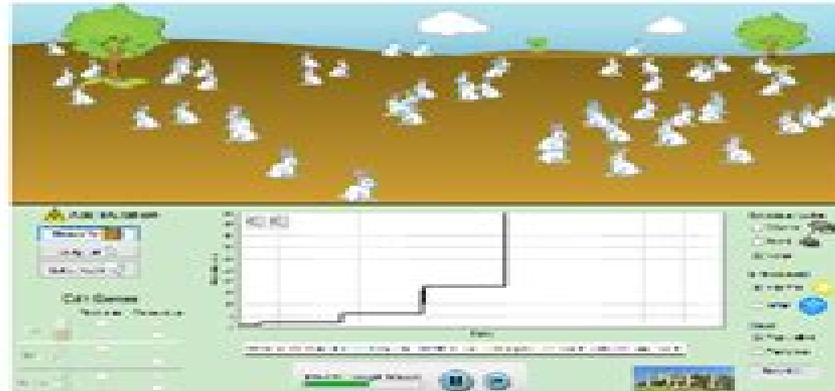


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Natural Selection Simulation at PHET

This simulation is located on the school's server. See instructions on board to access the simulation.



1. When you first open the simulation, one bunny will be shown on your screen. If you don't do anything with the simulation, what happens to the bunny?
If you don't do anything with the simulation the bunny does not change and nothing else happens other than it hopping around the land.
2. The simulation allows you to control types of mutations that occur in the bunnies. Look for the area that says "add mutation." What kind of changes can you make to your bunny?
In the area that says "add mutation" you can add fur, ears, and teeth.
3. There are two selection factors listed that can also be changed. What are they?
The selection factors in the simulation that can be changed include wolves, tough food, and limited food.
4. What are the two environments you can choose?
You can choose a summer or winter environment.
5. Click on the RESET ALL button and you will get another bunny. This time, click the button that says "add a friend." What happens to the bunnies this time?
When you click "add a friend" the bunnies reproduce and eventually overpopulate as time goes on.
6. In nature, populations don't get out of control because there are limiting factors in the environment. Start your simulation over and click to add food as a selection factor. **Describe** what happens to the bunnies when food is added as a selection factor.
When food is selected as a limiting factor the bunnies are still able to reproduce just at a much slower rate and at times the population drops and increases.
7. Animals have adaptations that can help them survive in their environment. Reset the simulation and add the "long teeth" mutation to your bunnies and use "food" as your selection factor. **Describe** what happens to the bunnies this time.



Natural Selection Virtual Lab Answer Key

Thomas Griffiths



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