

## Lesson Plan for Activity MIT App Inventor

**Subject:** Mobile App Development

**Length of Lesson:** 90 minutes

**Concept or Skill Focus:** Gain experience with designing, programming, testing, and debugging apps

**Goal:** To gain a basic understanding of how to use MIT App Inventor to create mobile apps

### **Objectives/Outcomes:**

- Navigate the App Inventor environment: designer, blocks editor, emulator and/or physical phone
- Correctly use the following App Inventor components: accelerometer sensor, button, player
- Correctly use the following App Inventor concepts: making and using a list, responding to an event

### **Materials**

- Computers with web browser (tested with Firefox and Chrome)
- Google Account
- Android Tablets and/or Android Phones with MIT AI2 Companion app (can be found on Google Play Store), or downloaded emulator <http://appinventor.mit.edu/explore/ai2/setup-emulator.html> if tablets/phones are not available

### **Activities and Time Line (Introduction, Middle, Conclusion)**

#### Introduction:

- Demonstrate what the finished app will look like

#### Main Activity:

- Go through and build the basic outline
- Show and explain the different elements in the “designer” mode
  - Labels
  - Button with image
  - Player
  - Accelerometer Sensor
  - Text-to-Speech
- Show and explain the different elements in the “blocks” mode
  - Defining variables
  - Getting values from text box
  - Click listener
- Let participants finish creating the app and walk around and give help to anyone who needs it
- Test the app and help debug
- If there is extra time, offer option to create another app (below)

## App Option 2

### PaintPot

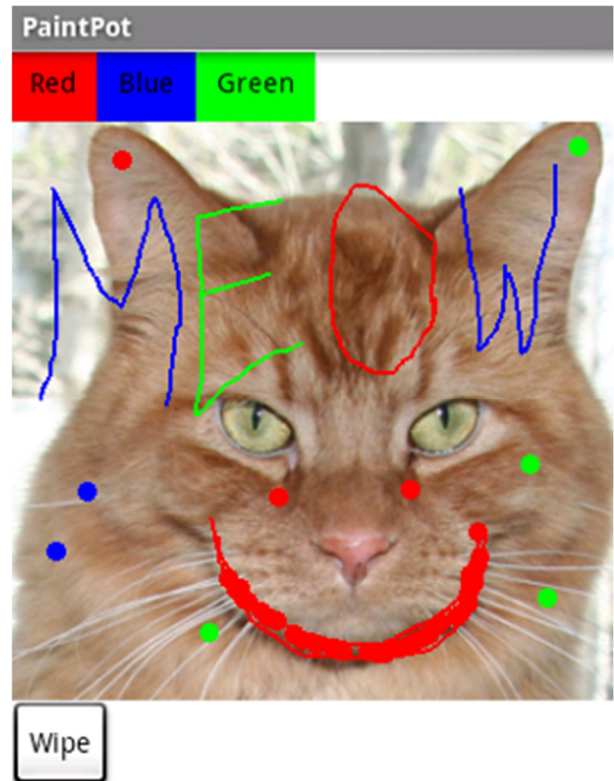
This tutorial introduces the **Canvas** component for creating simple two-dimensional graphics. You'll build an app that lets you draw on the phone screen in different colors.

With the *PaintPot* app, you can:

- Dip your finger into a virtual paint pot to draw in that color.
- Drag your finger along the screen to draw a line.
- Tap the screen to make dots.
- Use the button at the bottom to wipe the screen clean.
- Include an image as a drawing background.

*This tutorial introduces the following App Inventor concepts:*

- The **Canvas** component for drawing.
- Controlling screen layout with **Arrangement** components.
- Event handlers that take arguments.
- *Variables.*



Find the full tutorial here: <https://appinventor.mit.edu/explore/ai2/paintpot-part1>

## App Option 3

### Space Invaders

#### What You're Building

By building the Space Invaders App you will get practice with using Clock components and Timers, using Animation components such as Image Sprites and the Canvas, setting visibility, and detecting collisions in App Inventor. You'll program an application that has a shooter ship whose goal is to shoot all the flying saucers on the screen.

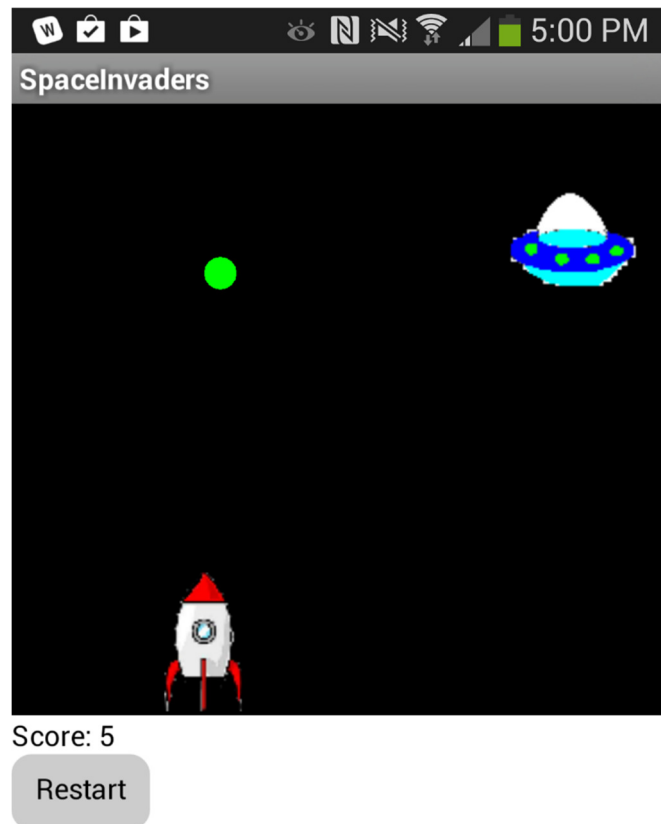
#### Getting Started

Connect to the App Inventor web site and start a new project. Name it SpaceInvaders, and also set the screen's **Title** to "SpaceInvaders". Connect to a device or emulator.

#### Introduction

This tutorial introduces the following skills, useful for future game development:

- Using the Clock component
- Using Clock.Timer to move sprites
- Using Sprite.Flung to move a sprite
- Using collision detection
- Setting visibility of sprites



Find the full tutorial here: <https://appinventor.mit.edu/explore/ai2/space-invaders>