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| **Unit:** Methodology | **Turn In List:** **1. Terms** |
| *“I will explore and implement the use of arrays in application development.”* | |

**Arrays**

**Content Objectives:** Students will create apps with the use of a powerful and innovative data type.

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| **Starter Activity** |
| int[] nums;  void setup() {  nums = new int[101];  //nums[0] = 0;  //nums[1] = 1;  for (int i = 0; i<nums.length; i++) {  nums[i] = i;  }  }  void draw() {  for (int i = 0; i<nums.length; i++) {  println(nums[i]);  noLoop();  }  } |

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| **Key Terms:** | |
| Syntax:initialize an array w/ values | When you write out each individual print line, for each individual number |
| Syntax:initialize an array w/ “new” | This is when you use a an int[] number, like in the code written above to have less lines of code, but a lot more possiblities |

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| **Assignment:** |
| Complete the following problems with Arrays assuming the following int array. Hint use .length to help achieve results. See the following page for additional information:  **int[] nums = {5,4,2,7,6,8,5,2,8,14};**  **Problem #1:**  int[] nums = {5, 4, 2, 7, 6, 8, 5, 2, 8, 14};  for (int i=0; i<nums.length; i++) {  nums[i] = nums[i]\*nums[i];  println(nums[i]);  }  **Problem #2:**  int[] nums = {5, 4, 2, 7, 6, 8, 5, 2, 8, 14};  for (int i=0; i<nums.length; i++) {  nums[i] = int(sq(nums[i]));  println(nums[i]);  }  **Problem #3:**  int[] nums = {5, 4, 2, 7, 6, 8, 5, 2, 8, 14};  for (int i=0; i<nums.length; i++) {  if (i<nums.length - 1) nums[i] += nums[i+1];  println(nums[i]);  }  **Problem #4:**  int[] nums = {5, 4, 2, 7, 6, 8, 5, 2, 8, 14};  int numsTotal = 0;  for (int i=0; i<nums.length; i++) {  numsTotal += nums[i];  }  println(numsTotal);  **Problem #5:**  Write a program that implements a simple rollover. In other words, if the mouse is over a rectangle, the rectangle changes color.  int x = 50;  int y = 50;  int w = 100;  int h = 75;  void setup() {  size(200, 200);  }  void draw() {  background(255);  stroke(0);  if (mouseX>x && mouseX<x+w && mouseY>y && mouseY<y+h) {  fill(120);  } else {  fill(180);  }    rect(x, y, w, h);  }  **Problem #6:**  class Button {  //Member variables  int x;  int y;  int w;  int h;  boolean on;  //Constructor  Button(int tempX, int tempY, int tempW, int tempH) {  x = tempX;  y = tempY;  w = tempW;  h = tempH;  on = false; // Button always starts as off  }  void display() {  if (on) {  fill(127);  } else {  fill(180);  }  rect(x, y, w, h);  }  void hover() {  on = mouseX>x && mouseX<x+w && mouseY>y && mouseY<y+h;  }  } |

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

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