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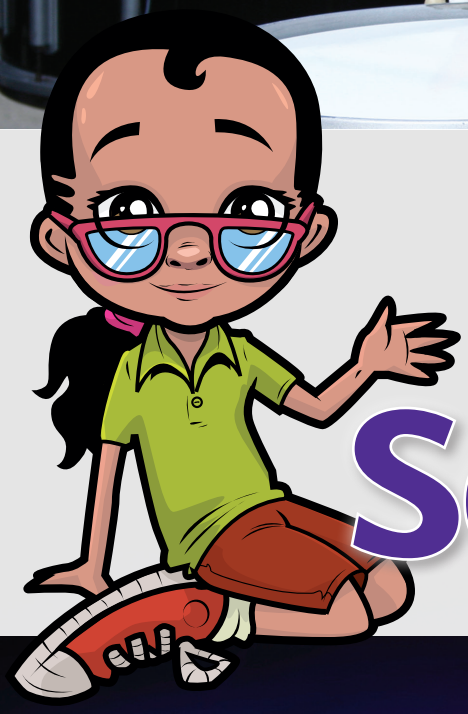
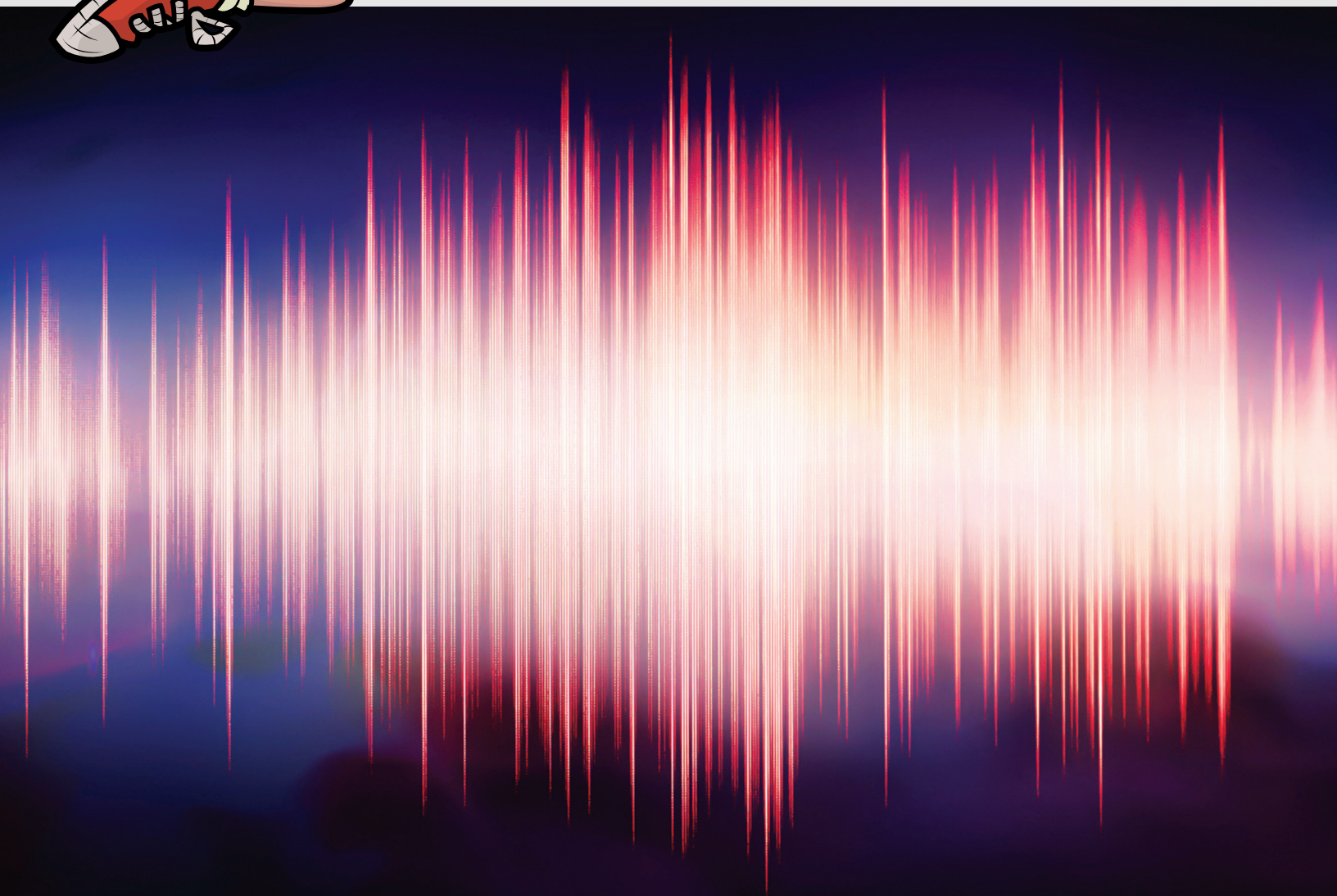


