

# **BRAIN HACKERS APP DEVELOPMENT CURRICULUM**

## Lesson 4

### Talking Picture App – Canvasses, Sprites and Hotspots

#### **SUMMARY**

This lesson introduces canvasses and the use of sprites. For now, sprites will be used to create hotspots on an image that behave like a button. An App will be created that presents an image and when a user taps hotspots on the image, the app will speak. This exercise demonstrates the practice of finding ways to represent important information both visually and verbally.

#### **ASSUMPTIONS**

It is assumed that students will be able to use the Internet to find images.

#### **IMAGES FOR TALKING PICTURE APP DEMONSTRATION**

Students will need an image with a world map. For the demonstration, it is preferable that the map be a silhouette or a geological map, as opposed to a political map with countries, borders and other political details marked. Students will also need to find images showing the following four locations: Mount McKinley/Denali; Death Valley; Mount Aconcagua and the Valdes Peninsula.

#### **DESIGNER WORKSPACE**

- From the Drawing and Animation components, drag a Canvass onto the screen

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### **Key Concepts**

**Canvas** – a panel which can be touch sensitive and may allow drawing using the phone’s touch screen

- Set both the Height and Width to “Fill Parent”

### **Key Concepts**

**Parent** – a higher level component, such as the overall visual display, that incorporates lower level components, such as features placed on the visual display

- Set the Background Image to be the image of a world map – NOTE: you may need to upload the image.
- Adjust the ScreenOrientation to “Landscape”



**FIGUREB.** As shown, the screen should be in the Landscape orientation

- From the Drawing and Animation components, drag an ImageSprite onto the Canvas
  - Set the Picture to the image of Mt McKinley/Denali
  - Adjust the size of the image

## Key Concepts

**Sprite** – a two-dimensional image that is incorporated into a larger graphic, and may provide the basis for operations by a user

- Repeat the previous steps placing ImageSprites on the map with the pictures for Death Valley, Mount Aconcagua and the Valdes Peninsula
- Insert four Text-to-Speech components – NOTE: there will be a Text-to-Speech for each ImageSprite

