**Explorations of Technology – Khan Academy Javascript Drawing Commands**

**Color Commands**

|  |  |  |
| --- | --- | --- |
| **Command** | **Description** | **Example** |
| fill(Red, Green, Blue); | Sets the fill color of any shapes that follow. It requires, 3 numbers, (0 to 255) which represent the concentration of Red, Green and Blue | *fill(255,0,0);*  This sets a red fill color |
| stroke(Red, Green, Blue); | Sets the outline color of any shapes that follow. It requires, 3 numbers, (0 to 255) which represent the concentration of Red, Green and Blue | *stroke(0,255,0);*  This sets a green outline color |
| background(R, G, B); | Sets the background color of the entire canvas. Careful, this will cover anything drawn before it! | *background(0,0,255);*  Sets background to blue |
| strokeWeight(#); | Sets the width of any line or outline on shapes drawn to be however many pixels thick as specified in parentheses. | *strokeWeight(8);*  Each line or outline will be 8 pixels thick, instead of the default 1. |
| noFill(); | Removes the fill color for any shape drawn | noFill(); |
| noStoke(); | Removes the outline for any shapes draw | noStroke(); |

**Basic Shape Commands**

|  |  |  |
| --- | --- | --- |
| **Command** | **Description** | **Example** |
| rect(x, y, width, height) | This command draws a rectangle. The rectangle’s upper left corner will appear the location (X, Y), which are the first two numbers provided. The width and height of the rectangle are controlled with the last two numbers. | *rect(75,125,80,60);*  This command will draw a rectangle whose upper left corner is at location (75, 125) on the canvas. The rectangle will be 80 pixels wide and 60 pixels tall. |
| ellipse(x, y, width, height) | This command draws an ellipse. The center of the ellipse will appear the location (X, Y), which are the first two numbers provided. The width and height of the ellipse are controlled with the last two numbers. | *ellipse(125,50,50,90);*  This command will draw a ellipse centered at location (125, 50) on the canvas. The ellipse will be 50 pixels wide and 90 pixels tall. |
| line(x1, y1, x2, y2); | The command draws a line start at point(x1, y1) to point (x2, y2). | *line(0,0,200,200);*  This command will draw a line from the upper left corner (0,0) to the middle of the canvas (200,200) |
| triangle(x1,y1,x2,y2,x3,y3) | The command draws a triangle by connecting the three points, (x1, y1), (x2, y2) and (x3, y3) | *triangle(0,0,100,150,200,50);*  Create a triangle using points (0,0), (100,150) and (200,50) |
| quad(x1,y1,x2,y2,x3,y3,x4,y4) | Same as line and triangle, but how four points |  |
| arc(x, y, w, h, start, stop) | Like ellipse with 2 more values. Start controls the starting angle of the arc (0 to 360) and stop is the ending angle. | arc(100,100,50,50,90,270);  A pie-shaped arc is created using an ellipse centered at (100,100) that is 50 pixels wide and 50 pixels tall. The arc will start at 90 (bottom) and stop at 270(top), rotating clockwise |

