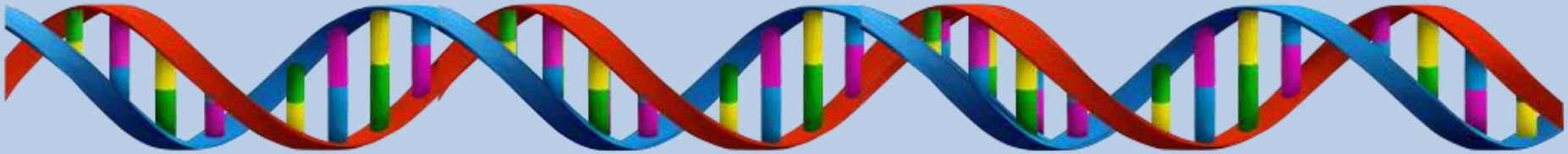
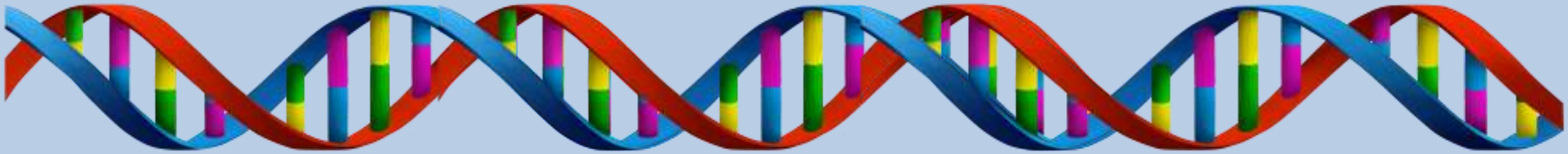
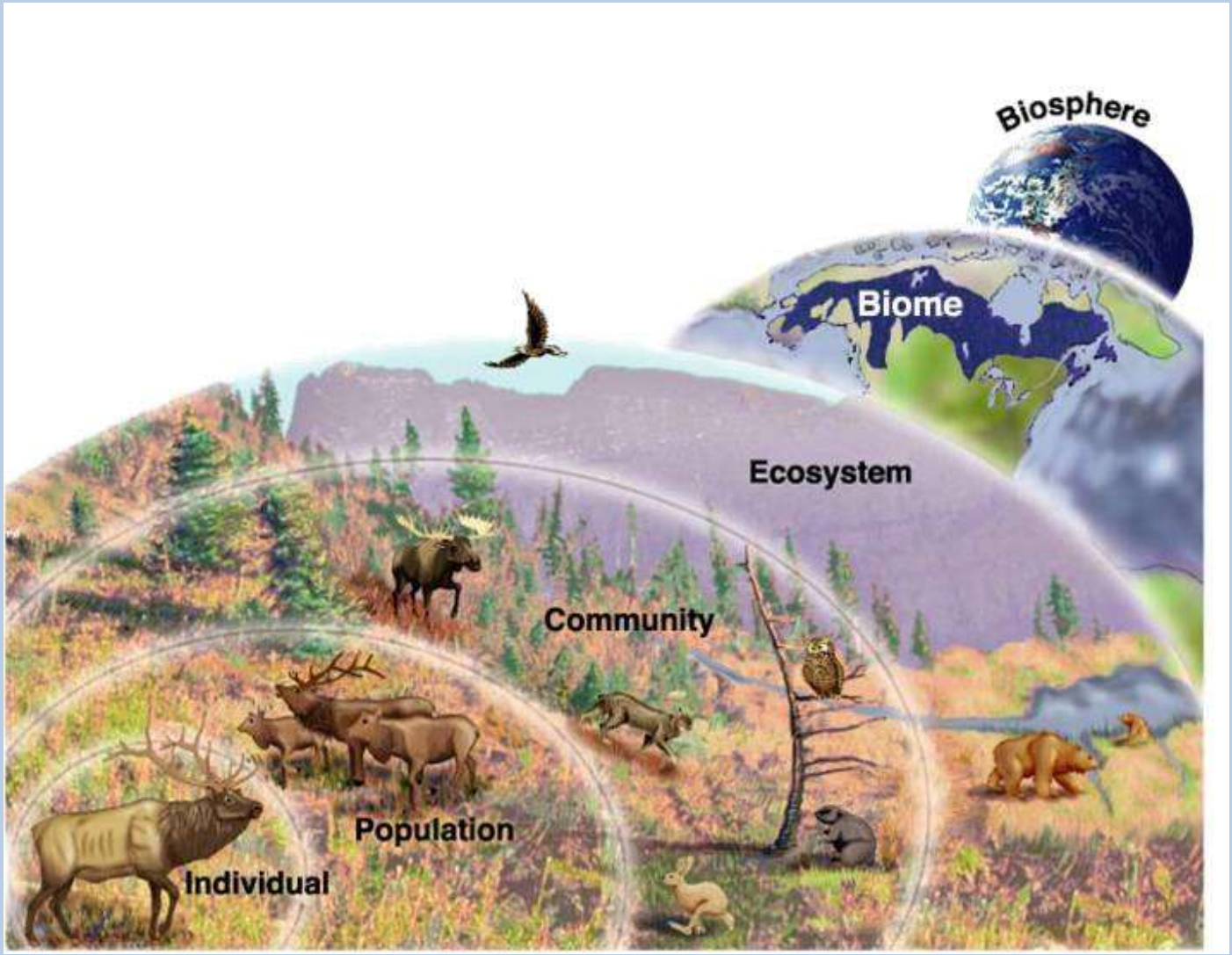


