EDUVERSESTEM

Explore the EduverseSTEM Collection

Everything your students need to investigate, experiment, design and create

CLASSVR® Xcelerate

Contents

Give students the opportunity to investigate, experiment, design and create through immersive STEM learning experiences.

EduverseSTEM brings together interactive simulations, virtual laboratories, 3D models, engineering challenges and coding experiences into one comprehensive learning environment designed specifically for education. From virtual dissections and chemistry experiments to robotics challenges and coding projects, students engage with STEM concepts in ways that are difficult to achieve through traditional instruction alone, developing the knowledge, skills and confidence required for success in STEM subjects and future careers.

This guide gives you a complete view of what's included across five curriculum areas - Biology, Chemistry, Physics, Computing, and Engineering & Technology, plus the five Project-Based Learning projects that bring the subjects together around real-world challenges. Content is organised by subject and type so you can explore the full range and see exactly where EduverseSTEM fits your teaching.

BIOLOGY

Explore the Living World from the Inside Out

172 EXPERIENCES

From the human body to the microscopic world of cells, students can investigate biological systems through immersive, hands-on experiences. Virtual dissections and repeatable investigations make complex concepts visible, accessible and engaging for every learner.

Plant Biology

Lab/Experiment

Dicot Monocot

Germination

Micropropagation

Potometer

Explorable Scene

Biology Experiment - Photosynthesis

Inside a Plant Cell

Life Cycle of a Plant

Specialised Cell - Guard Cell

Structure of a Leaf

Xplodable: Plant Cell

3D Model

Dandelion Seeds

Seed

The Cell Cycle

Tomato Plant

Ecology

Lab/Experiment

Chemistry of River Water

Observation of River Water

Light Microscope

Explorable Scene

Bioloy Experiment - Microscopy

Biological Molecules

Lab/Experiment

Biomolecular Structures and Functions (Food Test)

Enzymes

Extraction of DNA

Nutrients

SDS Page

Explorable Scene

Biology Experiment - Food Tests

Immunity and Response

Inside a Plant Cell

Inside an Animal Cell

Nutrition and Food

Structure of DNA

3D Model

Adenine Molecule

Antibody

Cytosine Molecule

DNA

DNA Simplified

Glycerol

Guanine Molecule

Molecule Builder - Water

Nucleotide Molecule

Thymine Molecule

Uracil Molecule

Microbiology

Lab/Experiment

Analysis of Stools

Bacterial Staining - Sci

Culture Media

Observation of Saliva

Explorable Scene

Bioloy Experiment - Microscopy

Germs: Invisible Invaders

Immunity and Response

3D Model

Bacterium

Lactobacilli

Light Microscope

Prokaryotic Cell

Body Systems

Tour/Simulation

Anatomy: Body System Exploration

Anatomy: Metabolic Molecules

Chick Embryo

Human Anatomy Lab in Mixed Reality

Lab/Experiment

Respirometer

Dissection

Clam - Mollusk/Bivalve

Crayfish - Arthropod/Crustacean

Earthworm Dissection

Earthworm - Annelid Invertebrate

Frog - Amphibian/Vertebrate

Perch - Bony Fish Vertebrate

Prawn Dissection

Rat Dissection

Explorable Scene

Amphibians as Animals

Exercise and the Human Body

Fish as Animals

Gestation and Pregnancy

How Does the Eye Work?

