

# Lesson: I got the power! Part 2

Gina Juarez<sup>1</sup>

<sup>1</sup>Affiliation not available

April 28, 2020

**Grade Level: 3-5**

**Suggested Time: 50 minutes**

## Overview

Students will utilize what they learned about the functions of circuit parts by designing and creating their own flashlight, fan, or alarm. They will do this by following the engineering design process. Students will explain how the transfer of energy enables their product to work.

## Vocabulary

- circuit
- schematic diagram
- output
- input
- power source
- energy

## Objectives

Students will apply the engineering design process to make a flash light, fan or alarm out of various LittleBit circuit components. Students will test their product and collect data about how it improves from the initial design.

## Required Project Materials

Engineering Design Process Packet (1 per group)

Paper

Pencil

Ruler

Tape

Various craft material such as construction paper, felt, foam sheets, cardboard, or card stock.

LittleBits <https://littlebits.com/>

## Before the lesson

Print out the engineering design process for students to view as needed (1 per group)

Make a model of a flashlight using LittleBits and the same material that the students will have access to. Provide examples of how to complete each page of the engineering design process packet to view along with the class.

## The Lesson

1. Ask students to imagine what their classroom would be like without electricity or batteries. Allow students to point out all of the objects in the room that would not work and ask how that would affect their learning environment.
2. Reiterate to students why technologies are created (to solve a problem)
3. Inform students that they will be working as a team of engineers to create a flashlight, alarm, or fan.
4. Show students your product and the engineering design packet that helped you go through each step of the engineering design process.
5. Remind students who their team members are and assign team roles to each member (time keeper/material collector, lead designer, lead engineer, etc.) Roles can be switched up during the improve phase.
6. Set a timer for each step in the process to keep students on task. Walk around to each team to guide and facilitate as needed.
7. Students should be able to improve at least one thing on their initial design

If time permits:

Ask each group to explain, using the appropriate vocabulary to the class, how they improved their product from their initial design and what they would change/add to improve it further.