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| **Date Assigned: 10/21/15** | **Date Due: 10/23/15** |
| **Unit:** Methodology | **Turn In List:** **1. Terms 2. Cars pde** |
| *“I will harness the power of object oriented design in programming with a simple example of a car.”* | |

**Classes and Objects**

**Content Objectives:** Students will begin to explore classes and objects in Processing.

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| **Starter Activity** |
| This entire assignment is based on the Processing tutorial on objects: <http://processing.org/tutorials/objects/> -  Code the example from the car class demo from lecture on a 2nd tab in a new project. |

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| **Key Terms:** | |
| OOP |  |
| Class |  |
| Objects |  |
| Properties |  |
| Constructor |  |
| Functions |  |

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| **Assignment:** |
| Create a new “Tab” in a Processing project and name it Car (yes with a capital C.) Write the Car class as described in the Objects article under “Writing the Cookie Cutter” with comments naming the four code blocks. Once your car class is created, add 3-5 elements to the look of the car (visible tires, body parts etc…) Your car is now a Data Type of its own!  Challenge #1: the example code at the conclusion of the article has two cars (see : <http://processing.org/tutorials/objects/>)  Challenge #2: can you use random strategically to assign car colors, speed, or even size?  Challenge #3: can you make the cars go in both directions on the screen?  Challenge #4: Can you use an array of the Car object and create 100 of them?  Challenge #5: Add two or more details to the appearance of the car (i.e. windows, tires, antenna etc…)  Paste code below for a real world class you created with the following:   1. Name 2. Member variables 3. Constructor 4. Visibility Method 5. Behavior Method   class Car {  color c;  float x;  float y;  float speed;  float left  Car(color tempC, float tempX, float tempY, float tempSpeed float left){  c = tempC;  x = tempX;  y = tempY;  speed = tempSpeed;  left = random(2);  }  void display() {  rectMode(CENTER);  fill(c);  rect(x, y, 30, 10);  }  void drive() {  if (left >= 1) {  x+= speed;  if (x > width) {  x =o )  } else {  x = x + speed;  if (x > width) {  x = 0;  }  }  }  } |

Notes (Points of interest, mistakes, lessons learned, web resources, and thoughts):

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