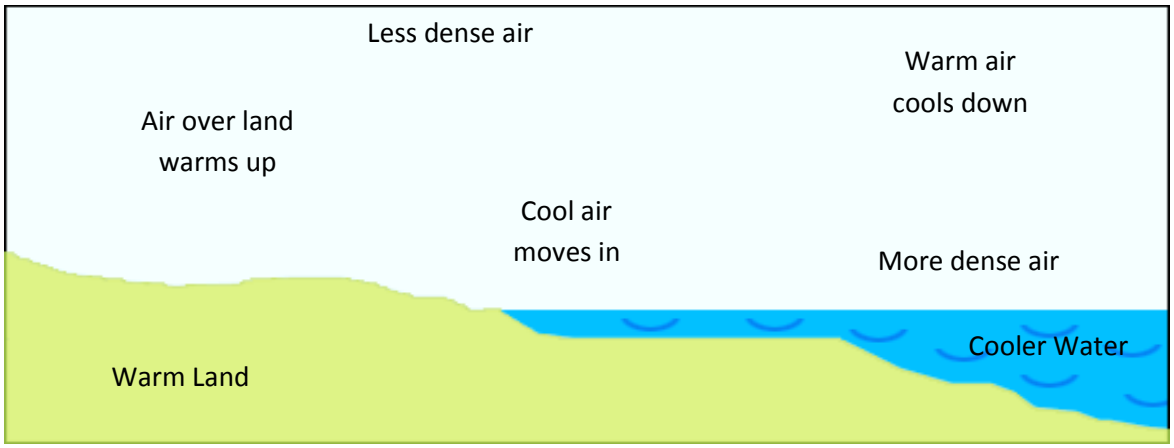
Year 9 Revision: Heat, Light and Sound

HEAT

1. In the table below write one of the 3 methods of heat transfer that best fits the description. Choose from CONDUCTION / CONVECTION / RADIATION.

METHOD	DESCRIPTION
	Occurs only in solids
	Is the heat transfer we receive from the sun
	Occurs in Fluids (liquids and gases)
	Is called Infra-red radiation which our skin detects as heat
	No particles (medium) are need for this type of heat transfer
	Occurs when particles can move from a hot area to a cold area.
	Is used for cooking on a stove top
	Is absorbed more by darker colours (especially cars)
	Is the method of heat transfer utilised to heat (and cool) our houses and building

2. On the below diagram draw the process of convection with the arrows showing the movement of air:



3. Do particles move faster or slower when heated?

4. Does heat flow from warm to cold objects or from cold to warm objects?

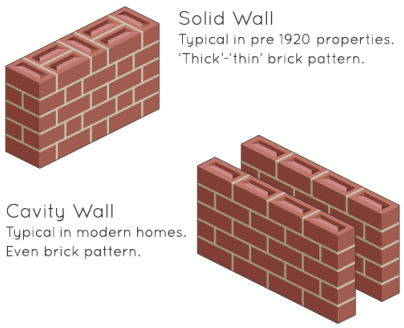
5. Define the term insulator and name two.

6. What form of heat transfer does not require a medium?

7. What type of heat transfer occurs in air and water?

8. What type of heat transfer occurs when objects are touching?

9. Out of the below to pictures select which wall would better insulate your home, identify what the insulator is and explain how it is insulating the house:

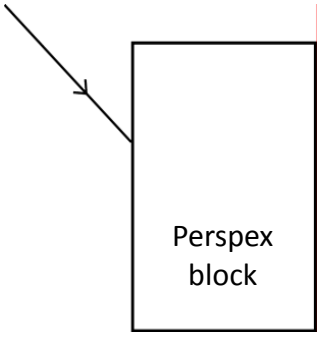


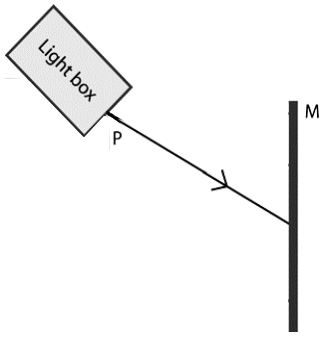
LIGHT

10. Which one of the following waves is at the beginning of the Electromagnetic Spectrum - **Radio, Microwave or infra-red**?

