

Topic 08

Course Wrap Up

Session Objectives

This session has presented you with the following:

- Describe biology in terms of the natural sciences
- Contrast prokaryotic and eukaryotic cells
- List and describe key organelles of cells
- List and describe major themes related to botany
- List and describe major themes related to zoology
- List and describe ways cells divide
- Correctly use a light microscope in a lab

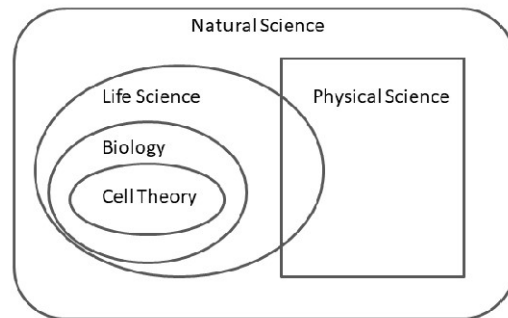
Wrap Up Outline

Module 1 – What is Biology?
Module 2 – Prokaryotic & Eukaryotic Cells
Module 3 – Cells & Organelles
Module 4 – Botany (Plants)

Module 5 – Zoology (Animals)
Module 6 – Cell Division
Module 7 – Lab Activity: Using a Light Microscope
Module 8 – Class Wrap Up

01

What is biology?



02 Prokaryotic & Eukaryotic Cells

Size Comparisons

One millimeter (mm) is the small mark on a meter stick.

10^{-3} is one thousand times SMALLER than a millimeter.

Each of these are 10 times smaller than the number above it.

10⁻³ 1 mm
10⁻⁶ Eukaryotes
10⁻⁷ Prokaryotes
10⁻⁸ Viruses
10⁻⁹ Proteins
10⁻¹⁰ Small molecules
Atoms

meters

Biology 16 – Honeycutt Science

03 Cells & Organelles

Human Cell

Plant Cell

04 Botany (Plants)

Botany overview

Plants Fungus Algae

Plant cell organelles

Photosynthesis

Shoots & roots

Tissue

Biosphere hierarchy

Cycles

Expertise and Global Issues

05 Zoology (Animals)

Zoology overview

Animal characteristics

Characteristics of animals:

1. all animals eat other organisms
2. all animals move
3. all animals are multicellular

Kingdom
Phylum
Class
Order
Family
Genus
Species

Animal phylogeny

Animal reproduction


Sexual Cyclic Constant Polyembryony

Animal trophic levels

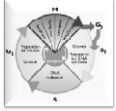
Tissue Symmetry Blastopore Growth

06 Cell Division


Prior concepts



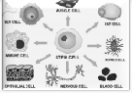
Mitosis cycle



Fission, meiosis & mitosis



Cellular differentiation



07 Using a Light Microscope



Banana

Onion

Hair

methylene blue dye

Iodine



08 Class wrap up

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08 Post test

