

Podcast_10
Digital Transformation Learning Activity
Preparing Technicians for the Future of Work
October 2019

License: 

Purpose: To give student teams a learning activity that ties together sensors, data acquisition, data logging and data analysis to solve a challenge in a simulated work/industry environment.

Background: Temperature changes can be used as the context for STEM problem scenarios. For example, examining what caused the freezing and bursting of pipes in a storage facility or asking what the optimal temperature range is for incubating a biotech culture.

Activity: Student teams set up a sensor or sensors and download data via a Bluetooth connection and an app on their phones. Data is analyzed and students propose actions based on this digital information.

The sensor: Temperature Sensor Development Tools SHT31 Smart Gadget

Availability:

- Amazon \$52.28; also available for Arduino
- Mouser Electronics, Mouser.com, part no. 403-1-101294-01. \$21.62 each



The SHT31 Smart Gadget is a reference design circuit board which demonstrates the outstanding performance and ease of use of Sensirion's humidity and temperature sensors. It not only shows humidity and temperature values on the display, but it can also communicate wirelessly with a Bluetooth Smart enabled device like a smartphone. It comes with a battery.

Guidance for teams

Download the free app, Sensirion MyAmbience Smart Gadget App that you will be using on your Apple or Android device. Do this where you have a good Internet connection.



1. Your team should first review what sensors you have on your device.

For the SMART Gadget SHT31 they are:

- Humidity
 - Temperature
2. Assemble and power up your sensor following the steps in the Quick Start guide that comes with the Smart Gadget.
 3. Activate your sensor and Bluetooth pair it to a phone of one of your team members.
 - Here is a “how to” article on pairing, in case you need it:
<http://www.howtogeek.com/214185/beginner-geek-how-to-pair-devices-over-bluetooth/>
 4. Show your instructor that the sensor platform is communicating with your phone by viewing the live data.
 5. Track your history and export data.

Congratulations! Your team has now taken the first step towards developing a solution to a problem using digital transformation.