3M Young Scientist Lab, 3M Young Scientist Lab	Annenberg Learner I	Interactive modules featuring virtual labs on topics like amusement park physics and the chemistry of running
Annenberg Learner Interactives	Annenberg Learner Interactives	Features virtual labs on topics like amusement park physics and the chemistry of running. Interactive modules featuring virtual labs on topics like amusement park physics and the chemistry of running.
Beyond Labz	Beyond Labz	Highly realistic chemistry and physics benches where students can "break things" and see the results of open-ended experimentation. Highly realistic chemistry and physics benches where students can “break things” and see the results of open-ended experimentation.
Blockly Games	Bioman Bio	Free virtual biology labs for middle and high school covering cells, ecology, genetics, and physiology.
Bioman Bio	Blockly Games	Free virtual biology labs. Middle and high school. Covers: Cells, ecology, genetics, physiology. Series of block-based games that teach programming concepts and logical thinking.
CK-12 Interactive Simulations	CK-12 Interactive Simulations	Free physics and chemistry simulations for middle school through high school, grounded in real-world contexts.
ChemCollective	ChemCollective	A collection of virtual labs for chemistry education. Free physics and chemistry simulations. Middle school through high school. Real-world simulations.
Chrome Music Lab	Chrome Music Lab	Interactive experiments that connect music to science and math concepts such as waves and patterns.
CircuitLab	CircuitLab	A professional-grade browser-based tool for designing and simulating electronic circuits.. A professional-grade browser-based tool for designing and simulating electronic circuits.
Cloud-Based Virtual Labs	Cloud-Based Virtual Labs	General term for virtual lab environments hosted in the cloud and accessed through a web browser.
Codio	Codio	A virtual lab environment for Computer Science (Python, Java, Web Dev) with automated grading.. Cloud virtual lab environment for computer science (Python, Java, web development) with automated grading.

Code.org (CS Fundamentals)	Code.org (CS Fundamentals)	Block-based coding curriculum for elementary and middle grades that supports problem-solving and computational thinking.
Concord Consortium	Concord Consortium	STEM education simulations that support free, inquiry-based learning from middle school through college.
Education.com	Education.com	Offers a variety of virtual experiments and interactive science worksheets suitable for elementary grades. Covers basic physics, chemistry, and biology.. Virtual experiments and interactive science worksheets for elementary grades in physics, chemistry, and biology.
Edmodo	Edmodo	A learning management system that can host virtual labs and collaborative projects.Learning management system that can host virtual labs, assignments, and collaborative projects.
ExploreLearning (umbrella for Gizmos/Reflex/Frax/Science4Us)	ExploreLearning (umbrella)	Umbrella for Gizmos, Reflex, Frax, and Science4Us—an ecosystem of K–12 simulations and math-fluency tools.
ExploreLearning Gizmos	ExploreLearning Gizmos	Interactive simulations and virtual labs across science and math topics for grades 3–12.
Frax (math simulation, part of ExploreLearning suite)	Frax	Fraction-focused math simulation game, part of the ExploreLearning suite.
Google Science Journal	Google Science Journal	An app that allows students to conduct experiments and document their findings. An app concept that allows students to conduct experiments and document sensor-based measurements.
Gizmos (ExploreLearning)	Gizmos (ExploreLearning)	Extensive library of over 400 interactive simulations and labs for middle school science and math. Topics include ecosystems, chemical reactions, force and motion, and more.
HHMI BioInteractive	HHMI BioInteractive	High school and college-level biology virtual labs such as Lizard Evolution, Bacterial Identification, and Neurophysiology.
Inq-ITS	Inq-ITS	AI-powered virtual labs for middle and high school that cover physical, life, and Earth science with a virtual tutor and auto-grading.

JavaLab	JavaLab	A collection of browser-based Java simulations and virtual labs across physics and other sciences.
Kahoot!	Kahoot!	Game-based platform that can be used to review science content and concepts, including virtual lab contexts. An interactive quiz platform that can be used for science topics and virtual labs.
K12 IRC Best Virtual Labs list	K12 IRC Best Virtual Labs List	Curated list of recommended virtual labs for K–12 teachers.
Labster	Labster	Provides virtual lab simulations for high school and college science courses.
LabXChange , Harvard)	LabXChange (Harvard)	Massive library of modular lab simulations and resources, including high-level molecular biology techniques like gel electrophoresis and CRISPR.
Learn.Genetics (University of Utah)	Learn.Genetics (University of Utah)	Multimedia biology activities focusing on genetics and human health; includes popular labs like the Mouse Cloning Lab.
LearnChemE	LearnChemE	Features interactive chemical engineering modules, including a gas behavior simulator with sliders for parameters.
Legends of Learning	https://learnchememe.com/quiz-yourself/interactive-self-study-modules/ideal-gas-law/ideal-gas-law-simulation/	Legends of Learning. Gamified “mini-labs” and games aligned to thousands of specific science standards.
Line Rider	Line Rider	A drawing-based simulation where students can explore motion, slopes, and forces through animated sledding paths.
McGraw Hill CUS Virtual Labs	McGraw Hill CUS Virtual Labs	Curriculum-aligned virtual labs specifically designed for middle school science programs. Covers physical science, life science, and Earth science.
McGraw Hill Science Interactives,	McGraw Hill Science Interactives	Virtual labs and digital experiments for middle and high school, subscription-based and available 24/7. Middle and high school Virtual labs and digital experiments Subscription-based Available 24/7 for remote learning