11. What are the last two waves at the end of the EM Spectrum – Either Visible and Ultraviolet **OR** X-rays and Gamma rays?

12. On the below diagrams draw the ongoing ray, the normal, and the incidence and reflected angle for each interface:

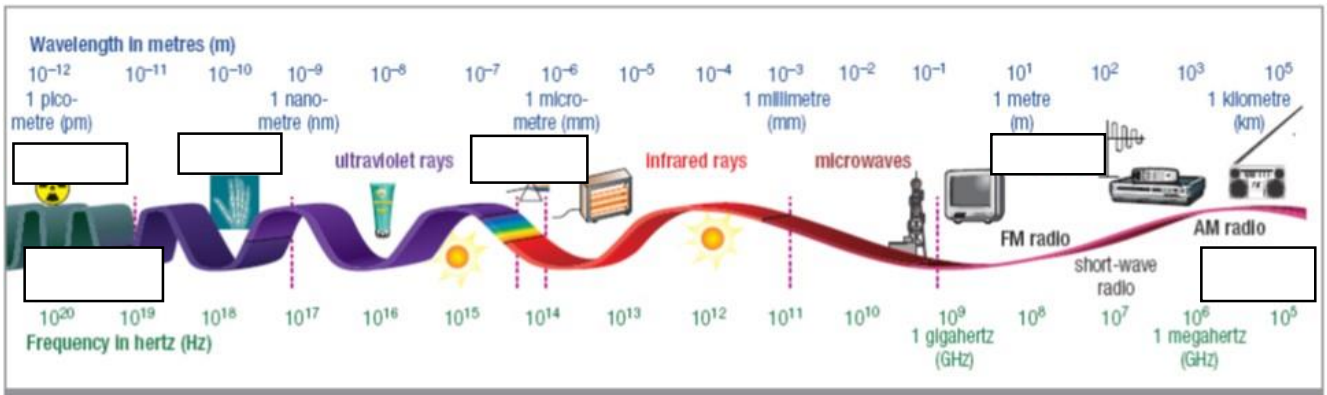




13. On the electromagnetic spectrum below fill in the missing labels from the list:

A. X-rays B. Visible Light C. Long wave length

D. Gamma rays E. Short wave length F. Radio waves



4.5.9 The electromagnetic spectrum. All these waves travel at the same speed, 300 000 km/s. The shorter the wavelength, the higher the frequency, the more energy the wave carries and the more dangerous the radiation is.

14. How do glasses correct vision?

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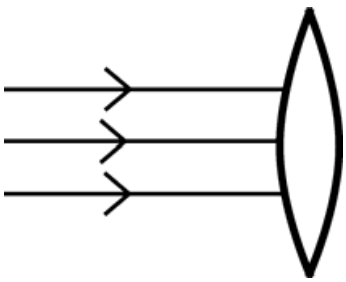
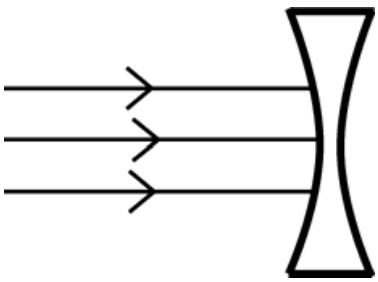
15. On the diagrams below draw the ongoing ray and the focus point for each lens:



Biconvex Lens



Biconcave Lens

SOUND

16. True or False. A high frequency sound will have a high pitch?

17. Draw a sound wave with high frequency:

18. Draw a sound wave (as a reference) and then a sound wave which is louder in comparison.

19. Describe sonar and how it is used to locate objects.

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