MAKER JOURNAL

Name: _____ Date: _____

Unit: Electrical Engineering Board Game Challenge Lesson 6: Slowing the Flow with Resistors

Write a paragraph in the box below that addresses the prompt. After 2-3 minutes, be ready to share your ideas!

Quick Write Prompt: "Resistors are important in a circuit because …"

raft RESOURCE AREA FOR TEACHING

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Use the table below to draw circuits and conduct calculations.

Total (Equivalent) Resistance Calculations	
Draw a circuit with two resistors in series	Draw a circuit with two resistors in parallel
Resistor Values: 100R, 22K, 56R, 470K, 1K, 220R	
Series Circuit: Choose two values from above and calculate $R_{(eq)}$. Do it again for two different values. Show your work! $R_{(eq)} = R_1 + R_2$ $R_{(eq)}$ = _____ $R_{(eq)}$ = _____ Ohm's Law: V = IR Solve this formula for current (I) and calculate the current for each R(eq) value above. Assume a voltage of 3V.	Parallel Circuit: Use the values for the series circuit to calculate $R_{(eq)}$. Show your work! $1/R_{(eq)} = 1/R_1 + 1/R_2$ $R_{(eq)}$ = _____ $R_{(eq)}$ = _____ Ohm's Law: V = IR Solve this formula for current (I) and calculate the current for each R(eq) value above. Assume a voltage of 3V.

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Investigation: Use the table below to record calculations and observations.

	R1 (Ω)	R2 (Ω)	R(eq) (Ω)	Voltage (V)	Current (amps)	Observations
Control	1K	None	R(eq) = 1K = 1000 ohms	3V		Answers vary
Series	1K			3V		
	1K			3V		
	1K			3V		
	1K			3V		
Parallel	1K			3V		
	1K			3V		
	1K			3V		
	1K			3V		