

Lesson: Design a Digitally Enhanced Nametag

Big Picture

This lesson is combining the tools learned in the previous two lessons; it is expanding the nametag activity by adding the micro:bit to digitally enhance their creation.

Objectives

Students will be able to:

- Create a digital name tag using micro:bit

Alabama Standards Alignment

29: Create an artifact to solve a problem using ideation and iteration in the problem solving process.

- Examples: Create a public service announcement or design a computer program, game, or application

Links to Resources

For Teachers:

Idea behind activity- https://dschool-old.stanford.edu/groups/k12/wiki/c739e/Wallet_Project.html

Intro to Design Thinking.pdf

Preparation

The following file will be needed:

- Digitally Enhanced Nametags Worksheet Design Thinking.pdf
 - Print for each student so they can design their own nametag and their group member's digital nametag.
 - **Print 3 copies of page 1 for each student**, and one copy of the remaining pages.

Materials Required

Each student requires:

- Pens/pencils
- Nametag Worksheet
 - Students may also use their Tutorial Handout from the previous lesson
- micro:bit kit
- USB cable
- Internet connected computer with modern browser

**Note: Browsers known to work with micro:bit software includes Firefox, Chrome, Safari, and Microsoft Edge*

For a complete list, visit this page: <https://makecode.microbit.org/browsers>

Optional:

- Construction Paper
- Markers/Crayons
- Scissors

Vocabulary and Concepts

- Design Thinking - a process of creating a new idea or solving a problem.
 - Brainstorming to find a creative way to find a solution.
- Empathy - being able to share thoughts and understand where the other person is coming from.
 - Important because you need to deliver precisely what your client is looking for.
- Ideation - the process of forming ideas and concepts.
 - Creatively coming up with solutions to problems
- Prototype - a sample model presented to a client before starting the actual project.
 - It ensures that the user and the maker of the product are on the same page and have the same “vision” before spending time building the product.

Teaching Guide

Getting started (2 mins)

Give each student a handout. Have students form into groups of 2.

Activity Part 1 (20 mins)

The worksheets have a vocabulary review of the ideas this activity is implementing. Review these terms and the description with your students. The worksheet also has step-by-step instructions for the students to follow. The most important part for the instructor with this activity is putting time constraints on each step.

Recommended Time Constraints:

Vocabulary Review – 2 minutes

Step 1 - 3 minutes

Step 2 - 5 minutes (allow enough time for both students to interview each other)

Step 3 - 5 minutes

Step 4 - 5 minutes

You may reduce times more if you choose to let the students craft their own name tag using construction paper, markers, etc.

Activity Part 2 (20 mins)

For Step 5, allow the students to use their *Introduction to the micro:bit* handout from Week 1 Lesson 3 to reference how to program their micro:bit. Students were encouraged in today’s handout to have their partner’s name OR a shape displayed on the LEDs; it is okay for students to personalize these.

Step 6 is labeled optional. If time and materials are available, instruct students to recreate their final sketch using arts and crafts.

Step 7 instructs the students to add the micro:bit to their name tag. If Step 6 was completed, they may place their construction paper over the micro:bit. If not, they can place their micro:bit on top of the dotted-line area from Step 4. If materials are available, they may also cut out the square to display the micro:bit from the back-side of their paper.

Wrap Up (10 mins)

Encourage a few students to share their designs with the class. Ask them to explain what they designed and why they chose those designs to represent the other group member.

Ask all students how the vocabulary and concepts relate to the activity completed.