

JANUARY 2024

PRIVILEGED & CONFIDENTIAL



EMPOWERING CLASSROOMS WITH TOMORROW'S TECHNOLOGY, TODAY



Virtual Science Experiments with VRLab Academy

- 240+ experiments
- Immersive and engaging
- Scientific formula based
- Safe lab environment
- Curriculum aligned
- Flexible usage

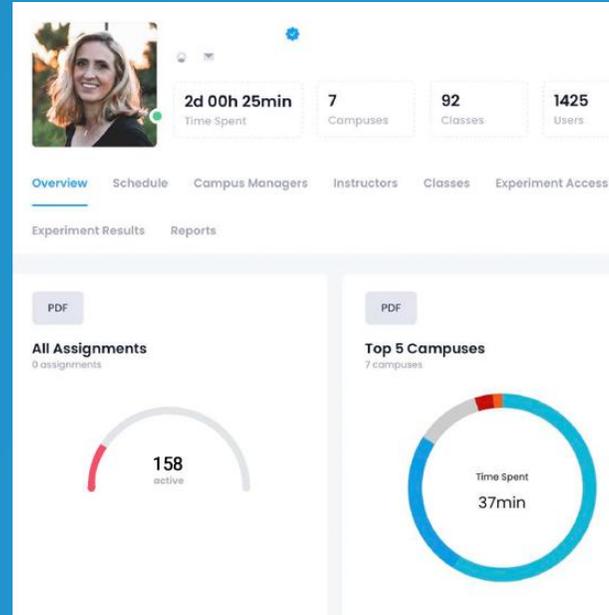


Advantages for Everyone



Students

Increased engagement
Reflective learning



Educators

Curriculum alignments
Assessment

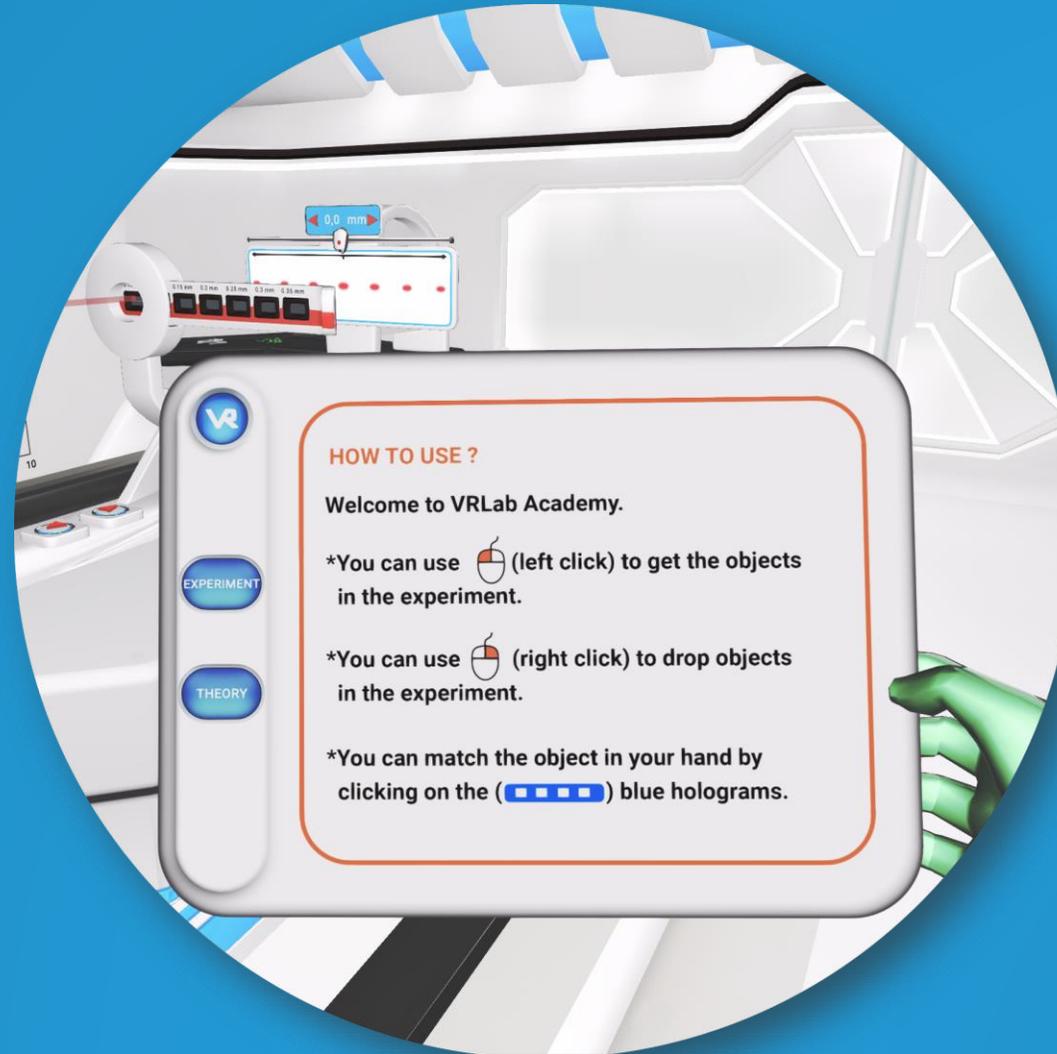


Schools

Reduced costs
Minimum hardware requirements

Designed for Easy Usage

- PC , VR and Tablet access
- VRLab Tablet
- Standart directions
- Lab manuals
- User friendly interface



