Year Group: 11 Term: 3 (electromagnetic spectrum and using waves)

We are learning:

1. **Electromagnetic Waves – A family of transverse waves that includes radio, microwave, infrared, visible light, ultraviolet, X-rays, and gamma rays.**
2. **Uses and Dangers of EM Waves – Each type has practical uses (e.g. X-rays in medicine, microwaves in cooking) and potential risks (e.g. UV causing skin damage).**

Separate science only

3. **Sound Waves – Longitudinal waves that travel through solids, liquids, and gases; speed depends on the medium.**
4. **Human Hearing Range – Humans can hear sounds between 20 Hz and 20,000 Hz.**
5. **Ultrasound – High-frequency sound waves used in medical imaging and industrial testing.**
6. **Seismic Waves – Waves produced by earthquakes; used to study Earth's internal structure.**

How can you support your child:

- Encourage them to make revision posters on each of the sub-topics within the topic.
- Encourage them to make cue cards with questions and answers on all the sub-topics.
- Encourage them to use the notes, videos, and quizzes, on BBC Bitesize.
- Encourage them to use Seneca Learning to supplement and secure their knowledge on the topic.

Try asking them:

1. **"Can you name the electromagnetic waves and one use for each?"**
   Answer:
   - **Radio – broadcasting**
   - **Microwave – cooking and mobile phones**
   - **Infrared – remote controls and thermal imaging**
   - **Visible light – seeing things**
   - **Ultraviolet – sterilising and tanning**
   - **X-rays – medical imaging**
   - **Gamma rays – cancer treatment**
2. **"How do sound waves travel?"**
   Answer: Sound waves are longitudinal and travel by particles vibrating — they move fastest in solids, slower in liquids, and slowest in gases.
3. **"What's the range of sounds humans can hear?"**
   Answer: From 20 Hz to 20,000 Hz.
4. **"How is ultrasound used in real life?"**
   Answer: It's used in medical scans (like pregnancy imaging) and industrial testing (like checking for cracks in materials).
5. **"What are seismic waves and why are they important?"**
   Answer: Seismic waves are caused by earthquakes — scientists use them to study the Earth's internal structure.

Useful Links:

Senecal Learning = https://senecalearning.com/en-GB/

BBC Bitesize = GCSE Physics (Single Science) - AQA - BBC Bitesize

Kerboodle = www.kerboodle.com