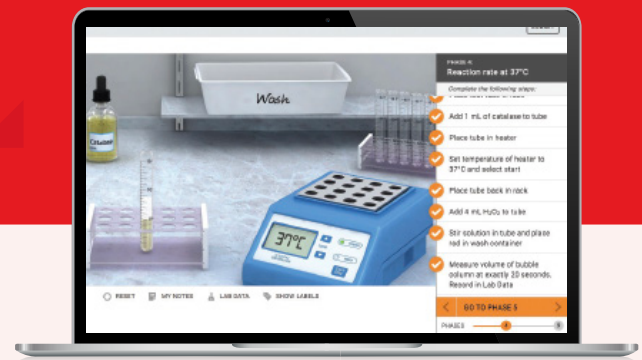


A Realistic Simulated Lab Experience

Anatomy & Physiology

Your students will be better prepared for lab, more efficient, and retain more of the fundamental skills necessary for a successful laboratory experience.

The lab is *always* open.



1st Lab Tutorial

- Virtual Labs Tutorial

Applying the Scientific Method

- Pillbug Preference

Basic Chemistry

- Chemistry for Biology
- Density Cube
- Properties of Water
- Stoichiometry
- Titration Vinegar

Lab Safety

- Hand Washing Procedure
- Personal Safety

Metric Measurement

- Length
- Weight
- Volume
- Temperature

Chemical Composition of Cells

- Test for Starch
- Test for Sugars
- Digestion of Starch
- Emulsification of Lipids
- Test for Fat
- Test for Proteins

How Enzymes Function

- Effect of Temperature
- Enzyme Activity
- Effect of pH
- Effect of Concentration

Cellular Respiration

- Yeast Fermentation
- Measuring Energy Production in Plants
- Cell Structure
- Examining Plant & Animal Cells

Cell Structure

- Examining Plant & Animal Cells

Cell Membrane Transport

- Passive and Active Process of Membrane Transport - Concept Overview Physiology Interactive*

Cell Division

- Examining Meiosis
- Examining Mitosis

Control of Microbial Growth

- Effect Ultraviolet Light
- Effect of Antiseptics and Disinfectants
- Antimicrobial Sensitivity Testing (Kirby-Bauer Method)

Diffusion

- Effect of Concentration on the Rate of Diffusion in a Semisolid
- Effect of Density of Media on the Rate of Diffusion
- Effect of Molecular Weight on the Rate of Diffusion in Air
- Diffusion Across a Selectively Permeable Membrane

Osmosis

- Movement of Water Across a Selectively Permeable Membrane
- Tonicity in Red Blood Cells
- Tonicity in Elodea Cells
- Tonicity in Potato Strips

Microscopy

- Operation of a Brightfield Microscope
- Oil Immersion
- Epithelial Tissue Histology
- Connective Tissue Histology
- Muscle Tissue Histology
- Nervous Tissue Histology
- Euglena Wet Mount
- Pond Water Wet Mount
- Plant Cells
- Animal Cells
- Diversity of Microorganisms

Skeletal Muscle

- Effects of Stretch and Stimulus Frequency on Muscle Tension
- Isometric and Isotonic Contraction
- Shoulder and Elbow Movement Exercise
- Skeletal Muscle Contraction - Concept Overview Physiology Interactive*
- Electrical Stimulation

Electromyography

- Motor Unit Recruitment
- Time to Fatigue

A Realistic Simulated Lab Experience

Anatomy & Physiology

Nervous System

- Resting Membrane Potential
- Compound Action Potential
- Temporal and Spatial Summation
- Demonstrate Monosynaptic Reflexes
- Neuron Physiology – Concept Overview Physiology Interactive*

Eye and Vision

- Eye Dissection
- Accommodation of the Lens
- Astigmatism Test
- Blind Spot Demonstration
- Color Vision Test
- Convergence Reflex Test
- Pupillary Reflex Test
- Visual Acuity Test

Endocrine System

- Endocrine System – Concept Overview Physiology Interactive*
- Influence of Thyroid Hormone on Temperature Regulation
- Effects of Blood Glucose Level

Blood

- Differential White Blood Cell Count
- Hematocrit
- Hemoglobin Content
- Blood Typing

Cardiovascular Physiology

- Abnormal Electrocardiograms
- Chemical Effects on the heart
- Frank-Starling Law of the Heart
- Refractory Period of the Heart
- Pulse Rate
- Blood Pressure
- Electrocardiography
- Heart Auscultation
- Cardiac Cycle- Concept Overview Physiology Interactive*
- Blood Pressure – Concept Overview Physiology Interactive*

Respiratory System

- Measuring Lung Volumes
- Oxygen-Hemoglobin Saturation Curve
- Mechanism of Breathing
- Pulmonary Function Tests
- Respiratory System – Concept Overview Physiology Interactive*

Lymphatic and Immune System

- Innate Immunity – Concept Overview Physiology Interactive*
- Adaptive Immunity – Concept Overview Physiology Interactive*

Urinary System

- Effects of Antidiuretic Hormone on Urine Formation
- Urinalysis
- Glomerular Filtration – Concept Overview Physiology Interactive*
- Tubular Reabsorption/Secretion- Concept Overview Physiology Interactive*

Digestive System

- Enzymes and Digestion

pH Balance

- Function of Buffers
- Antacids as Buffers

Human Genetics

- Chromosomal Inheritance During Meiosis
- Genetic Inheritance

Bacterial Genetics

- DNA Profiling
- PCR
- Bacterial Transformation

DNA Biology and Technology

- Isolation of DNA
- Gel Electrophoresis
- DNA/RNA Structure
- Rapid Diagnostic Testing
- Transcription, Translation, and Mutation
- Enzyme-Linked Immunosorbent Assay (ELISA) Testing

Mendelian Genetics

- Monohybrid Plant Cross
- Fruit Fly Characteristics
- Monohybrid Fruit Fly Cross
- Dihybrid Plant Cross
- Dihybrid Fruit Fly Cross
- X-Linked Fruit Fly Cross

Evidence of Evolution

- Molecular Evidence
- Fossils and Comparative Anatomy

Animal Dissection

- Fetal Pig I (Digestive, Respiratory, Endocrine Systems)
- Fetal Pig II (Circulatory, Urinary, Reproductive Systems)

*Concept-based overview interactive simulations that cover difficult physiology topics



To explore the Blood Typing Virtual Lab, scan the QR code or click [here](#).



To explore the Virtual Labs website, scan the QR code or click [here](#).