

Name:	
Period:	

UNIT: ELECTRICAL CIRCUITS

ENGINEERING OPTIMIZATION CHALLENGE

OBJECTIVE:

Improve one of your circuits to reduce energy loss and increase performance.

MATERIALS:

- ✓ Any previously used circuit
- ✓ Optional: buzzer, motor, second battery
- ✓ Multimeter
- √ Stopwatch (for timing response)

STUDENT DIRECTIONS:

Step 1: Choose a Circuit to Improve

- 1. Pick one of your designs from a previous activity.
- 2. Identify problems like dim lights, overheating, or low power.

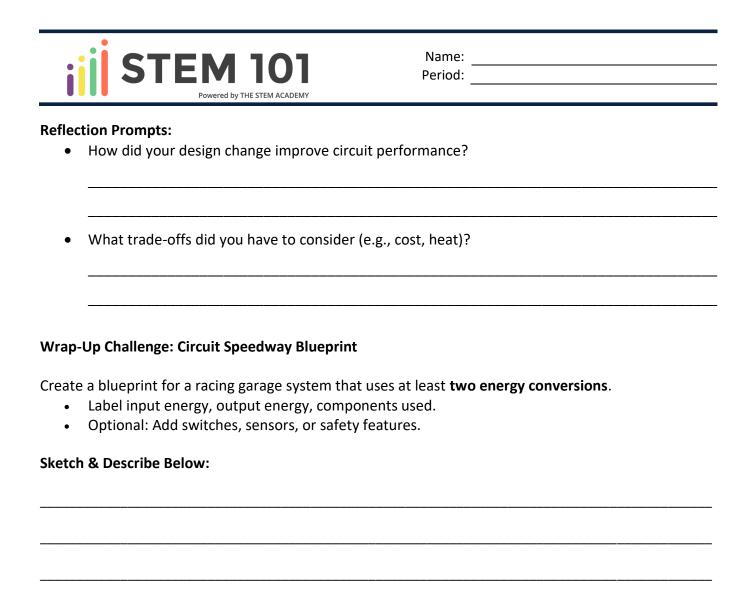
Step 2: Make Modifications

Try one or more of the following:

- Reduce resistance
- Use parallel layout
- Add a more powerful battery
- Add a motor or buzzer for multifunctional output

Test & Record Results:

Change Made	Outcome	Better/Worse?



STANDARDS ALIGNMENT

NGSS: HS-ETS1-3 STEL: STEL 1E, STEL 2E, STEL 3E, STEL 4E, STEL 5E, STEL 6E, STEL 7E CCSS: CCSS.MATH.CONTENT.HSN.Q.A.1-3, CCSS.MATH.CONTENT.HSA.CED.A.1, CCSS.MATH.CONTENT.HSA.REI.B.3, CCSS.MATH.PRACTICE.MP2, CCSS.MATH.PRACTICE.MP4, CCSS.MATH.PRACTICE.MP5