Laboratories



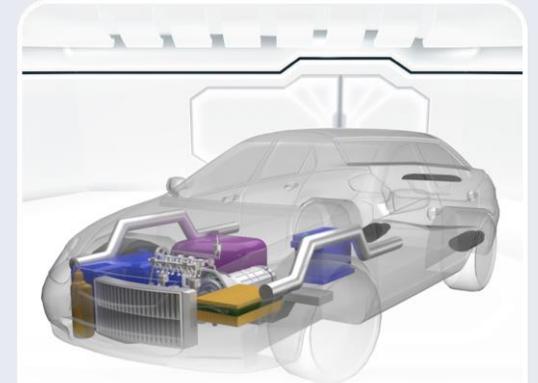
**CHEMISTRY
LABORATORY**



**OPTICS and WAVES
LABORATORY**



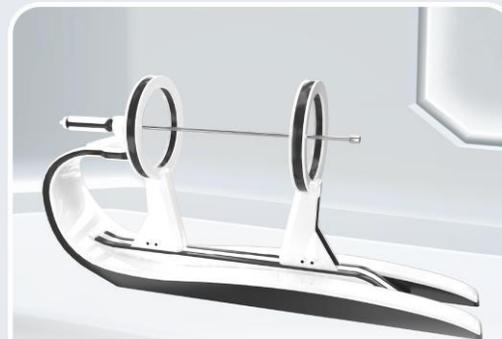
**FLUID MECHANICS AND
THERMODYNAMICS
LABORATORY**



POPULAR SCIENCE



**MEDICAL
BIOCHEMISTRY
LABORATORY**



**MODERN PHYSICS
LABORATORY**

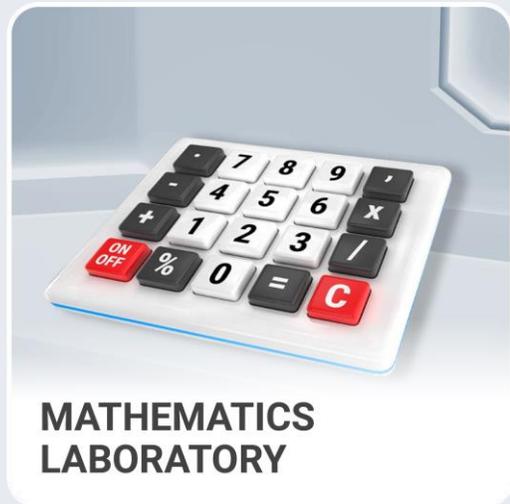


**ELECTROMAGNETISM
LABORATORY**



**MECHANICS
LABORATORY**

Laboratories



Start

Manual

Factors That Affect Mitosis

Mitosis is part of the cell cycle where the cell divides its nucleus and organelles. The mitotic stages start after interphase and end with telophase. Cell division is completed with cytokinesis, which is the separation of cytoplasm. In this experiment, the effect of lectin, a

Experiment List

Virtual laboratories with 240+ science experiments available on VR and PC



Chemistry Laboratory

- Hoffman Electrolysis
- Introduction to Laboratory and Solution Preparation
- Electrical Conduction in Ionic Solutions
- Producing Natural Dye
- Avogadro's Number
- Separating Mixtures
- Determination of Melting Point
- Ideal Gas Laws
- Ionic and Covalent Bonds
- Periodic Table VR
- Introduction to Organic Chemistry
- Equilibrium Constant
- Viscosity
- Atomic Models
- Acid or Base
- Solubility of Gas-Liquid Solutions
- Molar Mass Experiment
- Solubility in Solid - Liquid Solutions
- Paper Chromatography
- Elevation of Boiling Point
- UV-Vis Spectrophotometer and Beer-Lambert Law
- Law of Definite Proportions: The Formula of a Hydrate
- Bonding in Solids
- Law of Mass Conservation
- Redox Titration: Determination of H₂O₂ Concentration
- Rate of Reaction: Mass Change Method
- Rate Laws
- Enthalpy Change of Solution
- Chemical Equilibrium: Iron(III) Thiocyanate Complex Ion
- Acid-Base Titration with a pH meter: The Identification of an Unknown Acid Solution
