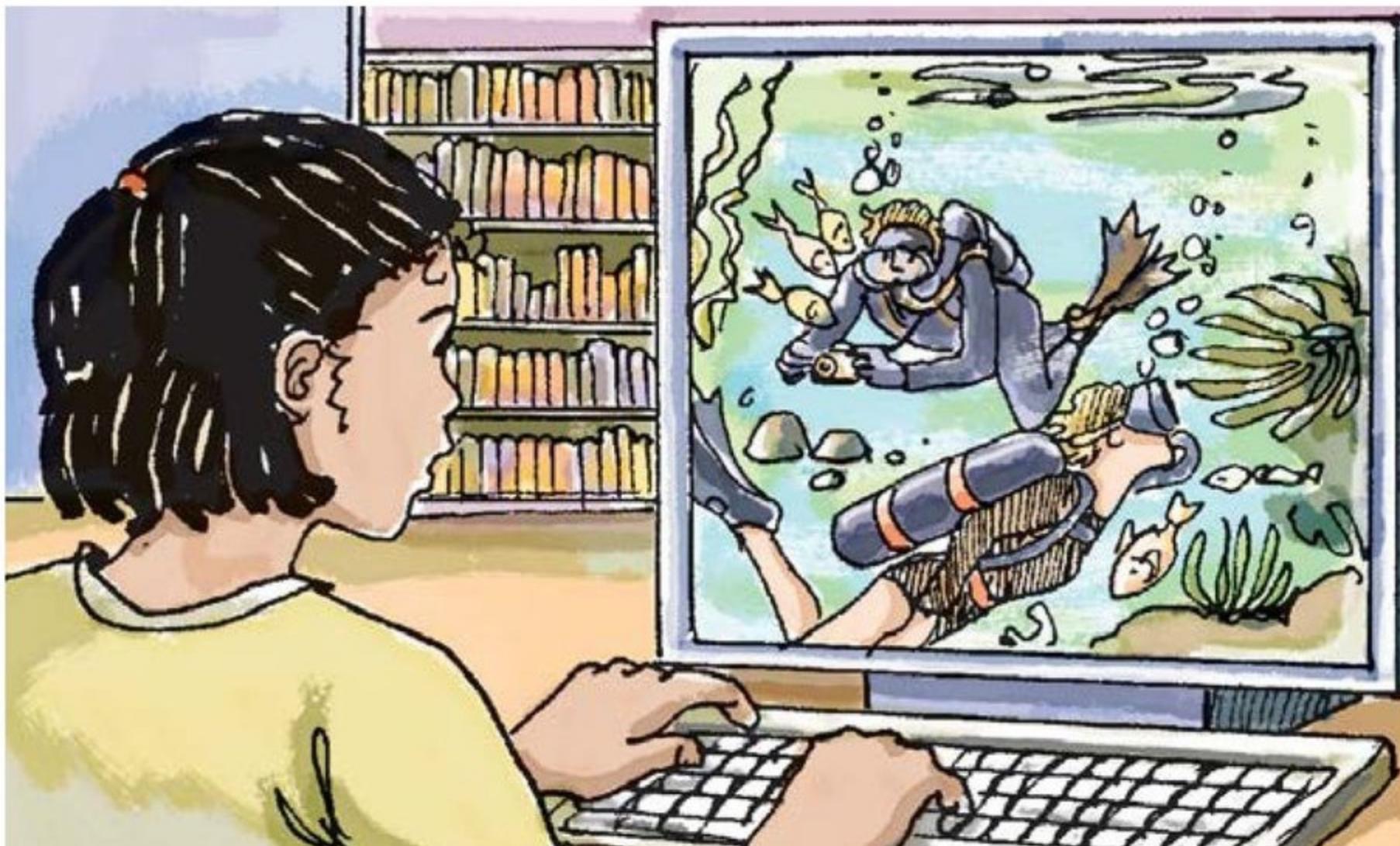
Then the water began to get darker, and the plants began to disappear, leaving just squid and some dark-colored fish. The fish began to get strange looking, with large mouths, huge eyes, and even little glowing spots. Then everything outside the submarine's floodlight was black. Occasionally a tiny light swam by, but when it swam into the light, the little glowing animal turned out to be totally **transparent**.

Then, with a whoosh, the submarine brushed the bottom, churning up clouds of dust. This was the muddy sediment that **sloughed** off from the river deposits on the continental shelf. The submarine had reached the continental rise.

