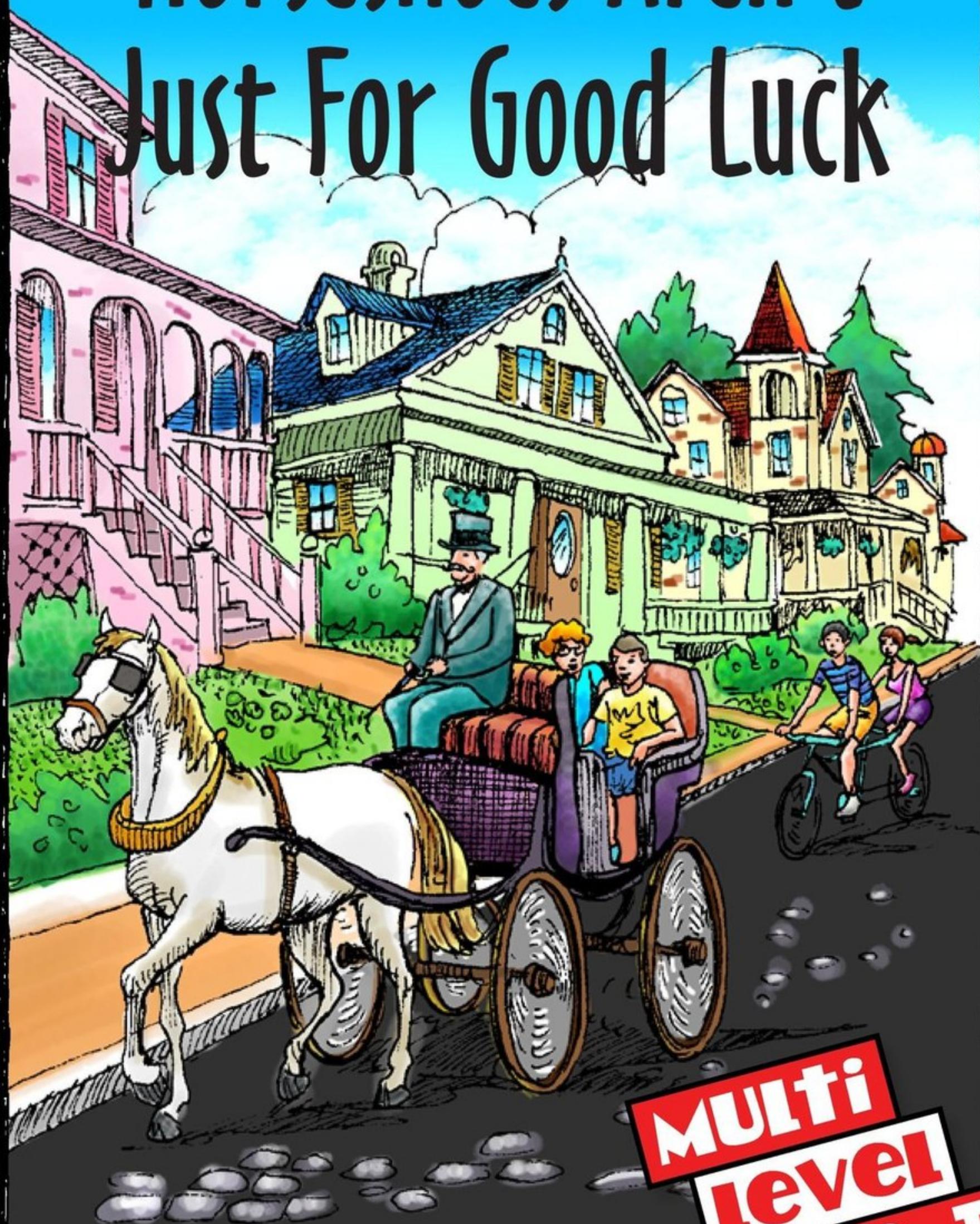


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Horseshoes Aren't Just For Good Luck



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Written by Deborah Ambroza
Illustrated by Marcy Ramsey

