

## Inventing Environmental Add-on Kit

Product ID: **32003**

### Overview

The Environmental Add-On Kit provides students with the components to shape electronic solutions for real-world environmental problems. This kit requires the Electronics Base Kit and is ideal for Henry Ford Invention Convention participants in the grades 6-8 and 9-12 categories.

Invention themes around the Environmental Add-On Kit are plants and farming, environmental conditions (water, air, soil) and color (of fruit, recyclables). The types of sensors in this kit measure these parameters while 96x64 color OLED display is included to show the values (as text and values, bargraphs).

This kit maybe combined with the Mechanical Add-On Kit to provide motion-control for environmental inventions. For example, light levels, temperature, and soil moisture conditions may be modified by changing the localized environment in a mini greenhouse by adjusting air flow or watering.

The programming environment for the Invention Kit Series is BlocklyProp. BlocklyProp is a well-documented visual programming language based on Google's open-source Blockly. After using the Electronics Base Kit with the Mechanical Add-On Kit students will have the ability to envision new solutions using a wide variety of sensors and devices supported in BlocklyProp simply by looking at the BlocklyProp Reference.

## Features

- Moisture and liquid level sensors for insertion directly into potted plants, soil, or wet environments
- UV light and color sensors for characterizing the physical attributes of what we see
- Temperature & humidity sensor for characterizing physical attributes we don't see!
- Color OLED display for displaying the data to humans

## Application Ideas


- Create an optimal micro-farming system with hydroponics or soil
- Measure UV light, temperature and humidity to create a smart-watering system
- Characterize recyclables, fruit or plants by color to automate a process

Details
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## Kit Contents

- (1) Moisture Sensor Probe (#28092)
- (1) UV Light Sensor (#28091)
- (1) Mini Liquid level Sensor (#28090)
- (1) ColorPal Color Sensor (#28380)
- (1) CM2302 Temp/Humidity (#28059)
- (1) OLED Display (#28087)
- (2) MCP3002 A/D Converter (#603-00039)
- (4) 3-pin Headers (#451-00303)
- (4) Extension cables, 16" (#800-00160)
- (1) Ribbon Cable FM 200 mm (#800-00064)

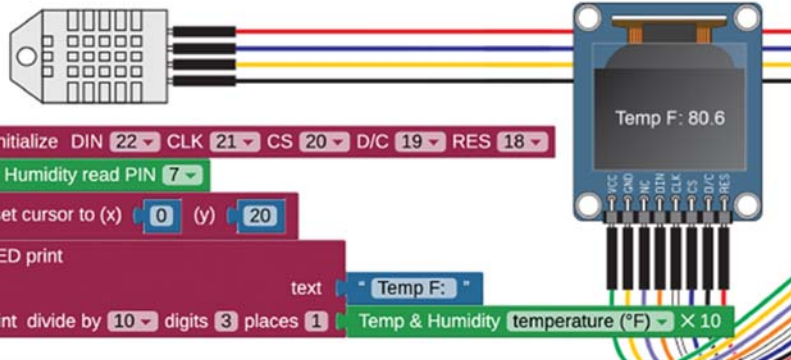
**Note:** Parts and quantities subject to change without notice. For use with the Inventing Electronics Base Kit (#32000) not included.



# ENVIRONMENTAL ADD-ON KIT

#32003

INVENTING  
KIT  
SERIES



```

OLED initialize DIN 22 CLK 21 CS 20 D/C 19 RES 18
Temp & Humidity read PIN 7
OLED set cursor to (x) 0 (y) 20
OLED print
float point divide by 10 digits 3 places 1
Temp & Humidity temperature (°F) × 10
          
```

## SOIL MOISTURE LIQUID LEVEL UV LIGHT COLOR TEMPERATURE


Equip your FLiP to monitor and report on the local environment.

Kit includes color, moisture, liquid level, UV light, temperature and humidity sensors, a 96x64 color OLED display, and cables.

**Electronics Base Kit required, not included.**


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32000



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32001




ENVIRONMENTAL  
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32003



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