Bert couldn't seem to find any information on ocean trenches, and he couldn't understand why Tad was so excited about them. The librarian told him that most of the research was pretty new, so it wasn't widely available. There weren't any books in the school library, and the one he found in the public library was full of super-long science words. Plus, he was way behind in his other homework. He told himself he would only work on his history report for ten minutes, but when he looked up, it was an hour later.

But then he skimmed through the *Guinness Book of World Records* and finally found something about trenches. The Mariana Trench in the Pacific Ocean was the deepest point on Earth, at 9.6 kilometers (6 mi) deep. In 1960, it took the Swiss scientist Jacques Piccard four hours and forty-eight minutes to dive down into the trench in his **bathyscaphe**.

Bert looked up *bathyscaphe* in the dictionary and wrote down that it meant a small submarine. Then he looked up *trench* and learned that ocean trenches form when one tectonic plate slides under another, but before he had time to finish writing his sentence, the bell rang.

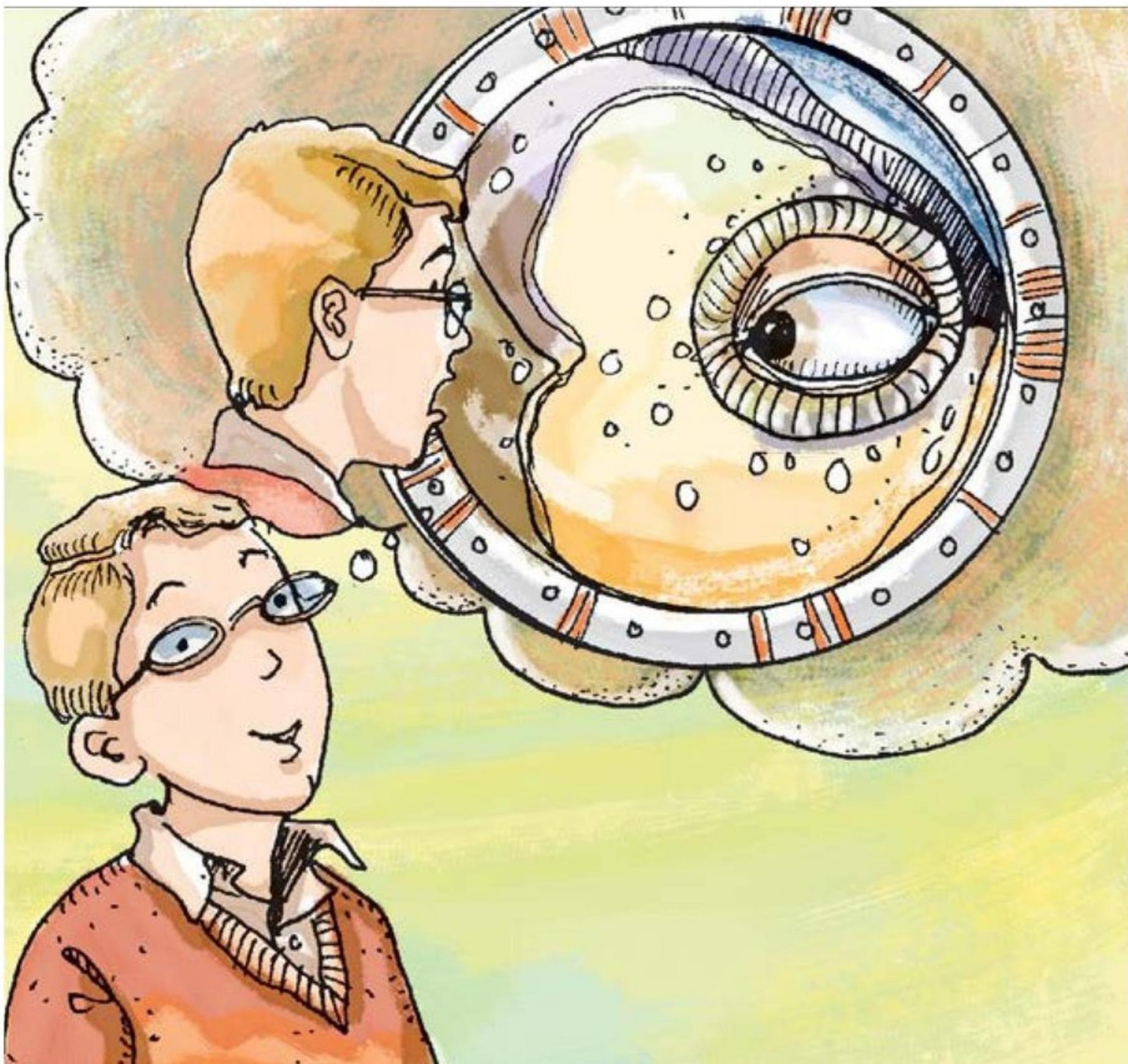


Maggie tried the same approach as Caroline, sitting down at one of the library computers and typing “continental shelf” into a search engine. But instead of giving up when she got hundreds of hits, she began to poke around. It wasn’t hard to find information, and Maggie nearly got lost chasing links about coral reefs, fishing practices, and tide pools. In fact, most of the things she could think of about the ocean fell under the category of the continental shelf.

This was because the continental shelf received the most sunlight, which allowed more sea life to function there than anywhere else. It was also the shallowest part of the sea, so more research was done there. The shelf was only about 200 meters (660 ft) deep on average, so it was very shallow compared to the rest of the sea floor.

She found out that the land forming the continental shelf was the same land that formed the continents, only the shelf land was underwater. All of the continents, including Eurasia, North and South America, and Africa, had continental shelves. The width of the continental shelf varied from continent to continent. The South American shelf only went out about 200 kilometers (125 mi), while the shelf off the coast of northern Asia stretched into the sea for 1,600 kilometers (1,000 mi).

Tad walked up one library aisle and down the other, up one aisle and down the other. His books at home had plenty of information about the abyssal plain. In fact, he probably knew as much about the abyssal plain by heart as any of the rest of them would find out about their topics from research. He knew that the plain was the deepest part of the ocean, below 2,000 meters (6,500 ft), and that it covered almost 75 percent of the ocean floor. The total area covered 20, no, 200 million square kilometers (77 million sq mi). By contrast, all the land on the planet only covered 150 million square kilometers (58 million sq mi). But there was hardly any life down there because of the intense water pressure and darkness.



