

# Virtual Science Education Support for Parents

(All Sources are Hyperlinked)

## Elementary Students

- [Free Interactive Science & Engineering Google Slides](#) AFA STEM Outreach has developed a variety of science slides that students can manipulate.
- [AF K-12 STEM Parent Page](#) provides inspiring STEM activities for students using common household items.
- [Scholastic-Learn at Home](#) Cross-curricular daily learning journeys. Every day includes four separate learning experiences, each built around a thrilling, meaningful story or video. Students can do complete the activities individually, with their families or with their teachers.
- [National Geographic Education \(grades PK-5\) Resource Library](#) offers high-quality, standards-based, educational resources and activities for PK- Grade 5 students. Educators have access to free maps, lesson plans, imagery, interactives, and reference materials have been curated into collections grounded National Geographic Education's approach to instruction.
- [Mystery Science](#) Short mini lessons that are completely digital and full lessons that include an activity. All of the activities are designed to use simple supplies found at home.
- [PBS Kids for Parents](#) Children are naturally curious, full of ideas and questions and motivated to investigate everything in the world around them. These resources are for children 2-8 years old and support science learning at home. PBS Kids has platforms for computers as well as phones. Parents can sign-up for a daily newsletter to support at-home learning. Resources are curated in many different languages.
- [Crash Course Kids](#) has over 100 short video clips explaining a variety of science concepts.
- [Exploratorium](#) Tinkering activities for students to do at home.
- [National Institute of Environmental Health Sciences Science Activities](#) Science experiment ideas from the National Institute of Environmental Health Sciences.

### These local organizations and businesses support science education:

- [Catamount Institute](#)
- [Challenger Learning Center of Colorado](#)
- [Cheyenne Mountain Zoo](#)
- [Chico Basin Ranch](#)
- [Colorado Springs Fire Department](#)
- [Colorado Parks and Wildlife](#)
- [Colorado Springs Pioneer Museum](#)
- [Colorado Springs Utilities](#)
- [Cool Science](#)
- [Denver Museum of Nature and Science](#)
- [Space Foundation Discovery Center](#)
- [Pikes Peak Library District](#)
- [Project Learning Tree](#)
- [Western Museum of Mining and Industry](#)
- [Wings Over the Rockies Air & Space Museum](#)

## Middle School Students

- [National Geographic at Home](#) Resource Library offers high-quality, standards-based, educational resources and activities for middle grades. Educators have access to free maps, lesson plans, imagery, interactives, and reference materials have been curated into collections grounded National Geographic Education's approach to instruction.
- [Open Science Ed Middle Grades Units](#) An open source free middle school science program. The curriculum can be leveraged to support at-home learning. Units are life science, physical science, and earth and space science units of instruction.
- [PhET Chemistry Simulations](#) Free interactive math and science simulations. Explore chemistry specific topics through simulations are available for use in lessons. Lesson plans available for educators.
- [PhET Physics Simulations](#) Free interactive math and science simulations. Explore physics specific topics through simulations are available for use in lessons. Lesson plans available for educators.
- [PhET Earth Science Simulations](#) Free interactive math and science simulations. Explore earth science specific topics through simulations are available for use in lessons. Lesson plans available for educators.
- [Science Friday Spoonfuls](#) Support media literacy and leverage informational text with doses of current science, technology and engineering stories ready for the classroom. Each Spoonful contains a short piece of media, a transcript for video and radio segments, student questions and activity suggestions for extending student exploration into the science behind the story. Developed and produced for use middle and high school teachers by Science Friday Educate.
- [Scholastic-Learn at Home](#) Cross-curricular daily learning journeys. Every day includes four separate learning experiences, each built around a thrilling, meaningful story or video. Students can complete the activities individually, with families or with their teachers.
- [National Geographic- Citizen Science Projects](#) Get ideas on how students can participate in citizen science—projects where volunteers and scientists work together to collect data to help answer real-world questions.
- [Learn Genetics/Teach Genetics](#) Virtual labs and curricular resources that are focused on genetics, bioscience and health to the classroom. Teach Genetics offers additional tools and resources to support science curriculum.
- [Graph Literacy](#) Graph literacy is the ability to identify important features of graphs and relate those features to the context of the graphs. The Graph Literacy project developed activities using Smart Graphs technology to specifically improve graph comprehension and data literacy in grades 7 and 8 science students includes lesson plans and activities for students.
- [Science News for Kids Online](#) Stories about recent research and current events across the full breadth of STEM fields. The site offers several types of articles, weekly features and additional content that can leveraged as solo reading or for discussion in the online or in person classroom.
- [Science Snacks](#) Hands-on, teacher-tested using cheap available materials. These activities span multiple disciplines, so you can search a hands-on activity using a subject specific list.
- [Ted-Ed Online-Science](#) Media rich online resource organized by theme or subject. Short 2-10 minutes video animations, in which students can watch, think (consider what they have learned), dig deeper with a reading. Educators can customize the resource by creating their own account.

## High School Students

- [Virtual Tours of AFA Academic Centers](#) – See USAFA aero, air warfare, cadet battle, chemistry and mechanics labs as well as AF CyberWorx and CyberCity.
- [Chemistry Labs](#) – A variety of endo and exothermic reaction labs are provided.

### Life Sciences (Biology and Environmental Science)

- [i-Hub Biology](#) A free online full-year high school biology course anchored in phenomena and aligned to Science Standards.
- [Howard Hughes Medical Institute](#) Interactive resources for the Biology classroom. Resources include digital media, lesson plans, resource playlists, and current events. Resources are free to access and are aligned for use in high school biology, environmental science, and AP and IB Biology courses.
- [PhET Biology Simulations](#) Free interactive math and science simulations. Explore biology specific topics through simulations. Lesson plans are available for educators.
- [Geniverse](#) is free, web-based software for high school biology that engages students in exploring heredity and genetics by breeding and studying virtual dragons.
- [Learn Genetics/Teach Genetics](#) Virtual labs and curricular resources that are focused on genetics, bioscience and health to the classroom. *Teach Genetics* offers additional tools and resources to support your curriculum, all free of charge, and *Learn Genetics* is focused on supports for student learning experiences.
- [Khan Academy Biology](#) starts by looking at the foundations of biology, energy, cells, genetics, evolution, human body systems and culminates with learning modules focused on ecology. Educators can create accounts to assign students elements of courses.

### Physical Science (Physics and Chemistry)

- [PhET Chemistry](#) provides free interactive math and science simulations. Explore chemistry specific topics through simulations. Lesson plans available for educators.
- [PhET Physics](#) Free interactive math and science simulations. Explore physics specific topics through simulations. Lesson plans available for educators.
- [Khan Academy-Physics](#) starts by looking at motion and forces, momentum, energy and other concepts in a variety of different physical situations. This course incorporates algebra and trigonometry. Educators can create accounts to assign students elements of courses.
- [AACT High School Chemistry Resources](#) These resources include activities, animations, projects, simulations, and videos for middle school, high school and Advanced Placement/general chemistry.

### Earth and Space Sciences

- [PhET Earth Science Simulations](#) Free interactive math and science simulations. Explore earth science specific topics through simulations are available for use in lessons. Lesson plans available for educators.