

Lesson Plan Template

Lesson Name

Title: Pointy Meter

Lesson Overview: Students will learn how to use Littlebits by creating a Pointy Meter to keep track of points earned for classroom activities and signal when a goal is reached.

Bits	Accessories	Other Materials	Tools Used
Battery, wire, power Bit, dimmer bit, buzzer Bit, pulse Bit.	Tea cup	Tape	Screwdriver

Lesson Tags

Grade Level: Elementary

Subjects: Media

Difficulty: Beginner

Duration: Three days/classes

Pre-requisite Knowledge: None

Description

Lesson Objectives: Students will learn how to create a littleBits circuit that keeps track of points earned for classroom activities/behaviors. Students will plan ways to adapt circuit according to different uses.

Standards: National Educational Technology Standards for Students IV. Critical Thinking, Problem-Solving, and Decision-Making D. use multiple processes and diverse perspectives to explore alternative solutions.
Assessment Strategies: Students will be able to demonstrate their ability to create a littleBits circuit to keep track of points earned for classroom activities to achieve a goal.
Key Vocabulary: Inventory, power, battery, input, wire, output, magnet, sensitivity, mode, dimmer, pulse, buzzer.

Additional Files
Attachments: littleBits Invention Cycle https://lb-community.s3.amazonaws.com/uploads/user/15649/c95be686-a3b6-4bbd-bb76-32a894ea22ef.pdf Student Invention Guide https://lb-community.s3.amazonaws.com/uploads/user/15649/cab15023-4e29-461c-9e9e-897ea8b49eb8.pdf
Inspirational Links
Tips and Tricks <i>[helpful hints]</i>

Instructional Steps
Step 1: Set up This lesson can be done individually or in small groups (2-3 students). Each group will need at least one STEAM Student Set and Invention Guide, and one printed Invention Log per student. Materials and tools that students will use to build their inventions will be displayed in color coded storage pods. Students will have access to a prototype of the Pointy Meter and will have lesson displayed on Apple TV.
Step 2: Connect: Introduce the lesson objectives and the concept behind the challenge • How do we keep track of Tea Party Points in Media? How can we use technology to keep track of points and signal when to enter 5 points as a bar on class Tea Party Point graph? Explain to the students that they are going to use Bits to make a battery driven mechanism to keep track of points earner – and they will plan other ways to use this tool and ways to adapt it for other purposes.

Step 3: Teach

Open littleBits Kit. Have students open it up and take inventory of the Bits and tea cup and tape accessories.

Introduce the littleBits to be used in this lesson and identify their function. Demonstrate littleBits Tea Pointy Meter and display image on Apple TV. Ask students to create their own Pointy Meter.

Step 4: Engage Have students connect a 9V battery to the power Bit using the white battery cable. Switch the circuit on (a red light will glow). Snap the bargraph Bit to the power Bit. Add the slide dimmer in between these Bits. Then snap on a buzzer Bit

Step 5: Practice. When students have created circuit, have them diagram the circuit – labeling power, input, wire and input elements. Then make notes/diagram a purpose for the circuit and improvements/adaptations./ Play and remix with new Bits. (A suggestion for students who find this challenging is to add pulse output to make buzzer less annoying)

Step 6: Close

Students will share their new adaptation and purpose for circuit. **Gather students together, and record on whiteboard responses in columns relating to the Remix phase. Ask students how they improved their circuit and also other uses for the circuits?**

Summarize students' ideas and tell them they will have an opportunity next class to improve on their circuits or design of a completely new tool to create.

Step 7: Extensions Students investigate ways to “stabilize” circuit (clip onto a board or tape Bits together). Preview Invention Cycle and Student Invention Guide.