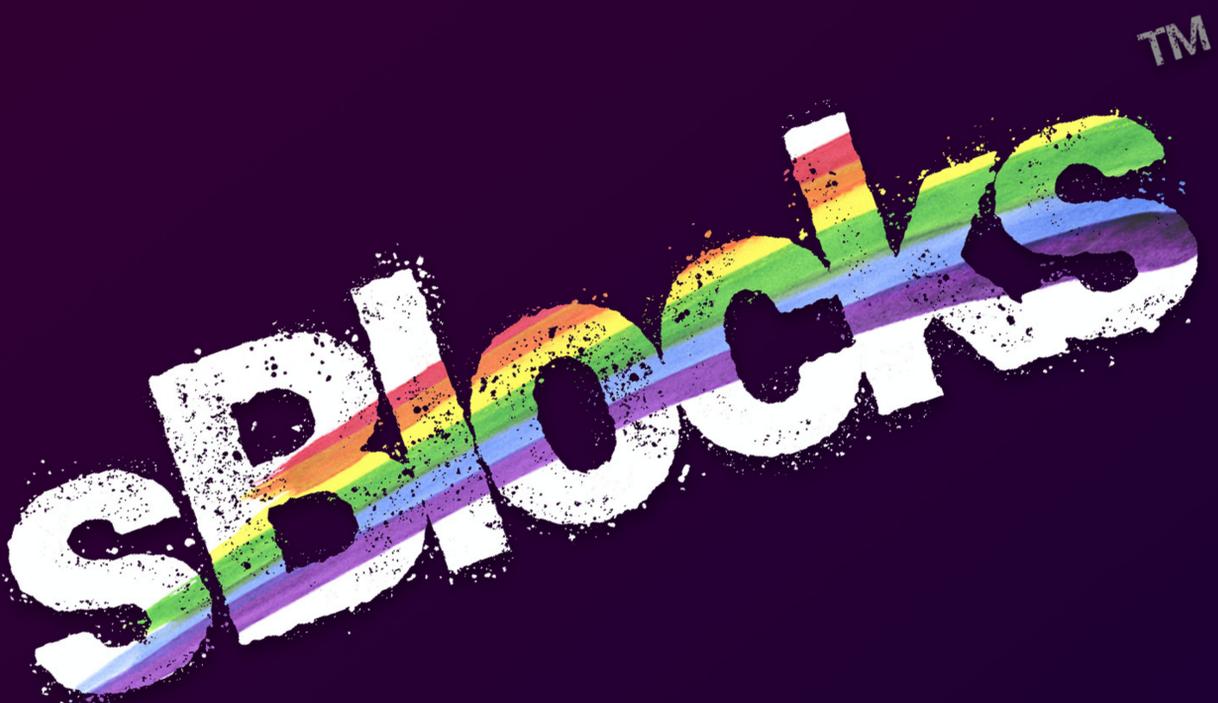


Scope & Sequence

Elementary School Level



Class Carnival

TeqTM

Introduction to LittleBits

Lesson Summary:

Through the use of littleBits, students are able to understand the concepts of cause and effect, as well as establishing a circuit. In this module, the students will learn the ins and outs of littleBits as well as observe and identify potential outcomes of various littleBits combinations.

Learning Goals:

Students will learn about littleBits and understand how to customize and build their own projects.

Standards (by code):

3-5-ETS1-1
3-5-ETS1-2
3-5-ETS1-3

Required Materials:

- LittleBits
- Student devices
- Internet access

Lesson Plan

Introduction

Teachers will begin with live/recorded introduction. Teachers can pre-teach or assign sBlock vocabulary before starting this lesson, or introduce the vocabulary as it occurs throughout the lessons (see Defining the sBlock for suggested vocabulary words).

Introduce students to littleBits as a circuit:

- littleBits are circuits that allow electricity to pass through them causing an effect.
- littleBits are connected by magnets.
 - Demonstrate how to connect the littleBits (feet-side down) and how they'll repel if facing the wrong direction.

littleBits colors and functions:

- Blue - Power Bit - Most important, it provides the power to the other bits and starts the circuit.
 - Instruct how to connect the battery to the Battery Power Bit and turn it on and off.
 - Demonstrate how to use USB Power Bit (good option for 1:1 Chromebook class).
- Green - Output Bit - These bits provide an outcome or where the power of the circuit allows an effect to occur such as turning on a light or making a sound.
 - Demonstrate how to connect any Green bit to the Power bit.
 - Introduce students to the names of the Green Bits
 - > Some Output Bits will require explanations such as Servo Bit and RGB Light Bit.

Research & Discovery Phase

LESSON

1

Introduction to LittleBits (continued)

- Pink - Input Bit - The Control for the circuit (think a light switch).
 - Demonstrate a potential outcome by attaching an Input bit with a Power Bit and Output Bit.
 - Go over Input Bits.
- Orange - Wired Bit or Logic Bit - Extensions to your circuits or a way to connect to devices for coding.
 - Demonstrate how to connect wired bits (could come in handy during the Class Carnival project creation).
 - Demonstrate the function of Logic Bits (Inverter Bit).

Lesson Activity

Hands-On Activity: Tinker Time!

Have students complete a simple circuit with blue, pink, and green littleBits. Students will observe and identify the outcomes of their littleBits combinations to get familiarized with the various Bits. Let the students tinker and play to get familiar and then have them log the different bits, their observations and results. This can be done in a chart, a journal, as a group or pair activity.

Challenge Activity

Students will decode which littleBits will be needed to create the functions below and should log the results as well as draw a diagram of the circuit (including power, input and output at minimum).

1. Create a simple circuit that increases and decreases SOUND volume.
2. Create a simple circuit that counts NUMBERS.

Assessment and Closure:

Formal Assessment - Exit Ticket

Students will complete a 3-2-1 at the end of the lesson. This can be done through Google Classroom, Google Forms, Microsoft Teams, etc.

- 3 things you learned about littleBits.
- 2 things you enjoyed about this lesson.
- 1 question you still have about this lesson.

Closure

Teacher can introduce the next lesson.

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