

Name

# Introduction to STEM with Electricity Worksheet

## Part A.

#### Observations

Brightness of two bulbs in series circuit	Brightness of two bulbs in parallel circuit

### Part B.

Draw a circuit diagram for the circuit with the battery, bulb, and SPST switch.

# Part C.

Draw a circuit diagram for the circuit with the battery, bulb and SPDT switch.

# **Post-Lab Questions**

1. For Part A, explain the difference in brightness between the bulbs in the series circuit and the bulbs in the parallel circuit.

© 2018, Flinn Scientific, Inc. All Rights Reserved. Reproduction permission is granted from Flinn Scientific, Inc. Batavia, Illinois, U.S.A. No part of this material may be reproduced or transmitted in any form or by any means, electronic or mechanical, including, but not limited to photocopy, recording, or any information storage and retrieval system, without permission in writing from Flinn Scientific, Inc.

- 2. List the constraints given for your design challenge.
- 3. In completing your challenge, explain how you followed the engineering design process as shown in Figure 9.
- 4. Compare your challenge solutions to other groups with the same challenge. Did any group have a different solution than yours?
- 5. For each of the questions below, determine if it is a scientific question or an engineering problem.*a*. Is lightning a form of electricity?
  - b. How are current, voltage and resistance in a circuit related?

c. How can a microwave be added to a kitchen without overloading the circuit?

d. How can a string of holiday lights be designed to blink on and off in time with music?

2