

THE LIVING ENVIRONMENT CURRICULUM

Safety

1. Safety Lab

Graphing/Data Analysis

1. Constructing a line graph
 - *Let's graph*
2. Interpreting graphs and charts

Lab Equipment

- Intro to Lab Equipment

Scientific Method – Controlled Experiment

1. Scientific method- standard 1/key idea 2
 - *Making Connections*

Ecology

1. Relationships in an ecosystem
 - *Biomes: distribution of life*
 - *Leaf pack field data*
1. Population and carrying capacity
2. Succession
 - *How fast can change occur in an animal community*
3. Energy flow
 - *Monterrey Bay Food Web*
4. Nutrient cycles
5. Biodiversity

Human Impact

Biochemistry

- Nutrient Lab
- Enzyme activity (potato)

Cells

1. Structure and function
 - *Animal cell vs. plant cell*
2. Cell theory and exceptions
3. Microscopes
 - *Introduction to the compound microscope*
 - *Letter "e"*
 - *Measuring with the microscope*
 - *Using a microscope*
4. Cell Transport
 - *STATE: Diffusion through a Membrane*

Reproduction

1. Cellular reproduction
 - a. Mitosis
 - *Karyotyping*
 - *Sock mitosis lab*
 - b. Meiosis
 - *Stimulating meiosis*
2. Human reproduction and development
 - *The human menstrual cycle*
3. Plant reproduction
 - *Flower Structure*
 - *STATE: Adaptations for Reproductive Success in Flowering Plants*
 - *Fruits and Seeds*

Genetics

1. DNA Structure and function
 - *DNA Extraction from wheat germ or strawberry*
2. Protein synthesis
 - *Read my code*
 - *Investigation: protein synthesis*
 - *Protein synthesis*
 - *STATE: Relationships and Biodiversity*
3. Heredity
 - *Using a pedigree*
 - *Interpreting information in a pedigree*
 - *Congratulations! You're having a Baby! The genetics of Parenthood Guidebook*
 - *Make a Face – A genetic Simulation*
4. DNA Technology
 - a. Cloning
 - b. Genetic Engineering
 - c. Selective Breeding
 - d. Gene therapy
 - *STATE: DNA Technology*

Evolution

1. Origin of Life- Heterotroph Hypothesis
2. Scientists – Darwin & LaMarck
3. Natural Selection
 - *Evolution and Adaptation – Be a bird*
 - *STATE: Beaks of Finches*
 - *Birds and Beans*
4. Evidence of Evolution
 - *Evidence of Evolution*
 - *Analyzing Amino-Acid sequences to determine evolutionary relationships*
5. Patterns of Evolution

Classification

- *Mosquito Lab (UPCO)*
- *Shark Lab – Dichotomous Keys*

Life Function/Homeostasis

1. Characteristic of life- life function

- *Life Functions (see microviewer binder)*

A. Nutrition

i. Human Digestive System

- *Nutrition lab*
- *Going crackers*

ii. Photosynthesis

- *Stomate and Guard cell lab*
- *Chromatography*

B. Transport

i. Human circulatory system

- *Is there a dr. in the house (also may be used for immunology)*
- *Blood types*

ii. Immunology

- *Transmission of disease (x3)*

C. Respiration

i. Cellular Respiration – aerobic and anaerobic

- *Respiration and Photosynthesis*

ii. Human respiratory system

D. Excretion

i. Human excretory system

- *Urinalysis lab*

E. Regulation

i. Human endocrine and Nervous System

- *Testing reflexes and reactions*
- *Testing Reflexes and reactions (Sam's Version)*

ii. Homeostasis and Feedback mechanisms

- *Feedback mechanisms*