- What new forces did you add to affect the behavior of a flock? How did you tie in the genetic values?

- Added in three new behaviors. The first behavior is split into two parts, if the value is greater than a certain number, then the boids will move faster once they see food in their path, if its less than a certain number, the boids will revolve around your mouse and move faster based on your mouse movement. The second behavior plays off the wander feature of the boids and it's a direct relation with the random number generated. The higher the number generated, the higher the wander which basically means how chaotic each boid appears to be, but they stay confined within the boundaries of their respective flock. The last behavior theoretically is supposed to speed up the flock depending on the value of behavior2.

- Describe your two new fitness functions. What do they try to optimize? Try evolving flocks for several generations under each. How successfully do the flocks evolve to fit the desired outcomes from these selective pressures? Can you outperform the evolutionary process by adjusting flock genomes by hand?

- The first fitness function we added was one that selected a winner based on the wing power of the flock. It selected the flock with the highest wing power and added it as a winner. The second fitness function selected a winner based on hues. This fitness function selected the flock with the smallest difference between hues and then added it as a winner. The flocks successfully evolve to fit the desired outcomes most of the times. Sometimes when winning flocks have one winning trait but not another winning trait it takes some time to get flocks that contain both traits. Yes, I can outperform the evolutionary process by manually moving the bar.

- Experiment with evolving flocks using only mutation, only crossover, and a mix of both. Describe your findings in how the evolutionary mechanisms differ over time.

- Because we have our winners based on the color of the boid, as well as the wing power and food, we saw the next generations of boids growing closer and closer to the color of the original "hue winner". We also saw the flocks pick up the behavior that makes them revolve around the mouse more than the behavior that attacks the food. A longer test period might show a different result, but from our findings, the new flocks also had a relatively high wing power overall.