- Acid Base Titration with Indicators: The Acidity of Beverages
- Buffer Design
- Buffering Activity
- Law of Definite Proportions: The Empirical Formula of a Metal Oxide
- Copper Content of Brass
- Introduction To Gravimetric Analysis

Biology Laboratory

- Introduction to Laboratory and Solution Preparation
- Acid-Base
- Structures and Functions of Small Organisms
- Preparation of Herbarium
- Classification of Living Organisms
- Ecology and Environment Experiment
- Enzymes Experiment
- DNA Structure
- Genetics Experiment
- Anatomy Experiment
- Mitosis and Meiosis
- Cell Structure Experiment
- Lipids Experiment
- Sexual and Asexual Reproduction
- The Dangerous Scenario Awaiting Arctics
- Passive Transport: Osmosis
- Energy Flow in Ecosystem
- Quantitative Protein Assay Using Biuret Reagent
- Factors That Affect Photosynthesis I - Light and Chlorophyll Content
- Cellular Respiration
- Factors That Affect Mitosis
- Meiosis and Crossing Over
- Bacterial Transformation
- Transpiration in Plants
- Protein Isolation
- Animal Behavior
- Protein Determination with Bicinchoninic Acid Assay
- Mendel and His Peas
- Effect of pH on Amylase
- DNA Isolation and Determination of Quantity and Purity
- Testing for Carbohydrates, Lipids and Proteins
- ELISA
- Active Transport

Mechanics Laboratory

- Buoyancy of Liquids
- Free Fall & Atwood's Machine
- Simple and Damped Pendulum
- Measurement of Mass, Volume and Density
- Force Table
- Ballistic Pendulum and Projectile Motion
- Measurement & Uncertainties
- Uniform Circular Motion
- Work-Energy Theorem and Mechanical Energy
- Collisions in One Dimension
- Rotation of Rigid Bodies
- Newton's Laws of Motion
- Hooke's Law and Springs
- Friction Forces
- Angular Momentum
- Linear Motion
- Projectile Motion
- Harmonic Motion in Springs
- Ballistic Pendulum

