

Appendix E

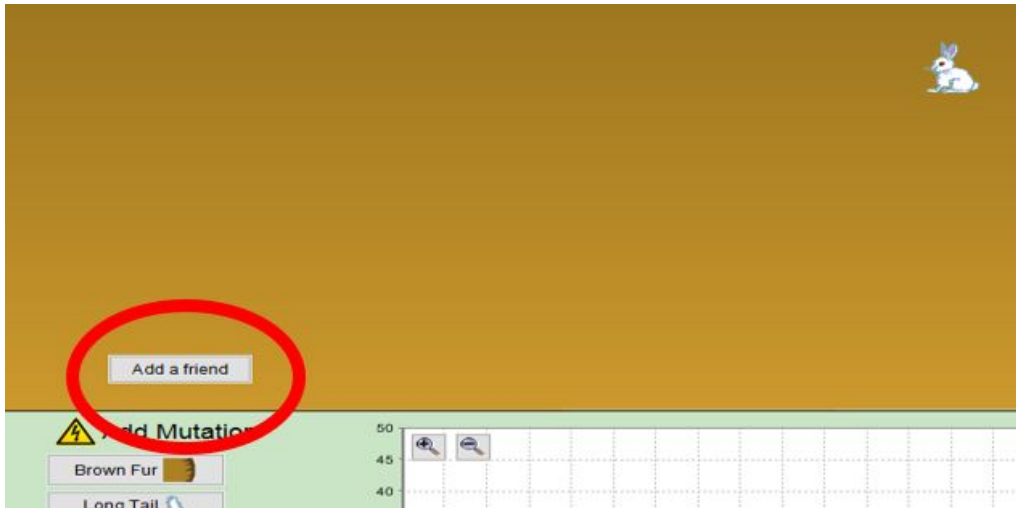
PhET—Natural Selection Simulation Lab

Open the [simulation](#).

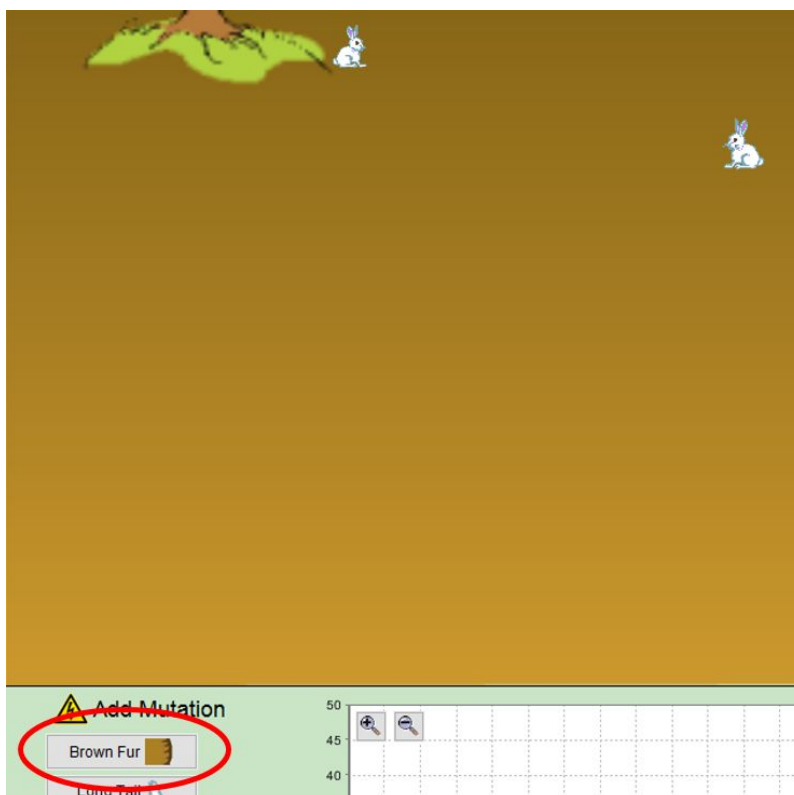
Notice that when the simulation is first opened, the environment is set to equator. What do you know about the environment at the equator? _____

What do you notice about the environment in this simulation? _____

Click add a friend for your bunny.