How Our Muscles Work

How the Ear Works

Human Reflex Action

Immunity and Response

Inside a Vein

Inside the Lungs

Minibeasts

Nutrition and Food

Our Circulatory System

Our Digestive System

Our Five Senses

Specialised Cells: Nerve Cell

The Brain

The Human Body

The Human Heart

The Human Kidneys and the Urinary System

The Human Skeleton

The Respiratory System

Types of Teeth

3D Model

A Balanced Japanese Meal

Anaemic Blood vs Normal Blood

Animated Lungs

Circulatory System

Digestive System

Endocrine System

Excretory System

Heart

Human Heart

Human Lymphatic System 3D

Human Male Musculature

Human Muscle Structure 3D

Human Skeleton

Human Skull

Integumentary System

Kidney

Lungs

Muscular System

Nephron

Nerve Cell

Nervous System

Osteology

Ramen Noodles

Red Blood Cell

Reproductive System

Respiratory System

Skeletal

Image

Market in Cambodia

Market in Vietnam

Biological Molecules

Lab/Experiment

Blood and Blood Groups

Blood Group Test - Sci

Cellular Respiration

Centrifugation

Estimation of Haemoglobin

Focusing Microscope

Giant Chromosome

Köhler illumination

Meiosis

Mitosis

Observation of Animal Cells

Observation of Plant Cells

Osmoscope

Osmosis

Vegetal DNA

Explorable Scene

Asexual and Sexual Reproduction

Biology Experiment - Microscopy

Cell Cycle

Inside a Plant Cell

Inside a Vein

Inside an Animal Cell

Specialised Cells: Guard Cells

Specialised Cells: Root Hair Cells

Structure of DNA

The Cell Cycle

Xplodable: Plant Cell

3D Model

DNA Simplified

Eukaryotic: Animal Cell

Haem Group

Haemoglobin

Light Microscope

Plant Cell

Red Blood Cell

CHEMISTRY

Experiment Safely, Understand Deeply

130 EXPERIENCES

From atoms and molecules to complex chemical reactions, students can investigate chemistry through immersive, hands-on experiences. Virtual experiments remove the constraints of consumables, equipment and safety risks, allowing every learner to experiment, repeat and refine their understanding.

Acids and Alkalis

Lab/Experiment

Acid-Base Titration 1

Acid-Base Titration 2

Conductivity and pH

pH

pH & Cell Structure

Stoichiometry

The pH of Strong and Weak Acids

Titration

Using pH Indicators

Explorable Scene

Acids & Alkalis

Acids and Alkalis

Neutralisation

3D Model

Chlorine Atom

Hydrogen Atom

Chemical Equilibrium

Lab/Experiment

Le Chatelier's Principle

The Qualitative Aspect of Chemical Equilibrium

Explorable Scene

Displacement Reactions

Neutralisation Reactions

Chemical and Physical Properties

Lab/Experiment

Density

Gas Identification

Heavy Metal Extraction

Identification of Elements Through Bright Flames

Melting Point and Density

Metal Properties

Physical Properties and Identification of Products

Separating Physical & Chemical Properties

The Law of Conservation of Mass

3D Model

Argon Atom

Calcium Atom

Chlorine Atom

Copper Atom

Eiffel Tower

Fluorine Atom

Hydrogen Atom

Iron Atom

Metal Safe

Neon Atom

Nuclear Model Atom

Old Metal Cup

Oxygen Atom

Planetary Model Atom

Potassium Atom

Quantum Model Atom

Sulphur Atom

The Periodic Table of Elements

Trumpet

Explorable Scene

Changing States

Chemistry Experiment - Chromatography

Chemistry Experiment - Electrolysis

Distillation

Eletrolysis

Physics Experiment: Density

Refraction of Light

Separating Materials

The Building Blocks of the Universe

The Life of Marie Curie

The Periodic Table

Time to Reflect

What Are Atoms?