Electromagnetism Laboratory

- Equipotential Surfaces and Electric Field Lines
- Wheatstone Bridge
- Biot-Savart Law
- Current Balance
- Magnetic Induction
- Helmholtz Coil
- Van De Graaff Generator Experiment
- Transformers
- Microwaves
- Magnetic Force on a Wire
- Hall Effect
- Magnetic Induction (Faraday's Law)
- Ohm's Law
- RC Circuits
- Electrical Resistance
- Resistors In Series and Parallel

Medical Biochemistry Laboratory

- Introduction to Laboratory and Solution Preparation
- Lipids Experiment
- Nucleic Acids Experiment
- UV-Vis Spectrophotometer and Beer-Lambert Law
- Quantitative Protein Assay Using Biuret Reagent
- Protein Isolation
- Protein Determination with Bicinchoninic Acid Assay
- DNA Isolation and Determination of Quantity and Purity
- Designing PCR Primers and Gradient PCR
- Protein Imaging with Coomassie Blue
- Protein Denaturation and Vertical Electrophoresis
- ELISA
- Kinetic Enzyme Activity Measurement
- Qualitative Determination of Carbohydrates
- Western Blot

Popular Science

- Blood Vessels
- Big Bang VR
- CSI VR
- Oil Pump Jack VR
- Large Hadron Collider (LHC) Experiment
- Albert Einstein VR
- Stephen Hawking VR
- Future City VR
- Car Mechanic VR
- Mars Curiosity VR
- Drone VR

Modern Physics Laboratory

- Electron Diffraction Experiment
- Thomson Electron Tube Experiment
- Franck-Hertz Experiment
- e/m Electron Indication Experiment
- Michelson Interferometer
- Hall Effect
- Photoelectric Effect
- Millikan Oil Drop Experiment

Mathematics Laboratory

- How Calculators Work
- Mathematics History Chronology

Thermodynamics Laboratory

- Joule's Law
- Thermal Conductivity of Metals
- Surface Tension
- Pressure due to Solids and Liquids
- Thermal Expansion of Metals
- Determination of the Specific Heat of Solids and Liquids
- Hoffman Electrolysis

Optics and Waves Laboratory

- Speed of Light
- Young's Double Slit Interference Experiment
- Kundt's Pipe
- Ripple Tank
- Michelson Interferometer
- Snell's Law of Refraction
- Lenses And Images

Experiment List

Virtual laboratories with 240+ science experiments available on VR and PC



VRLab Academy Junior

Physics

- Motion under Net Force and Equilibrium
- Newton's Apple
- Energy Conservation on the Earth
- Simple Electric Circuit and Circuit Components
- Electrical Energy in Circuits
- Energy Conversion in Springs
- Motion with Constant Speed
- Pressure due to Solids
- Pressure due to Liquids and Pascal Principle
- Toricelli Experiment
- Pressure in Gases and Monometers
- Color Combination
- Ohm's Law and Connection of Resistors
- Let's Discover Batteries
- Plane Mirrors Reflections and Image
- Sound Formation and Propagation
- Electrical Conducting and Insulating Materials
- Electrical Resistance
- Waves
- Thermal Conductivity
- Let's Make Dynamometer
- Rough Surfaces and Friction
- Lever, Wheel, and Axle
- Inclined Plane
- Electrification Experiment
- Transformation of Electrical Energy
- Refraction of Light
- Spherical Mirrors
- Lenses
- Formation of Umbra and Penumbra
- Pulleys and Blocks
- Screw
- How does a Magnetic Compass Work?
- Collisions
- Friction on an Inclined Plane
- Ohm's Law and Simple Circuits
- Series and Parallel Circuits