He knew that the volcano Mauna Kea in Hawaii actually rose into the sky all the way from the abyssal plain. If you measured it to the bottom, it was a full 10,203 meters (33,346 ft) high. That was nearly 1,500 meters (4,921 ft) taller than Mt. Everest. He also knew that the creatures in the abyssal plain were completely freaky, like the giant squid, which until recently, no human had ever seen alive. Tad privately thought he'd be just the right biologist to discover new creatures in the deep. *This research is a snap*, he thought, without ever opening a book.

A few days before the Quiz Bowl, the kids came together and shared their information.

"This is awesome, guys. You brought back tons of facts," Maggie said.

"Well, except you, Bert," Tad said. "Couldn't you find anything else to report on besides the deepest trench?"

"Well," Bert stammered, "I sort of ran out of time. It's tough with all my other classes, and you wouldn't believe how little information there was."

"But what about the undersea geysers? The mineral-spewing chimneys that send boiling toxic **plumes** into the ocean depths, feeding bacteria? The fantastic tube worms and giant clams that scientists had assumed could not live without light?" Tad demanded.

"Okay, it's all right," Maggie said. "We have plenty to work with, and Bert's right, it's tough with our other classes. We all just have to work as a team, because the Quiz Bowl is this weekend."

And it was.



Chapter 4

"I'm so nervous I can't see," Caroline whispered to Maggie, peeking out from behind the black curtain onto the stage of the auditorium.

"No kidding," Maggie whispered back. The bright stage lights shone right in their eyes. Bert nervously chewed a pencil, Caroline hopped from foot to foot, and Maggie could feel her palms sweating. The bright lights, the audience, and the pressure to win were more than the team had counted on. This was the final round, and they were battling Shelbyville for the field day at Shamu Ocean World. The only one who looked calm was Tad, who stood perfectly still.

“Okay, Deerfield, you’re on,” the stage manager said. The team walked nervously to their platform and stood in a row behind their four red buttons, waiting for the questions to begin. The host stood at a **podium** with a booming microphone.

“Welcome, everyone, to the final round of the seventh annual Kid Quiz Bowl competition. We’re down to our last two teams, and the one that wins this round will receive the free trip to Shamu Ocean World for their whole school! If you think you know the answer to the question, quickly hit the buzzer and you will get a chance to respond. If you miss a question, the other team automatically gets a chance to respond. Are we ready? Question one: What is the largest ocean on Earth?”

