

# ARISE Project: Biology

## Topics:

1. Scientific Method
  - 1a. Lab Reports
  - 1b. Winter Survival
  - 1c. Ghost Crystals
  - 1d. Hypothesis Card Game
  - 1d1. Hypothesis Card Game PowerPoint
  - 1e. Bess Bugs
  - 1f. Osmosis/Diffusion Inquiry Lab
  
2. Biochemistry
  - 2a. Chemical versus Structural Formulas: Ball and Stick Macromolecules
  - 2b. Testing for Macromolecules: Butter Lab
  - 2c. Hair Chemistry: Give a Hair a Perm Lab
  
3. Cells
  - 3a. Cell Organelle as Common Objects Activity
  - 3b. Size of Cells: Agar Block Lab
  - 3c. Osmosis/Diffusion Egg Lab
  - 3d. Bacteria and You Lab (Cells Come from Cells)
  
4. Energetics
  - 4a. Combustion Lab: Preparing for Cellular Respiration
  - 4b. Calorimeter Lab: How Much Energy is in a Peanut or a Marshmallow?
  - 4c. Cell Respiration Lab using Calcium Oxide
  - 4d. Cell Respiration Lab using Titration
  - 4e. Fermentation Lab
  - 4f. Photosynthesis: Chromatography of Leaf Pigments
  - 4g. Water Weed Website
  - 4h. Enzyme Lab
  
5. Genetics
  - 5a. Chi-Square Lab with M&M's
  - 5b. Online Fly Lab
  - 5c. Fruit Fly Lab for Beginners
  - 5d. Mendelian Genetics Problems Website
  
6. Evolution and Classification
  - 6a. Introduction of Evolution using the Evolution of the Automobile
  - 6a1. Introduction of Evolution using the Evolution of the Automobile PowerPoint
  - 6a2. Introduction of Evolution using the Evolution of the Automobile (w/Teacher Notes)
  - 6b. Natural Selection Stories
  - 6c. Are You Average? Standard Deviation Lab
  - 6d. Hardy-Weinberg Lab

7. Plants
  - 7a. Plant Race
  - 7b. Yam Lab
  - 7c. Transpiration Lab
  - 7d. Stomate Lab
  - 7e. Fertilizer Strength Lab
  
8. Body Systems
  - 8a. Digestive System
    - 8a1. Enzyme Lab
  - 8b. Immune System
    - 8b1. Antibiotics and Disinfectants
    - 8b2. Handwash Lab
  - 8c. Nervous System
    - 8c1. Reaction Time Lab
    - 8c2. Neurology Lab
  - 8d. Respiratory/Circulatory Systems
    - 8d1. VO<sub>2</sub> Max Lab
    - 8d2. Goldfish Tail Circulation Lab
  - 8e. Muscle System
    - 8e1. Chicken Wing Dissection
  
9. Ecology
  - 9a. Population
    - 9a1. Age-Gender Distribution Lab
    - 9a2. Human Population Web Quest
  - 9b. Biodiversity
    - 9b1. Wanted Posters
    - 9b2. Insect Collection