

OH DEER!

Intro: In this activity you will model another type of cycle in nature, the cycle of natural populations. In this case, you will be modeling how the size of a deer population changes over 10 years. You will determine the carrying capacity of this deer population.

Background info: All organisms including deer need suitable habitat to survive. Habitat includes food, water, shelter and space. If all four of those things are present in the correct amount then the organism will survive. If one of those four is not present in the correct amount, the organism will die. Because food, water, shelter and space are necessary for an organism's survival – because they determine the size of a population – they are called limiting factors. In the space below, list some other limiting factors that might affect a deer population.

The maximum size a population can grow to is its carrying capacity. Limiting factors prevent populations from growing beyond the carrying capacity. In this activity you will get a chance to see how a population's size cycles or fluctuates over 10 years as well as what the carrying capacity of this population is.

Size that can be sustained over time

Procedure:

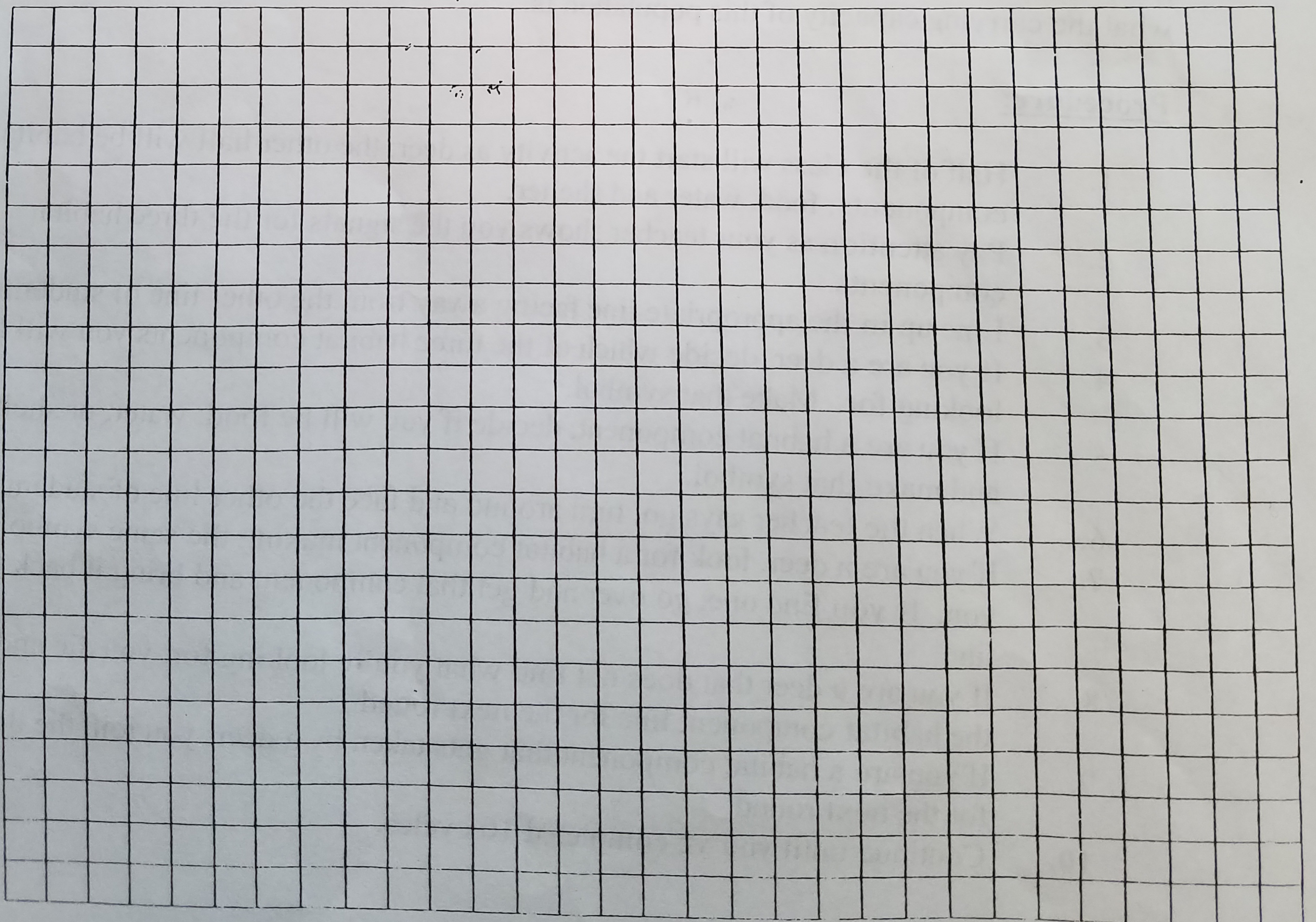
1. Half of the class will start the activity as deer; the other half will be habitat components: food, water and shelter.
2. Pay attention as your teacher shows you the signals for the three habitat components.
3. Line up in the appropriate line facing away from the other line of students.
4. If you are a deer, decide which of the three habitat components you will be looking for. Make that symbol.
5. If you are a habitat component, decide if you will be food, water, or shelter and make that symbol.
6. When the teacher says go, turn around and face the other line of students.
7. If you are a deer, look for a habitat component making the same symbol as you. If you find one, go over and get that component and bring it back to your line.
8. If you are a deer that does not find what you're looking for, you die and join the habitat component line for the next round.
9. If you are a habitat component that gets taken by a deer, you join the deer line for the next round.
10. Continue until you've completed 10 cycles.

Data:

Change in Size of Deer Population over a Ten Year Period

SIZE OF DEER POPULATION	YEAR NUMBER
	1
	2
	3
	4
	5
	6
	7
	8
	9
	10

Graph the data from the table on the grid below. Remember to title your graph, label both the x and y axis, and make your graph fit the entire grid.



Questions: Answer in complete sentences in the space below.

1. What is realistic and unrealistic about this activity?
2. What four things do all organisms need to survive?
3. What are six limiting factors that affect survival of organism?
4. How do limiting factors influence carrying capacity?
5. What seems to be the carrying capacity of this deer population?
6. How do limiting factors affect competition between organisms?
7. Why is good habitat important for animals?
8. Are wildlife populations static or do they tend to fluctuate as part of an overall balance of nature? Explain.
9. Is nature really ever in balance or are ecological systems involved in a process of constant change? Explain.
10. What might have happened to our graph if we had included a third limiting factor: predators?