Light and Sound Waves



Light and Sound

By Corinn Kintz

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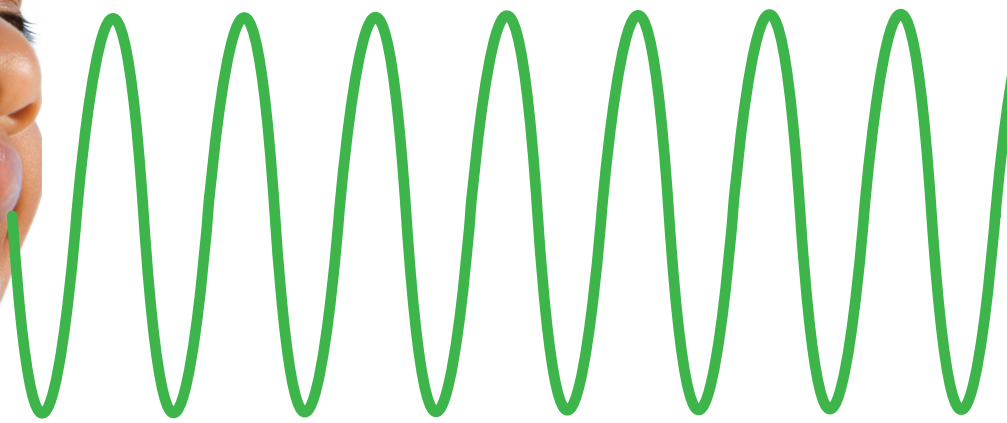
What Is Sound?

Sounds let us know what happens around us. Think about what you learn when you hear a loud bark.

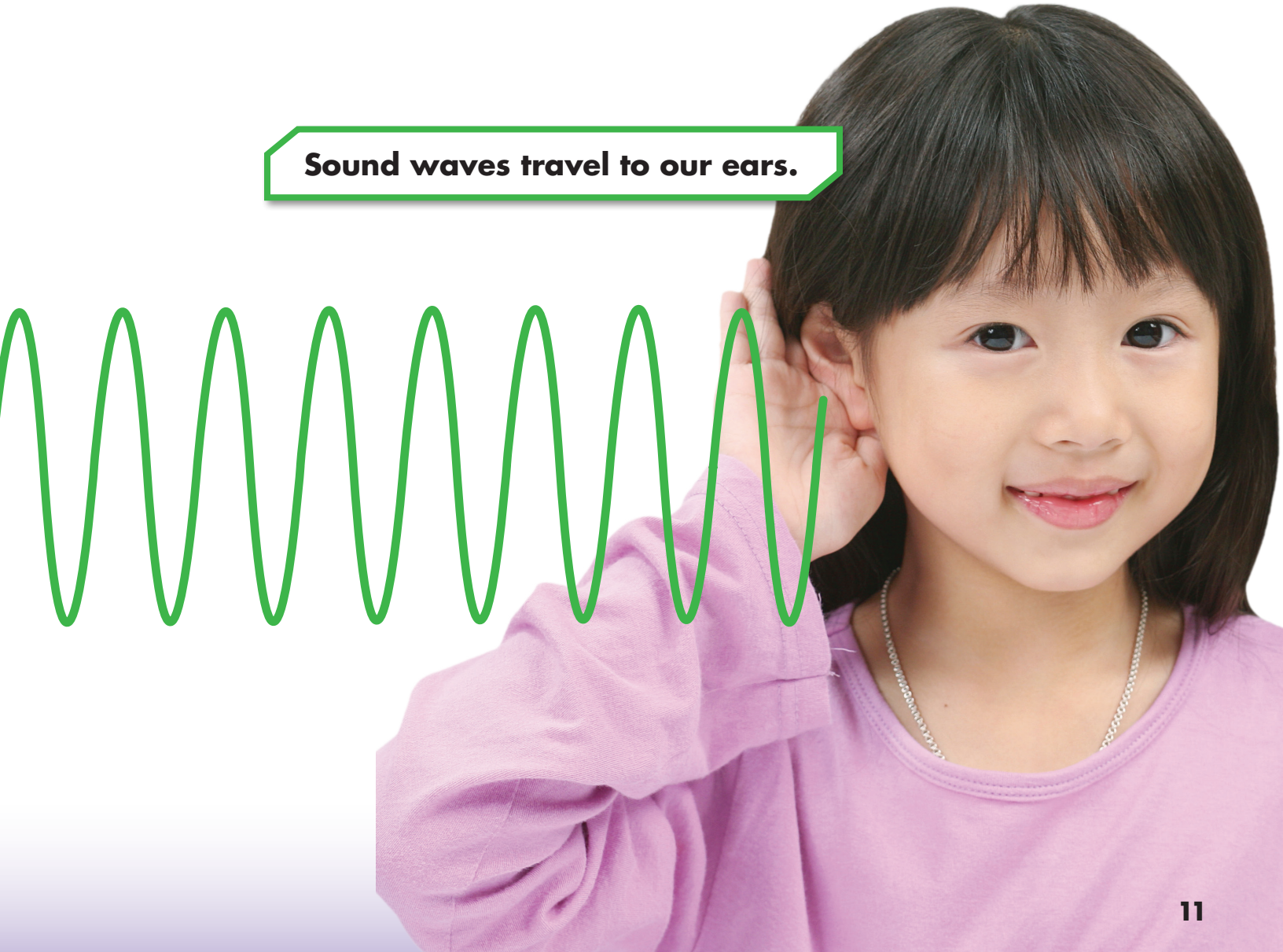
Things are made of **matter**. Matter is anything that takes up space. When matter vibrates, it makes sound. To **vibrate** means to move back and forth quickly. **Sound** is a type of energy that comes from things that vibrate.

