

22.1 Organization of Living Things II



Summarize main points from each video.

Video Title / topic _____

Video Title / topic _____

Video Title / topic _____

Topic Introduction



Summarize your understanding of each paragraph.

The biological levels of organization of living things arranged from the simplest to most complex are: organelle, cells, tissues, organs, organ systems, organisms, populations, communities, ecosystem, and biosphere.

This topic focuses on “population” – (a group of organisms of one species that interbreed and live in the same place at the same time). Variation and distribution of expressed traits in a population can be described through statistics and probability.

Some studies suggest that over twenty-five percent of all amphibians are in serious danger of going extinct. Population ecology is the study of this type of information and other questions about what factors affect population why a population changes over time.

Population ecology is the study of the factors that determine the abundance of species and is concerned with the identification of those environmental factors that cause fluctuations in population size and of those which determine the extent of these fluctuations.

Read/Summarize Text



1. Read the passage.
2. Underline key expressions in each sentence.
3. Re-write each word (or expression) you underlined.
4. Summarize the passage.

Recovery of marine animal populations and ecosystems

Many marine populations and ecosystems have experienced strong historical depletions, yet reports of recoveries are increasing. Overall, 10–50% of depleted populations and ecosystems show some recovery, but rarely to former levels of abundance. In addition, recovery can take many decades for long-lived species and complex ecosystems. Major drivers of recovery include the reduction of human impacts, especially exploitation, habitat loss and pollution, combined with favorable life-history and environmental conditions. Awareness, legal protection and enforcement of management plans are also crucial. Learning from historical recovery successes and failures is essential for implementing realistic conservation.

<https://www.sciencedirect.com/science/article/pii/S0169534711002060>

Re-write words you underlined

Using a complete sentence, summarize or rephrase the passage

Read Text for Comprehension

Read this article for deeper understanding. No summary is required, although you may want to circle, underline, or mark key ideas and words.

Organelle – a specialized cellular part (such as a mitochondrion, chloroplast, or nucleus) that has a specific function and is considered analogous to an organ. (*organelles make up cells*)

Cells – The basic unit of all living things except viruses. In advanced organisms, cells consist of a nucleus (which contains genetic material), cytoplasm, and organelles, all of which are surrounded by a cell membrane. (*cells make up tissue*)

Tissues – In biology, tissue is a cellular organizational level between cells and a complete organ. A tissue is an ensemble of similar cells and their extracellular matrix from the same origin that together carry out a specific function. Organs are then formed by the functional grouping together of multiple tissues. (*tissues make up organs*)

Organs – An organ pertains to a group of tissues that perform a specific function or group of functions. ... examples are heart, lungs, brain, eye, and stomach. (*organs make up organism systems*)

Organ systems – In biology, an organ system is a group of organs that work together to perform one or more functions. Each does a particular job in the body, and is made up of certain tissues. (*organ systems make up organisms*)

Organisms – An individual living thing that can react to stimuli, reproduce, grow, and maintain homeostasis. An organism refers to any individual living thing that can react to stimuli, reproduce, grow, and maintain homeostasis. (*organisms make up populations*)

Populations – A group of organisms of one species that interbreed and live in the same place at the same time (e.g. deer population). A set of individuals, objects, or data from where a statistical sample can be drawn. (*organisms make up communities*)

Communities – Community, also called biological community, in biology, an interacting group of various species in a common location. For example, a forest of trees and undergrowth plants, inhabited by animals and rooted in soil containing bacteria and fungi, constitutes a biological community. (*communities plus physical environment makes up an ecosystem*)

Ecosystem – A system that includes all living organisms (biotic factors) in an area as well as its physical environment (abiotic factors) functioning together as a unit. Supplement. An ecosystem is made up of plants, animals, microorganisms, soil, rocks, minerals, water sources and the local atmosphere interacting with one another. (*all the ecosystems combined make up the biosphere*)

Biosphere – The biosphere is the zone of air, land and water where organisms exist. It is commonly known as the global sum of all ecosystems and consists of several layers including the atmosphere, the lithosphere and the hydrosphere. ... And that's the overlapping areas and regions of these three where you find living organisms.

