Learning to program with Alice 3.x

**Contents**

**Lesson 4:**

1. Get the Rabbit to jump instead of walk
2. Use of separate method
3. Learn what parameters are and how they work
4. Learn more programming statements

**Lesson 5:**

1. Moving on the flying classes
2. Get a dragon to hover and move
3. Get a dragon to move forward and land safely

**Lesson 4:**

1. Open a new project and save as “jumpingRabbitProject”
2. Place a white rabbit in the scene
3. Make a method for the white rabbit called “jumpForward”
4. In the jump forward method, just below the tabs (Scene, myFirstMethod etc.) click “Add Parameter”
5. Click on the drop down box and select Integer or Whole Number and name the variable “numJumps” (Read and check the checkbox then press OK if the exclamation is there)
6. You have just created a parameter!
7. Now, at the bottom where the do together statements are, click and drag “count” to the code area in the “jumpForward” method and a menu will appear: select “numJumps”
8. Now, in that “count up to box”, write the code to get the rabbit to jump
9. In “myFirstMethod”, select “this.whiteRabbit” and drag the “jumpForward” method into the code window and select however many jumps you’d like!
10. Why did it make more sense to write a separate method?

**Lesson 5:**

1. Open a new project and save as “dragonProject”
2. Place a dragon into the scene
3. Get the dragon to fly upwards
4. Have the look like it’s hovering
5. Get the dragon to move forward
6. Have the dragon land

**Lesson 4 Answers:**

1. Select “Setup Scene” at the bottom right of the scene window
2. Search for “white rabbit” and drag it into the scene and name him “whiteRabbit”
3. Select “Edit Code” at the bottom right of the scene
4. Click on the hexagon to the left of the tab Scene, hover over white rabbit and select “Add new white rabbit procedure” and name it “jumpForward”
5. In the jump forward method, just below the tabs (Scene, myFirstMethod etc.) click “Add Parameter”
6. Click on the drop down box and select Integer or Whole Number and name the variable “numJumps” (Read and check the checkbox then press OK if the exclamation is there)
7. You have just created a parameter!
8. Now, at the bottom where the do together statements are, click and drag “count” to the code area in the “jumpForward” method and a menu will appear: select “numJumps”
9. In the “count up to” box, drag a “do-together” in
10. What to add into the do-together box:
    1. “this.move” : UP , amount of 0.6
    2. “this.move” : FORWARD , amount of 2.5
    3. Select the drop box for “this” (whiteRabbit) and hover over the arrow, then select “getRightHip”
       1. Drag “turn” into the code : FORWARD, amount of .125
    4. Select the drop box for “this” (whiteRabbit) and hover over the arrow, then select “getLeftHip”
       1. Drag “turn” into the code : FORWARD, amount of .125
    5. Select the drop box for “this” (whiteRabbit) and hover over the arrow, then select “getRightShoulder”
       1. Drag “turn” into the code : RIGHT, amount of .125
    6. Select the drop box for “this” (whiteRabbit) and hover over the arrow, then select “getLeftShoulder”
       1. Drag “turn” into the code : LEFT, amount of .125
    7. Select the drop box for “this” (whiteRabbit) and hover over the arrow, then select “getRightEar”
       1. Drag “turn” into the code : FORWARD, amount of .125
    8. Select the drop box for “this” (whiteRabbit) and hover over the arrow, then select “getLeftEar”
       1. Drag “turn” into the code : FORWARD, amount of .125
11. Copy that do-together block and paste it under the first do-together
12. Change the following:
    1. The first move to: DOWN
    2. Both hip turns to: BACKWARD
    3. Right shoulder turn to: LEFT and Left Shoulder to: RIGHT
    4. Change both right and left ear turns to: BACKWARDS
13. Go to “myFirstMethod” and select “this.whiteRabbit”
14. Drag the “jumpForward” method and enter the number 1 (or any other) and Run

**Lesson 5 Answers**:

1. Select “Setup Scene” at the bottom right of the scene window
2. Search for dragon and place one into the scene (without a tutu) name him “dragon”
3. Drag and drop the dragon into the scene and select “Edit Code” at the bottom right
4. Drag a do-together block into the code window
5. Select “this.dragon” and drag a move method into the do-together : UP, amount of 8.0 and duration of 1.5
6. Select “getLeftWingBase” for the dragon and drag the turn method into the code window : FORWARD for an amount of 0.25
7. Do the same thing for “getRightWingBase”, “getBackRightKnee” and “getBackLeftKnee”
8. Select “getFrontLeftKnee” and drag the turn method into the code window : FORWARD for an amount of 0.375
9. Do the same thing for “getFrontRightKnee”
10. Select “getTail” for the dragon and drag the turn method into the code window : FORWARD for an amount of 0.0625
11. Drag another do-together block and place it under the first one
12. Copy the “getLeftWingBase”, “getRightWingBase” and “getTail” and place them into the second do-together block
13. Change the directions to BACKWARD
14. Select “this.dragon” and drag a move method into the second do-together block : DOWN for an amount of 0.25
15. Copy and paste the second do-together block and place it under the second do-together block
16. Change turn methods to FORWARD and move method to UP
17. Copy and paste the second do-together block and place it under the third do-together block (NOTE: there is nothing to change about that one now)
18. Copy and paste the third do-together block and place it under the fourth do-together block
19. Drag a fresh do-together block into the code window
20. Drag a do in order block into that do-together block
21. Drag a do-together block into the do in order block
22. Copy and paste a “getLeftWingBase” and “getRightWingBase” into that do-together block; make sure the directions are FORWARD for an amount of 0.25
23. Copy and paste that do-together block under the first do-together in the do in order block
24. Change the directions to BACKWARD
25. Copy and paste the first do-together block and place it under the second do-together in the do in order block
26. Copy and paste the second do-together block and place it under the third do-together block inside of the do in order block
27. Drag another do in order block under the first do in order block inside of the do-together block
28. Select “this.dragon” and place two move methods inside the do in order: first one in DIRECTION down for an amount of 0.25 and the second in direction UP for 0.25
29. Copy and paste the first move method and place it under the second move method inside of the do in order block
30. Copy and paste the second move method and place it under the third move method inside of the do in order block
31. Change the last (fourth) move method to an amount of 0.125
32. Under the do in order block, drag another move method into the entire do-together block in the FORWARD direction for an amount of 20.0 and duration of 3.0
33. Copy and paste the very first do-together block at the top and place it on the bottom of the code
34. Change the direction of “getLeftWingBase” and “getRightWingBase” to FORWARD
35. Change all of the turn methods to a direction of BACKWARD
36. Change the move method to a direction of DOWN
37. Change the move method amount to 7.5 and the duration to 2.0
38. Select “this.dragon” and place a “straightenOutJoints” method under all of the code (by itself)
39. Hit Run