

Chapter 1 : Color

Exercise P.1.1.1

Step 1:

This exercise focuses on creating a color spectrum within a grid. First we use the setup function to create a canvas with its size being 800 x 400. We set the color mode to HSB again. The width and height is referring the the size constraints given above. We can reference 800 and 400 by using width and height. The brightness is set to 100.

```
function setup() {  
  createCanvas(800, 400);  
  noStroke();  
  colorMode(HSB, width, height, 100);  
}
```

Step 2:

We can declare two variables stepX and stepY. These are set for the step size of the mouse position. stepX and stepY are equalled to mouseX and mouseY plus 2. This prevents stepX and stepY from being too small which also creates longer display times.

```
function draw() {  
  stepX = mouseX + 2;  
  stepY = mouseY + 2;
```

Step 3:

To create a grid we must use a nested for loop. In the outer loop the y-position is being increased step by step. The inner loop draws a line which increases the rectangles x position until the full rectangle has been drawn. The y position of the rectangle is defined by grid Y in the outer loop. The variables gridX and gridY also determine to fill color of the rectangles

```
for (var gridY = 0; gridY < height; gridY += stepY) {  
  for (var gridX = 0; gridX < width; gridX += stepX) {  
    fill(gridX, height - gridY, 100);  
    rect(gridX, gridY, stepX, stepY);  
  }  
}
```