




Group Lab Project

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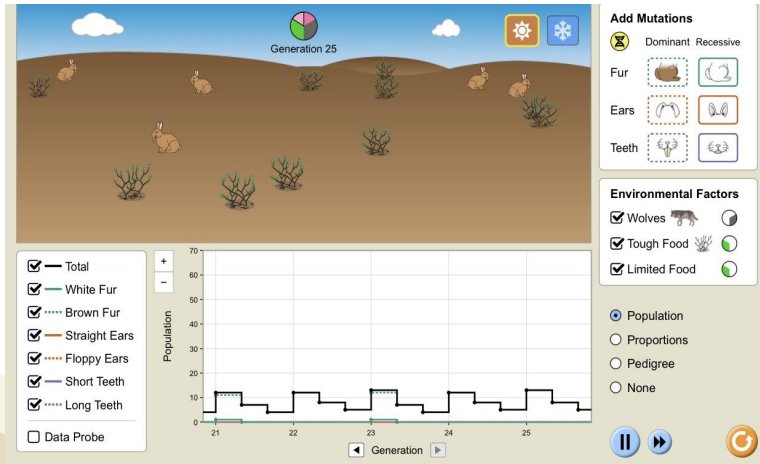
Introduction

Background Information	Mutation and environmental factors Natural selection
Basic facts	Experiment of surviving bunnies
Purpose of experiment	Purpose of today's lab experiment is to study how genetic traits in bunnies affect population size
Hypothesis	Bunnies with longer teeth are more fit for the environment and are likely to survive.

Difference in environments & In which station can bunnies survive?

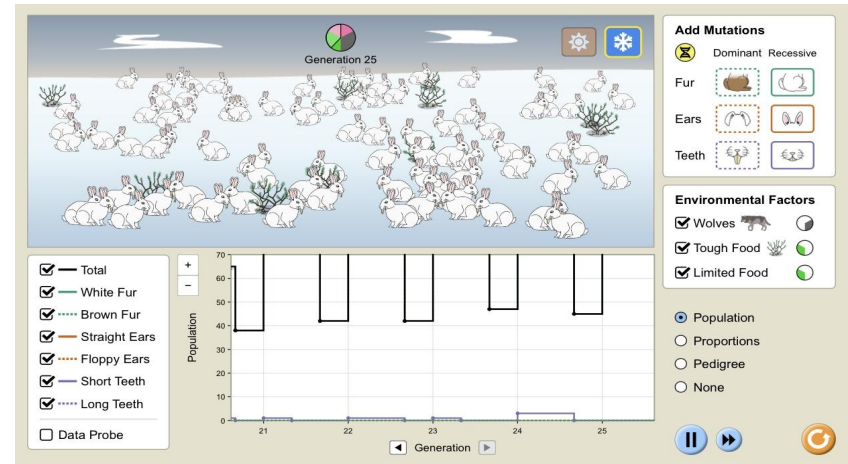
Summer

- The brown furred bunnies survived
- The bunnies are covered in a thick and woolly brown fur, which is advantageous in the brown colored environment. Therefore the fur allows them to camouflage

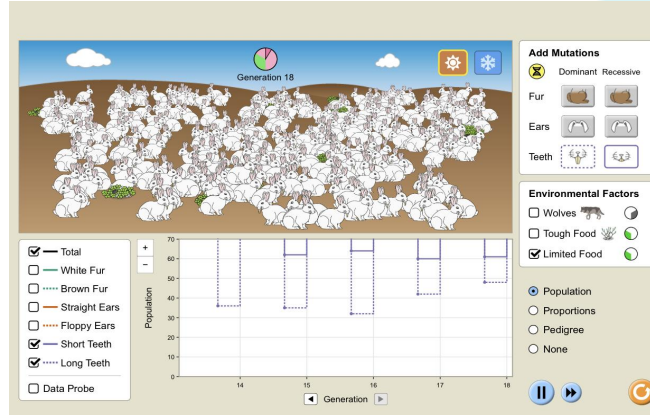
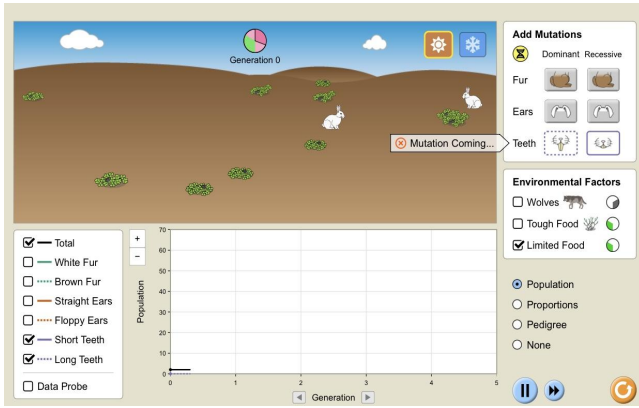


