

# Inventing Electronics Base Kit

Product ID: 32000

## Overview

The Electronics Base Kit provides the key hardware required to get started with the Parallax Inventing Kit Series. The Inventing Kit Series is designed to provide students with training and enough parts to add electronic control to their inventions and solutions for real-world problems.

The Inventing Kit Series may be used to prepare for the Henry Ford Invention Convention Worldwide competition grades 6-8 and 9-12 categories in a 1:1 individual or 1:2 team format as an electronics accessory to their curriculum. Teacher workshops are offered by Parallax through our partnership with Henry Ford Foundation. Educators of any background with no prior experience are able to do these projects; the only requirements are computers (Mac, Windows or Chromebooks) and interest.

The Electronics Base Kit is exactly that - the complete “platform” with microcontroller, breadboard, power supply and electronic components to learn circuit building, troubleshooting and writing BlocklyProp programs. The kit also includes enough hardware for inventions requiring movement, light measurement, lights and sound. The add-on kits (mechanical, environmental, security) provide components for more projects.

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 learning the Electronics Base 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

- FLiP Multicore Microcontroller, breadboard, wires, USB cable, and battery pack are a complete setup for invention prototyping
- Online teacher workshop training material in Google Slides may be used for classroom training
- Input devices (pushbuttons, dial, light sensor, tilt-switch sensor) for physical control, starting or stopping an invention
- Output devices (LEDs, 7-segment LED, speaker, servo motor) for showing a value or condition, making something move

## Application Ideas

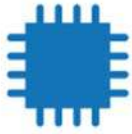
- Detect tilt and sound an alarm
- Make something move by combining popsicle sticks, cardboard, hot glue
- User-input project with buttons for start/stop games
- Display the number of times something happens on 7-segment LED

Details
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## Kit Contents

- (1) Propeller FLiP Module (#32123)
- (2) pushbuttons (#400-00002)
- (1) piezospeaker (#900-00001)
- (1) 10 k-ohm single-turn potentiometer (#152-01031)
- (2) phototransistor (#350-00029)
- (1) 4-directional Tilt Sensor (#28036)
- (3) green LEDs (#350-00001)
- (3) red LEDs (#350-00006)
- (3) yellow LEDs (#350-00007)
- (20) 220 ohm resistors (#150-02210)
- (5) 10 k-ohm resistors (#150-01030)
- (5) 1 k-ohm resistors (#150-01020)
- (2) capacitors, 0.01  $\mu$ F (#200-01031)
- (2) capacitors, 0.1  $\mu$ F (#200-01040)
- (1) Standard Servo (#900-00005)
- (1) 7-segment LED (#350-00027)
- (1) 3-pin header (#451-00303)
- (1) Flip Kit Breadboard (#700-32023)
- (1) USB A to microB cable, 6' (#805-00016)
- (1) battery Holder, 4AA (#700-00038)
- (1) 2.1 mm Barrel Jack for Breadboard (#452-00099)
- (5) 3" Jumper Wires (1 Bag of 10) (#800-00016)

4AA batteries required, not included, for servo use. Parts & quantities subject to change without notice. For individual replacement components, contact [sales@parallax.com](mailto:sales@parallax.com).



# ELECTRONICS BASE KIT

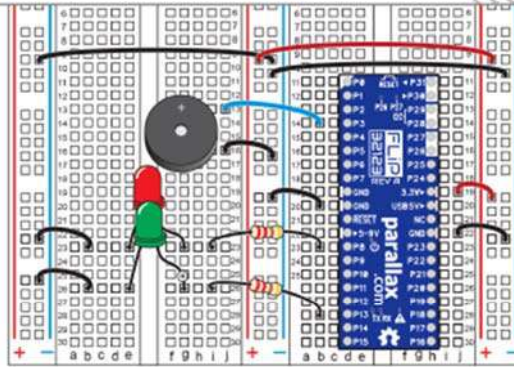
#32000

INVENTING KIT SERIES

```

repeat forever
do
  make PIN 8 toggle
  frequency PIN 3 50
  duration (ms) 2500
  frequency (Hz) 2500
  make PIN 13 toggle
  frequency PIN 3 50
  duration (ms) 50
  frequency (Hz) 3000

```



LIGHTS  
SOUND  
MOTION  
PUSHBUTTONS  
BREADBOARD

Learn inventing essentials with BlocklyProp visual programming and the Propeller FLiP.

Kit includes FLiP microcontroller, breadboard, USB cable, servo motor, battery pack, and a variety of electronic components.

TUTORIALS & SUPPORT: [www.parallax.com/inventingkit](http://www.parallax.com/inventingkit)

EQUIP YOUR  
GENIUS:



ELECTRONICS  
BASE KIT  
32000



MECHANICAL  
ADD-ON KIT  
32001



ENVIRONMENTAL  
ADD-ON KIT  
32003



SECURITY  
ADD-ON KIT  
32002

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