

Principles of Evolution Lab #3: Evodots

Name _____

Simulation 1 - Size:

1. Predict How the Population of Dots will Evolve in Response to Predation.

2. Explain your reasoning.

3. Run your simulation for 20 seconds.

4. How did the distribution of dots change as you ran the simulation?

5. How many generations did it take for your population of dots to reach a point where it can no longer evolve?

6. Record data

	Bar 1	Bar 2	Bar 3	Bar 4	Bar 5	Bar 6	Bar 7
Start							
Stop							

7. On a separate piece of paper, graph your starting data vs. your ending data.

8. What is the % change for each color?

Simulation 2 - Variation:

1. Predict How the Population of Dots would Evolve if there were No Variation.

2. Explain your reasoning.

3 Run your simulation for 20 seconds.

4. Did the population of dots change as you ran the simulation?

5. Was your prediction correct?

6. Record data

	Bar 1	Bar 2	Bar 3	Bar 4	Bar 5	Bar 6	Bar 7
Start							
Stop							

7. On a separate piece of paper, graph your starting data vs. your ending data.

8. What is the % change for each color?

Simulation 3 - Inheritance:

1. Predict How the Population of Dots would Evolve if Size were Not Heritable.
2. Explain your reasoning.
3. Run the simulation for 20 seconds.
4. Did the population of dots change as you ran the simulation?
5. Was your prediction correct?

6. Record data

	Bar 1	Bar 2	Bar 3	Bar 4	Bar 5	Bar 6	Bar 7
Start							
Stop							

7. On a separate piece of paper, graph your starting data vs. your ending data.
8. What is the % change for each color?

Simulation 4 - Selection:

1. Predict How the Population of Dots would Evolve if the Dots are Eaten at Random.
2. Explain your reasoning.
3. Run simulation for 20 seconds.
4. Did the population of dots change as you ran the simulation?
5. If so, did it evolve in the same way it did when survival was selective?
6. Was your prediction correct?
7. Record data

	Bar 1	Bar 2	Bar 3	Bar 4	Bar 5	Bar 6	Bar 7
Start							
Stop							

8. On a separate piece of paper, graph your starting data vs. your ending data.
9. What is the % change for each color?

Final Reflections on EvoDots:

1a. After they were born, did the individual dots ever change their size or color?

1b. If the individuals didn't change, how was it possible for the population to change?

2a. What role did the predators play in causing the population of dots to evolve?

2b. Did they create a need for the dots to change?

2c. Or did they simply determine which dots survived to reproduce and which didn't?

Source of Error questions:

1. What sources of error may have caused your trials to be off? Why did this occur?

2. What could your group have done better to eliminate the sources of error? How will these changes help?

3. What could have been changed in the lab activity to eliminate sources of error? How will these changes help?