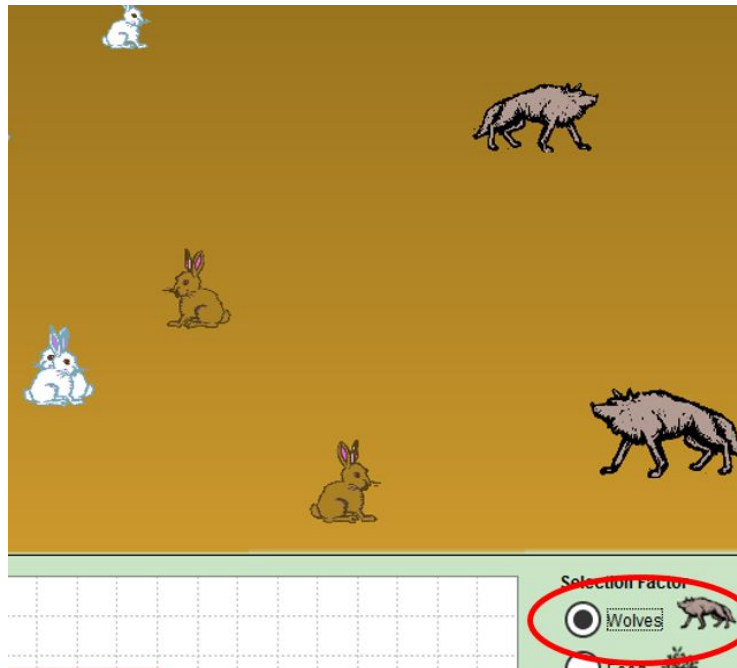
Click to add the brown fur mutation.



Allow the simulation to run for several generations.

Which color rabbit is most common? _____

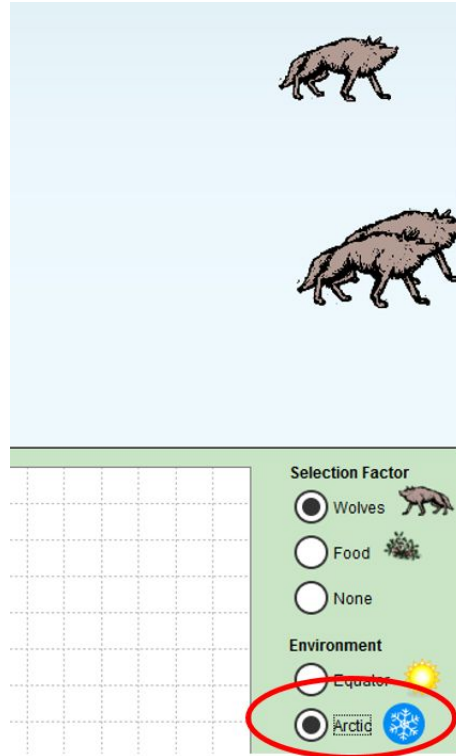
Click to add wolves.



Which color rabbits are the wolves eating the most? _____

Why do you think that might be? _____

Click to change the environment setting to arctic.



Click to remove wolves to allow the rabbit population to build up again.

What do you know about the environment in the arctic? _____

What do you notice about the arctic environment in this simulation? _____

Allow the simulation to run for several generations.

Which color rabbit is most common? _____

Click to add wolves back.

Which color rabbits are the wolves eating the most? _____

Why do you think that might be? _____

How does climate impact the rabbit population? _____

Some snakes lay eggs, and others have live births. Of the two types of rabbits that we saw in the simulation, which was more like the egg-laying snake? Circle one.

Brown Fur Rabbit

White Fur Rabbit

Complete the chart below using the following animals: egg-laying snake, live-birth snake, brown rabbit, and white rabbit.

	Most Successful Animal	
Location	Snake	Rabbit
Cold Climate		
Warm Climate		

What do you think is the main reason that one type of rabbit is more successful than the other in a given environment?

Do you think the variation in the rabbits' color serves a similar purpose to the variation in snakes' birthing methods? What other possible environmental factor could explain why snakes have different ways to give birth?

What do you think would happen to the snakes that laid eggs if they moved to a colder environment like the rabbits? _____

Why do you think it is beneficial to snake populations to have variety in the way they produce offspring? _____
