

Lesson Plan 3 – Exploring Developer Experience, part 1

Topic Description

During this lesson, students will play a more complex game and follow along with a demonstration to modify some of the characters and the action. Next, they will complete the Air Delivery tutorial. At the conclusion of this lesson, students will be prepared to think creatively about how they might like to modify the games they have worked with.

Objectives

Students will be able to:

- Summarize character menu
- Apply the When ...Do... construct
- Navigate the menus associated with characters and actions
- Create a game using a tutorial
- Revise an existing game

Materials and Preparation Required

- Access to the Internet and Kodu Game Lab: <http://www.kodugamelab.com>
- Computing device with screen display for teacher
- Computing devices with keyboards for students
- Flashy Fishbots (completed working game): <http://aka.ms/flashyfishbots>
- Boku's Amazing Race: <http://aka.ms/amazingrace>
- Air Delivery Tutorial: <http://aka.ms/airdelivery>
- Air Delivery Complete: <http://aka.ms/airdeliverycomplete>
- Student Guide: **Student_Guide_Kodu_Makerspace.docx**
- PowerPoint Presentation to deliver the lesson: **3_Slides_Kodu_Makerspace.pptx**
- Dry run the PowerPoint Presentation in Slide Show mode to enable animations and be familiar with any on-click animations
- Headphones for students (recommended)

Outline of the Lesson

- Getting Started: Review Kodu Game Lab
- Boku's Amazing Race Revisions
- Pair Programming: Air Delivery Tutorial
- Wrap up

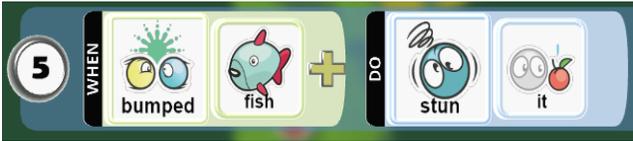
Student Activities

- Review the When...Do... programming construct
- Revise a race game
- Follow Air Delivery Tutorial to create the game
- Brainstorm how actions in the Air Delivery game could be modified

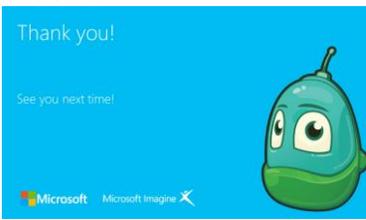
Teaching/Learning Strategies

Strategy	PPT Image
<p>Getting started: Review Kodu Game Lab (5 min)</p> <p>Introduce the third lesson <i>Exploring Developer Experience, part 1</i> by sharing the Big Questions. Reveal Slide 2 for questions.</p> <p>Students should expect to explore the answers to these questions during the third lesson:</p> <ul style="list-style-type: none"> • What new things can we learn about the character menus? • What new things can we learn about the When...Do... form? • What ideas do we have for redesigning one of the games we've played? <p>Review the Kodu menu</p> <ul style="list-style-type: none"> • Display Slide 3 • Think-Pair-Share: What is each of these tools? Name two things you can do using this tool. <ol style="list-style-type: none"> 1.  Home Menu – The Home Menu button will take you back to the main menu where you can choose to load a different world or quit Kodu. 2.  Play Game – Click the Play button to see the game in action. 3.  Move Camera – Click on the Move Camera button to change the angle of the camera (view). Right click + scroll, "tips" or "turns" the view. Left click+ scroll, "zooms" the view. 4.  Object Tool – This Object Tool is really cool. Click the Object Tool to add new objects to your game or to change an existing object such as a Kodu character. 	<p>Slide 1</p>  <p>Slide 2</p>  <p>Slide 3</p>  <p>Slide 4</p> 

Strategy	PPT Image
<p>Review the When...Do... programming construct</p> <ul style="list-style-type: none"> • Display Slide 4 • Refer students to pages 10-11 in the Student Guide <p>Think pair share: Describe exactly what each line does.</p> <p><i>Answers:</i></p> <p>Line 1: <i>When the user left clicks the mouse, Kodu shoots</i></p> <p>Line 2: <i>When the shot hits anything, the damage is set to zero points</i></p> <p>Line 3: <i>When the shot hits anything, the object should change to some random color</i></p>	
<p>Boku's Amazing Race Revisions (15 min)</p> <p>Note: this activity is intended for students to complete individually.</p> <p>Demonstrate finding Boku's Amazing Race game from the "Load world" menu option. Display Slide 5.</p> <p>Point out the directions on the "Load world" game listing.</p> <p>After 5 minutes of playing, interrupt to tell students that they will be able to play another 2 minutes, but that they should look for at least 3 When...Do... situations involving the objects in the game. Display Slide 6.</p> <ul style="list-style-type: none"> • Identify one When...Do... that happens with Blue Kodu • Identify one When...Do... that happens with Red Kodu • Identify one When...Do... that happens with any Boat <p><i>Answers:</i></p> <p>Blue Kodu: <i>When keys pressed or mouse is clicked do move quickly</i> <i>When bumps blue ship Do climb on/disappear</i></p> <p>Red Kodu: <i>When bumps red ship Do climb on/disappear</i> <i>When sees blue ship Do shoot</i></p>	<p>Slide 5</p>  <p>Slide 6</p> <p>Find the When...Do... situations</p> <ul style="list-style-type: none"> • Identify one When...Do... that happens with Blue Kodu • Identify one When...Do... that happens with Red Kodu • Identify one When...Do... that happens with any Boat