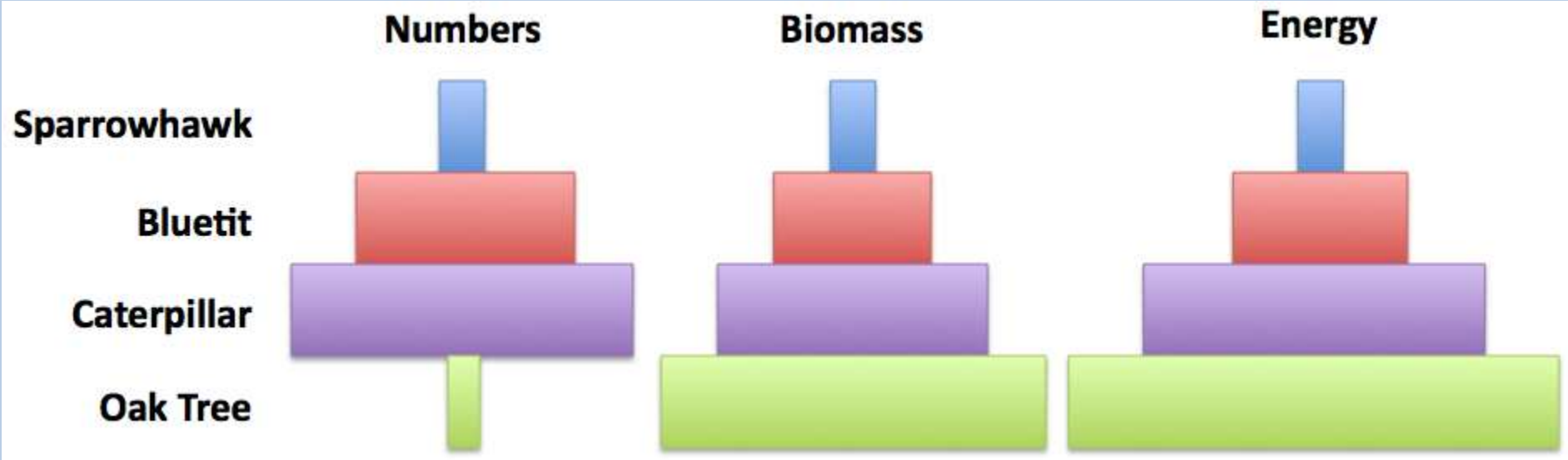
1. What is the difference between biosphere, ecosystem, and community?
2. What are the 3 kinds of ecological pyramids and what do they show?
3. What is the difference between an autotroph and heterotroph?



