**Homework Menu Grid: Waves 1**

Complete some of the tasks from the grid below to reach a total of points over this unit of work. Try and cover a variety of tasks over the unit so that you’re practising different skills. Once you’ve completed a task, colour that box on the grid to keep a record of your points. Can you get the highest point score this unit?

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| **Topic** | **1 Point** | **2 Points** | **4 Points** | **6 Points** | **10 Points FGF** |
| **Types of waves** | Write down 2 types of waves.  | Give an example of each type of wave. | Define:* Wavelength
* Amplitude
* Frequency
 | Draw a diagram of a transverse wave, and label it with the wavelength, amplitude and frequency. | Draw a diagram of a longitudinal wave, and label it with the amplitude, frequency, wavelength, rarefaction and compression.Explain the difference between rarefaction and compression.  |
| **Light waves** | Write down the speed of light, in metres per second.  | Write down the equation that links speed, distance and time.  | It takes 480 seconds for light to reach us from the Sun. Calculate how far away the Sun is, in metres. Show your working out. | The moon is 38,440,000m away from Earth. Calculate how long it takes for light to reflect from the Moon onto Earth. Show your working.  | Draw a light ray diagram explaining how we can see the moon at night. |
| **The eye** | Name 5 parts of your eye. | Describe what happens to your iris as more light tries to enter your eye.  | Describe the function of:* The optic nerve
* The lens
* The retina
 | Explain why the light inverts as it passes through the lens in your eye.  | Some people need to wear glasses or contact lenses to improve their vision. Research how glasses can help improve someone’s vision. Research any permanent ways to improve vision.  |
| **Colour** | Name 7 colours of light. | Describe what happens to white light as it goes through a prism.  | Create your own acronym to remember the 7 colours of light. An example is *‘Richard Of York Gave Battle In Vein.’* | Explain why looking through a red filter will make everything appear red.  | A green filter is placed in front of a blue filter. When looking through these 2 filters, nothing can be seen. Explain why nothing can be seen through these 2 filters. S.r |

**Homework Menu Grid**

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| **Sound waves** | Give the speed of sound in air. | Explain why we see lightning before we hear thunder.  | Explain why sound might travel at different speeds though solid or liquid materials.  | Explain why sound cannot travel in space. | When fighter jets travel at immense speeds, they are known to ‘break the sound barrier’.Research this phenomenon and explain why some objects ‘break the sound barrier’, and what happens when the sound barrier is broken.  |
| **Loudness and pitch** | Identify the hearing range of humans.  | Identify which animal can hear the lowest frequency sound. Identify which animal can hear the highest frequency sound. |  Describe how amplitude affects the sound of a wave.Describe how frequency affects the sound of a wave. | Explain how a trumpet player can change the loudness and pitch of his instrument. You must talk about amplitude and frequency here. | Draw and label the following 4 sound waves as they would appear on an oscilloscope:* A loud and low pitch sound
* A quiet and high pitch sound
* A quiet and low pitch sound
* A loud and high pitch sound
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| **The ear** | Name 5 parts of the human ear.  | Identify 2 ways we can protect our hearing from loud sounds. | Describe the function of the:* Ear drum
* Cochlea
* Ossicles
 | Explain what causes ‘tinnitus’ in your ears, and suggest how it can be prevented.  | Draw a labelled diagram of the inner ear. Explain how sound travels through the ear to our brains using your labelled diagram.  |
| **Radiation** | Give the definition of radiation.  | Identify 5 objects which give off their own infrared radiation.  | Describe how black material is better at absorbing radiation.  | Explain why radiation can travel through space.  | Use the internet to research a diagram of a vacuum flask. Draw and label your own design for a vacuum flask, and explain all the key features of your vacuum flask.  |