

Lesson Title:	Series and Parallel Circuits Introduction
Standards (TEKS):	5F
Learning Objectives:	<ul style="list-style-type: none"> Construct series and parallel circuits on a computer and qualitatively explore their characteristics.

AGENDA	KEY POINTS
1. PhET Simulation 2. Exit check-in	For a series circuit, the resistance of the objects adds up and the voltage is applied over the entire resistance. For a parallel circuit, resistance adds up inversely, and the voltage is the same across all legs of the circuit.

Time	Learning Activity
45	Students will use the Circuit Construction Kit to qualitatively explore what happens when light bulbs are placed in series and parallel arrangements. Guiding Questions <ol style="list-style-type: none"> What do you think the moving blue dots in the computer simulation represent? As the blue dots move through the circuit, does their speed change? What does that tell you about the current? If we want to measure current, where should we place the ammeter? Does it matter where we place it? Why? How does the parallel circuit compare to the series circuit? Is this surprising? Why or why not? What are the limitations of using the PhET simulation? What are the advantages of using the PhET simulation over doing a hands-on lab?
10	Students will complete a 3 – 2 -1 exit ticket <ol style="list-style-type: none"> Things they learned Things I found interesting Question I still have