Ecology Review

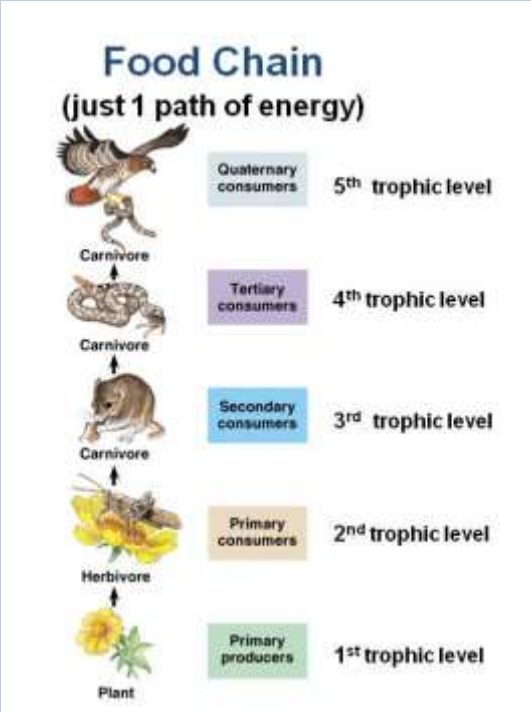


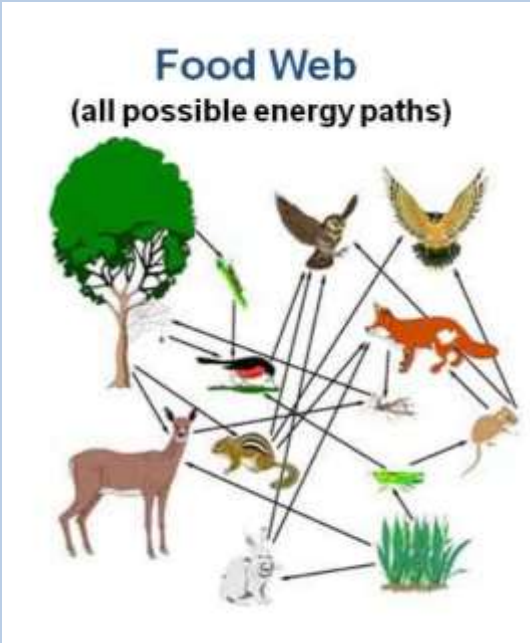
Ecology Review

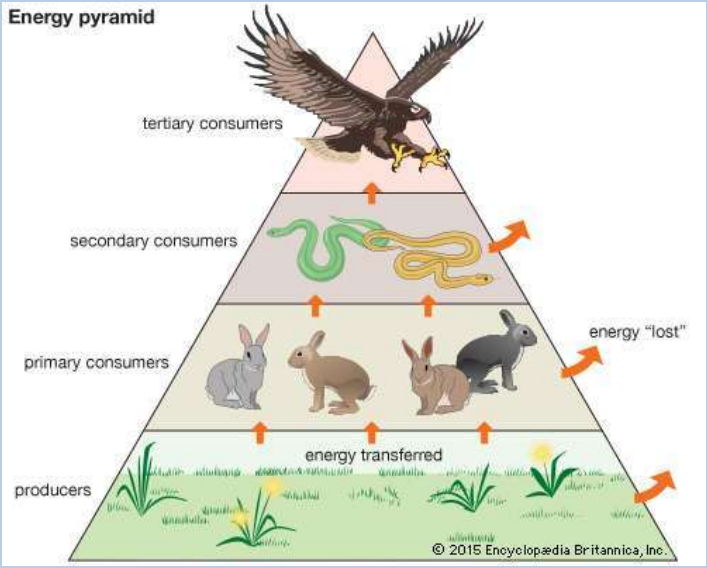


Ecology Review

- What do these three models show?

