Biology is: The scientific study of life, being the chemistry, genetics, anatomy/physiology.

The seven defining characteristics of life are: Order Evolutionary adaption Response to the environment Regulation Reproduction Energy processing Growth and development

Arguments arise in establishing whether or not viruses are alive.

Q1: "To be considered life, do all seven characteristics need to be met?" Yes.

REOCCURING THEMES IN BIOLOGY

CELLS

-Cells are the basic units of structure and function. They are a series of biochemical reactions that govern from ses. -Cells are the lowest level of organizations that can preform all activities required facility. Types of cells: eukaryotic - have a nucleus - membrane-enclosed organelles - examples: plants, asimal, fungi --tionnition toru torn organelles

- - no nucleus - have no membrane within the cell, seperating DNA from the rest of the cell.
 - examples: bacteria and archaea
- All cells have DNA, a plasma membrane, and cytoplasm.
- The plasma membrane separates the cell from the environment.

organel

Cytosol is the fluid between the structures, while the cytoplasm is the area within the cell.

-Cellular division is the basis of all reproduction, growth, and repair of multicellular organisms.

-Mitosis for repair, and miosis for creation

-There is a debate among whether or not viruses were the first living thing on Earth, which are prokaryotic.

DNA

-Continuity of life is based in heritable information in the form of DNA

-Genome: all the cells genetic material, which leads to the development and maintenance of organisms.

-There are 46 human chromosomes. Chromosomes are composed of coiled DNA around histones, which are bundled proteins. They come together to form chromosomes.

-Phenotype is based on which genes are being expressed, as opposed to which are available. This is why an individual may have an equal amount of traits from their mother and father, despite a difference in the amount of DNA that one receives from each parent.

-More DNA in the mitochondria and cellular parts come from the female in development.

-Transcription factors tell the cell which DNA to read, leading to varied development. They are of varied in concentration within the cell, leading to the development of different types of cells.