

# Question of the Day

In a class of 25 students, 6 new students joined the class. At the same time, 2 students dropped the class. How much did the class population change by?



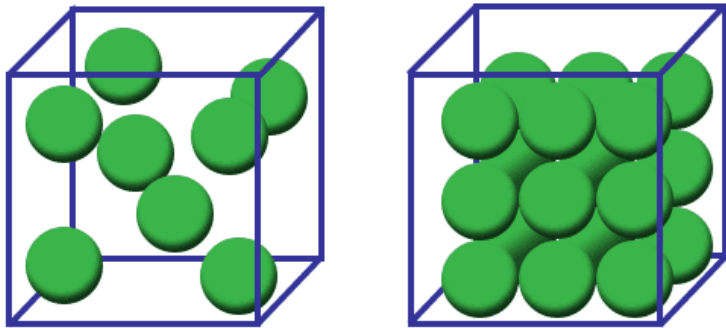
# Understanding Populations



# Properties of Populations

- Density is the number of individuals of the same species that live in a given area. (How crowded is it)

Density



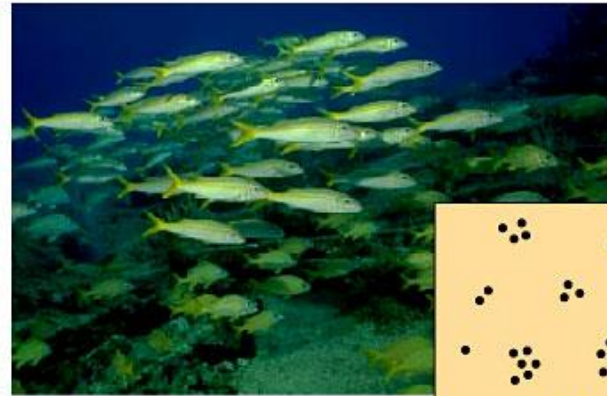
TheEngineeringMindset.com



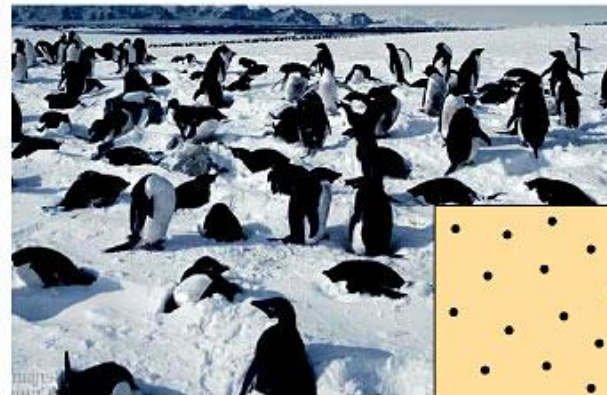
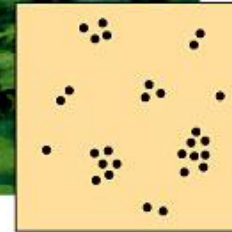
# Properties of Populations

- Dispersion is the pattern of distribution of organisms in a population.