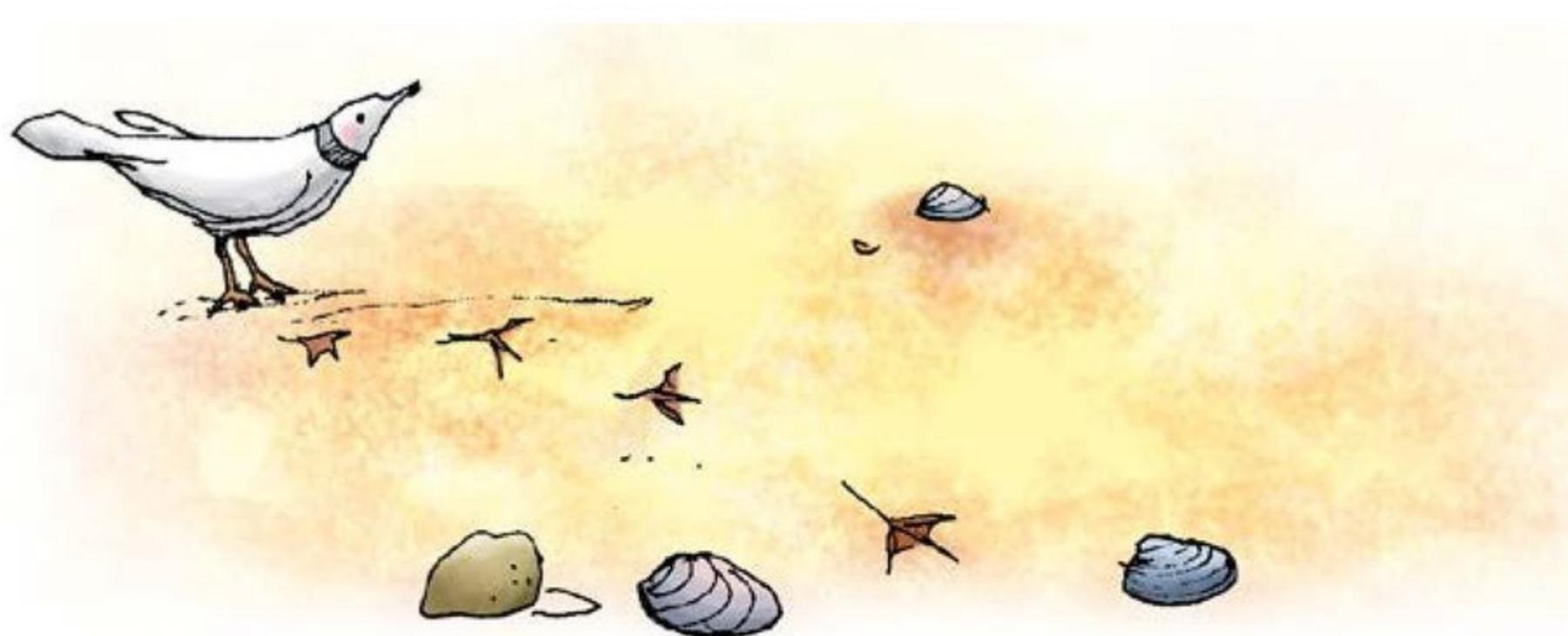
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Introduction

I had the best summer ever when I was nine years old. That was the summer I went to visit Gram, my great-grandmother, who lived at the seashore. I had never seen the ocean before. Dad hoped I would love visiting there as much as he had when he was a kid.



Life by the Sea

I did so many new things! Dad took me to the train station for my first train ride, and I took the train by myself from the city. Towns and countryside went by outside the window. Gram and her friend Jim met my train at the station. We drove out to her large old home in the little beach town where she lived. Her town was very different from the city. Most people walked or rode bicycles instead of driving cars. I even saw horse-drawn carriages!

