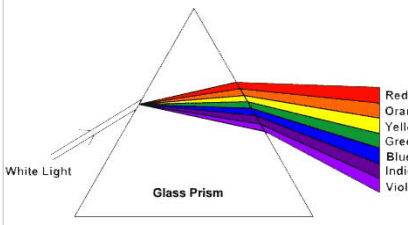
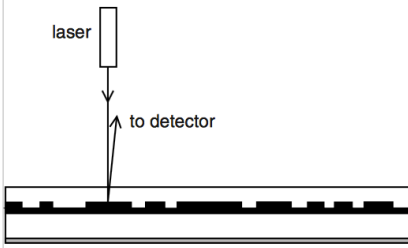


Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
					1 st	2 nd
<h1 style="margin: 0;">APRIL (P1 & 5)</h1>					<p>Chantel does some experiments using light. She shines a beam of white light through a prism. Look at the diagram opposite.</p> <p>The white light disperse to produce a visible spectrum of colours. Explain why the white light disperses and why the colours deviate by different amounts. [6 marks]</p>	
3 rd	4 th	5 th	6 th	7 th	8 th	9 th
<p>a) What is diffraction? b) When will the effect of diffraction be at its maximum? c) State a use for diffraction (link it to radio or micro waves). d) Draw two diagrams, one showing diffraction and the other showing maximum diffraction</p>	<p>An explosion emits light, infra red and sound waves. Which waves will be received first by a person who is some distance away and why? a) Infrared and sound b) All three received together c) Infra-red and light d) Light and sound</p> <p>Explain your reasoning.</p>	<p>What are seismic waves? Name the two different types and the key features of both. If you are to detect some seismic waves which would you measure first? How is is seismic waves can be used to determine the structure of Earth?</p>	<p>Draw, label and explain what a longitudinal wave and how energy is transferred in this manner. do the same then for transverse waves. Give an example of a transverse wave and a longitudinal wave.</p>	<p>a) State whether an ultrasonic wave is transverse or longitudinal b) Bats emit ultrasonic waves of frequency 6.6×10^4 Hz. Calculate the wavelength of these waves (speed of sound in air is 330 m/s) c) A bat flies past a hole which is 0.10 m deep. - Write down the differences in the distances travelled by sound reflected from the rest of the cave wall and those from the back of the hole. - Calculate the time difference which the bat must be able to detect if it is to be able to 'see' that there is a hole.</p>	<p>CD players use lasers to read information from a disc. Look at the simplified diagram of the laser and cross-section of part of a disc. The top is a transparent plastic layer. The black section shows a shiny aluminium layer with 'lands and pits'. Beneath this is another plastic layer and at the very bottom is a label position. Describe the properties of a laser beam and explain how information is stored and read from the disc. [6 marks]</p>	
10 th	11 th	12 th	13 th	14 th	15 th	16 th
<p>State and explain three types of insulation that a typical house may have. Explain which type of heat transfer it is minimising and why.</p>	<p>Draw a ray diagram for a convex lens where the object is 'beyond 2f'. Where will the image lie on the other side of the lens? State a use for this type of lens.</p>	<p>In an experiment, a student used a block of aluminium of mass 956 g. The block was heated with an immersion heater supplying 900 J of energy every minute. The student found that in 5 minutes the temperature of the block rose by 4.8 °C. Calculate the specific heat capacity of aluminium .</p>	<p>a) TIR stands for what? b) Name three uses for TIR c) How does an optical fibre work and what is transmitted down them? d) What is multiplexing?</p>	<p>Draw and label diagrams showing reflection and refraction showing clearly on your diagrams the 'normal', the incident angle, the reflected and refracted angle (where appropriate). Don't forget to add a direction to your light rays.</p>	<p>Over twenty years ago scientists working in Antarctica discovered that a deterioration in part of the Earth's atmosphere had led to an increased level of UV reaching the Earth's surface. Jane is concerned that the increased UV levels put her more at risk when sunbathing. Explain how human activity has increased the threat from UV, why Jane is concerned and how internationally, governments took action to reduce the risk. [6 marks]</p>	
17 th	18 th	19 th	20 th	21 st	22 nd	23 rd
<p>Draw a ray diagram for a convex lens where the object is 'beyond 2f'. Where will the image lie on the other side of the lens? State a use for this type of lens.</p>	<p>a) Name the three regions on the 'sound spectrum'. b) What is the average range in which humans can hear? c) State and explain three uses for Ultrasound.</p>	<p>Create a table showing the 7 different waves in the electromagnetic spectrum in an appropriate order stating two uses for each and two dangers</p>	<p>a) What are the two main types of lenses? b) Draw a ray diagram showing how light changes direction for each type of lens. c) Give a (or multiple) uses for each type of lens.</p>	<p>a) Define the term specific heat capacity and specific latent heat. b) Water has a specific heat capacity value of 4200 J/kg°C. What does this mean? c) The specific latent heat of water into steam is 2.3×10^6 J/kg. Use this information to explain why burning yourself from steam is much worse than burning yourself with water at 99 °C.</p>	<p>Sam has a microwave oven and a convection oven in her kitchen. She is going to cook a ready meal for her dinner. Look at the cooking instructions. Explain why microwave cooking is quick and why the food is stirred and allowed to stand before it is ready.</p>	<p>Microwave oven heating <i>Pierce the lid several times. Place on a microwaveable plate and cook on full power (850W) for 3 minutes. Remove lid and stir. Cook on full power for a further 1 minute. Leave to stand for 1 minute before serving.</i> Convection oven heating <i>Pierce the lid several times. Place in the centre of a preheated oven (200°C) for 25 minutes.</i></p>
24 th	25 th	26 th	27 th	28 th	29 th	30 th
<p>A canon ball (of mass 5kg) is to be fired and its speed measured. When fired the the canon itself (of mass 1120 kg) recoils at a speed of 90 cm/s. What speed is the canon ball likely to leave the canon at? Will the canon ball maintain this speed? Discuss.</p>	<p>An electric kettle (marked 3 kW) is filled with water, weighed and switched on. After coming to the boil, it is left on for a further 80 s and then switched off. It is found to be 100 g lighter. Calculate the specific latent heat of steam. Suggest reasons why your answer does not agree with the accepted value.</p>	<p>An electric motor is used to raise a weight. When 20 kJ of electrical energy is supplied to the motor, the weight gains 920 J of gravitational potential energy in 23 s. a) How much energies wasted by the motor and where does this energy go? b) What is the efficiency of the motor? c) What is the power of the motor?</p>	<p>Discuss the method of cooking food using; a) A microwave oven b) A conventional oven c) Give the advantages and disadvantages of both.</p>	<p>Jamie throws an egg horizontally at a window. The egg hits the window with a velocity of 7.5 m/s, the egg comes to a complete stop (decelerating) over an average distance of 2 cm, exploding everywhere. a) Who time frame does the egg stop in? b) What is the average deceleration of the egg? c) If the egg has a mass of 50 g, with what force does the egg hit the window?</p>	<p>Rockets carry satellites into space. These satellites can have different types of orbit around the Earth. One type is a low polar orbit. Another type is a geostationary orbit, which has an orbital period of 24 hours. Describe and explain the differences in orbits, periods and speeds between geostationary orbits and low polar orbits. [6 marks]</p>	

Try a daily question on P1 or P5 each day in April 2017