Strategy	PPT Image
<p>Blue ship or Red ship: <i>When keys pressed or mouse is clicked Do move quickly</i> <i>When see apple Do grab it</i></p> <p>Guide students to add a new line of code.</p> <ul style="list-style-type: none"> • Direct students to page 11 in Student Guide • Read the Add a New Line Directions and Activity checklist <p>Toggle to Boku’s Amazing Race and pace through the directions as students follow along, stopping at each step to make sure the students are on pace with you.</p> <ul style="list-style-type: none"> • Add an Object <ul style="list-style-type: none"> <input type="checkbox"/> Click on the Object Tool <input type="checkbox"/> Right click somewhere on the land between Boku and the boat ramp <input type="checkbox"/> Add a few rocks • Add a new line of code <ul style="list-style-type: none"> <input type="checkbox"/> Add code for Boku to say “Ouch!” when he hits a rock  <ul style="list-style-type: none"> • Add characters and actions <ul style="list-style-type: none"> <input type="checkbox"/> Add fish to the water <input type="checkbox"/> Change their rotation <input type="checkbox"/> Add code to the boats to stun any fish they bump  <p>Test the game. Does it work?</p> <p>Quick summary.</p> <p>What did you learn? Do you have any questions?</p>	<p>PPT Image</p>

Strategy	PPT Image
<p>Pair Programming: Air Delivery Tutorial (25 min)</p> <p>Transition students to a new tutorial activity by distinguishing between games and tutorials. Display slide 7.</p> <ul style="list-style-type: none"> • Tutorials are designed to teach something about programming Kodu. • Tutorials give you steps but it's possible to make a mistake. The Undo button will reverse simple errors. • But it is easier to start the tutorial over if the program become terribly messed up or the students becomes frustrated. • Start over by closing the tutorial without saving and selecting Load World from the main menu again. <p>Getting them started:</p> <ul style="list-style-type: none"> • Briefly play the Air Delivery Complete game and project from the teaching computer so that students will understand what the game should look like after they finish the tutorial. • Organize teams of two to work on one computing device. Instruct that they will take turns starting with one partner as the Map Reader and the other partner as the Driver. • Explain the Map Reader and Driver roles • The Map Reader is the partner who reads the instructions on the screen. • The Driver is the partner who writes the code described in the instructions. • Demonstrate this technique with a helper students projecting the game for the first few steps of the tutorial, as required. • Tell students that after a few minutes they will change roles so that each team member gets a chance at each role. • Ask student teams to decide who will be the first Map Reader and who will be the first Driver. • Monitor students as they work on the Air Delivery tutorial. Tell them to switch roles after each two minutes. • Students can play game, as time permits, after completing the tutorial. 	<p>Slide 7</p> <p>Air Delivery Tutorial</p> <ul style="list-style-type: none"> • The Map Reader is the partner who reads the instructions on the screen • The Driver is the partner who enters the code described in the instructions 

Strategy	PPT Image
<p>Wrap Up (5 min)</p> <p>Guide students to save their game with a name selected by the team.</p> <p>Direct students to page 6 in Student Guide.</p> <p>Read Saving Changes Directions. Display slide 8.</p> <p>Demonstrate as students follow along. Display slide 9.</p> <ol style="list-style-type: none"> 1. Click the Home Menu button 2. Select Save My World 3. Add 1 to the version number 4. Change the name of the game in the top row as desired 5. Add your initials to the end of the game’s name. 6. Revise the Description, as desired 7. Add students first names only 8. Click Save <p>Ask students to share other ideas they have for revising Air Delivery, as time permits.</p> <p>Review Big Questions.</p>	<p>Slide 8</p>  <p>Slide 9</p>  <p>Slide 10</p> 

Extensions

Instruct students to explore some of the other games in the Kodu “Load World” menu selections and to search for characters in the games that have more than 1 page of code associated with it. Then, examine the code and summarize how multiple pages of code work in that particular program.



Tips

Air Delivery Tutorial is a more difficult tutorial. Provide Air Delivery Complete to any students who do not successfully complete the tutorial. It will be more satisfying to do the revisions on a game that works correctly during subsequent lessons. If this Air Delivery is too difficult for some students, suggest that they redo the Fishbots Tutorial for practice with Kodu menus.