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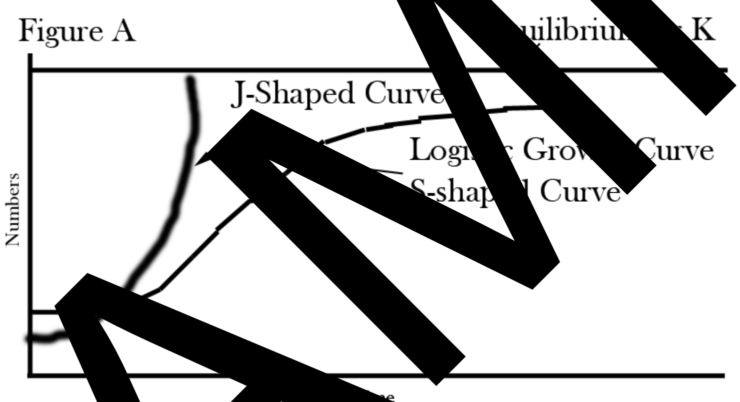
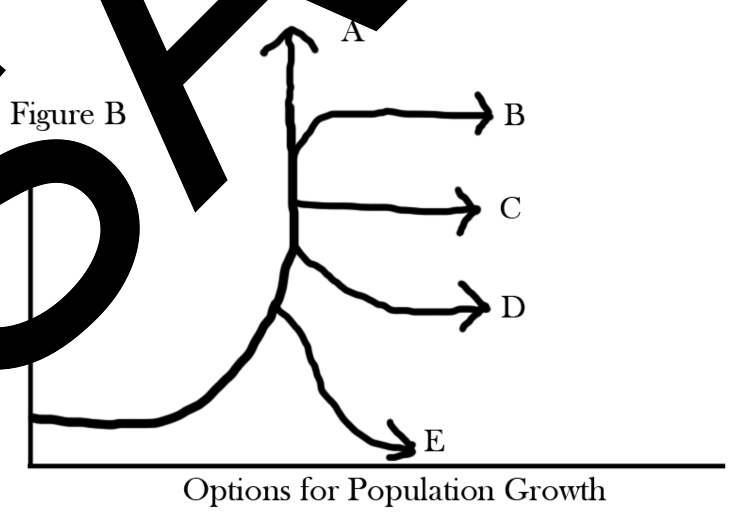
Additional Information:

Population Ecology

The Dynamics of Species Populations and How These Populations Interact with their Environment

- Equilibrium (represented by the letter K or carrying capacity) means there is zero growth in a population. This is the limit the population can reach and still survive
- Exponential Growth Curve (called J-shaped growth) is the initial incline of the growth.
- Logistic Growth Curve (called S-shaped curve) is the overall growth of the population.
- A population cannot infinitely grow; it will eventually reach its carrying capacity.
- The human population is currently growing exponentially but it is not indefinite. Eventually we will level off at a carrying capacity, or our population growth will crash, or we will go extinct. On average, populations are typically at carrying capacity, but will fluctuate.





Options for Population Growth

- The American chestnut tree, which used to be the most common tree in the Eastern United States, was exterminated by the Japanese chestnut.
- The American Elm was driven endangered by the Dutch Elm
- 10% of tree species go extinct. In other words, 10,000 out of 100,000 species of trees go extinct.
- Species are going extinct as a result of exotic species and deforestation.
- Why should we plant trees? Privacy, filters pollution, shade (saves money on cooling), and space for vegetation.
- The sassafras tree is native to North America and colorful. They are found in Eastern Kentucky but not in yards because their shape is unpredictable. The roots of sassafras trees can be used to make tea. Additionally, the leaves are used for spices. However, they are carcinogens that [illegible] cause cancer.
- Having all the same trees in a particular area, or mo[illegible] is bad because disease will hit harder. For example, disease hit Dutch elm trees causing them to die.
- Disease is typically controlled by biodiversity [illegible] native plants.
- Trees typically increase property valu[illegible]

Our Environment; Our Waste

- Landfills are expensive because they requ[illegible] fossil fuels, and it is difficult to find available space [illegible]dfill.
- The average American gen[illegible]es fiv[illegible] pounds of trash per day.
- Lexington is one of the few ci[illegible] making [illegible] from recycling because the labor in[illegible]d comes from pr[illegible]ers.
- Berea Colleg[illegible] is ra[illegible] number six o[illegible]f the top ten green colleges and universities.
- Grass is meant [illegible] be k[illegible] long. S[illegible]t grass is more likely to die. [illegible]rding to the [illegible]petition theory, weeds will takeover.
- Compost should c[illegible]ist of grass, leaves, and clothing containing natural fibers. D[illegible]mposin[illegible] grass generates heat. Compost mounds should not co[illegible] dead [illegible]mals [illegible]ecause it causes odor and attracts creatures.
- [illegible]aggots, wor[illegible] and other insects help break down compost.
- The typical A[illegible]erican yard is a broken-nutrient cycle, which occurs when v[illegible]uable [illegible]urces are sent to landfills.
- Po[illegible], phosphorus, nitrogen, and sulfur are elements spread in the yard from wastes.
- A closed-nutrient cycle is best for the environment. (See pg. 54 for more information)

Additional Information:

- Ozone is used to block ultraviolet rays. Ozone low in the atmosphere is a greenhouse gas. However, it is meant to be high in the atmosphere. Currently, ozone is not a significant greenhouse gas.
- Global cooling occurs when volcanoes erupt. Volcano eruptions can cause economic problems as a result of crop failures. The ultimate effect of global warming is volcano eruptions, which can lead to global cooling. As a result ice ages can occur.

- More recently, research [illegible] that asteroi[illegible] heat a[illegible]ool the earth. As a result, volcanoes erupt. [illegible] aste[illegible]ds have [illegible]t the earth in billions of years.
- It has been 10,000 years since t[illegible]ast ice ag[illegible]
- Warm peri[illegible]ically last only 8,[illegible] years. In the last 2,000 years human intel[illegible]ence a[illegible]ulation has[illegible]nificantly risen.
- Electric powe[illegible]ombusti[illegible] and machinery are high heat producers. Hig[illegible]tures, alo[illegible]g with O_2 and N_2 results in nitrous [illegible]
- Burning fossil fue[illegible]esults in sulfur oxide, sulfur dioxide, and nitrogen oxide.

The function of ________________________ is to explain the natural world.	Science
A ________________________ is the most powerful predictor of the natural world	Theory
_________________________ is very important when trying to prove a theory is correct.	Corroborating evidence
What is ecology?	Ecology is the study of the environment.
What is human ecology?	Human ecology is the study of how humans interact with their environment.

Fold Over