Game Design, Lesson 2: *Flappy Bird*

GRADE LEVEL: 3-8

UTAH CORE STATE STANDARDS:

Grades 3 - 6, Visual Arts
Strand: Create
Standard 3.V.CR.1, Standard 3.V.CR.2, Standard 4.V.CR.2, Standard 5.V.C.1, Standard 5.V.C.2, Standard 6.V.CR.3, Standard 6.V.CR.6

Grades 7 - 8 Fine Arts: Media Arts
Strand: Create, Produce
Standard 7–8.E.CR.1, Standard 7–8.E.CR.2, Standard 7–8.E.CR.5, Standard 7–8.E.CR.7, Standard 7–8.E.CR.8, Standard 7–8.E.P.2, Standard 7–8.E.P.3, Standard 7–8.E.P.4, Standard 7–8.E.P.7.

CLASSROOM TIME REQUIRED: 30 minutes - 1 hour (depending on number of students and skill level)

OBJECTIVES: Students are introduced to basic programming and game design. With clear instructions for how to use the software, students learn to navigate the software and then are able to create their own media using the same tools.

DEFINING SUCCESS: Students complete the Flappy Bird project and are able to create their own games and develop their own coding.

RESOURCES:

- Flappy Bird game files, downloaded from **spyhop.org/spy-hop-schools**
- **Game Maker software** (free software for Mac or PC)

CONCEPTS ADDRESSED:

- Game design
- Coding
- Visual storytelling
- Problem solving

SHARE: We would love to see what your students create! Please share your students innovations with us: **jana@spyhop.org**

FlappyBird

Objectives

- Import Sprite cycle
- Add images to Objects
- Add Object to Rooms
- Import audio
- Add audio Events and Actions
- Navigate Game Maker,
  - Test "run game"
  - Get back to Game Maker
- Export game

1) Open Game Maker > open the file named FlappyBird.gmk
   - Select the launchpad icon
   - In the search bar type in "game" and the icon for game maker will appear
   - When game maker is open select file > open > FlappyBirds.gmk (if you are asked what mode, select ADVANCED mode)

2) Import Sprite cycle
   - Select the create sprite icon
   - Name the sprite: spr_bird
   - Select the
   - Then import the file named: flap0.png>open
   - Finish adding the sprite cycle to spr_bird (select the find flap1.png,)
     (Select find flap2.png,)
   - Cut empty images (if you see select the green layer &)
     Check the bird animation
   - Change the speed to whatever you like
     If it looks good, select the
   - Make sure the sprite properties menu looks like this,
     Then select the OK button

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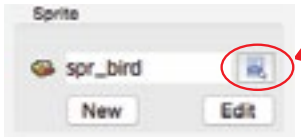
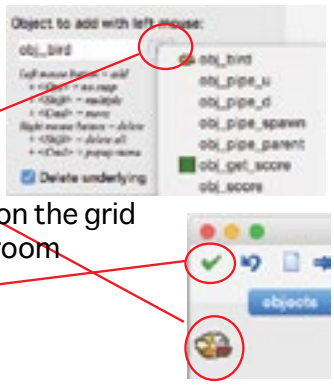
3) Add images to an object

- In the Objects select the object named obj_bird by double clicking
  In the Sprite drop down menu select spr_bird
  Select OK button



4) Add objects to the room, open a room

- Select the room0, by double clicking
- From the Objects drop down menu (botton, left), select obj_bird
- When the icon is visible in the left side of the Screen the object is ready to be placed in the room on the grid
  - Left click (on grid) to place the object in the room
  - Right click to delete
  - Green check when finished



5) Import Audio

- Select create audio icon
- Load Sound Navigate to the audio folder and select a .wav file
- Name the sound something descriptive like “sound_fall”
- Select OK button OK

6) Add audio to an Objects, add an Event and an Action
(When the left mouse is clicked, audio will play)

- Select the obj_bird , then
- Mouse>left button (Mouse > Left Button)
- Then add an Action to the Event, select the “main1” (tab on the far right side)
- Select the audio icon, Left click and drag into the Actions window, release.
- Double click on the Play sound <undefined>
- From the drop down menu, find audio clip loop:false, click “OK” OK
- Select the Object Properties “OK” button OK

7) Run the game

- To play the game select the
- Select the playable game maker window to play the game: controls=left click
- To close the playable game window click the red close button
- To get back to game maker, select the icon once to activate

8) Export the game

- On mac computers, select file > Create Executable
  - Name the game,
  - Select where it will be saved,
  - Make sure the format is executable
  - Make sure the extension is .app
  - Play the application!