

## Secondary Biology Index to Labs

The Biology labs are numbered according to the chapter that they relate to. I've included the chapter titles of the book I currently use (Miller & Levine, 2002, Biology, Prentice Hall). The numbering of the labs I use is as follows: The first number in the triplet indicates is it for my grade nine earth science, the second number of the triplet indicates the chapter number it is related to, and the third number of the triplet indicates what part of the chapter is to be completed before doing the lab.

Click on the lab title below to download the worksheet with adobe acrobat reader software. If that doesn't work for you, find these labs online at <http://circle.adventist.org/files/nadspiritual/biosci/>

### **The Science of Biology**

- [10-1-1f](#) Observations & Questions-Intro to the Metric System
- [10-1-2a](#) Interpreting a Controlled Experiment
- [10-1-2d](#) Disproving spontaneous Generation
- [10-1-3c](#) Characteristics of Living Things
- [10-1-4b](#) Using the Metric System
- [10-1-4c](#) Parts & Use of the Compound Light Microscope
- [10-1-4e](#) Uncertainty of Measurements

### **The Chemistry of Life**

- [10-2-1b](#) Drawing A Model for an Atom
- [10-2-1d](#) Identifying Elements of Density
- [10-2-2](#) Drawing Models to Show Two Types
- [10-2-2b](#) Understanding Mixtures & Solutions
- [10-2-3a](#) Using Acid-Base Indicator to Test Unknown Substances
- [10-2-3f](#) Tests for Presence of Organic Nutrients
- [10-2-4b](#) Physical & Chemical Changes
- [10-2-4d](#) Enzyme Activity & Factors that Affect It

### **Cell Structure and Function**

- [10-7-1b](#) Leeuwenhoek & Hooke's Experiments
- [10-7-2b](#) Differences between Animal & Plant Cells
- [10-7-2d](#) Cell Parts
- [10-7-3a](#) Characteristics of Prokaryotic & Eukaryotic Cells
- [10-7-3d](#) Diffusion & the Selectively Permeable Membrane
- [10-7-3e](#) Osmosis in Living Cells
- [10-7-4c](#) Unicellular & Multi-cellular Organisms & the Resolving Power of the Microscope

### **Photosynthesis**

- [10-8-2a](#) The Rate of Photosynthesis
- [10-8-3a](#) Chloroplast, Chlorophyll & Color
- [10-8-3c](#) Effect of Light Wavelengths on Photosynthesis
- [10-8-3e](#) What Plants Do with Sunlight

### **Cellular Respiration**

- [10-9-1c](#) Energy Release during Respiration
- [10-9-1d](#) The Role of Decomposers in the Environment
- [10-9-2a](#) Observing the Relationship between Photosynthesis & Respiration
- [10-9-2e](#) The Effect of Exercise on Cellular Respiration

