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| **Unit:** Methodology | **Turn In List:** **1. Terms** |
| *“I will be able to identify and prescribe solutions for various types of errors in a program.”* | |

**Working with Errors: What happens when a program breaks or fails?**

**Content Objectives:** Students will be able to identify and resolve syntax, runtime and logic errors while stepping through an application.

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| **Starter Activity** |
| Use a while loop to accomplish the following result:   |  |  | | --- | --- | | **Code** | **Result** | | // code here:  size(200, 200);  int i = 0;  while(i < width) {  line(0, i, width, i);  i = i + 8;  } | Macintosh HD:Users:kkapptie:Desktop:Screen Shot 2013-10-03 at 6.49.48 AM.png |   Use a for loop to accomplish the following result:   |  |  | | --- | --- | | **Code** | **Result** | | // code here:  size(200, 200);  for (int i = 0; i < width; i+=10) {  line(0, i, width, i);  } | Macintosh HD:Users:kkapptie:Desktop:Screen Shot 2013-10-03 at 6.49.48 AM.png | |

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| **Key Terms:** | |
| Syntax Error | Language violation. In most IDE’s it prevents code from running. |
| Runtime Error | Halt the program during run-time because of user interaction. |
| Logic Error | Does not meet criteria for app, gives wrong output. |
| Break Point | Assigns a stop line for debugging. |
| Iterate or Iteration | Loop. |

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| **Assignment:** |
| Complete the code to accomplish the result on the right:   |  |  | | --- | --- | | size(200, 200);  background(255);  float w = 200;  while (w > 0) {  stroke(0);  fill(w);  ellipse(width/2, height/2, w, w);  w-=20;  } | Macintosh HD:Users:kkapptie:Desktop:Screen Shot 2013-10-03 at 9.45.11 AM.png |   Complete the code to accomplish the result on the right:   |  |  | | --- | --- | | size(200,200);  background(255);  for (float f = 200; f > 0; f-=20) {  stroke(0);  fill(f);  ellipse(width/2,height/2, f, f);  } | Macintosh HD:Users:kkapptie:Desktop:Screen Shot 2013-10-03 at 9.45.11 AM.png |   Use a nested loop to create random filled rectangles inside a canvas (8 lines of code in a for loop):   |  |  | | --- | --- | | size(200,200);  for (int x = 0; x < width; x+=10) {  for (int y = 0; y < height; y+=10) {  fill(random(255));  rect(x, y, 10, 10);  }  } | Macintosh HD:Users:kkapptie:Desktop:Screen Shot 2013-10-03 at 7.21.37 AM.png |   **Etch-A-Sketch**  Modify the code below to create an algorithm to write your name.   |  |  | | --- | --- | | int x, y;  void setup() {  size(400,400);  frameRate(10);  // Set start coords  x = 0;  y = 0;  }  void draw() {  fill(255);  drawName();  noLoop();  }  // Algorithm for your first name  void drawName() {  moveRight(1);  }  // Method to draw right line  void moveRight(int rep) {  for(int i=0;i<rep\*10;i++){  point(x+i,y);  }  x=x+(10\*rep);  } | Mac HD:Users:kkapptie:Desktop:Screen Shot 2014-09-29 at 6.40.57 AM.png | |

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

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| //Global Variable //<>//  int x, y;  void setup() {  size(1000, 400);  background(#581845);  strokeWeight(5);  stroke(#900C3F);  x = 20;  y = 50;  }  void draw() {  fill(255);  drawName();  noLoop();  }  // Algorithm for your first name  void drawName() {  moveRight(100);  moveDown(300);  moveLeft(100);  moveUp(100);  moveDown(100);  moveRight(120);  moveUp(150);  moveRight(100);  moveDown(150);  moveLeft(100);  moveRight(120);  moveUp(150);  moveRight(100);  moveDown(150);  moveRight(20);  moveUp(150);  moveRight(80);  moveDown(150);  moveLeft(80);  moveRight(80);  moveUp(20);  moveRightDown(20);  moveRight(20);  moveRight(50);  moveUp(300);  moveDown(120);  moveLeft(50);  moveRight(100);  moveLeft(50);  moveDown(180);  moveRight(70);  moveUp(300);  moveDown(150);  moveRight(100);  moveDown(150);  moveRight(20);  moveUp(150);  moveRight(80);  moveDown(150);  moveLeft(80);  moveRight(80);  moveUp(20);  moveRightDown(20);  moveRight(20);  moveUp(150);  moveRight(100);  moveDown(150);  moveRight(20);  }  //Method to draw left line  void moveLeft (int rep) {  for (int i = 0; i < rep; i++) {  point(x-i, y);  }  x=x-rep;  }  // Method to draw right line  void moveRight(int rep) {  for (int i = 0; i < rep; i++) {  point(x+i, y);  }  x=x+rep;  }  //Method to draw lines up  void moveUp (int rep) {  for (int i = 0; i < rep; i++) {  point(x, y-i);  }  y=y-rep;  }  //Method to draw lines down  void moveDown (int rep) {  for (int i = 0; i < rep; i++) {  point(x, y+i);  }  y=y+rep;  }  //Method to draw lines right and up  void moveRightUp (int rep) {  for (int i = 0; i < rep; i++) {  point(x+i, y-i);  }  x=x+rep;  y=y-rep;  }  //Method to draw lines right and down  void moveRightDown (int rep) {  for (int i = 0; i < rep; i++) {  point(x+i, y+i);  }  x=x+rep;  y=y+rep;  } |