Winter

- The white furred bunnies survived
- The White fur is advantageous in the white colored, and snowy environment. This allows the bunnies to camouflage

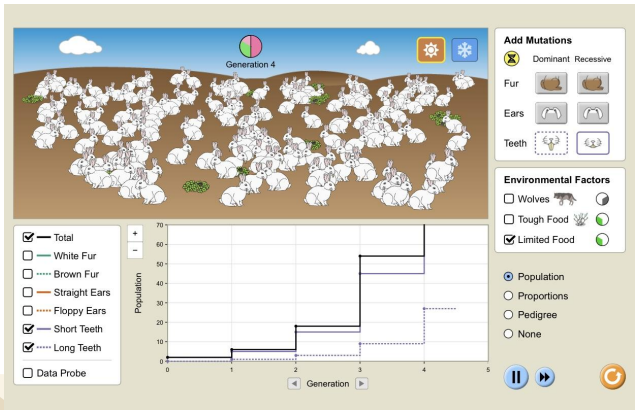


PROOFS



Summer

- Mutation: Long/Short Teeth
- Environmental Factor: Limited food



Methods & Materials

01

The virtual lab :

Following the link to the virtual lab, we were able to see the sample in place.

02

Options :

“Add Mutations” - Dominant or Recessive (Fur, Ears, and Teeth)
“Environmental Factors” - Wolves, Tough Food and Limited Food

03

What we chose :

Mutation : Dominant - Teeth
Environmental Factors - Limited Food

RESULTS

0

Generation

Contained one male and one female rabbit for reproduction

4

Generation

Bunnies were able to reproduce, population growth increased.

18

Generation

It was the same for this generation.

23

Generation

The population would either increase or decrease due to scarce amounts of food, or over population.



There was no ending as as the environment for sustainable for the bunnies survival

DISCUSSION

- Our hypothesis that bunnies with longer teeth will survive better than those with short was true. However other environmental such as overpopulation and food scarcity played a role in minor population decline when peak population was reached.
- A small number of bunnies died out as the population size/food ratio prevented bunnies from eating, and in turn causing a slight population decline.
- Due to natural selection certain bunnies were more fit for survival in different colored environments. White furred bunny population succeeded in a more light/snowy environments, while brown furred bunnies found more success in a sandy, brownish environment.

CONCLUSION

- Our initial hypothesis that bunnies would take over the world was not supported. The mutation of the bunny teeth gave them a competitive advantage in some ways
- The environmental conditions may have played a significant role in the survival of bunnies, as some bunnies may not have survived due to lack of food or the changes in generation.
- Certain Environmental factors such as predators, as bunnies with certain types of fur may not survive in all types of environments.
- This experiment highlights the importance of considering multiple factors when predicting the outcomes of evolutionary changes.

Resources

- https://phet.colorado.edu/sims/html/natural-selection/latest/natural-selection_en.html
- <http://dx.doi.org.ccny-proxy1.lib.ccny.cuny.edu/10.1007/s41469-022-00120-y>
- <https://web-s-ebshost-com.ccny-proxy1.lib.ccny.cuny.edu/ehost/detail/detail?>
- [link.gale.com/apps/doc/A201086610/AONE?u=cuny_ccny&sid=bookmark-AONE&xid=ad7a5fdc.](http://link.gale.com/apps/doc/A201086610/AONE?u=cuny_ccny&sid=bookmark-AONE&xid=ad7a5fdc)
- [https://www.sciencedirect.com/science/article/pii/S0959437X97800470?ref=pdf_download&fr=RR-9
&rr=79e026d87a06e841](https://www.sciencedirect.com/science/article/pii/S0959437X97800470?ref=pdf_download&fr=RR-9&rr=79e026d87a06e841)