Image

Amedee Island

Anhumas Abyss Brazil

Squid New Caledonia

Symbiosis Coral Blue Lagoon

Video

Experiencing Fish and Coral Underwater

Great Barrier Reef Sea Turtle

Kinetics and Thermodynamics

Lab/Experiment

Endothermic & Exothermic Reactions

Hess's Law

Reaction Rate and Enthalpy

Reaction Rate Between Molecules

Specific Heat Capacity

The Influence of Concentration on Reaction Rate 1

The Influence of Concentration on Reaction Rate 2

The Influence of Contact Surface on Reaction Rate 1

The Influence of Contact Surface on Reaction Rate 2

Explorable Scene

Biology Experiment - Photosynthesis

Bush Fires

Collision Theory of Reactions

The Great Fire of Rome

3D Model

Fire Torch

Video

In the Eye of the Fire

Solutions

Lab/Experiment

Changing the Solubility of a Solid

Dilutions

Ebullioscopy

Precipaitation

Preparation of a Solution

Preparation of Solution by Dissolution

Explorable Scene

Chemistry Experiment - Making Salts

Separating Materials

Separating Techniques

Lab/Experiment

Chromatography

Paper Chromatography

Product Separation Using Boiling Point 1

Product Separation Using Boiling Point 2

Separation of Solid and Liquid Products

Thin Layer Chromatography

Water Electrolysis

Explorable Scene

Changing States

Chemical Bonding

Chemistry Experiment - Chromatography

Chemistry Experiment - Electrolysis

Distillation

Electrolysis

Separating Materials

The Periodic Table

3D Model

Argon Atom

Chlorine Atom

Fluorine Atom

Hydrogen Atom

Neon Atom

Oxygen Atom

The Periodic Table of Elements

Molecules

Lab/Experiment

Stereochemistry

Explorable Scene

Chemical Bonding

3D Model

Ammonia

Carbon Dioxide

Carbon Disulfide

Carbon Tetrachloride

Formaldehyde

Hydrogen Chloride

Hydrogen Cyanide

Hydrogen Sulfide

Methane

Nitrosyl Fluoride

Phosphorus Trichloride

Water

Water Molecule

PHYSICS

Experience Physics Beyond the Textbook

90 EXPERIENCES

From forces and motion to electricity, waves and energy systems, students can investigate physics through immersive simulations and virtual experiments. Concepts that are often difficult to visualise become visible, interactive and easier to understand through direct exploration and testing.

Electricity

Lab/Experiment

Assembling an Electrical Circuit in Parallel

Cathode Ray Oscilloscope (CRO)

Conductivity

Electrical Circuit Assembly

Hall Coefficient

Hysteresis Loop

Impact of Current on the Brightness of a Lamp

Magnetic Fields

Multivibrator

Reading a Resistor

Solenoids

Static Electricity

Transistors

Explorable Scene

Electrical Circuits

Electromagnets

Magnets and Magnetism

Physics Experiment - Resistance

Video

Electric Field

Magnetic Coefficient

Uniform Magnetic Fields in Solenoid

Optics & Acoustics

Lab/Experiment

Diffraction Grating

Diffraction Grating with HE NE Laser

Michelson's Interferometer

Newton's Ring

Quincke's Tube Method

The Prism

UV, IR and NMR Spectroscopy

Explorable Scene

Refraction of Light

The Speed of Sound

Time to Reflect

Pressure & Volume

Lab/Experiment

The Pressure of Gases

The Relationship Between a Gas' Temperature and Its Volume

The Relationship Between Gas Solubility and Temperature

The Relationship Between the Volume and Pressure of a Gas 1

The Relationship Between the Volume and Pressure of a Gas 2

Explorable Scene

Changing State

Structure of the Atmosphere

3D Model

Hot Air Balloon

Image

Hot Air Balloons, Turkey

Mechanics

Lab/Experiment

Calorimetry

Constant acceleration

Effective Force

Energy Efficiency

Kinetic Energy

Kirchhoff Law

Mechanical Advantage in Theater Stage Design

Millikan Oil Drop Experiment

Quantum Physics Lab

Reverse Bungee

Rolling Motion on Inclined Ramps

The Mechanical Energy of a Moving Object

The Operation of a Hoist

The Relationship Between the Deformation of a Spring and the Restoring Force it Exerts

The Relationship Between the Resultant Force and Acceleration

Game Level/Challenge

Centre of Mass

Motor Size & Torque

Sliding Joints - Game Level/Challenge

Sliding Joints

Surface Joints

Explorable Scene

Different Types of Energy

Electrical Circuits

Forces - Powering a Rocket

Forces - Pushing and Pulling

Gravity

Physics Experiment - Acceleration

Physics Experiment - Resistance

Chemical & Physical Processes

Lab/Experiment

Beer Lambert Law - Sci

Density of Liquids & Solids

Particle Physics Playground

Explorable Scene

The Building Blocks of the Universe

The Life of Marie Curie

The Periodic Table

What Are Atoms?

