Java Fundamentals
2-3: Procedures and Arguments
Practice Activities

Lesson Objectives:

- Toggle between, and describe the visual differences between, the Scene editor and the Code editor
- Locate and describe the purpose of the methods panel and the procedures tab
- Use procedures to move objects
- Add Java programming procedures to the Code editor
- Demonstrate how procedure values can be altered
- Create programming comments
- Reorder, edit, delete, copy, and disable programming statements
- Test and debug an animation

Vocabulary:

Identify the vocabulary word for each definition below.

	The panel that contains the procedures and functions tab.
	A piece of program code that defines how the object should execute a task.
	The place where you program your animation.
	Computes and answers a question about an object.
	A value that the procedure uses to complete its task. It tells the computer program how to implement the procedure.
	An object's sense of direction.
	Describes the intention of the programming instructions.

Try It/Solve It:

Open the "WhiteRabbitProject" project you saved in the previous lesson. You will use this project for all of the practice activities listed below.

1. Program an object to move.
    a. Program the White Rabbit to move 1 meter to the right and then 1 meter to the left.
    b. Save the project.
2. Edit arguments in a procedure.
    a. Edit the arguments in the move procedures so that the White Rabbit moves 1 meter to the right and then .25 meters to the left.
    b. Save the project.

3. Reorder, copy, edit and delete programming statements.
    a. Reorder the "Move" programming statements so that the White Rabbit moves left 1 meter, and then moves right 1 meter.
    b. Copy and edit programming statements so that the White Rabbit then moves right .5 meters and then left 2 meters, and then right 1 meter.
    c. Delete a programming statement so that the White Rabbit no longer says "hello".
    d. Save the project.

4. Test and debug the program.
    a. Test, edit, and debug the program so that the White Rabbit pauses for 1 second before speaking (use delay) and moves more gently.
    b. Save the project.

5. Disable a programming statement.
    a. Disable the "Say" programming statement so that the Rabbit does not say "Have Fun".
    b. Run the program to test that the disabled statement does not animate.
    c. Save the project.

6. Add programming comments.
    a. Add programming comments to each segment of programming code.
    b. Save the project.

Optional Activities:

Complete the following optional practice activities below to continue practicing the concepts you learned in this lesson.

1. Create an animation based on the textual storyboard below. Test and debug the animation to ensure that it works as intended at run-time.

    - Chicken walks by
    - Cat turns to look at the chicken
    - Cat says, “Dinner time!”
    - Chicken says, “Oh no!”
    - Chicken turns to right
    - Do the following steps together
    - Chicken walks away quickly
    - Cat walks away quickly

2. Browse the gallery tab “Gallery by Theme”. Set up an initial scene using the sea_floor with objects from the ocean theme. Add three clownfish, one dolphin, and one cave. The dolphin should be hidden in the cave. The clownfish should be at least five meters in front of the cave, facing the camera. Create an animation for the following textual storyboard:

    - The clownfish simultaneously bob up and down in the water three times
    - The dolphin comes out of the cave.
    - The dolphin says “Look at what I can do!”
    - The dolphin moves forward .5, turns completely around, rolls 4 times and then moves back .5 in order.
    - The clownfish simultaneously say “We can do that too!”
    - The clownfish simultaneously move, turn, and roll, in order. Then, they move in opposite directions until they are out of view.