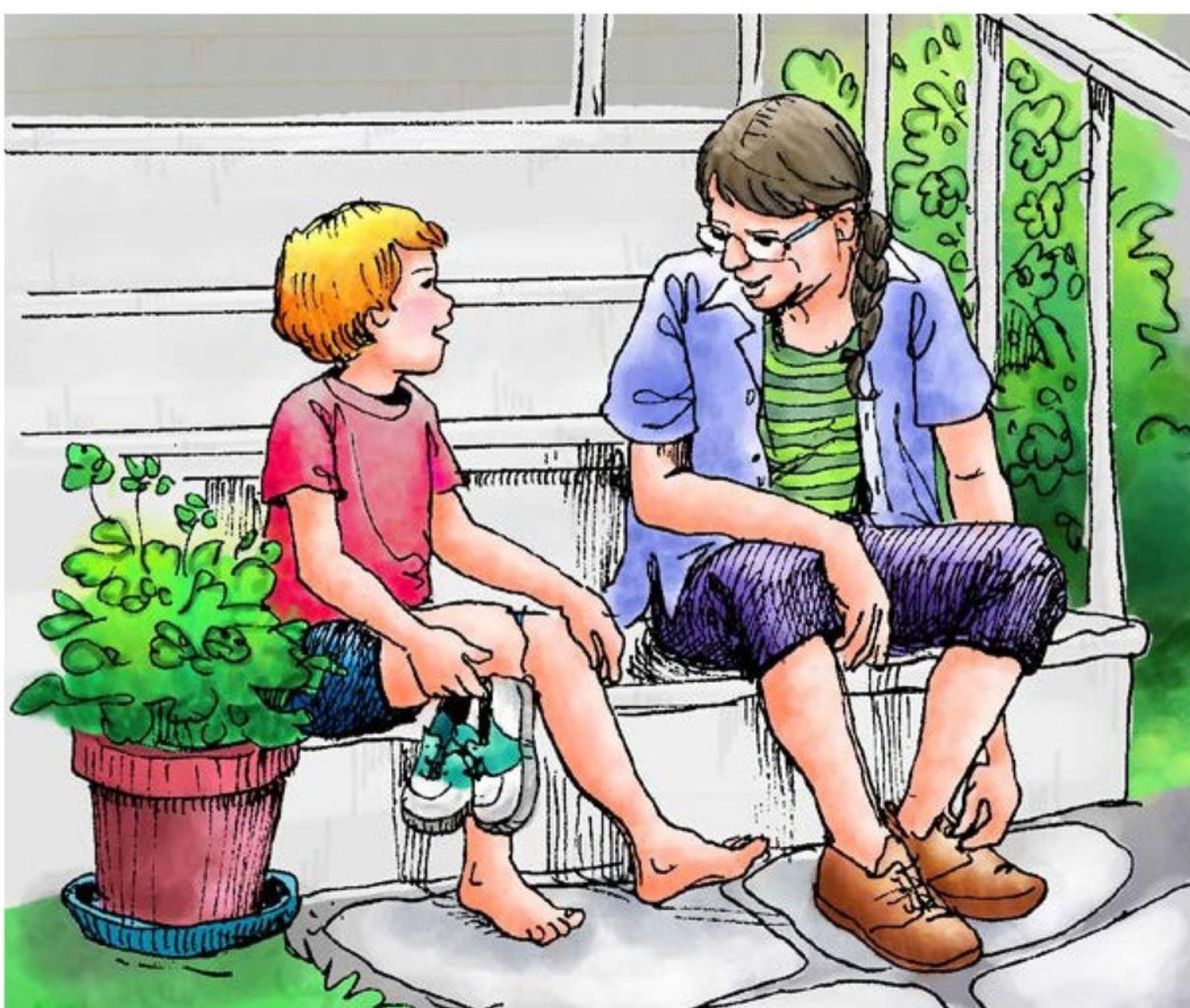
While Gram was making dinner, I climbed the creaky wooden stairway up to the second floor to pick which bedroom I wanted. Each bedroom had different-colored wallpaper. As soon as I looked out the window in the yellow room, I knew it was the room I wanted. I could see sand, birds, blue sky, and ocean waves!



My Summer Home

It was much quieter here than in the city—there were no horns and no sirens—but I could hear the sound of the waves. I had to go see the ocean up close! I ran downstairs and said, “I’m going out to the beach.”

Gram stopped me and said I needed to learn the rules of the sea before I could go to the beach alone. We left our shoes on the porch and walked down to the beach together. The rough sand tickled under my toes.





Gram showed me the long shoreline between two rock jetties (JET-ees). The jetties were long walls of rocks that stretched out into the ocean. Gram said the town had built them years ago to prevent the beach sand from **eroding** (ih-RO-ding) away with the tides.