3D Model

Calcium Atom

Chlorine Atom

Copper Atom

Hydrogen Atom

Iron Atom

Nuclear Model Atom

Oxygen Atom

Planetary Model Atom

Potassium Atom

Quantum Model Atom

Sulphur Atom

Image

Amedee Island

Anhumas Abyss Brazil

Experiencing Fish and Coral Underwater

Great Barrier Reef Sea Turtle

Squid New Caledonia

Symbiosis Coral Blue Lagoon

COMPUTING

Turn Students from Consumers into Creators

30
EXPERIENCES

From coding and computational thinking to game development and immersive content creation, students develop the skills to design, build and create with technology. An open coding platform enables learners to create their own VR experiences, progressing from block-based coding to TypeScript while applying creativity, logic and problem-solving in meaningful ways.

Computational

Sandbox Build

Build a Robot (Free Build)

Game Level/Challenge

Across the Goo

Byte of the Living Dead

Chrome Thumb

Dance, Dance Robot Revolution

Freights in High Places

Kaiju Catastrophe

Pinata's Peril

Roaring Refuse

Robo Coffee

RoboRepair Centre of Mass

RoboRepair Motor Controls

RoboRepair Resize Piston

RoboRepair RPM

RoboRepair Servo Motors

RoboRepair Wheel Assembly

RoboRepair: Flip Motor Direction

RoboRepair: Motor Size & Torque

RoboRepair: Sliding Joints

RoboRepair: Sliding Joints

RoboRepair: Surface Joints

RoboRepair: Transmitters

Same Day Delivery

Sandwich Server

Silicon Sonata

"Soda Me!"

The Berry on Top

Tippy Toe Tidy Up

Wood and Chips

Coding

Sandbox Build

DelightEx

ENGINEERING & TECHNOLOGY

Step Inside the Design Process

76 EXPERIENCES

From robotics and automation to mechanical and civil engineering, students apply mathematics, data analysis and engineering principles to solve real-world problems through immersive, hands-on experiences. By building, testing and refining solutions, they develop the technical knowledge, problem-solving abilities and design-thinking skills needed to tackle complex engineering challenges.

Electrical Engineering

Tour/Simulation

Bifacial Solar Panel

Solar Power Plant

Step-Down Transformer

Wind Power Plant

Explorable Scene

Renewable Energy - Solar Power

Renewable Energy - Wind Turbines

The Sun - Our Star

Xplodable: The Sun

3D Model

Anatomy of the Sun

Nuclear Engineering

Tour/Simulation

Nuclear Power Plant

Explorable Scene

Nuclear Fission

Nuclear Power Plant

The Sun - Our Star

Xplodable: The Sun

3D Model

Anatomy of the Sun

History of Engineering

Other

Mrs Benz

Civil Engineering

Lab/Experiment

Bridge Construction

Dam Cross Section

Hydro Power Plant

Water Treatment Plant

Explorable Scene

Reactions of Metals

Renewable Energy - Hydrostatic Electricity

Renewable Energy - Tidal

Tour/Simulation

Dry Canyon Trestle

Golden Gate Bridge

Paris Notre Dame Bridge

Samuel Beckett Bridge Dublin

Sydney

CAD Design

Sandbox Build

DelightEx

Mechanical Engineering

Tour/Simulation

Centrifugal Pump

Flywheel

Induction Motor

Shell And Tube Heat Exchanger

Lab/Experiment

Universal Testing Machine

Explorable Scene

Electromagnets

Generating Electricity

Magnets and Magnetism

Nuclear Power Plant

3D Model

Steam Turbine

Spinning Jenny

Steam Engine

Steam engine machine

Other

Mrs Benz

Computational

Sandbox Build

Build a Robot (free build)

Game Level/Challenge

Across the Goo

Byte of the Living Dead

Chrome Thumb

Dance, Dance Robot Revolution

Freights in High Places

Kaiju Catastrophe

Pinata's Peril

Roaring Refuse

Robo Coffee

RoboRepair Centre of Mass

RoboRepair Motor Controls

RoboRepair Resize Piston

RoboRepair RPM

RoboRepair Servo Motors

RoboRepair Wheel Assembly

RoboRepair: Flip Motor Direction

RoboRepair: Motor Size & Torque

RoboRepair: Sliding Joints

RoboRepair: Sliding Joints

RoboRepair: Surface Joints

RoboRepair: Transmitters

Same Day Delivery

Sandwich Server

Silicon Sonata

"Soda Me!"