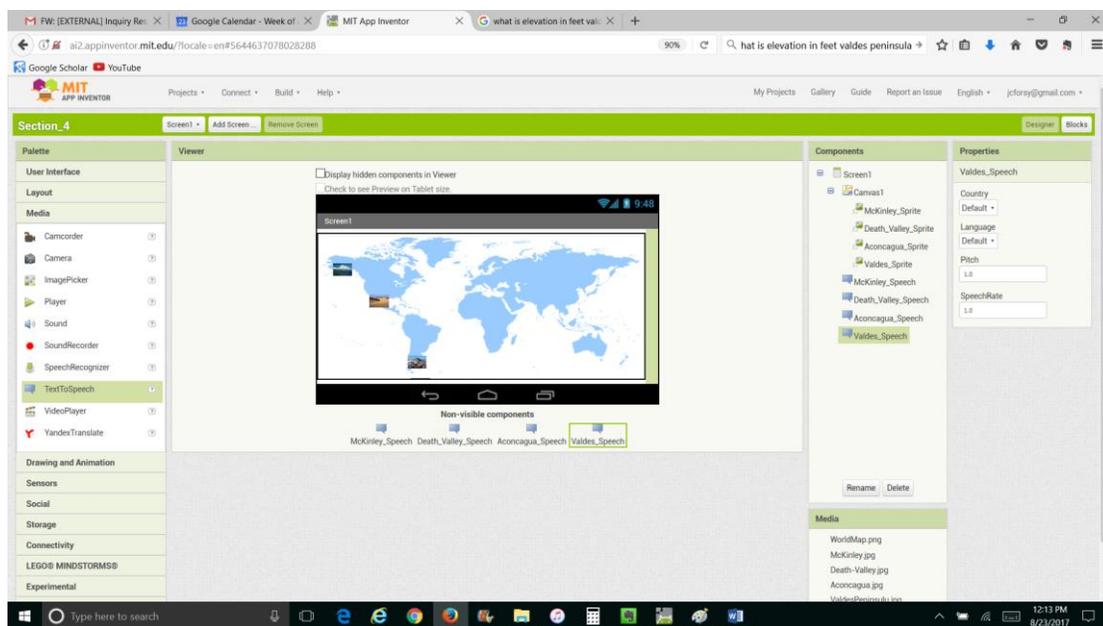
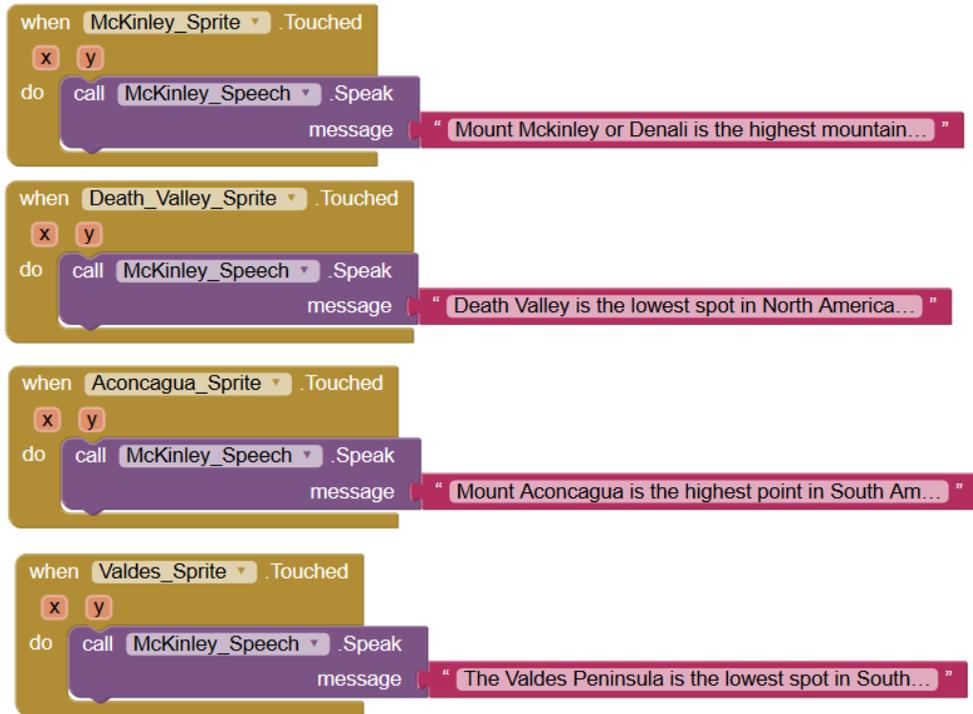


FIGURE 2. This image shows how the Designer workspace should appear.

## BLOCKS WORKSPACE

- For the ImageSprite with the picture for Mount McKinley/Denali, insert a **when \_\_\_\_ .Touched do** block – NOTE: this will allow the image to function like a button, with the app responding when it is touched
  - o Insert a **call \_\_\_\_ .Speak** block
    - Attach the text string, “Mount Mckinley or Denali is the highest mountain in North America at 20,310 feet elevation.”

- Repeat the above step for Death Valley with the text, “Death Valley is the lowest spot in North America with at 282 feet below sea level.”
- Repeat the above step for Mount Aconcagua with the text, “Mount Aconcagua is the highest point in South America at 22,841 feet elevation.”
- Repeat the above step for the Valdes Peninsula with the text, “The Valdes Peninsula is the lowest spot in South America with an elevation of 131 feet below sea level.”



**FIGURE 3.** This image shows how the Blocks workspace should appear

### ACTIVITY

For the assigned topic, create a Talking Picture app by finding a background image to serve as the canvass and then, adding smaller pictures that when tapped, tell about details related to the topic.