About the overview

The diagram below shows the science concepts outlined in this book and in the level 3–4 companion book, Properties of Sound. The arrows show the links between concepts and how they might build in sequence. A “big idea” shows how a fully developed understanding of the concepts might look. Such an understanding might not be achieved until level 7 or 8. The big ideas are included to help you build appropriate concepts with your children, whatever their age.

**Big Idea**

**Sound is a form of energy that, like all other forms of energy, can be transferred or transformed into other types of energy.**

- If a sound carries large amounts of energy, hearing can be damaged.
- Sound energy can travel through solids, liquids, and gases.
- We hear when sound energy reaches our ears.
- The larger the vibration, the louder the sound.
- For sounds to be produced, something needs to move.
- Our ears can hear differences in sounds.

**Big Idea**

The properties of sound are related to the manner in which sound waves travel through a substance.

- Sounds change as they move from one substance to another (for example, from a solid to air or from air to water).
- Sounds can be louder or softer, higher or lower.
- The higher the frequency of the vibration, the higher the pitch of the sound.
- The sound that musical instruments produce can vary in pitch according to the length, tension, and thickness of the vibrating material.
- Sounds that we like can be combined to make music.

**Big Idea**

The properties of musical instruments are related to the manner in which they generate sound waves.

- The materials used in musical instruments are chosen for their properties of vibration.
- Musical instruments must make the air vibrate before we can hear the music.
- We make sounds by actions such as striking, blowing, plucking, and scraping.
- Musical instruments all make vibrations. They have features that allow them to make different sounds.

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**Science Concepts**

- Exploring Sound (Book 18)
- Properties of Sound (Book 19)