Sound travels as sound waves.



You can feel your throat vibrate when you speak. Put a finger on the front of your throat. Say something. You feel your throat vibrate. There is no sound unless something vibrates.

Sound moves through air. Sound travels to our ears.

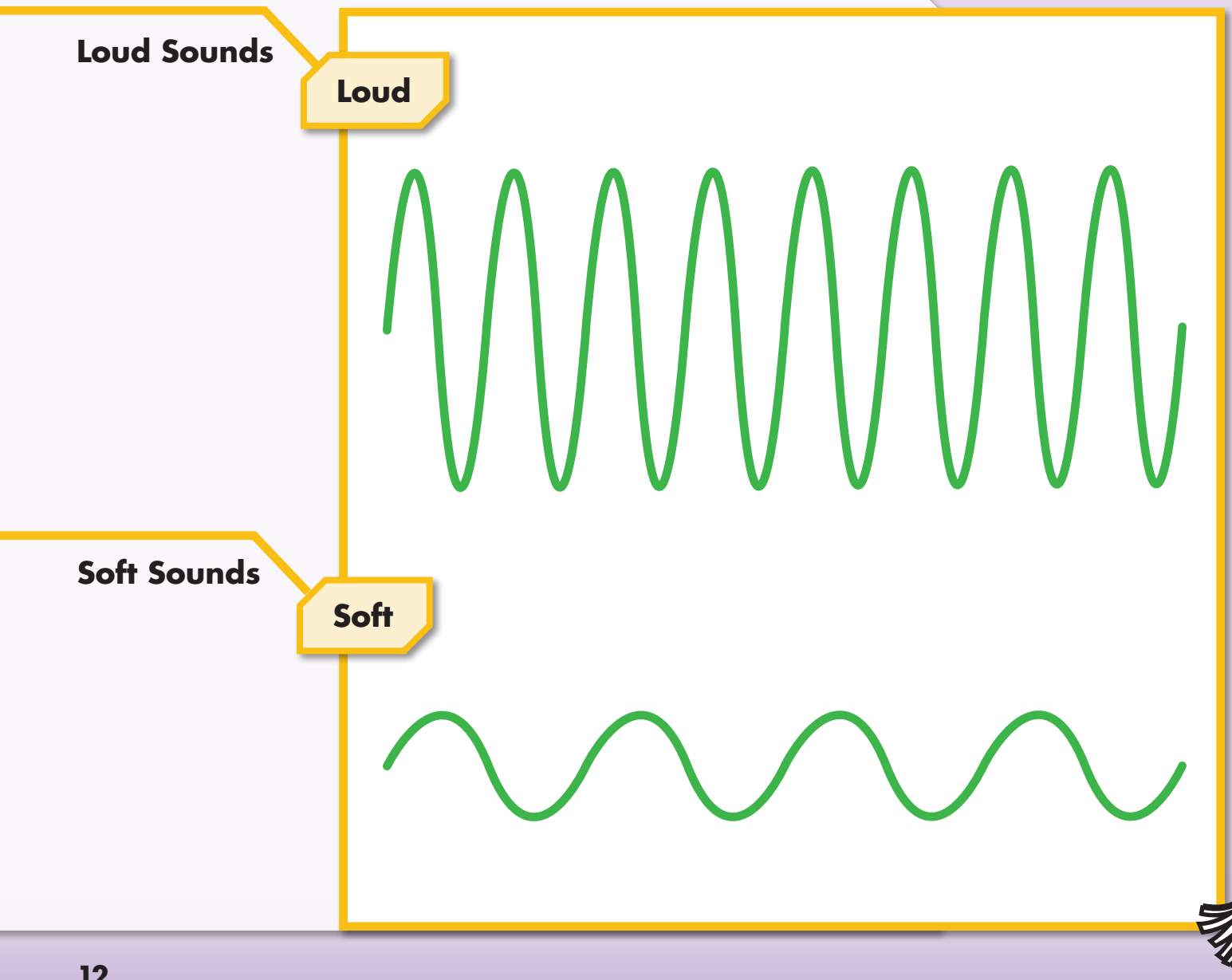


Sound waves travel to our ears.

Volume

Rub your finger on your desk. It makes a soft sound. Slam a door shut. It makes a loud sound. **Volume** is how loud or soft a sound is.

Loud sounds make taller sound waves than soft sounds.



Pitch

Pitch is how high or low a sound is. Something that vibrates fast makes a high pitch. The peep of a baby chick has a high pitch. Something that vibrates slowly makes a low pitch. The moo of a cow has a low pitch.

The bark of a big dog vibrates the air slowly. It has a low pitch.

A whistle vibrates the air quickly. It has a high pitch.

Crosscutting Concept

Keep still for a bit. What sounds do you hear? What causes each sound?

Science and Engineering Practices

Make Models!

Make a chart like this one. Think of things that make sound. List the things in the chart. Tell if each sound is loud or soft. Draw a model wave for each sound. Draw tall waves for loud sounds. Draw short waves for soft sounds.

Loud and Soft Sounds

Sounds	Loud or Soft?	Wave Model
kitten	soft	

Careers

Optician

Opticians help with eye care. They make lenses for glasses. They help people find good glasses.

Would I like this career?	You might like this career if • you are good with your hands. • you like helping people.