Draw Illustration



Copy and Label the Illustration in the Space Provided

Illustration

Organelles >> Cell

Cells >> Tissue

Tissues >> Organ

Organs >> Organ system

Organ systems >> Organism

Organisms >> Population

Populations >> Community

Communities >> Ecosystem

Ecosystems >> Biosphere

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Draw (Copy) the Illustration Here

Interpret a Graph



Write the title of the graph _____

Circle the type of chart this represents

Bar Chart *Line Chart* *Pie Chart* *Other*

If applicable,

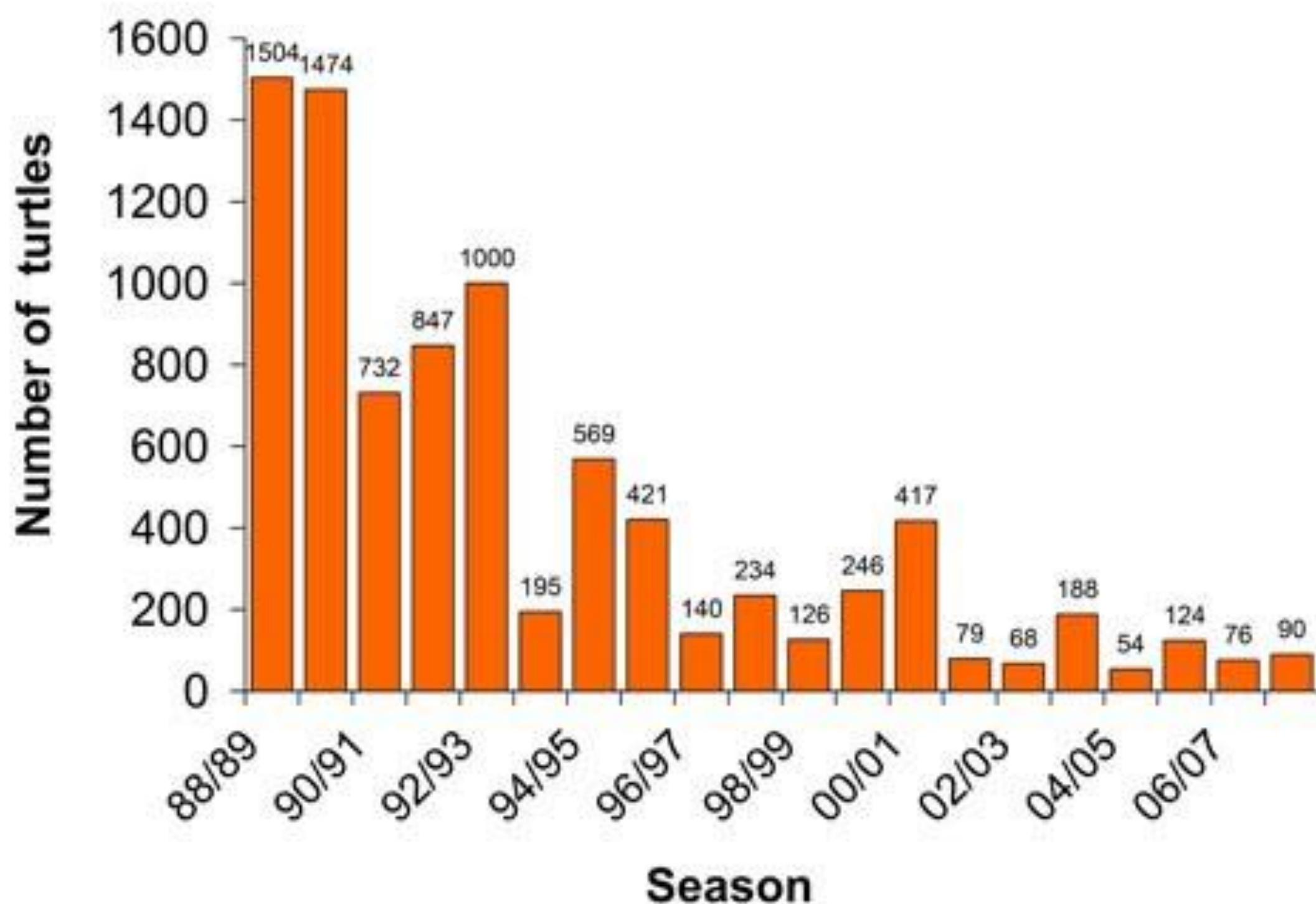
What does the X-axis represent _____

What does the Y-axis imply _____

Summarize what this graph represents or conveys

<https://sites.google.com/site/leatherbackseaturtlejc2015/endangered-species>

Leatherbacks in the Eastern Pacific Over Time*



*Data from Las Baulas National Park, Costa Rica

Show-Off Your Smarts!



