

Lesson: Data Logger – Temperature and Humidity

Big Picture

The students will create a program that will read the temperature and humidity values and log the values to a CSV file for data analysis. The data logger and Weather:bit will be used to capture the data.

Objectives

Students will be able to:

- Define temperature sensor
- Define humidity sensor

Alabama Standards Alignment

6th grade: Computational Thinker #2, #5, #6, and #7

7th grade: Computational Thinker #1, #4, #5, and #6

8th grade: Computational Thinker #1, #2, #3, #5, and #6

Preparation

Choose a presentation method:

- Instructor can walk the students through using the student tutorial handout.
- Students can work at their own pace using the tutorial handout. You may also post the video and tutorial locally and allow students to choose.

Materials Required

Each student (or pair of students) requires:

- Weather:bit board
- Data logger board
- SD card

Vocabulary and Concepts

Temperature Sensor – sensor that reads the current air temperature in Celsius Humidity

Sensor – sensor that reads the current relative humidity

Teaching Guide

Getting started (10 mins)

Tell the class that they will create a micro:bit program to read temperature and humidity values and log the values to a file today. Before they start programming, everyone needs to learn the new vocabulary terms.

Activity (40 mins)

The class is now ready to create their micro:bit with the sensors and SD card. Use your chosen method to demonstrate how to complete the activity. Make sure students are putting the SD card in the data logger board correctly, and then make sure the data is being read and logged into the CSV file without issues.

Wrap Up (5 mins)

Review the 2 vocabulary words.

Temperature Sensor: sensor that reads the current air temperature in Celsius

Humidity Sensor: sensor that reads the current relative humidity