Sound Lessons: Scope and Sequence

Lesson Number	Focus Question(s)	Main Learning Goal	Science Content Storyline
1a	How can we tell if something is making a sound?	To produce sound, objects must move back and forth quickly (vibrate).	In science, evidence is what we find out or understand that helps us know something. We can find evidence of sound by using our senses. In addition to hearing sound, we may also be able to see and feel an object moving back and forth quickly. This is called *vibrating*. To produce a sound we can detect with our senses, an object or some other kind of material must vibrate.
1b	How can we tell if something is making a sound?	To produce sound, objects must move back and forth quickly (vibrate).	An object or some other kind of material must vibrate to make a sound we can detect with our senses. *Vibrate* means "to move back and forth quickly." In addition to hearing the sound an object makes, we may also be able to see and feel the object vibrating. We heard a ruler and a rubber band make sounds, but we also saw and felt them vibrate. Seeing and feeling vibrations, as well as hearing sounds, are evidence that an object is making a sound.
2a/b	Do soundmakers always vibrate? What is our evidence?	To produce sound, objects must move back and forth quickly (vibrate).	All objects produce sounds by vibrating or moving back and forth quickly. Sometimes we can see these vibrations, and sometimes we can't. Even if we can't see an object vibrating, we may be able to feel the vibrations or see other objects move when a vibrating soundmaker touches them.
3	How does sound move from a vibrating object to our ears?	Vibrating objects can make other objects vibrate.	When a soundmaker vibrates, it can make objects around it vibrate. This sets up a repeating pattern of vibrations that move through the air and carry the sound from the soundmaker to our ears. We can use lines to represent this repeating pattern.
4a/b	How does sound move from a soundmaker to our ears? What is our evidence?	When something vibrates, it makes the air around it vibrate.	For us to hear sound, it must move from a vibrating object to our ears. All soundmakers vibrate and cause the air around them to vibrate. When these vibrations move through the air and reach our ears, we hear sound.
5a/b	When something makes a sound, where does the sound go? What is our evidence?	Sound moves in all directions away from the source.	When something makes a sound, the sound moves away from the soundmaker in all directions. The sound doesn't stop moving when we detect it.
6a/b	How do our ears help	Vibrating air (sound) can make	When a soundmaker vibrates, it causes the air around it to vibrate.

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	us hear sound?	other objects vibrate. When vibrating air makes our eardrums vibrate, we hear sound.	These vibrations move through the air away from the soundmaker. Some of the vibrations reach our ears and make our eardrums vibrate. Our eardrums send a message to our brains that these vibrations are sound.
7a/b	Why do we hear sound?	Vibrating objects produce sound. Vibrations travel through the air in all directions. Vibrating air can make our eardrums vibrate so we hear sound.	All soundmakers vibrate and make the air around them vibrate. These vibrations travel through the air to our ears and make our eardrums vibrate. Then our eardrums send a message to our brains that the vibrations are sound.