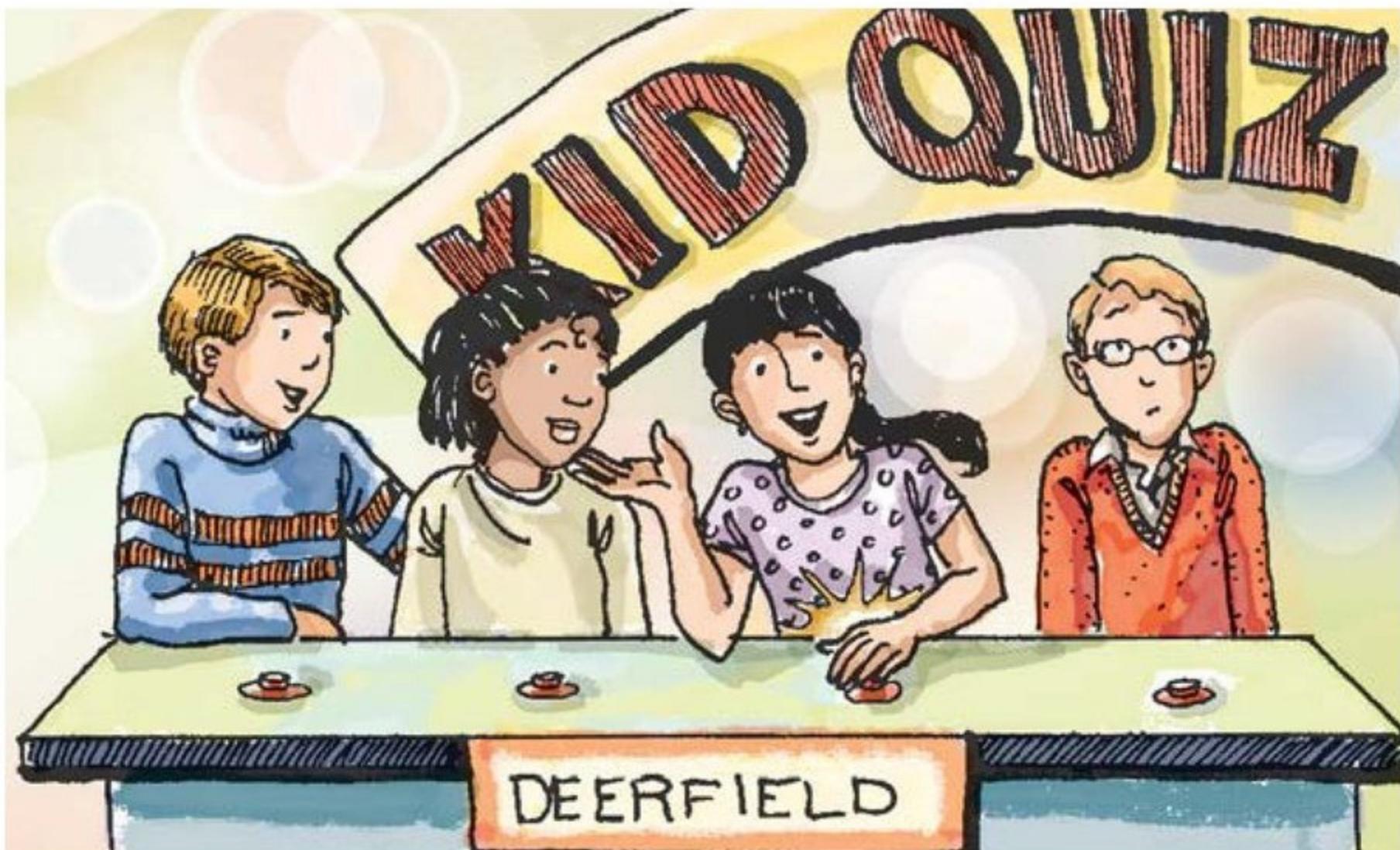
Caroline smacked her red button. *Buzz!*

“Deerfield, your answer is?”

“The Pacific,” screamed Caroline.

“You’re right, for one point.” The team hopped up and down before the host moved on. “Question two: What is the world’s largest fish?”

Buzz! The question went to Shelbyville. “The whale shark,” came an answer from the opposing side.



“One point for Shelbyville. Question three: What does *salinity* mean?”

Buzz! “Shelbyville, your answer?”

“Saltiness,” replied the same student from the other side.

