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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:  int i = 0;  while(i<height){  line(0,i,width,i);  i += 5;  } | 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:  for(int i=0;i<height; i+=5){  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 | Violating the language standard. (You will usually be given an indicator to where you messed up) |
| Runtime Error | Anything that is going to break the application during runtime or after compilation. |
| Logic Error | When something doesn’t make sense, and violates the intended use. (usually mathematic) |
| Break Point | A point where code is stopped for the sake of monitoring variables |
| Iterate or Iteration | looping |

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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 w = 200;w > 0; w-=20) {  stroke(0);  fill(w);  ellipse(width/2,height/2,w,w);  } | 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,width/10,height/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.   |  |  | | --- | --- | | // Jacob Schwartz 9/27/18  // Etch A Sketch  int x, y;  void setup(){  size(800,200);  frameRate(10);  //Set start coords  x=0;  y=0;  }  void draw(){  fill(255);  drawName();  noLoop();  }  //Algorithm for your first name  void drawName(){  moveRight(5);  moveDown(2);  //letter J  moveRight(10);  moveLeft(5);  moveDown(10);  moveLeft(5);  moveUp(3);  moveDown(3);  moveRight(5);  moveUp(10);  moveRight(5);  //letter A  moveDown(10);  moveUp(10);  moveRight(5);  moveDown(5);  moveLeft(5);  moveRight(5);  moveDown(5);  //letter C  moveRight(3);  moveUp(10);  moveRight(5);  moveLeft(5);  moveDown(10);  moveRight(8);  //letter O  moveRight(5);  moveUp(10);  moveLeft(5);  moveDown(10);  moveRight(8);  //letter B  moveUp(10);  moveRight(5);  moveDown(5);  moveLeft(5);  moveRight(8);  moveDown(5);  moveLeft(8);  }  //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);  }  //Method to draw down line  void moveDown(int rep){  for(int i=0;i<rep\*10;i++){  point(x,y+i);  }  y=y+(10\*rep);  }  //Method to draw left line  void moveLeft(int rep){  for(int i=0;i<rep\*10;i++){  point(x-i,y);  }  x=x-(10\*rep);  }  //Method to draw up line  void moveUp(int rep){  for(int i=0;i<rep\*10;i++){  point(x,y-i);  }  y=y-(10\*rep);  }  //Method to draw right down  void moveRD(int rep){  for(int i=0;i<rep\*10;i++){  point(x+i,y+i);  }  x=x+(10\*rep);  y=y+(10\*rep);  }  //Method to draw right up  void moveRU(int rep){  for(int i=0;i<rep\*10;i++){  point(x+i,y-i);  }  x=x+(10\*rep);  y=y-(10\*rep);  }  //Method to draw left up  void moveLU(int rep){  for(int i=0;i<rep\*10;i++){  point(x-i,y-i);  }  x=x-(10\*rep);  y=y-(10\*rep);  }  //Method to draw left down  void moveLD(int rep){  for(int i=0;i<rep\*10;i++){  point(x-i,y+i);  }  x=x-(10\*rep);  y=y+(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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