Year 9 - Physics – Spring Term 2 – KNOWLEDGE ORGANISER

Year group:	Unit:		Resources	
Week beginning:	Big question / concept:	Learning intentions:	Offline: Can be found in the following area:	Online including links on how to access these:
22/02/21	How do we represent components in circuits?	Identify circuit symbols and the components they relate too. State the definition for current, potential difference, charge, resistance, series circuit and parallel circuit. Apply the calculation for charge flow = current x time	Read and make notes from slides 1-6 Answer the exam questions on slides 7-9 Mark your answers using slides 10 and 11	From the YouTube video make notes on the circuit symbols and explain the uses of these. YouTube video on circuit symbols and components https://www.youtube.com/watch?v=sFUmuuJjAcw Oak national Academy Lesson on Charge https://classroom.thenational.academy/lessons/charge-and-current-64r36t
	How does the length of wire affect its resistance?	Describe factors that affect resistance in a wire. Rearrange and apply the following equation Potential difference = Current x Resistance	Read and make notes from slides 14-16 Answer the exam questions on slides 17 to 18 Mark your answers using slide 19	Oak National Academy Resistance https://classroom.thenational.academy/lessons/electrical-resistance-6wvk4t Oak National Academy Resistance of a Wire https://classroom.thenational.academy/lessons/resistance-of-a-wire-69h64d

1/03/21	How do different components, resist flow of electricity?	Explain what an ohmic conductor is. Explain what a non ohmic conductor is and provide examples of these. Explain how thermistors and LDR's work	Read and make notes from slides 20-23 Answer the exam questions on slides 24-26 Mark your answers using slides 27-28	Oak national academy lesson on Thermistors https://classroom.thenational.academy/lessons/thermistors-cgr68d Oak national academy lesson on Diodes https://classroom.thenational.academy/lessons/diodes-6gtpcr Oak national academy lesson on LDRs https://classroom.thenational.academy/lessons/light-dependent-resistors-chhk8c
	How can you calculate resistance from a practical?	Describe how to setup a circuit to be able to measure resistance, and apply the correct equation to calculate resistance. Describe the differences between series and parallel circuits	Read and make notes from slides 29-31 Answer the exam questions on slides 32-36 Mark your answers using slides 37-38	Make notes to create a method, results table, graph and risk assessment on the required practical. YouTube video on resistance of a wire required practical https://www.youtube.com/watch?v=m_3JrA-sDEg Watch the video, write a method, draw a table, graph and write a conclusion Complete the exam question on the link below for the required practical video. https://kitiwob.exampro.net/
8/03/21	What is electrical current and how does the configuration of a circuit effect this?	Explain how current and potential difference behave in series and parallel circuits. Describe the difference in current when potential	Read and make notes from slides 39-42 Answer the exam questions on slides 43-46 Mark your answers using slide 47	Oak National Academy Lesson 1 on Series Circuits https://classroom.thenational.academy/lessons/series-circuits-6wrpad Oak National Academy Lesson on Parallel Circuits https://classroom.thenational.academy/lessons/parallel-circuits-68w3ct?step=2&activity=worksheet

		difference is alternating or direct.		
	How do plugs work?	Identify the three types of wire in plug. Explain the uses of these three types of wire.	Read and make notes from slides 48-53 Answer the exam questions on slides 54-56 Mark your answers using slides 57	GCSEPOD Video on Plugs and Wiring https://members.gcsepod.com/shared/podcasts/title/10473/64256 Make notes on the roles of the different wires. Complete the exam questions on ExamPro using the link below https://yapeten.exampro.net/
15/03/21	How is the power of an electrical appliance affected by potential difference and current?	Explain how transfer of energy determines power of an appliance. Calculate the power of an appliance using the correct formula, and to be able to rearrange the formula.	Read and make notes from slides 58-62 Answer the exam questions on slides 67 Mark your answers using slide 65	Oak National Academy Lesson 1 on Electrical Power https://classroom.thenational.academy/lessons/electrical-power-part-1-6hjk6r GCSEPOD Video Energy Transfers in The Home https://members.gcsepod.com/shared/podcasts/title/10979/67368
22/03/21	How does energy change in an appliance?	Identify and describe the energy changes that take place in an appliance. Calculate the energy transferred by electrical work in	Read and make notes from slides 68-72 Answer the exam questions on slides 76 Mark your answers using slide 74	Oak National Academy Lesson 2 on Electrical Power https://classroom.thenational.academy/lessons/electrical-power-part-2-cgvkjc Complete the electrical energy exam question https://buuyuuo.exampro.net/

		an appliance. Using the correct formula. (E=PxT or E=QxV)		
	How is electricity provided to homes and businesses?	Explain the role of the national grid in providing electricity to homes. Explain how a step up and step down transformer works. Explain why the national grid is an efficient way to transfer energy.	Read and make notes from slides 77-79 Answer the exam questions on slides 80-84 Mark your answers using slides 85-87	Oak National Academy Lesson on National Grid https://classroom.thenational.academy/lessons/the-national-grid-c4rp6t Oak National Academy Lesson on Domestic Electricity https://classroom.thenational.academy/lessons/domestic-electricity-review-c4wpcc
	Why do we get static shocks?	State how static charge is produced applying this to different scenarios. Explain what is meant by an electric field. Explain the effects of an electric field.	Read and make notes from slides 88-97 Answer the exam questions on slides 98-100 Mark your answers using slide 101	Oak National Academy Lesson on Static Electricity https://classroom.thenational.academy/lessons/static-electricity-74t32t Oak National Academy Lesson on Electric Fields https://classroom.thenational.academy/lessons/electric-fields-65hk8c