Year 9, P8 Waves, their properties and effects, Science

Rationale and Context of Unit:	Core curriculum content:	Tier 2 & Tier 3 vocabulary explicitly taught:
• *This unit is the final unit of the Year 9 Physics as it builds on the topics have learnt in KS2 and is seen again at of GCSE. There are some tricky concepts which is why it is taught at the end of KS3.* • *This unit links to the GCSE Waves topics P12, P13 and P14.*	• What are the different types of waves • What happens to a wave as it interacts with a surface or different medium • What happens when two or more waves interact • What are sound waves and how do they travel • What are electromagnetic waves • The differences and similarities of sound and light • What can we use waves for	• *Transverse* • *Longitudinal* • *Ripple* • *Frequency* • *Amplitude* • *Reflected* • *Refracted* • *Absorbed*
Challenge and Support:	**World wide learning/ links to 21st century:**	**Cultural capital/ Industry/ Enrichment:**
Each lesson plan has activities broken down for the ability of the students. Most activities have a LPA, MPA, HPA and some have a CHAL. *Example includes " Pupils should additionally attempt to describe what happened to the energy that wasn't transmitted"*	• The new 5G network and how it works (L10)	• Farming/construction using hydraulics • Racing car design • Car design
Historical, Social, Moral, Spiritual, Cultural context:	**Cross curricular links/ literacy/numeracy:**	**Common misconceptions:**
• Is the new 5G network linked to the Corona virus pandemic (L10) • How we must check advances in technology (L10)	• *Cross-curricula links: PE – How we can use science to go faster and perform better in a range of sports* • *Numeracy: measuring of various amplitudes in various units, use of SI prefixes for very large and very small numbers*	• *Waves can travel through a vacuum* • *Sounds waves travel much slower than light* • *Waves can destroy each other during interference* • *Electromagnetic waves are used by us everyday* • *Use of EM waves is safe*

	• *Literacy: extended writing piece – persuasive writing to get a client to buy your ultrasound scanning machine. Communicating ideas work (L6/12)*	

Assessment timeline:

- *Practical skills monitored by teacher when conducting experiments.*
- *Assessed practical skill: 'communicating ideas' (lesson 6/12).*
- *End of topic exam to assess pupil progress at the end of test.*
- *All lessons have success criteria presented to pupils at the start of the lesson.*
- *Assessed tasks (highlighted above) will have feedback to help improve pupils understanding after they have completed the assessment.*

Home learning

- *Seneca online learning or homework booklet – 2 pages.*
- *Scholarly reading* https://www.mdpi.com/1660-4601/16/18/3406/htm

Feedback

- *Students will have feedback on their skills assessment midway through this unit.*
- *Students will self-assess their home learning page of the homework booklet.*
- *Students will have feedback on their end of topic text which will be teacher assessed also*
- *Students will self-assess their home learning page of the homework booklet.*

Students will generate self-feedback on their skills assessment at the end of this unit this unit.

Length of unit (duration indicated in lessons)

1	2	3	4	5	6	7	8	9	10	11	12

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