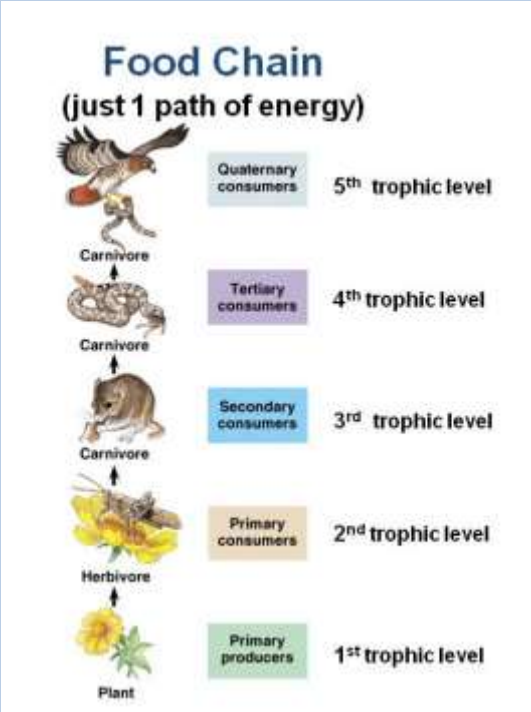


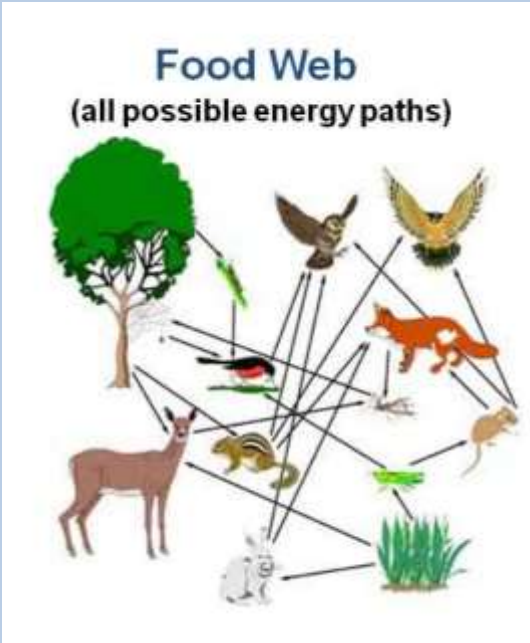


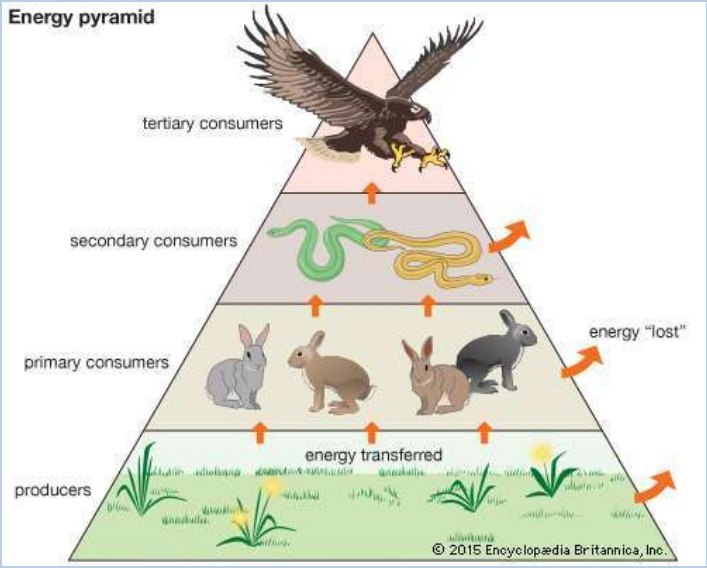


Ecology Review

- There are 3 models used to show how *ENERGY* FLOWS through ecosystems:

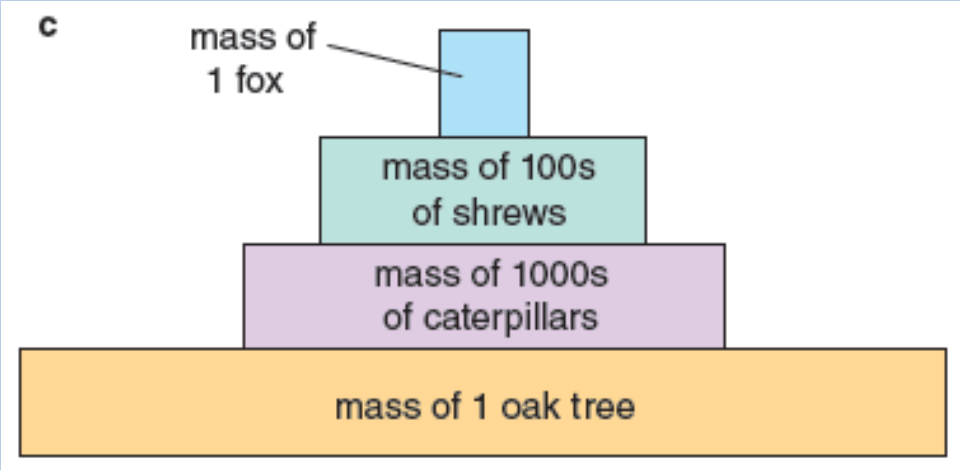


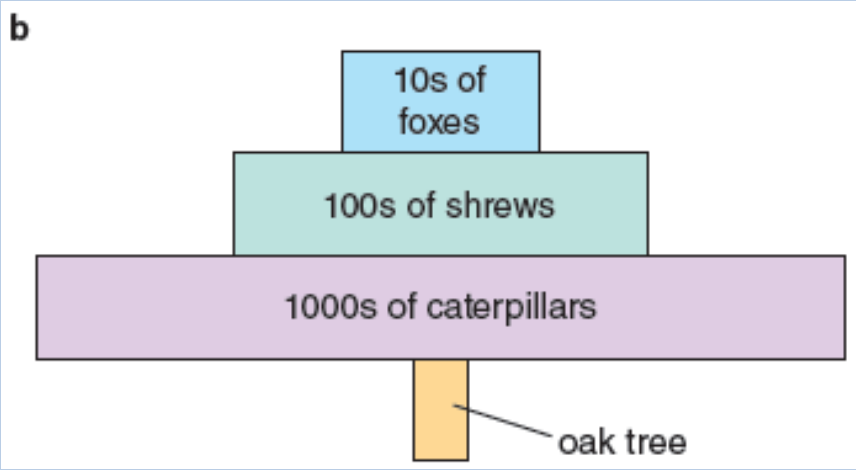




Ecology Review

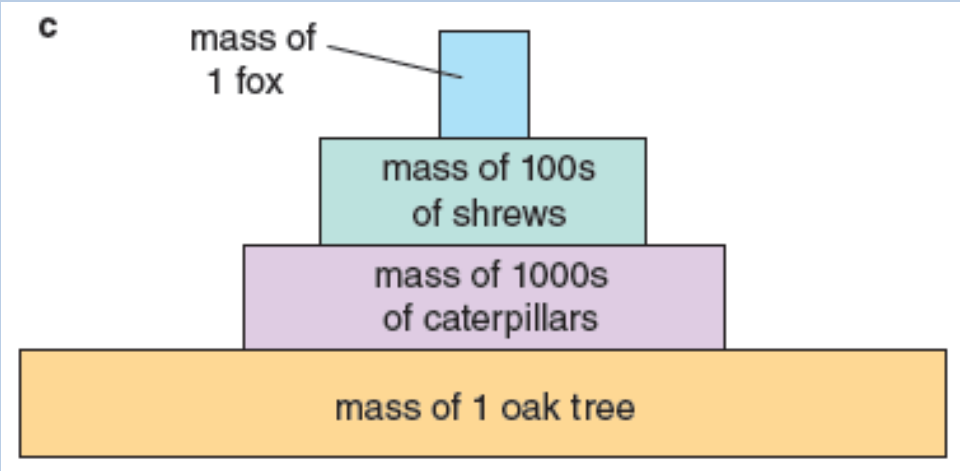
- What do these two models show?

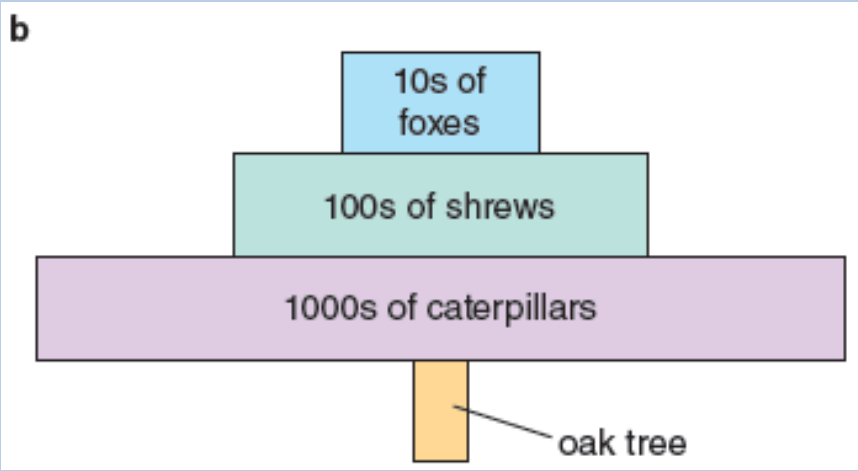




Energy Flow in Ecosystems

- There are 2 models to show how *MATTER* is distributed in an ecosystem:





Ecology Review

- **Photosynthesis/chemosynthesis review video**

Ecology Review

- Get out your objectives!

