

Processing: Two Elliptical Puzzles!

Z. Wood & J. Wilcox

Today we are expanding on last week's puzzles programming! ***Our goal is to practice using and coloring ellipses.*** We will start with the same 400 by 400 grid as last week. Remember that each line on the grid is 50 apart from the next line.

To help you plot out the figures in these puzzles, use the code for the grid that we have used the past few lessons.

```
size(400, 400);
background(255);

//the horizontal lines
stroke(0, 0, 255);
line(0, 50, width, 50);
line(0, 100, width, 100);
line(0, 150, width, 150);
line(0, 200, width, 200);
line(0, 250, width, 250);
line(0, 300, width, 300);
line(0, 350, width, 350);

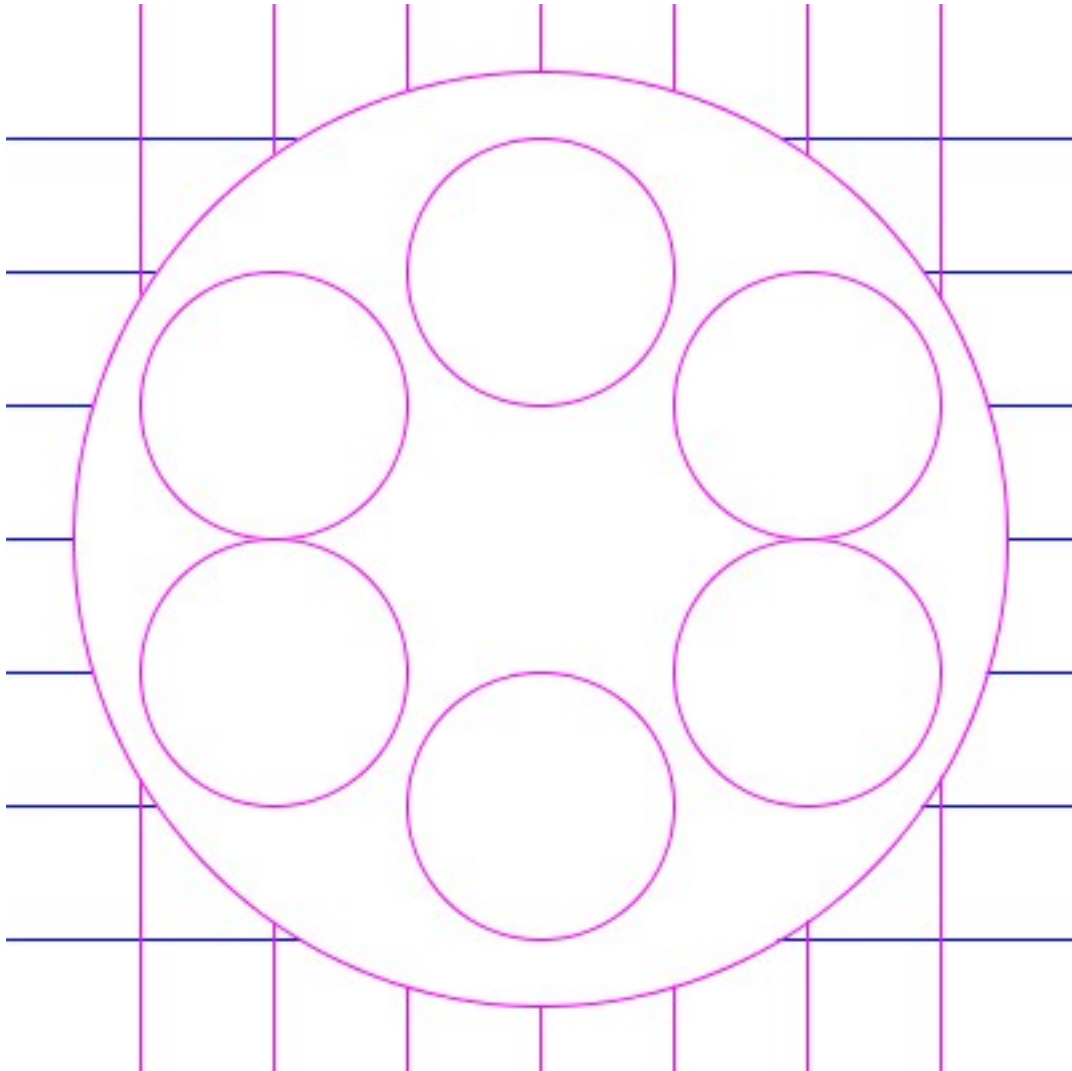
//the vertical lines
stroke(255, 0, 255);
line(50, 0, 50, height);
line(100, 0, 100, height);
line(150, 0, 150, height);
line(200, 0, 200, height);
line(250, 0, 250, height);
line(300, 0, 300, height);
line(350, 0, 350, height);
```

TODO: When creating the following pictures, remember to use these three important commands.

- ***ellipse(x, y, width, height);***
- ***fill(number, number, number);***
- ***triangle(x1,y1, x2,y2, x3,y3);***

Puzzle 1 – Rainbow Wheel

This puzzle requires you to create a painter's pallet with a series of paint blobs that are in a rainbow pattern. Use 7 ellipses to create this image. Color the ellipses as follows: 1) red, 2) orange, 3) yellow, 4) green, 5) blue and 6) purple.



Puzzle 2 – Jack-o-Lantern

This main character in this puzzle is made from stacking 8 ellipses on top of one another. What is changing about each of the ellipses? What is staying the same for each ellipse?



Help:

- The largest ellipse is *ellipse (200,250,330,300)*;
- The eyes - *triangle(100,200,150,____,200,____)*;
- *triangle(200,200,____,150,____,200)*;
- The mouth – *triangle (100,275, 300,275, _____, _____)*;
- The stem – *triangle(200,75,250,75,100,250)*;

//notes for teacher

The clues for the Jack-o-Lantern could be removed for those students who are feeling up for a bigger challenge.

Remember that the stem must be placed first in order to be under the pumpkin.

The numbers have been removed from the pictures the students received. Numerous students found it useful to write the numbers in themselves.

Some of the students grabbed the code for the grid from the website used in previous lessons. Others got the code from their own saved work. A few even wanted to take the time to type it in themselves.