

Mystery Circuit Challenge

Name: _____

Your teacher connects 4 light bulbs in a closed circuit to a 3 cell battery. You can see the light bulbs but the wires that connect them are hidden. If you study the 7 tests that are done on the circuit (by unscrewing various combinations of bulbs) you can determine the correct wiring for the circuit. Your task is to draw the circuit diagram for the Mystery Circuit.

Test #	Bulb # →	1	2	3	4
Test #1		OFF	X	LIT	LIT
Test #2		X	OFF	LIT	LIT
Test #3		LIT	LIT	OFF	LIT
Test #4		X	OFF	OFF	X
Test #5		OFF	OFF	LIT	LIT
Test #6		X	X	X	OFF
Test #7		OFF	X	OFF	X

“OFF” means the bulb was unscrewed

“X” means the light went out (when other lights were unscrewed)

“LIT” means the bulb continued to shine even when other bulbs were unscrewed

Sketch the circuit diagram below indicating the proper connections for the wires that connect the 4 bulbs.