Biology

- Identifying Living Things and Their Common Characteristics
- Biodiversity and Natural Balance
- Effects of Environmental Contamination on Organisms
- Microscopic Organisms
- Introduction to Microscopy
- Ecosystem Dynamics
- Muscular System
- Respiratory System
- Excretory System
- Monitoring and Regulatory Systems
- Harmony of Systems
- Digestive Adventure of Food
- Skeletal System
- Circulatory System
- Sensory Organs
- DNA Extraction in the Kitchen
- Human Reproduction System
- Reproduction in Animals
- How do Plants Reproduce?
- Nature vs Nurture
- Survival of the Fittest
- Comparison of Plant and Animal Cells
- Phases of Mitosis and Meiosis
- Cell Division: Mitosis and Meiosis
- Photosynthesis
- Aerobic and Anaerobic Respiration
- Life Cycle
- Prehistoric Life
- Sustainability
- World of Plants
- Changes of DNA
- Organisation of Genetic Materials : DNA
- Mendel and His Peas
- Respiratory System in Humans
- Reproduction System In Humans
- Excretory System in Humans
- Plants and Photosynthesis

Chemistry

- Elements and Compounds
- Heat Conduction
- Solid-Liquid-Gaseous
- Classification and Characteristics of Elements
- Which is One Heavier? 1 kg Iron or 1 kg of Cotton?
- Heat Exchange and Temperature
- Conservation of Mass in Chemical Reactions
- Homogenous and Heterogenous Mixtures
- The Dance of Particles
- Sour Acids and Bitter Bases
- Separation Methods in Chemistry
- Let's Burn a Little Warm a Lot
- Physical and Chemical Changes
- Natural Resources to Synthetic Materials
- Zero Waste
- Introduction to Atomic Models

Astronomy and Space Sciences

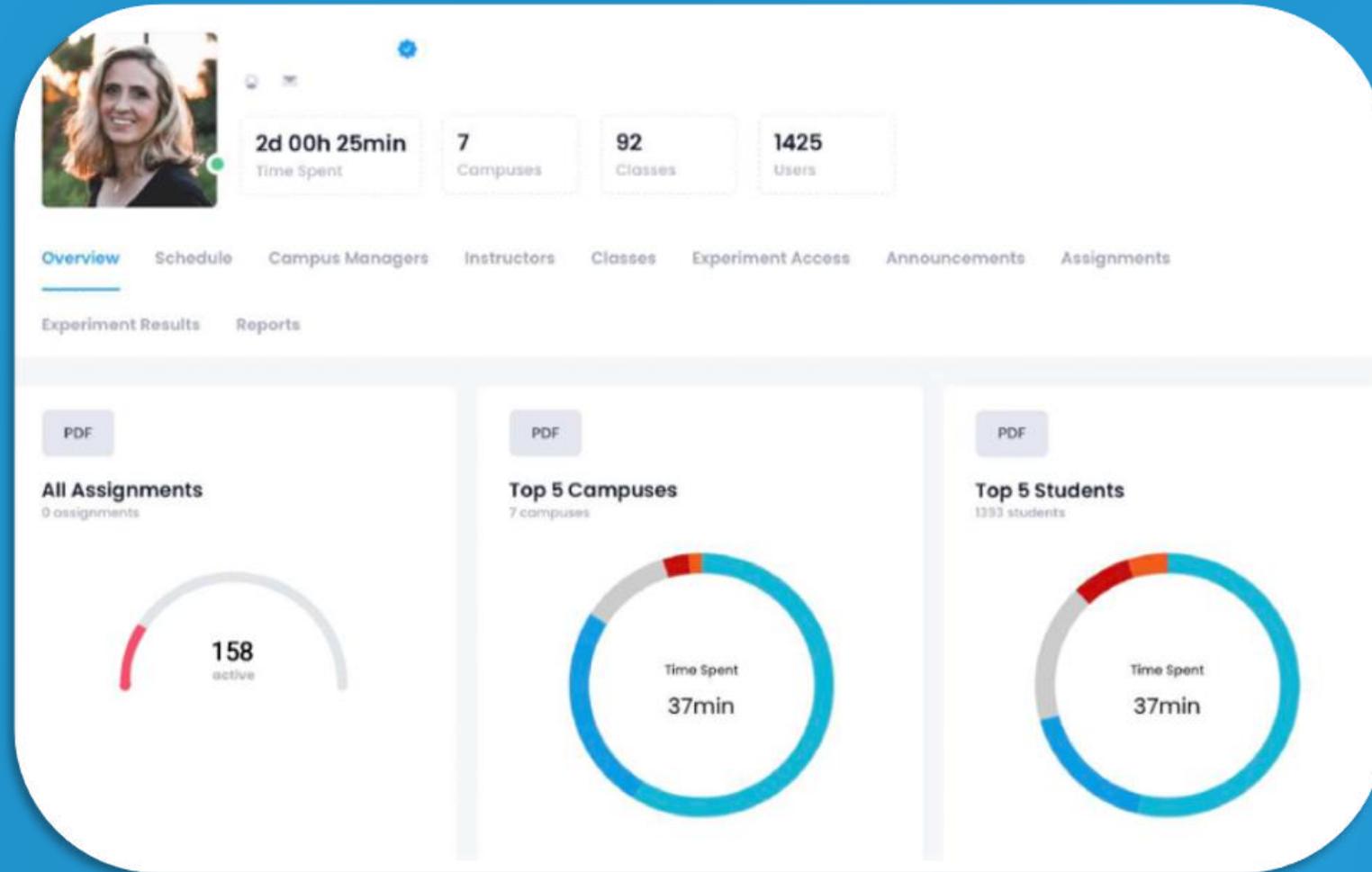
- Movements of the Sun, Earth and Moon
- Our Star, the Sun
- Solar System Residents
- Solar and Lunar Eclipses
- Sky Map
- Space Modelling Rocket with Parachute
- Journey to the Cosmos
- Observing with a Telescopes
- Life Cycle of Artificial Satellites
- 23 Degree 27 Minutes
- Atmosphere

