

Electrical Circuits Class Record Sheet

The Elementary Science Program

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Student Names



Activity	Objective Students will:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1	list what they think they know and the questions they have about electricity																														
	assist in completing the "K" and "W" section of a K-W-L chart																														
	begin to comprehend the importance of electricity by participating in a walk around the school and their home locating all the different ways electricity is being used																														
2	develop safety rules when studying electricity																														
	contribute to a group safety poster illustrating the safety rules																														
3	identify the terminals on a bulb and a battery																														
	determine four different ways to get a bulb to light using a battery, bulb and wire																														
4	label the parts of a bulb																														
	identify and trace the path of electricity through the bulb																														
	determine the function of each part of the bulb																														
5	label the components of a battery																														
	create a lemon battery using common household items and compare how it functions like an actual battery																														
	describe how the chemical energy from a battery transforms into other types of energy																														
6	light two bulbs in a simple circuit using battery holders, bulb holders, and switches																														
	determine how the holders and switches function in the circuit																														
7	construct electrical circuits to demonstrate the effect of the polarity of batteries on a circuit																														
	determine that the polarity of the batteries within a circuit has an impact on how the circuit functions																														
8	review and describe the symbols used in wiring diagrams																														
	construct simple circuits using a wiring diagram																														
	draw a wiring diagram of a circuit																														

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9	design and construct hidden circuit folders																														
	test, infer, and record the circuit design inside the hidden circuit folders																														
	assembled by their classmates																														
	determine how the hidden circuit folder completes or closes the circuit																														
10	explain what happens to the brightness of bulbs in a series circuit as more																														
	bulbs and/or batteries are added to the circuit																														
	identify and describe the single path for current in a series circuit																														
11	explain what happens to the brightness of bulbs in a parallel circuit as more																														
	bulbs and/or batteries are added to the circuit																														
	identify and describe the multiple paths for current in a parallel circuit																														
	compare and contrast series and parallel circuits																														
12	design, draw, and construct a solid conductor tester																														
	test solid objects using their solid conductor tester and record results																														
	determine the type of material (metal) that conducts electricity at the																														
	voltage provided by one battery																														
13	develop an investigation with their teacher around a problem question																														
	conduct the steps of the investigation to determine the conductivity of various																														
	liquid solutions and gather data from its results																														
	use the data results to make conclusions on the types of solutions that																														
	conduct electricity based on the results of the investigation																														
14	observe a demonstration of how thickness, material, and length of wire																														
	affect the flow of electricity in a circuit																														
	describe how a rheostat works																														
15	construct a model heater																														
	explain how the model heater works and the part resistance plays in the																														
	heater																														
	examine the parts of the heater and identify the energy transformation occurring																														
16	compare the difference between #40 and #41 bulbs in a series circuit																														
	observe the differences in the filament of a #40 and a #41 bulb																														
	explain how resistance contributes to why only the #40 bulb lights when the																														
	#40 and a #41 bulbs are connected in series																														

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17	identify a short circuit																															
	explain that electricity in a short circuit follows the path of least resistance																															
	conclude that short circuits are potentially harmful																															
18	construct a circuit that contains a fuse																															
	observe how a fuse functions within a circuit and design a presentation to																															
	explain its behaviors within the circuit																															
19	review all they have learned about electricity throughout the unit																															
	introduce and explain the steps of the engineering design process																															
	brainstorm solutions to one of the real-world problems presented and design																															
	an electrical device that solves the problem																															
	build a prototype of the device, test the device, and provide improvements as																															
	necessary																															