“Question four: What material makes up most of the Great Barrier Reef?”

Buzz! It seemed like Deerfield just wasn’t fast enough. “Limestone!” called out one member of the Shelbyville team.

“I’m sorry, Shelbyville, that is incorrect. Deerfield, you get a chance to give the correct answer.”

“Coral!” Maggie shouted.

The teams went back and forth, one breaking into the lead, the other catching up, until all thirty questions had been asked. It was fifteen and fifteen—a tie, so there had to be a tiebreaker. The host got a serious look on his face.

“Since this question will break the tie and determine the overall winner of this competition, it will be a little different from the previous ones. Each team may nominate one member to represent it. That member alone will answer the question. We’ll take a little break to give each team time to choose its representative.”

The team huddled. “Why haven’t you been answering any questions, Tad?” asked Maggie.

“Oh, these questions have all been pretty simple, so I thought I’d give the rest of you guys a chance,” Tad said, shrugging.

“Well, you should be the perfect candidate to represent our team for the tiebreaker,” Maggie said. The team agreed to send Tad out, but Tad only responded by shrugging again.

“He’d better be as smart as he acts,” Caroline muttered.

“Okay,” said the host, returning to the podium. “Here is the tie-breaking question, and it has two

parts, so take your time. What is the name of the deepest trench in the ocean, and in which ocean is it located?"

Maggie started laughing, Caroline jumped up and down, and Bert did a victory dance. There was no way Tad could miss this one—after all, he'd made fun of Bert for writing it down, as if everyone already knew it.

Buzz! "Deerfield?"

"All right!" Bert burst out before the team could shush him. Then, everything seemed quiet for an awfully long time.

"Deerfield, I need your answer," the host said.

"What's he doing?" Caroline hissed. Tad stared blankly ahead.

"Fifteen seconds, Deerfield." Another long silence. "I'm sorry, Deerfield, but your time is up. Shelbyville, your question."

"The Mariana Trench in the Pacific Ocean," the Shelbyville student answered confidently.

"You are correct! Shelbyville School is going to spend a field day at Shamu Ocean World!" The other team leapt up and down while Maggie, Caroline, and Bert stood **sullenly** in the wings. Tad didn't move.



Chapter 5

Back at school, Maggie, Caroline, Tad, and Bert met at their table in the library.

“What happened to you out there, Tad?” scolded Caroline. “You didn’t even blink, and we depended on your brains to win. Plus, that question was so obvious.”

“Yeah, even I knew the answer to the trench question,” Bert said.

Tad stared down at his hands and muttered something the rest of the team couldn’t hear.

“What’s that?” Maggie asked.

“I just said I’m sorry I let you guys down. I froze, I choked, I blew it. I just couldn’t think. I knew the answer, but I kept remembering how I treated Bert, and how **ironic** it was that his information ended up being what we really needed. I’m sorry, but I felt so isolated out there.”

Maggie, Caroline, and Bert exchanged looks. “I guess it could have happened to any of us,” Maggie said. “Oh well, we made a good show, and after all, we were tied until the very end. And they gave us those neat pens with the little clown fish that swim up and down.”

“Hey,” Caroline said, “I hear that next year’s topic might be the solar system, and the prize will be a trip to the planetarium.”

“Well that’s a **cakewalk!**” Tad cried. “I must already know everything there is to know about the solar system, the moons and the asteroid belt and gravitational arcs . . .” Tad stopped and then got up and began backing away from the glares of his teammates. Then he turned and ran, with Caroline, Bert, and Maggie chasing him, laughing.

Glossary

abyssal	the ocean zone that covers the deep ocean floor; abyss means a bottomless depth (p. 8)
bathyscaphe	a small submarine used for extremely deep diving (p. 12)
cakewalk	something very easy to do (p. 23)
intimidating	frightening (p. 6)
ironic	the opposite of what is expected; in a story, a twist in which something turns out to be the opposite of what it seems (p. 23)
plumes	rising clouds (p. 16)
podium	a stand with a microphone for public speaking (p. 18)
seamounts	undersea volcanoes (p. 8)
sediment	sand, dirt, and soil in water (p. 10)
sloughed	shed; fallen off (p. 11)
submerges	sinks under the water (p. 8)
sullenly	sadly and angrily (p. 21)
theoretically	according to assumed facts (p. 7)
transparent	clear; see-through (p. 11)
trenches	cracks in the sea floor (p. 8)

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