Ecology Review

1. Describe why ecology is important:
2. Define abiotic and biotic factors:
3. Describe the effect of abiotic factors on biotic factors:

Ecology Review

1. Describe why ecology is important: we depend on Earth for a home, and ecology supports our economy
2. Define abiotic and biotic factors: non-living and living
3. Describe the effect of abiotic factors on biotic factors: Abiotic factors are essential for life! They can provide energy and nutrients. The more kinds of abiotic factors allows more biotic factors (more biodiversity)

Ecology Review

4. Describe the methods used to study ecology:
5. Describe the difference between weather and climate:
6. Describe the factors that change due to climate change:

Ecology Review

4. Describe methods used to study ecology: observations, experiments, collecting data, models
5. Describe the difference between weather and climate: weather is temporary day-to-day, climate is patterns and averages over years
6. Describe the factors that change due to climate change: temperature, clouds, winds, precipitation, the frequency and severity of extreme weather events

Ecology Review

7. Describe how producers and consumers get energy:
8. Describe the flow of energy through ecosystems:
9. Explain how ecological pyramids model energy flow in ecosystems:

Ecology Review

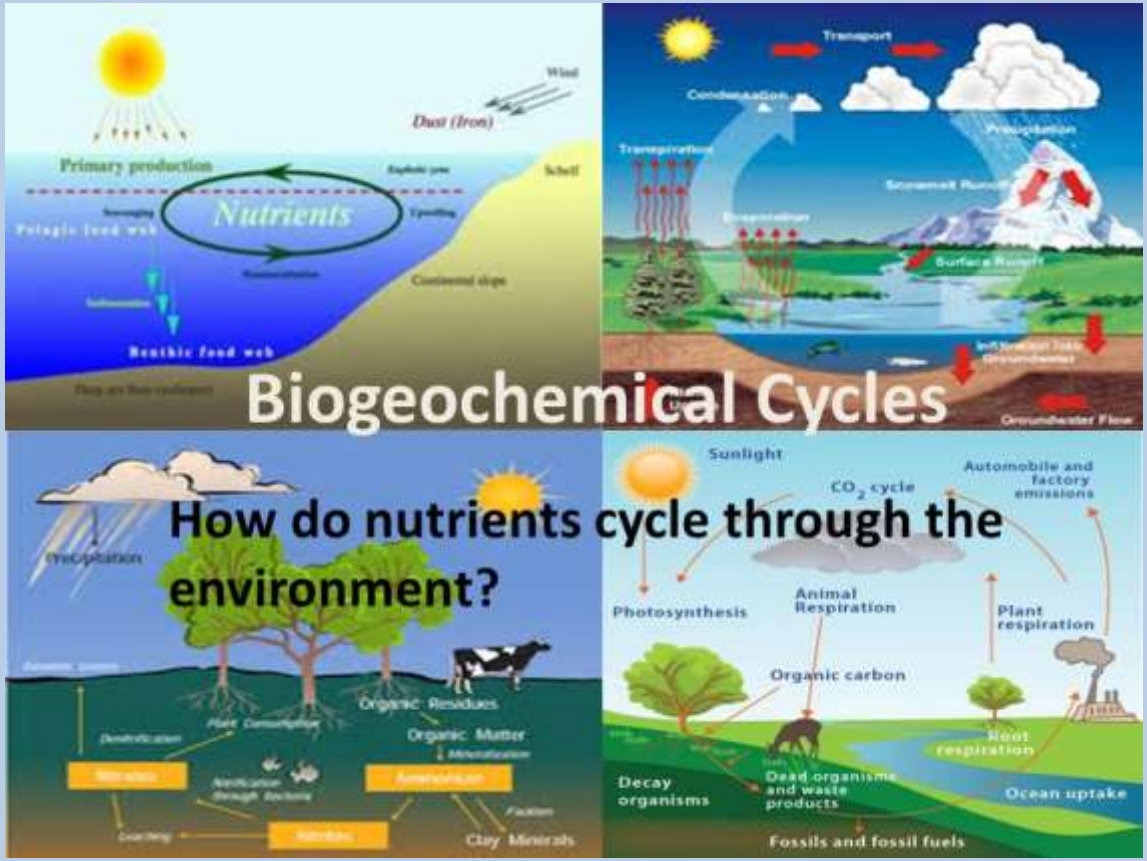
7. Describe how producers and consumers get energy: producers use abiotic factors, consumers use biotic factors
8. Describe the flow of energy through ecosystems: sun -> producers -> primary consumers -> secondary consumers -> tertiary consumers
9. Explain how ecological pyramids model energy flow in ecosystems: producers have most energy and matter in ecosystems, 90% energy is lost at each trophic level in the form of heat