Molecular Workbench	Molecular Workbench	Hundreds of physics, biology, and chemistry virtual labs with built-in models and assessments, free and open-source.
Mystery Science, K-5	Mystery Science	K–5 lessons that are primarily video-led but include digital “mini-explorations” that simulate scientific observations.
National Geographic Kids, Nat Geo Kids	National Geographic Kids (Nat Geo Kids)	Short interactive activities and media that support science and geography learning for younger students.
NASA STEM Resources	NASA STEM Resources	All-grade STEM resources including space science, engineering, and lesson plans, some with interactive lab components.
NOAA Weather Lab (Smithsonian)	NOAA Weather Lab (Smithsonian)	Middle-school-focused meteorology simulation for weather prediction.
NOVA Labs (PBS)	NOVA Labs (PBS)	High-quality virtual labs on frontier topics such as cybersecurity, RNA, evolution, and renewable energy.
Pearson Interactive Labs	Pearson Interactive Labs	Subscription high school and college biology, chemistry, and physics virtual labs. High school and college Biology, chemistry, physics Not free (subscription required
PhET Interactive Simulations	PhET Interactive Simulations	Free simulations covering physics, chemistry, math, and more, widely used in K–16 science.
The Physics Aviary	Physics Aviary	Free virtual physics labs and interactive simulations for upper middle and high school. Free virtual physics labs Upper middle school and high school Interactive simulations
Physics Classroom	Physics Classroom	Physics tutorials and simulations that support conceptual understanding. Description: Provides interactive simulations and tutorials for physics education.
Pioneer Valley STEM Network curated sim list	Pioneer Valley STEM Network curated sim list	A meta-collection of links to STEM simulations and virtual labs curated by the Pioneer Valley STEM Network.
Pivot Interactives (owned by Discovery Education)	Pivot Interactives	500+ video-based interactive activities (grades 6–12) using real experiment videos and data analysis tools. 500+ video-based interactive activities. Grades 6-12 (middle and high school). Real experiment videos with data analysis tools. Subscription: $5-10 per student per term. NGSS-aligned

PraxiLabs	PraxiLabs	3D virtual science labs in physics, chemistry, and biology for high school and college. 3D virtual science labs. High school and college. Physics, Chemistry, Biology
Reflex (math simulation game, part of ExploreLearning suite)	Reflex	Math-fluency game (ExploreLearning suite) focusing on basic facts through adaptive practice.
Replit Teams for Education	Replit Teams for Education	Collaborative browser-based coding environment supporting classroom projects and practice.
Research Quest	Research Quest	Multi-step investigations from the Natural History Museum of Utah focused on fossils, food chains, and related themes.
science-table	science-table	A reference list or table organizing science virtual labs and tools used for planning and selection.
Science Buddies Website: Science Buddies	Science Buddies	Website with science project ideas, guides, and links to virtual labs and simulations.
Science4Us (K–2 science simulations)	Science4Us	K–2 science simulations and instructional games, part of the ExploreLearning ecosystem — referenced within ExploreLearning
SciKids (NASA)	SciKids (NASA)	NASA's dedicated platform for young learners, offering interactive virtual labs and games focusing on space exploration, aeronautics, and Earth science.
Scratch	Scratch	Block-based programming environment for creating interactive stories, games, and simple simulations.
Smart Science Labs:	Smart Science Labs	Elementary through high school virtual labs designed by science educators and delivered online.
Smithsonian Science Education Center	Smithsonian Weather Lab	Interactive weather simulation focused on storms and climate patterns.
Smithsonian Weather Lab	Stellarium	Free planetarium software for visualizing the night sky at any time and location.
Stellarium	STEM Sims	STEM-focused simulations emphasizing engineering and science inquiry. Free planetarium software. All ages Sky observation tool
STEM Sims	STEMscopes Simulations	Simulation set aligned with STEMscopes K–12 science curriculum.
STEMscopes Simulations		

Tinkercad	Tinkercad	Web-based 3D design and electronics/Arduino simulator that functions as a virtual lab for beginners. A "virtual lab" for 3D design and electronics/Arduino simulation for beginners.
Tynker	Tynker	Coding platform offering guided courses and projects for K–12 students.
University of Texas (Chemistry 301)	https://ch301.cm.utexas.edu/simulations/js/idealgaslaw/	A gas simulator where you can control the relative amounts of two different gases, adjust temperature, and lock volume to observe \(P,V,n,\text{and\ }T\) relationships. University of Texas (Chemistry 301 Gas Simulator). Gas-law simulator allowing control of two gases, temperature, and volume to observe behavior changes.
VEXcode VR (Block/text hybrid; Free)	VEXcode VR	VEXcode VR. Block/text hybrid virtual robotics coding environment, free to use in a browser.
Description	Virtual Biology Lab	Virtual labs covering many biology concepts, including population ecology and physiology. Offers virtual labs covering various biology concepts.Virtual Biology Lab
Virtual IT Labs (ACI Learning)	Virtual IT Labs (ACI Learning)	Provides hands-on IT skills training using virtual labs, designed for educators to integrate with their LMS. Focuses on technical skills for CTE pathways. Hands-on IT skills training in virtual lab environments designed to integrate with LMS platforms.
Virtual Science Teachers (VST)	Virtual Science Teachers (VST)	Free virtual labs and simulations for K–5 and middle school science, aligned with NGSS and state standards. k-5, Offers free virtual labs and simulations for middle school science students, covering topics like NGSS and Virginia SOL.
VRLab Academy	VRLab Academy	PC and VR-compatible 3D science experiments for secondary and higher-education courses.
Wisconsin Virtual Learning	Wisconsin Virtual Learning	Offers middle school science courses where students engage with curriculum through different pathways that include virtual labs. Middle school science courses where virtual labs are integrated into multiple learning pathways.
Zooniverse	Zooniverse	Citizen-science platform where students can contribute to real research projects by classifying data.