**Angles for arc Command**

270

0 or 360

180

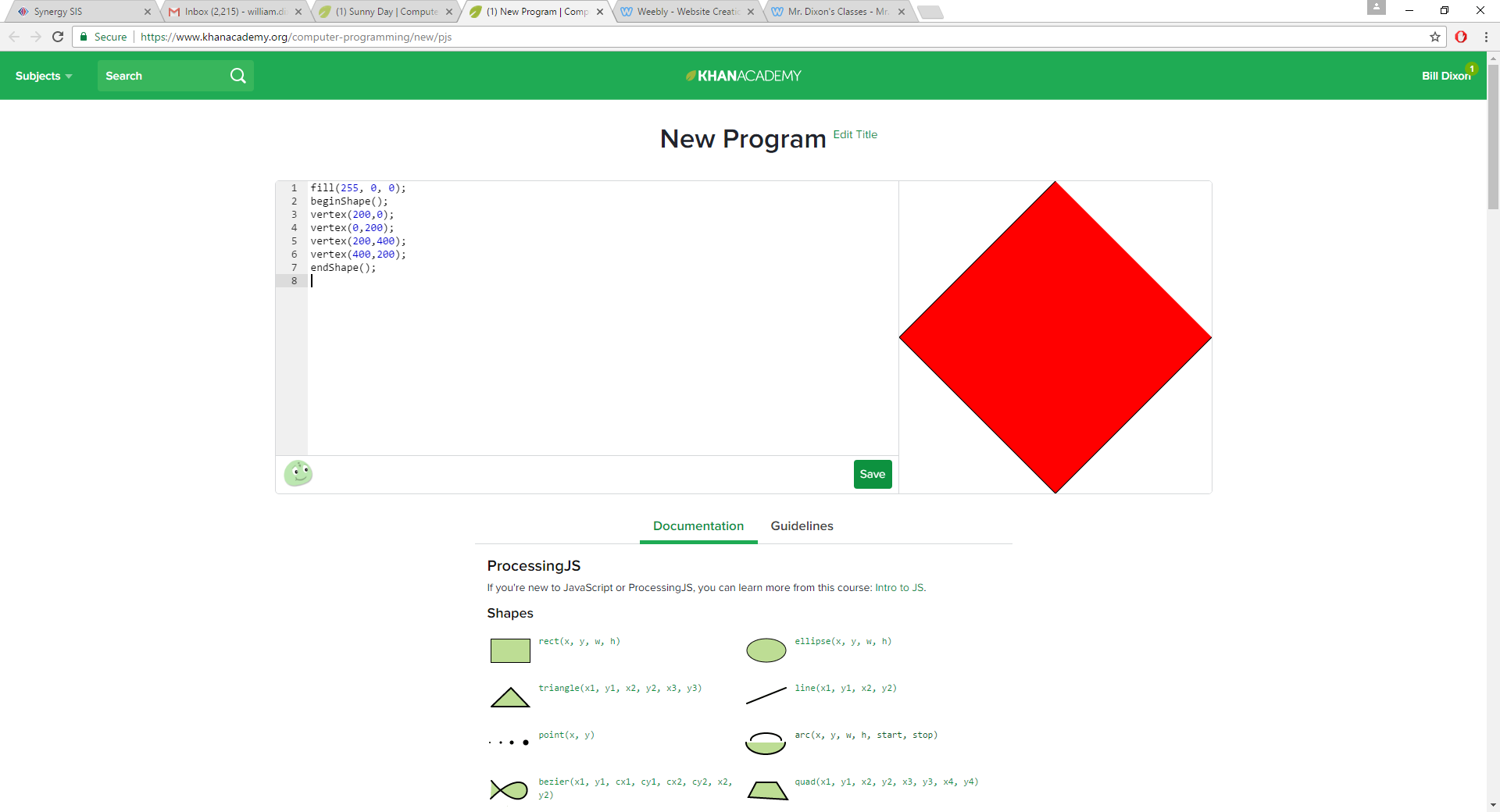
90

**Drawing Text**

|  |  |  |
| --- | --- | --- |
| **Command** | **Description** | **Example** |
| text(“Message”, X, Y); | Outputs the text (in quotes) at location (X, Y) | Text(“Hello!”, 100,200);  This outputs Hello! At location (100, 200) |
| textFont(font, size); | Changes the font and size of text. The font name must be contained in quotes and must be a font installed on the computer. | textFont(“Arial”, 15);  Sets the font to Arial, size 15 |

**Drawing a Complex Shape** (Polygons)

Imagine you want to draw an irregularly shaped region of the canvas. As long as you can determine the (X, Y) coordinates of the different vertices of the polygon, you can use the following code:

beginShape();

vertex(200,0);

vertex(0,200);

vertex(200,400);

vertex(400,200);

endShape();

Make sure that you put the vertices in the order you want the polygon to visit, like connect-the-dots.

You can add any number of vertices to your shape.