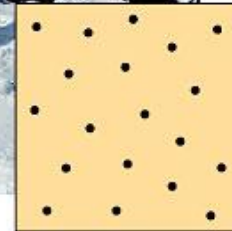
1. Clumped
2. Uniform
3. Random



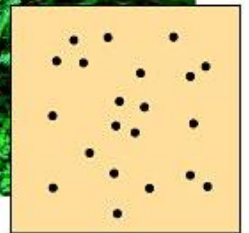
(a) Clumped



(b) Uniform



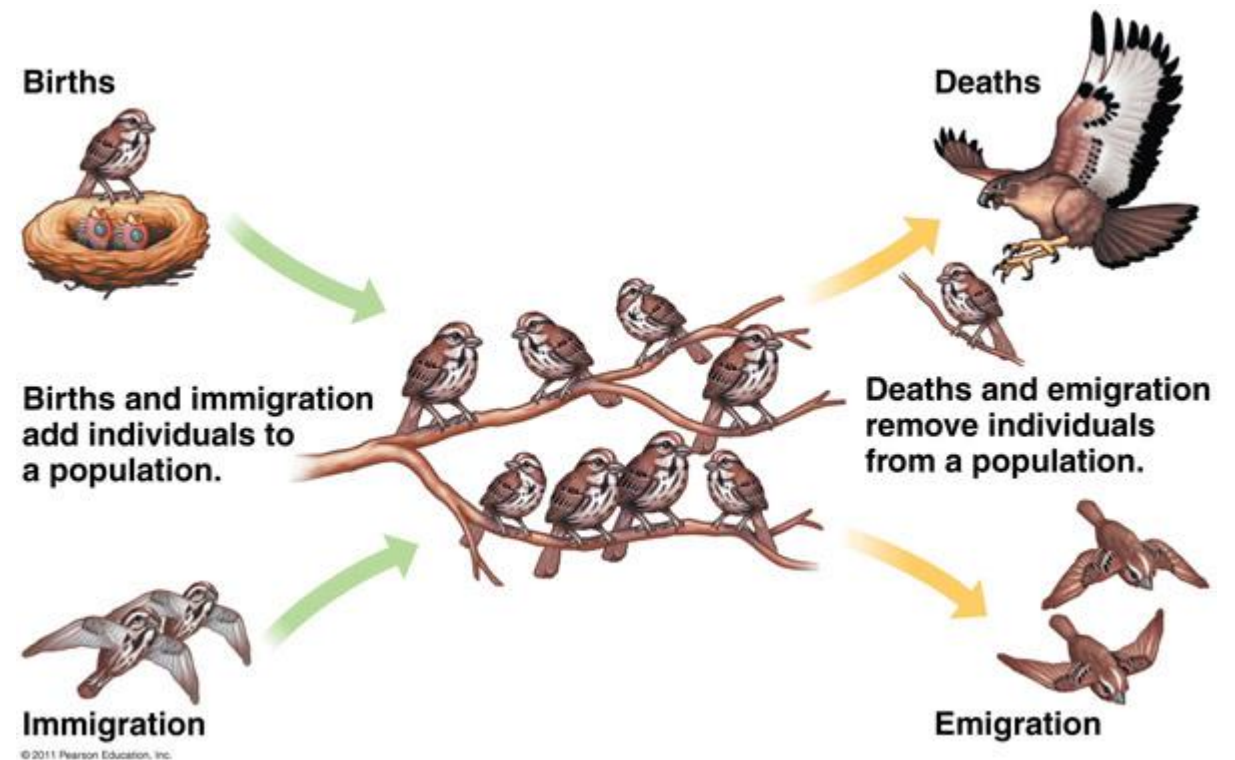
(c) Random



# How Does a Population Grow?

**Population Change = Birth – Death**

$$\text{Growth rate} = \frac{\text{Population Change}}{\text{Time}}$$





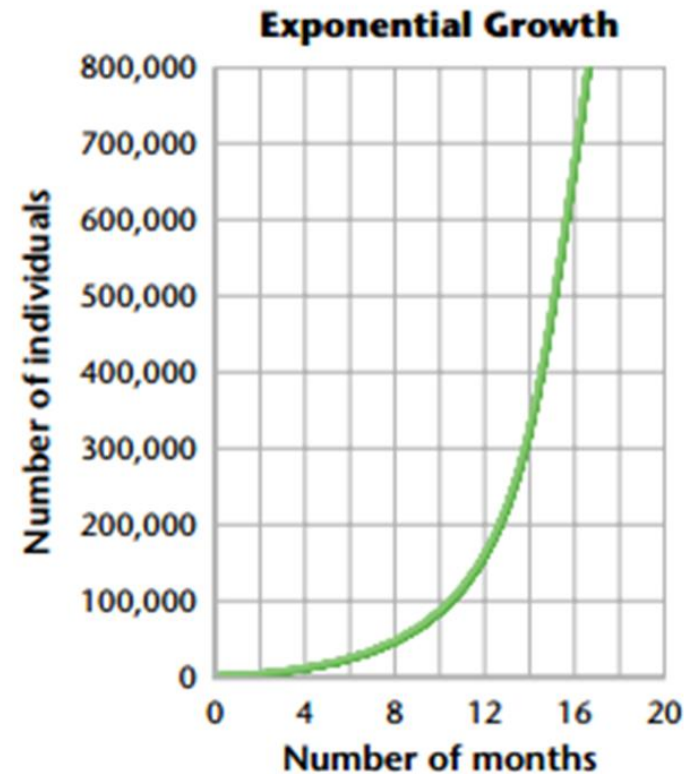
# Biotic Potential and Reproductive Potential

- How fast can a population grow?
- Reproductive potential is the maximum number of offspring that a given organism can produce.
  - Examples: Mice and Elephants
  - What causes a high reproductive potential?
    1. High number of offspring per pregnancy
    2. Short pregnancy periods
    3. Mature at younger age



# Exponential Growth

- Fast growth
- Occurs when there is plenty of resources
- No competition or predators



**Figure 4** ► Population growth is graphed by plotting population size over a period of time. Exponential population growth will look like the curve shown here.

# Carrying Capacity

- Maximum population an ecosystem can support

