# Worksheet 6

Inheritance is the relationship between objects with shared characteristics. In Java, a class can “inherit” a separate existing class. The new class, called a subclass, takes the state and behavior of the other class, the superclass, and expands on it.

Because the subclass expands a superclass, it is in fact larger than the superclass.

In the example file, a simple superclass called DriveDistance is declared. The subclass DriveDistanceLights is declared below it.

1. **Describe how the subclass DriveDistanceLights declaration is different from a “regular” class.**

The constructor of the superclass is not inherited. Therefore the subclass needs its own constructor. The superclass constructor can be called inside the subclass constructor using the super(); statement.

1. **Why is the super() statement passed to the object “robot”?**
2. **Describe the functional additions to the subclass that are not present in the superclass.**

In both the subclass and superclass, the method driveDistance() is defined. This means that the subclass will override the same-named method defined in the inherited superclass.

1. **How many methods could be accessed from an instance of the subclass if the driveDistance() method in the subclass was given the name driveDistance2()?**

A superclass can have multiple subclasses each which are their own extension of the superclass.

1. **Theorize two other types of subclasses that you could use with DriveDistance superclass.**
2. **What happens if you try to change the driveDistance() method in the subclass to private?**
3. **try to create a private integer called “a” and set it equal to 3 in the super class. What happens if you try to change the value of “a” to a new value in the subclass method driveDistance(). List one thing you could do to make “a” accessible in the subclass.**