### **Cell Growth and Division**

- [10-10-1a](#) Investigating the Limits of Cell Growth

[10-10-3c](#) Mitosis in Animal & Plant Cells

### **Introduction of Genetics**

[10-11-1c](#) Predicting Outcomes of Monohybrid Crosses

[10-11-2d](#) How Chance Influences Inheritance

[10-11-3a](#) Dihybrid Crosses

[10-11-3d](#) Incomplete Dominance

[10-11-4a](#) Determining the Sex & Some of the Traits of Organism

[10-11-4d](#) Chromosome Changes During Meiosis

[10-11-5b](#) Mapping Chromosomes

### **DNA & RNA**

[10-12-1d](#) The Structure of DNA

[10-12-2b](#) Constructing a Model of DNA Replication

[10-12-3b](#) Simultaneous Protein Synthesis

[10-12-3c](#) Transcription of DNA

[10-12-3e](#) Simulating Protein Synthesis

[10-12-3h](#) Protein Synthesis Controlled by DNA

[10-12-4b](#) The Genetic code & its Translation

[10.13.lab](#) Clone

### **The Human Genome**

[10-14-1b](#) Karyotypes

[10-14-1d](#) Some Human Genetic Traits

[10-14-2d](#) Karyotypes of Human Genetic Disorders & Blood Typing

[10-14-3d](#) Genetic Engineering-Exploring the Issues

### **Bacteria & Viruses**

[10-19-1ab](#) Examining Bacteria & Virus

### **Protists**

[10-20-1ab](#) Examining Protists

### **Fungi**

[10-21-1ab](#) Examining Fungi

### **The Nervous System**

[10-35-1b](#) Tissues & Homeostasis of the Body

[10-35-2b](#) Constructing a Model of a Nerve Cell

[10-35-2c](#) The Memory Molecule of the Brain

[10-35-3b](#) The Anatomy & Physiology of the Brain

[10-35-3d](#) EEG Activity & the spinal Cord Anatomy

[10-35-4a](#) The Mammalian Eye

[10-35-5](#) The Ear & Reflex Action

[10-35-5b](#) Distribution of Sense Receptors

### **Skeletal, Muscular, and Integumentary Systems**

[10-36-1c](#) Structure of a Bone

[10-36-1e](#) Bones of the skeletal System

[10-36-2b](#) Muscle Cells & the Muscular Skeletal Systems

[10-36-2d](#) Muscle Cells & Muscle Contractions

[10-36-3b](#) Structures & Functions of the Skin

### **Circulatory and Respiratory systems**

[10-37-1b](#) Parts of the Heart & Blood Flow

[10-37-1c](#) Blood Vessels & Autonomic Control of Heartbeat

[10-37-2](#) EKG & Blood Pressure

[10-37-2c](#) Blood Composition & Determining Your Blood Type

- [10-37-3b](#) The Human Lungs & Air Pathway
- [10-37-3d](#) The Mechanics of Respiration & Lung Capacity
- [10-37-3f](#) Controlling Breathing and Pitch of Our Voice

### **Digestive & Excretory Systems**

- [10-38-1b](#) Measuring Food Energy
- [10-38-1c](#) Determination of Organic Nutrients in Food
- [10-38-2b](#) Head Region of the Digestive System
- [10-38-2d](#) The Stomach, Liver & Pancreas
- [10-38-2f](#) The Intestines of the Digestive
- [10-38-3d](#) How the Nephron of Kidney Works

### **Endocrine and Reproductive Systems**

- [10-39-1d](#) Glands of the Endocrine System
- [10-39-1f](#) Simulating the Negative-Feedback Process
- [10-39-2c](#) Observing Human Growth
- [10-39-3c](#) Reproductive Organs
- [10-39-4a](#) The Human Menstrual Cycle
- [10-39-4d](#) Fetal Development
- [10-39-4g](#) The Miracle of Life

### **Invertebrates**

- [10-I-6](#) The Sponge-An Example of Porifera
- [10-I-12](#) Hydra-An Example of Cnidarians
- [10-I-20](#) The Three Classes of Platyhelminthes
- [10-I-27](#) *Ascaris*-An Example of Nematoda
- [10-I-34](#) Earthworm-an Example of Annelida
- [10-I-40](#) The Clam-An Example of Mollusca
- [10-I-47](#) Starfish-An Echinodermata
- [10-I-52](#) Complete & Incomplete Metamorphosis
- [10-I-57](#) Collecting & Pinning Insects
- [10-I-62](#) Crayfish-An Example of Arthropods
- [10-I-69](#) Insect Anatomy-A Class of Arthropoda

### **Vertebrates**

- [10-V-6](#) Some Vertebrate Characteristics
- [10-V-12](#) Perch-A Representative of Bony Fish
- [10-V-19](#) Sock-Eye Salmon
- [10-V-24](#) The Frogs Double Life
- [10-V-29](#) Frog-A Representative of Amphibians
- [10-V-37](#) Reptilian Vertebrates
- [10-V-46](#) Body Temperature Control in Reptiles
- [10-V-53](#) External Features of Birds
- [10-V-61](#) Feathers and Flight
- [10-V-68](#) Field Identification of Birds

### **Plants**

- [10-P-7](#) Anatomy & Physiology of Roots
- [10-P-15](#) Growth in a Root Tip
- [10-P-22](#) Monocot & Dicot Stems
- [10-P-30](#) Water Transport in Stems & Leaves
- [10-P-36](#) Leaf Structure & Function
- [10-P-42](#) The Effect of Light on Plant Growth
- [10-P-47](#) The Flowers Role in Reproduction
- [10-P-52](#) Parts of the Monocot & Dicot Seed
- [10-P-59](#) From Seed to Seedling
- [10-P-68](#) How Plants Respond to Stimuli

If you have questions concerning these labs please feel free to contact Steve Atkins at [satkins@andrews.edu](mailto:satkins@andrews.edu)