Gram told me to remember the rules in order to be safe. She said not to go into the water unless she or Jim were with me. She told me about currents (KUR-ents) and the undertow. They were strong flows of water that could drag me far out into the ocean. She said if I respected and followed the rules of the sea, I would learn to love the ocean.

I already loved the crisp, salty smell in the air. The waves rolling, rolling, rolling onto the shore lulled me to sleep that night.



Limulus

I awoke with the sun shining on my face. I pulled on shorts and a T-shirt and ran downstairs. “Remember the rules!” Gram said, and I nodded as I ran out the back door onto the sand. But what were these brownish-gray things scattered all over the beach?

The sand was covered in round things that had shells and pointed tails. Some were lying on their shelled backs and wiggling around. I watched them until Gram called me for breakfast.

During breakfast, I asked Gram about what I had seen. “Those are horseshoe crabs, a type of **arthropod** (AR-throw-pod).” She said scientists call them limuli (LIM-yoo-lie), but most people call them horseshoe crabs because of the U shape in their shells. I told Gram about the upside-down, wiggling ones. She said they were trying to use their tails to turn themselves upright. If they couldn’t turn over, they would get too hot and die.



Gram told me that if a crab is stranded on the hot beach after the tide goes out, it tries to stay cool by **burrowing** into the wet sand. She also said the females will lay green, jellylike eggs under the sand. One female crab might lay eighty thousand eggs in one season! Gram said that within two weeks, the tiny **larvae** (LAR-vee) that develop from the eggs wash out to the ocean. They don't have tails yet. After they molt, toward the end of summer, they grow a tail.



"What is 'molt'?" I asked Gram.

"Molting is when an animal sheds its skin, fur, or feathers and then grows back new ones," Gram said. "Usually this happens because the animal is growing larger."

Gram said that for the first three years, young crabs molt several times a year. After that, they molt just once a year until they are grown.

Later, while we were walking on the beach, Gram told me that when crabs get tired of swimming or floating on their shell backs, they will let themselves slowly sink to the bottom of the ocean to eat. On the bottom, the horseshoe crabs eat **algae** (AL-gee), little soft-shell clams, surf clams, worms, and other small **invertebrates** (in-VUR-tuh-brets).





Because they grind food with their spiny leg segments, these crabs have to be walking to chew their food! Scientists study horseshoe crabs to learn more about their nine eyes and nervous systems. Also, limulus blood can be used to test for some human diseases and to test new drugs. Gram said that horseshoe crabs have been around for 350 million years—since dinosaurs roamed the Earth.

Rescuing

Gram gave me a job. Every morning I ran to the beach to save as many horseshoe crabs as I could. I would turn them over. Then I'd pick up the crabs and toss them into the waves. Sometimes I'd toss them into the waves from the end of the jetty and wish them "good luck" as they floated away. I also tried to chase birds away when I saw them eating the eggs. But Gram told me I should leave the birds alone because they needed food to eat on their flight back north.



One morning I walked to the beach and there were no horseshoe crabs! I ran back to the house to ask what had happened. Gram said that their time for laying eggs was finished until next year. Gram said that next year I could come back and be there to save them again!

I walked back to the beach and lay down on the warm, damp sand. My summer vacation had just begun. What would I do now?



Glossary

algae (n.)	living organisms that grow in water and make their own food but are not plants (p. 12)
arthropod (n.)	a member of a group of invertebrates that have a segmented body, and exoskeleton, and jointed limbs (p. 10)
burrowing (v.)	digging a tunnel or hole (p. 11)
eroding (v.)	wearing away caused by wind, water, or ice (p. 8)
invertebrates (n.)	animals that don't have backbones (p. 12)
larvae (n.)	newly hatched forms of certain animals that look very different from their parents and that change greatly in appearance as they become adults (p. 11)

Note about the series: Horseshoes Aren't Just for Good Luck is the first book in a three-part series written by Deborah Ambroza. The books that follow are: Ants in My Bed and Bats in the Attic.

Horseshoes Aren't Just For Good Luck

Level Q Leveled Book

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Written by Deborah Ambroza

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