Science Faculty | Directed Improvement Sheet

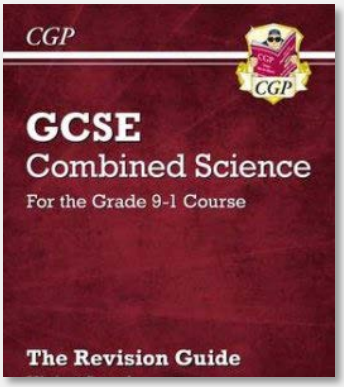
Year 10

Ensure you can compare longitudinal and transverse waves and describe what happens when a wave changes medium

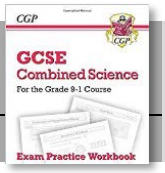
Step 1 What do I need to know?

- Be able to compare longitudinal and transverse waves
- Identify examples of both longitudinal and transverse waves
- Describe what happens when a wave changes mediums
- Draw ray and wave front diagrams to show what happens to a wave when it changes mediums

Step 2 How do I find out about it?

Revision Guide Page		Web Links
		Bitesize https://www.bbc.com/education/guides/z3yq4qt/revision YouTube https://www.youtube.com/watch?v=0f5iYCNCnow&list=PL9IouNCPbCxX1-0Nr5_bMDJnN-9RqMuA6
Higher	Pg. 218	
Foundation	Pg.219	
Triple Physics	Pg. 73	

Step 3 What can I do to help me learn it?



Complete the relevant questions in your CGP Science Workbook		
	Higher	Pages 233
	Foundation	Pages 197
	Triple Physics	Pages 71

TASK 1- Draw two diagrams: one of a slinky modelling a transverse wave and one of a slinky modelling a longitudinal wave.

TASK 2- Explain the difference between longitudinal and transverse waves. Make sure you include the following: direction of oscillations, perpendicular, parallel, examples include sound waves, examples include water waves.

TASK 3- Identify the three possible outcomes when a wave hits a boundary into another medium.

TASK 4- Sketch a ray diagram to show a light ray entering a solid block from air. Make sure you label your ray diagram.

TASK 5- What are the rules for drawing a wave front diagram?

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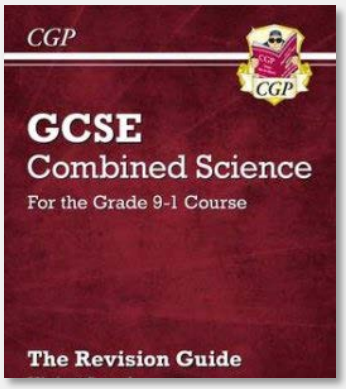
Year 10

Ensure you can explain how to measure the wavelength, frequency and wave speed in a fluid and in a solid

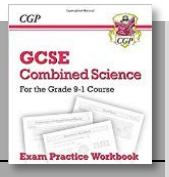
Step 1 What do I need to know?

- Be able to recall the equations to calculate wave speed and frequency
- Explain how to make the measurements necessary to calculate wave speed in a both a liquid (ripple tank) and a solid (piece of string)

Step 2 How do I find out about it?

Revision Guide Page		Web Links
		Bitesize https://www.bbc.com/education/guides/zwkn2nb/revision/4 YouTube https://www.youtube.com/watch?v=UNmv6H-f180&list=PL9IouNCPbCxX1-0Nr5_bMDJnN-9RqMuA6&index=4
Higher	Pg. 219	
Foundation	Pg. 220	
Triple Physics	Pg. 74	

Step 3 What can I do to help me learn it?



Complete the relevant questions in your CGP Science Workbook		
	Higher	Pages 234
	Foundation	Pages 198 - 199
	Triple Physics	Pages 72

TASK 1- Recall the equations to calculate wave speed and the frequency of a wave. Remember to also identify the units.

TASK 2- Explain how you would use a ripple tank to get accurate measurements of wavelength and frequency in order to calculate the speed on the wave.

TASK 3- Explain how you would use a piece of string or cord to get accurate measurements of wavelength and frequency in order to calculate the speed on the wave.

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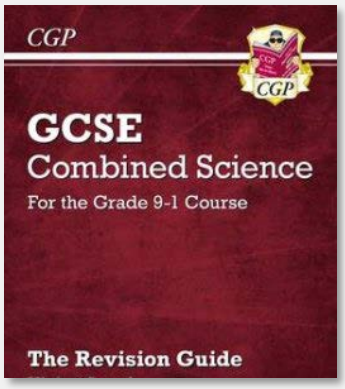
Year 10

Develop your knowledge of the electromagnetic spectrum, including the properties and uses of each type of wave

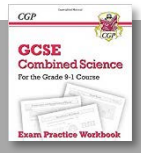
Step 1 What do I need to know?

- Describe the electromagnetic spectrum and recall the order of the waves.
- Give properties and uses of each part of the spectrum.

Step 2 How do I find out about it?

Revision Guide Page		Web Links
		Bitesize https://www.bbc.com/education/clips/zph87ty http://www.bbc.co.uk/schools/gcsebitesize/science/aqa/waves/soundandlightrev2.shtml YouTube The Electromagnetic Spectrum
Higher	Pg. 220-224	
Foundation	Pg. 223-225	
Triple (Physics)	Pg. ?	

Step 3 What can I do to help me learn it?



Complete the relevant questions in your CGP Science Workbook		
	Higher	Pages 237-239
	Foundation	Pages 201-203

TASK 1- Draw and label a diagram of the electromagnetic spectrum

TASK 2- complete a table like the one below, include each part of the EM spectrum

Part of the spectrum	Property	Use	Danger
Radio			

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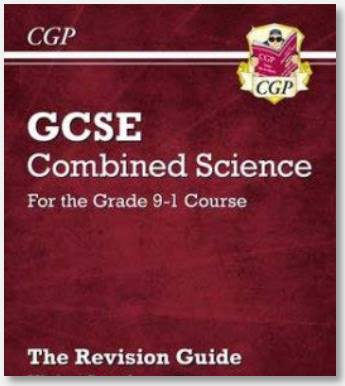
Year 10

Ensure you can explain how to investigate infra-red absorption and emission

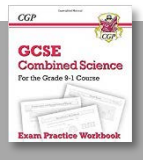
Step 1 What do I need to know?

- Describe what infrared radiation is.
- Explain how to investigate infrared emission with a Leslie Cube.
- Explain how to investigate infrared absorption using melting wax.

Step 2 How do I find out about it?

Revision Guide Page		Web Links
		Bitesize Leslie Cube required practical YouTube Required practicals investigating IR absorption and emission
Higher	Pg. 225	
Foundation	Pg. 226-227	
Triple (Physics)	Pg. ?	

Step 3 What can I do to help me learn it?

	Complete the relevant questions in your CGP Science Workbook	Higher	Pages 240
		Foundation	Pages 204-205

TASK 1- Draw a labelled diagram and write a method for the Leslie Cube practical – identify the independent, dependent and control variables.

TASK 2- Sketch a graph of the results and explain them in terms of emission of infrared radiation.

TASK 3 – Draw a labelled diagram of the melting wax required practical and explain the results.