

littleBits: Introductory Lesson

(40 min)

*** Have teachers put students into small groups of 2-3 upon entering. ***

Intended Audience- grades 3-5

*Can be adapted for middle school

OBJECTIVES

Students will be able to:

- Explore 2-3 bits with partner/s to figure out their characteristics (magnetic, have feet, have directional arrows, have label to ID the bit, etc.)
- Demonstrate knowledge of how the Bits connect and work together
- Identify and understand the functional grouping of the the four color-coded Bits: power, inputs, outputs, wires - to branch in other directions (like extension cords)
- Create basic circuits using the littleBits
- Make connections between littleBits and real-world applications

KEY VOCABULARY

signal, circuit, power, input, output, wire, magnetic

ATTENTION GRABBER (3 min) Keep hands in scholarly position.

- How do we rely on or use electronics everyday?
- What is one electronic device you couldn't live without? Why?
- Have any of you used littleBits? If so, what can you tell us about them?

EXPLORATION (7 min)

- LittleBits are fragile pieces of technology, so be **CAREFUL** with them.
- Give each st in the group one bit
- Goal: With your partner/small group, explore the littleBits to identify several characteristics of the bits. (magnetic- snap together), arrows, feet, label, color, etc.)
- Share observations with the class.

PRESENTATION (3 min) Keep hands in scholarly position and eyes on the speaker.

- What are circuits? How does a circuit work?
- Explain the Functions of each color (2 min)

BLUE- Supplies power

PINK- Interprets data from their surroundings. They are used to control something that is outputting- like a switch, dimmer, etc.

Green- are the outputs- like motors, lights, buzzers, fans, etc.

Orange- allows you to branch out and/or change direction. They are spacers

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and connectors. They act like extension cords.

APPLICATION (22 min)

- Have st helpers distribute a battery, a cord, & a powerbit that make the power supply to each group.
- **Groups put those pieces together and take the power supply with them as they rotate stations.**
- Have another student helper distribute the task card baggies
- Give each group a few minutes to read & complete the task, take apart the bits. Then rotate stations where students will read and complete that task card until all stations have been completed or time has run out.

CLEAN-UP- (2 min) Please return battery, cord & Powerbit to the supply table. Place all the bits and the task card in the plastic bag & zip the bag shut. One person from each group brings the bag to the supply table.

CLOSURE- (3 min) Keep hands in scholarly position and eyes on the speaker.

- What did you learn today?
- Was there any task cards you did that made you think of something in school, your home, or somewhere else?
- What could you invent with the littleBits next time if you had more supplies and materials to use?