

Population Size

Population size is the number of individuals that make up a population. Immigration and births increase population size. Emigration and deaths decrease population size.

The table below shows how several different populations have changed over a one-year time span. Look at each population and determine whether the overall population size has increased or decreased. If the population size has increased, draw an arrow that points upward (↑) in the population size column. If it has decreased, draw an arrow that points downward (↓). The first one has been done for you.

Factors that Affect Population Size

Population	Births	Deaths	Number of Individuals that Emigrated	Number of Individuals that Immigrated	Population Size
A	200	100	0	0	↑
B	10	10	100	0	
C	1	1	1	50	
D	10	100	100	10	
E	100	200	0	0	
F	50	1	1	50	
G	10	10	0	100	

Use the table to answer the question.

1. Look at population G. How would the population size have changed if 100 individuals had also emigrated?

2. A food shortage causes many members of a population to leave an area. What type of population movement does this describe? Circle the correct answer.

emigration immigration

Population Density

Population density is the number of individuals in a population in a unit area.

The grid below represents an ecosystem. Use the statements to map three populations that live in the ecosystem. Draw in each individual. Use an X to represent an oak tree. Use an O to represent an owl. Use an M to represent a mouse.

- Boxes 1, 2, 6, and 7 each have five oak trees.
- Boxes 8, 13, 15, 22, and 24 each have one oak tree.
- Boxes 6, 15, and 23 have one owl.
- Every box has two mice.

1	2	3	4	5
6	7	8	9	10
11	12	13	14	15
16	17	18	19	20
21	22	23	24	25

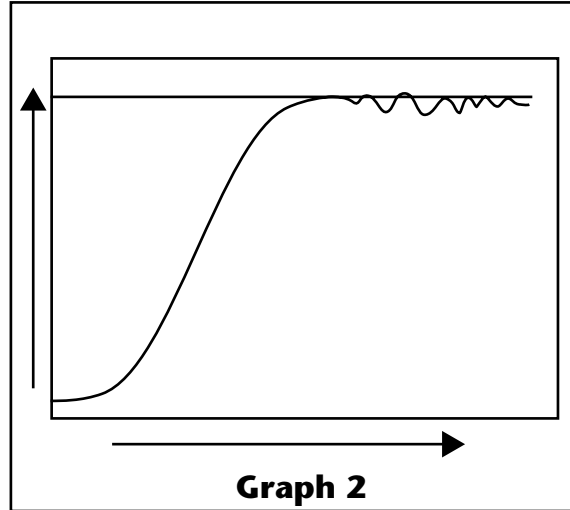
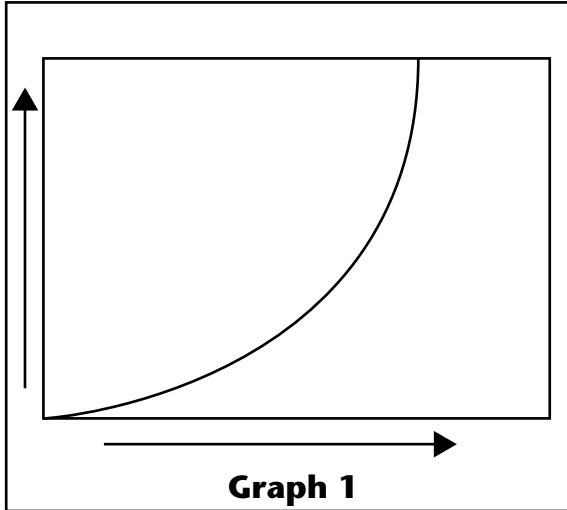
Use the diagram to answer the questions.

1. Which population has the lowest population density in this ecosystem? _____
2. In which boxes is the population density of oak trees the highest?

Exponential and Logistic Growth Curves

Exponential growth occurs when individuals in a population are reproducing at a constant rate. Logistic growth occurs when a population's growth slows or stops after a period of exponential growth.

The graphs below represent two different types of population growth. Use the graphs to answer the questions that follow.



1. On the blank lines below the graphs, give each graph a title based on the type of population growth it depicts.
2. Which graph shows a population that has reached its carrying capacity?

3. Which graph represents a population that is growing under ideal conditions with unlimited resources?

4. What is a population's carrying capacity?
