Year 8, P3 Waves and their properties and effects, Science

Rationale and Context of Unit:	Core curriculum content:	Tier 2 & Tier 3 vocabulary explicitly taught:
• *This unit is the only unit of the Year 8 Physics as we focus on physics in year 7 as we know our students come into high school weakest at this subject.* • *It builds on the topics have learnt in KS2 and slightly in year 7 and is seen again at of GCSE. There are some tricky concepts which is why it is taught in of year 8.* • *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 • How we measure waves • Properties of light • Reflection, refraction • Colour of light and rainbows • The eye • cameras	• *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 a specific section of how to differentiate the lesson to the needs of every students. This include specific resources to support and challenged students depending on their needs. Example includes " challenge - Pupils should additionally attempt to describe what happened to the energy that wasn't transmitted"	• The new 5G network and how it works (L2)	• Sound engineer • Optician • Ultrasound • Radiotherapy • Proton beam therapy

Historical, Social, Moral, Spiritual, Cultural context:	Cross curricular links/ literacy/numeracy:	Common misconceptions:
• Is the new 5G network linked to the Corona virus pandemic (L2) • How we must check advances in technology (L2)	• *Cross-curricula links: Art: true colour* • *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*

Assessment timeline:

- *Practical skills monitored by teacher when conducting experiments.*
- *End of topic exam to assess pupil progress at the end of the unit.*
- *All lessons have success criteria presented to pupils at the start of the lesson.*
- *Common misconception task in this unit 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 common misconception task midway through this unit.*
- *Students will self-assess their home learning page of the homework booklet (if done).*
- *Students will have feedback on their end of topic text which will be teacher assessed also*
- *Students will generate self-feedback on their work in each lesson (where appropriate).*

Length of unit (duration indicated in lessons)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
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