Java Fundamentals
3-8: World Animation and Game End
Practice Activities

Lesson Objectives:

- Construct a world object using a constructor method

- Create an object using a constructor

- Write programming statements to use the new keyword

- Define the purpose and syntax of a variable

- Recognize the syntax to define and test variables

- Write programming statements to switch between two images

- Write programming statements to end a game

Vocabulary:

Identify the vocabulary word for each definition below.

	These statements describe the tasks or operations for the instances to perform in a mix of Java language and plain English words. This helps us better understand what behaviors we want the instances to perform before we write the real code.
	Declared in a class, this is used to store information for later use, or to pass information. It can store objects or values.
	A special method that is executed automatically whenever a new instance of the class is created.

Try It/Solve It:

1. Add a constructor to the **Rocket** Class.

2. In the **Rocket** Constructor use the setRotation() method to set the angle of the rocket randomly between 45 and134 degrees.

3. In the act() method of the **Rocket** move the rocket at a speed of 2.

4. In the **Rocket** class create a method called removeAtEdge(). This method will detect when the rocket is at the edge of the world. If it is it will add another rocket to the world. It will then remove itself from the world. Add this method to the act() method.

5. Add two class field variables to **Barrel** called timer and maxtime. Both of these will be integers.

6. Add a constructor to barrel that sets timer to 0 and maxtime to 250.

7. Add a method to Barrel called resetBarrel(). Using the pseudo code below, add code to increment the timer and when the timer is greater than the maxtime value the Barrel is moved. Once complete add a call to this in the act() method.

```
Increment timer

If timer > maxtime then

        Reset timer

        Randomly place barrel on the screen
```

8. Create a method within **Rocket** called animate(). Using the three images - rocket1.png, rocket2.png and rocket3.png, code the method animate() to switch between these 3 images. Add a call to animate() within the act() method.

9. Create a method within **Plane** called animate(). Using the two images - airplane1.png and airplane2.png, switch between these two images. Add a call to animate() within the act() method.

10. In **Plane**, modify the method handleMovement(). If the up arrow key is pressed the speed will change to 3 else the speed will stay at 2.