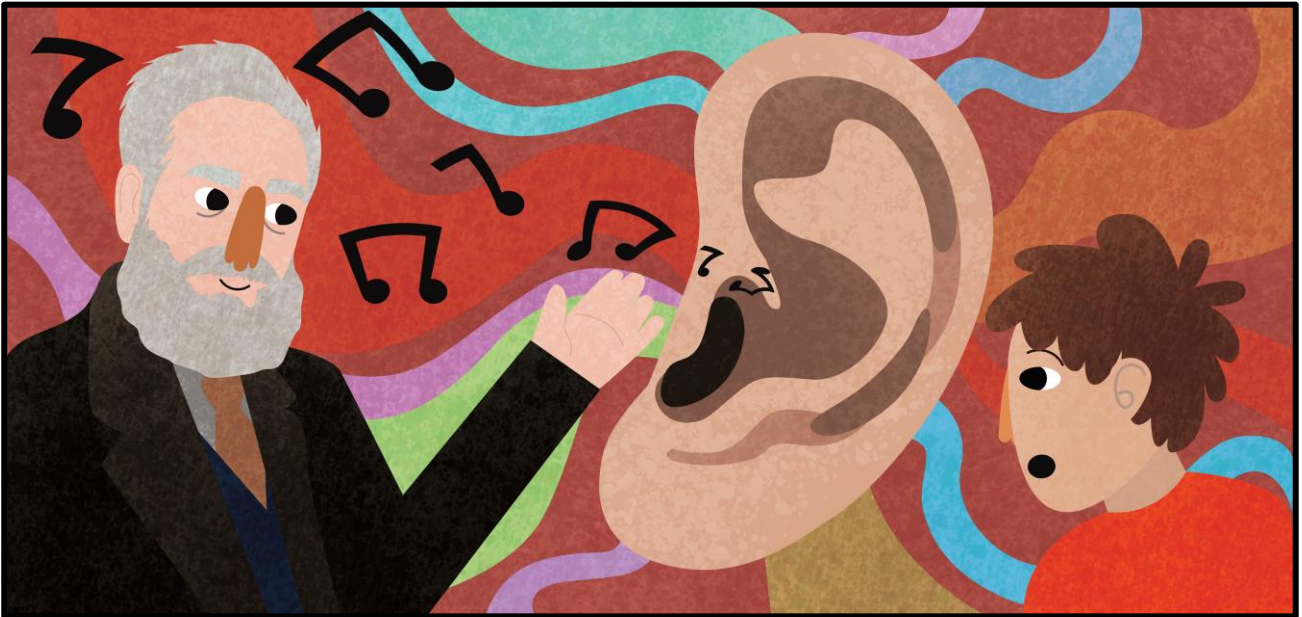


Deepening Understanding

LKS2 Fiction Text

A Day in the Life of a Soundwave by Kerry Tustin



“Will you be quiet!” screamed Ralph, as he tirelessly attempted to get some sleep following his camping weekend. Putting his pillow over his head, he screwed up his eyes and tried again. The sound appeared to become fainter and more muffled, but Ralph still could not get to sleep.

As Max played his beloved instrument - a gloss scarlet guitar - downstairs, Ralph could hear the high pitch sounds of the strings vibrating through the floor of his bedroom. The untuned noise of the instrument below became louder as he removed the pillow from his head. “All I want to do is sleep!” he bellowed downstairs as he jumped out of bed and ran to the door. “I wish you would just be quiet!”

Suddenly, the vibrations grew stronger and the sound became louder as the tune danced towards him. Everything around Ralph began to blur. As his eyes focused, the surroundings became larger and larger, until Ralph was no bigger than an ant!

“Greetings, fair traveller!” said a voice from behind. Ralph spun around in a daze, wondering what was happening.

“Wha...what’s happened to me? Where am I?” Ralph questioned.



"Welcome, Ralph! Mr Bell at your service! Alexander Bell. I'm here to take you on a journey, and... maybe help that brain of yours to switch off and sleep. Follow me!"

Puzzled and perplexed, Ralph jumped aboard the disc-shaped vehicle, sitting next to Alexander. "Mr Bell, what are we doing?" enquired Ralph.

"Please, call me Alex," he replied. "We are going on a journey. A journey of discovery! We, Ralph, are travelling to the inner ear!"

Soaring up towards Max, Ralph noticed the air was moving. "Those are **soundwaves**: invisible vibrations of air created when the strings of Max's guitar are plucked," stated Alex. Jumping into the **soundwaves**, they shot towards the ear.

As they approached, Ralph questioned, "Why do ears have those curved folds shaped like a 'C'?"

"Ah! The **pinna** or the **outer ear**!" answered Alex. "These folds of **cartilage** are shaped like this to funnel **soundwaves** into the **middle ear**."

Swirling around the **pinna**, they swiftly entered the **ear canal**. "Eurgh! Alex, what is all this sticky stuff seeping down the walls of the **ear canal**?" Ralph asked.

"**Ear wax**!" exclaimed Alex. "This yellowish, waxy substance may look unattractive, but it has an extremely important job. The **ear wax** actually cleans your ear, as well as protecting the skin of the ear from damage; however, the most important job it has is to keep out nasty **bacteria**, **fungi**, **water**, and even **insects**."

"Ooh..." replied Ralph, as they zoomed on down the canal towards the **inner ear**. "What is that up ahead? It looks like a drum."

"Correct! That is the **ear drum**. These **soundwaves** we are riding are hitting the stretched skin of the **ear drum**, causing it to **vibrate**. But we must be quiet here, Ralph, the **ear drum** is thin and extremely **sensitive** to sound."



'Ossicle...Ossicle...Ossicle...Ossicle...' came the faint rhythm of sound as the drum vibrated. Moving forwards, passing through the ear drum, Ralph and Alex were faced with three tiny bones, working together in unison to the beat of the ear drum. "These are the ossicles, also known as the hammer, anvil and stirrup," stated Alex. Ralph gazed around in amazement as the soundwaves vibrated past him, heading towards the brain.

"The journey isn't over yet, Ralph. Let's go," whispered Alex as they vibrated along with the soundwaves towards a curled structure.

"I didn't know we had a snail in our ear. How amazing is that?" shrieked Ralph.

"Ssshhh, Ralph! That's not a snail, it's the cochlea - a small curled tube filled with fluid. The vibrations from the ossicles create waves in the cochlea."

"What are those tiny hairs I see?" enquired Ralph.

"I'm glad you asked," replied Alex, "Those tiny hairs line the cochlea and the vibrations in the fluid move the hairs, sending nerve signals to the brain. Your brain receives these nerve signals and interprets them as sound."

"How amazing is that! Who would have known hearing sound was so complex? I still don't know how this will help me to sleep though, Alex," sighed Ralph.

"Ah...well that is simple. If you really want to sleep, Ralph, block out the soundwaves," stated Alex.

"Block out soundwaves? But how?" Ralph asked as they shot out of the inner ear, through the middle ear and back through the outer ear.

"Ear plugs! Give them a try and you'll sleep as sound as a baby."

Placing the foam ear plugs into his ear canal, Ralph climbed into bed, closed his eyes and lay down. "These will never work..." he yawned, just before he slipped into a peaceful sleep...

