## Chapter Five An Alarming Experience

After dinner Sarah shooed Pete and me out of the kitchen so she and Mum could chat and have tea. I didn't mind. That meant Pete and I could head out to his shed. That's where Pete keeps all his gadgets. Sometimes when he's working in the shed, he'll let me take apart one of the old radios he has or make sculptures out of coils of metal wire lying around.

"What are you working on now, Pete?" I asked.

Pete patted the rusty green frame of a lawn mower.

"Well, this old lawn mower is clapped out. I've got to fix up
the engine so I can cut the grass over by Sarah's garden."

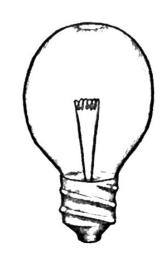
I hopped on a stool next to Pete and told him all about the new jump I'd just practiced. I could tell he was listening even as he hammered, unscrewed, and cleaned different parts of the lawn mower.

"And then we rode up to the jump," I said, "so fast that I thought Flash was going to run right into it instead of over it, and—" Beep! Beep! Beep! Beep!

Pete laughed as I whipped around towards the noise and almost fell off my stool. When I turned, I noticed the light above the shed door was flashing. "What's going on?" I asked.

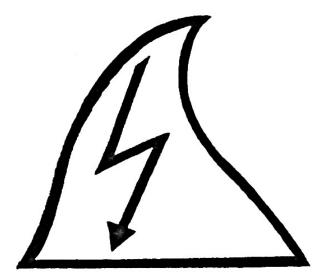


"That's one of my newest technologies," Pete said. "Sarah was complaining that when she would yell out to the shed to tell me that lunch was ready, I wouldn't hear her. Sometimes I'd be running one of my tools that makes a lot of noise,



and, well, my old ears aren't exactly what they used to be. Sometimes I just plain didn't hear her calling. I realized I needed some thing, system, or process—a technology—to help me solve the problem. So I rigged up a buzzer system. When Sarah wants me to come in, she can press a button I wired up in the kitchen. Then the buzzer sounds and the light flashes in the shed. I can see the light blinking even if I'm using a loud tool and I don't hear the buzzer. It keeps me out of trouble with Sarah," he said with a wink.

"Maybe I need one, too. I wish I had something to keep me out of trouble," I said. Hmm, I thought. An alarm to keep me out of trouble. What an idea. "Hey, Pete, what if I had an alarm to tell me when the sheep's water trough is low? You can see the shed from almost everywhere around the horse stables—I'd definitely see a flashing light. And if I were close enough I'd hear the buzzer. Could you help me make an alarm?"



"You're always one to present a challenge, Emily," Pete said. "I think we could work on one together. The tricky part will be figuring out a way to make sure the alarm is safe. Water conducts electricity. That

means electricity can pass through it and give you a shock, or worse. Have you ever noticed a warning label on some electronics that shows a triangle with a jagged arrow through it? That's to warn you about the danger of electrocution if you use them near the water," he said.

I nodded. "So this is a bad idea," I said.

"No, no," Pete said. "We'll just have to be extra careful. The fact that water conducts electricity is just one piece of the puzzle. Some materials are conductors, and others aren't. We can use that knowledge to help us. If we use a material that isn't a conductor to keep the water and the electricity separate, that will prevent anyone from getting hurt. Don't worry, we'll work it out. In the meantime, maybe you can find some materials to help us get started."

"Where should I look?" I asked.

"If you just take apart some of the junk I have around

here, you'll find lots of things you could use," Pete said. "Old radios and other electronics have lots of wires and switches inside."

"Pete," I asked, "how do you know how to make all these things?"

"I used to create all sort of neat things like that for my job before I retired," Pete said. "I was an electrical engineer. That's someone who uses what they know about science, math, and their creativity to solve problems involving electricity. I worked on all sorts of interesting projects, like helping to create hearing aids for tiny babies, and working on devices that helped to track whales by the sounds they make."

"Pete, that's great!" I cried.

Pete chuckled. "It was a lot of fun. But that's enough about me. Sarah and your mum are probably wondering where we are. Come on."