The Berry on Top

Tippy Toe Tidy Up

Wood and Chips

PROJECT-BASED LEARNING

Where the subjects come together.

5
PROJECTS

Five ready-to-teach projects are included with every EduverseSTEM bundle. Each is built around a compelling driving question that draws on knowledge and skills from across the STEM curriculum, guiding students through a sustained process of investigation, design and engineering before culminating in a live pitch where they present and defend their solutions. Full teacher guidance and session plans are included for every project.

Full Projects - 6 sessions each

Project 1 - Space: Building a Space Station

6 sessions
Ages 14–16, adaptable for 11–18

- Life Onboard the ISS
- Inside Skylab Space Station
- NASA Cygnus Cargo Module
- International Space Station
- Exploring the Solar System
- The Moon
- Renewable Energy – Solar Power
- Different Types of Energy
- Space Shuttle (Endeavour)
- Astronaut
- Train Like an Astronaut
- Constant Acceleration
- Kinetic Energy
- Pressure of Gases
- Relationship Between Volume and Gas
- Energy Efficiency
- Solar Power Plant
- Water Treatment Plant
- DelightEx
- Sandbox Mode

Project 2 - Volcanoes: Search and Rescue

6 sessions
Ages 11–14, adaptable for 14–16

- Plate Tectonics
- Inside a Volcano – Composite
- 'Xplodable': The Earth
- How Earthquakes Happen
- Speed of Sound
- Electromagnetic Spectrum
- Icelandic Volcano
- Mount Yasur Volcano
- Volcanic Eruption
- Earthquake Damage L'Aquila Italy
- Ohfunato Japan Earthquake Damage
- Volcano cutaway
- Composite Volcano 3D
- Mars Rover
- Lab 081 – Energy Efficiency
- Lab 082 – Effective Force
- Calorimetry
- DelightEx
- Sandbox Mode
- Same Day Delivery
- The Void

Project 3 - Oceans: Saving the Reef

6 sessions
Ages 16–18, adaptable for 14–16

- The Coral Reef
- Photosynthesis
- Fish as Animals
- The Carbon Cycle
- Acids and Alkalis
- Neutralisation Reactions
- Coral
- Coral 3D
- Pocillopora Meandrina
- Amedee Island
- Maldives
- Squid New Caledonia
- Symbiosis Coral Blue Lagoon
- Underwater World Life Scene with Coral
- Generation Ocean Video: Coral Reef (ANGARI Foundation)
- Photosynthesis
- pH
- The Relationship Between Gas Solubility and Temperature
- DelightEx
- Sandbox Mode
- Same Day Delivery
- The Void

Gateway Projects - 3 sessions each

Project 4 - Deserts: Solar Power Plant

3 sessions

Ages 14–16, adaptable for 11–18

Desert Ecosystem

Crescent Dunes Solar Energy Project

Atacama Desert Solar Platform

Electrical Circuits

Renewable Energy – Solar Power

Physics Experiment - Resistance

Solar Power Plant

Bifacial Solar Panel

Reading a Resistor

Electrical Circuit Assembly

Project 5 - Transport: Mrs Benz

3 sessions

Ages 14–16, adaptable for 11–18

The Relationship Between Resultant Force and Acceleration

Constant Acceleration

Rolling Motion on Inclined Ramps

Mechanical Energy of a Moving Object

Induction Motor

Flywheel

Bifacial Solar Panel

Reading a Resistor

Electrical Circuit Assembly

THE POWER OF VR LEARNING

Compared to learners taught with more traditional teaching methods, VR learners are:

x4
more focused

x3.75
more emotionally connected to lessons

x4
quicker to retain knowledge

275%
more confident in applying learnings

Source: PwC

Discover how ClassVR Xcelerate can help you deliver immersive, hands-on career experiences that prepare students for the world of work.

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