Ecology Review

9. Describe biogeochemical cycles and their importance:

Matter Flow in Ecosystems

- **Biogeochemical Cycles: cycle of nutrients in an ecosystem**



Important vocabulary:

- Transpiration
- Photosynthesis
- Respiration
- Combustion
- Denitrification
- Nitrogen Fixation
- Leaching

Ecology Review

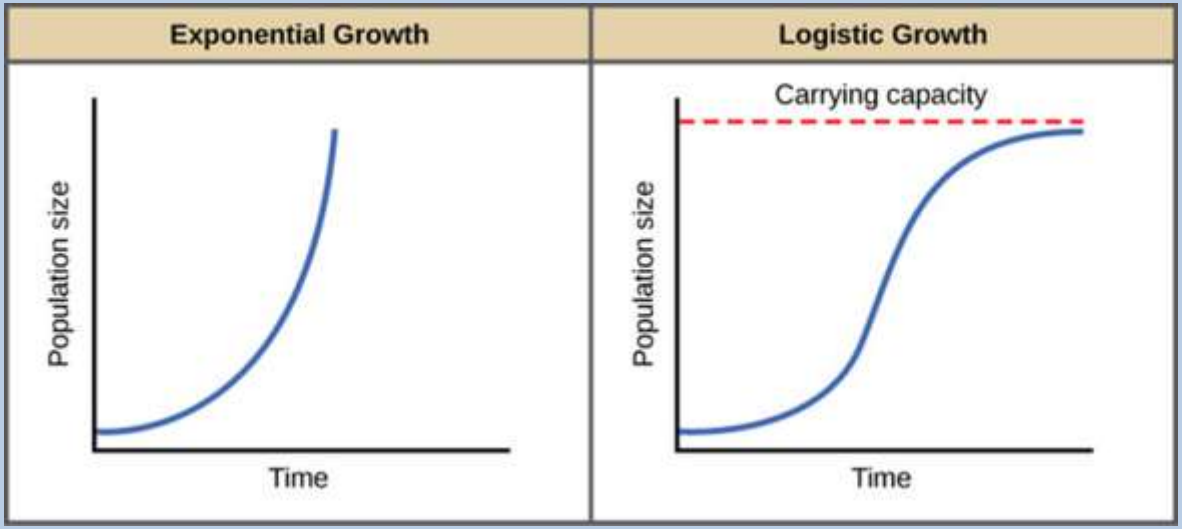
- **Describe biogeochemical cycles and their importance:**
  biogeochemical cycles describe the recycling of matter on Earth (in and between ecosystems), they are important because they make a variety of abiotic factors available for a variety of biotic factors

Ecology Review

11. Describe which factors affect population growth
12. Compare and contrast exponential and logistic growth

Ecology Review

11. Describe which factors affect population growth: **Birthrate, immigration, death rate, emigration**
12. Compare and contrast exponential and logistic growth:



Ecology Review

13. Explain how carrying capacity is determined
14. Compare and contrast density dependent and density independent limiting factors
15. Explain the relationship between limiting factors and extinction

Ecology Review

13. Explain how carrying capacity is determined: The amount of resources, and limiting factors determine the carrying capacity
14. Compare and contrast density dependent and density independent limiting factors: Density-dependent; disease, competition, predation

    Density-independent: weather, natural disasters, humans
15. Explain the relationship between limiting factors and extinction: Limiting factors can become so restrictive that the carrying capacity becomes 0 = extinction

Ecology Review

18. Describe the effect of keystone species on ecosystems
19. Give examples of the three symbiotic relationships
20. Describe the benefits of biodiversity
21. Describe ecosystem services

Ecology Review

18. Describe the effect of keystone species on ecosystems: Keystone species help keep populations in check, create more interactions, allow for more biodiversity
19. Give examples of the three symbiotic relationships: Mutualism, commensalism, parasitism
20. Describe the benefits of biodiversity: More biodiversity -> stable environment -> more RESILIENT ecosystem
21. Describe ecosystem services: Benefits that HEALTHY ecosystems provide to humans when every niche is full → stable environment

Ecology Review