What would I do?	• You would make eyeglasses. • You would help fit glasses.
How can I prepare for this career?	• You can work in a store that sells eyeglasses. • You can be trained at a school.

Opticians fit people for glasses.

Glossary

light a kind of energy that lets us see

Light shines from the Sun.

matter something that takes up space

A rock is a kind of **matter**.

opaque does not let any light pass through

A door is **opaque**.

pitch how high or low a sound is

His giggle has a high **pitch**.

property something that sets apart one thing from another

A sound has **properties** like loud or soft.

reflect bounce light off an object

We see a desk because light **reflects** off it to our eyes.

refraction the bending of the path of light waves

Refraction can make an object look bent or changed.

shadow a dark shape that forms when something is between a light and a surface

You see your **shadow** on a sunny day.

sound a type of energy that comes from things that vibrate.

We hear because **sound** waves reach our ears.

translucent lets only some light pass through

Tissue paper is **translucent**.

transparent lets light pass through

A clear window is **transparent**.

vibrate to move back and forth quickly

My hands **vibrate** when I clap.

volume how loud or soft a sound is

The **volume** of the television is too loud.

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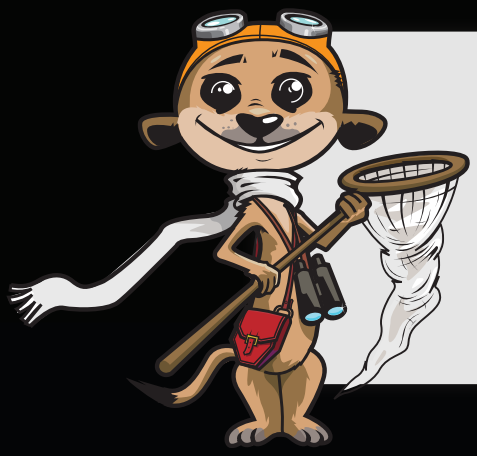

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