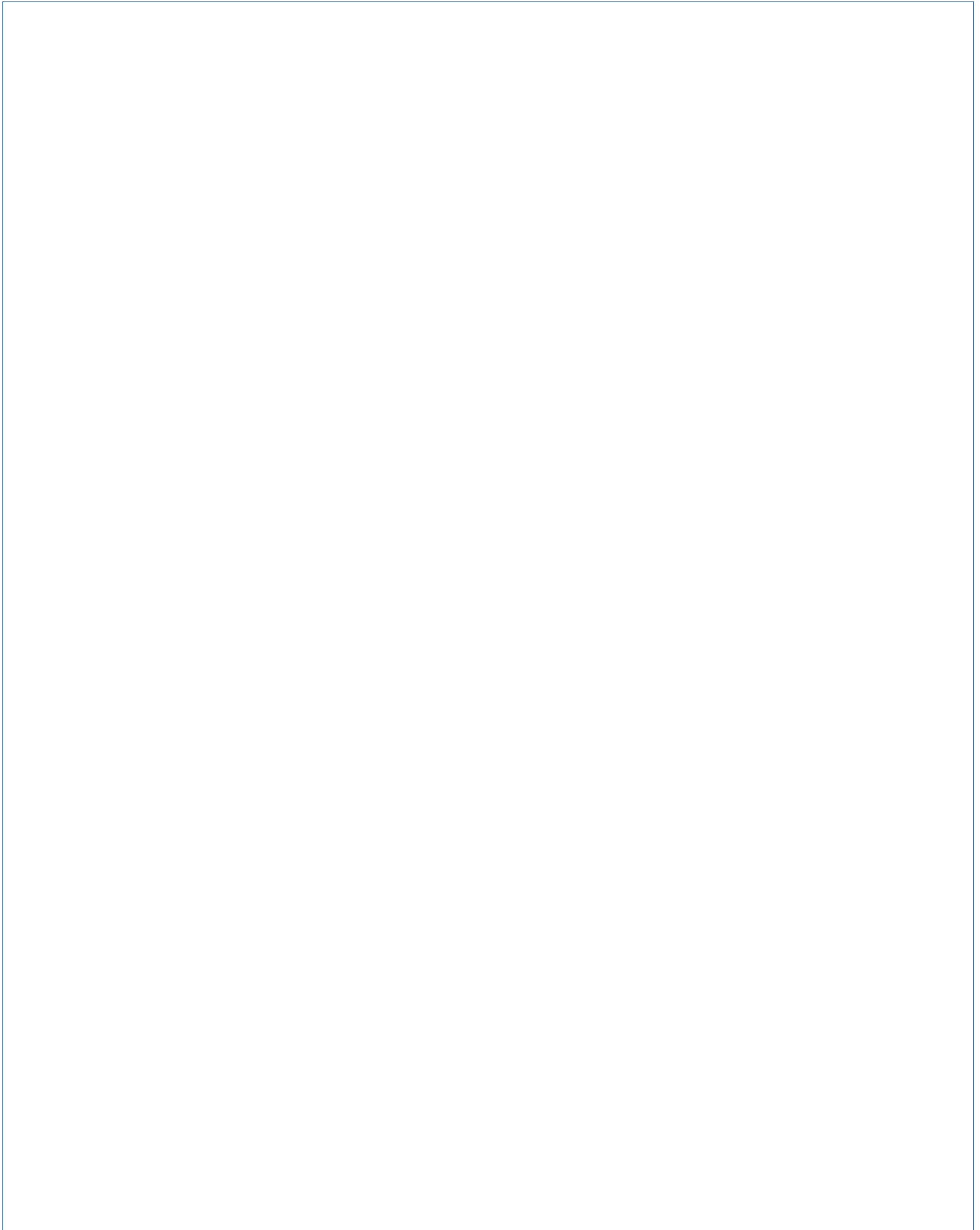
Instructions

- Complete as an individual or small group.
- Discuss your ideas/answers/responses in a small group.
- Select one person to present your responses to the class.

- Q1. Why are some populations more vulnerable to extinction than others?**
- Q2. How can current rates of individual survival and reproduction be projected into the future?**
- Q3. The Earth's human population has doubled in less than fifty years. What challenges do we face with this unprecedented growth?**
- Q4. What factors might most effect the rates of this human population growth into the future?**

Make a Poster

In the space provided here, create/draw a poster which conveys the concepts you have learned on this topic.

A large, empty rectangular box with a thin blue border, intended for the student to create a poster. The box occupies most of the page below the instructions.