Just Like Hands-On but More!

- Make mistakes : Theoretical, observational and instrumental errors to trouble shoot
- Realistic measurements
- Personalized answer sheet : Based on students' initial values, to support self-reflecting learning
- Cloud-based for easier access



One Dashboard for All



- Platform management
- Data tracking
- Performance tracking
- Experiment access
- Announcements
- Experiment results
- Assignments

Dashboard

Sadie Miller [sadmiller@edu.com](#)

2d 00h 25min Time Spent | 7 Campuses | 92 Classes | 1425 Users

Overview | Schedule | Directors | Campus Managers | **Instructors** | Classes | Experiment Access | Announcements | Assignments

Experiment Results | Reports

← Back to Campuses

Create Instructor is used to create a new instructor on VRLabAcademy.
Add Instructor is used to add an existing instructor to this campus.

[Create Instructor](#) [Add Instructor](#)

10 records

Excel Print Copy

Search:

INSTRUCTOR	ROLE	CLASSES
Jack Mayer jack.mayer@edu.com	Instructor	0-UH-A, 0-UH-B, 10-A, 11-A, 11-B, 9-A
Harley Toberman harley.toberman@edu.com	Instructor	9-A

Instructors

Sadie Miller [sadmiller@edu.com](#)

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Experiment Results | **Reports**

Platform Usage of Campuses

Platform usage is shown for campuses.
(hour)

[PDF](#)

All Time | Choose a grade | Choose Category

Region	Usage (hours)
North	0.37
South	0.10
Central	0.07
West	0.03

Reports

LMS Integration

- Performance tracking
- Single sign-on
- Notifications
- User updates
- Grading
- Reviews



Always Here to Support



Lab Assistants



Educator trainings
Tutorial videos



Onboarding



Syllabus mapping

VRLAB ACADEMY

Artificial Intelligence Science League Final

Date: May 2025

Place: London

Deadline: October 2024

www.vrlabscienceleague.com



THANK YOU