

Science Resources

These resources focus on the importance of the science academic standards and science practices and unifying themes. The activities and resources below are selected to be engaging and appropriate for your students' grade level - kindergarten to high school. Along with these resources, there are other resources within the Standards Aligned System (www.pdesas.org) under Materials and Resources and the Content Advisors Learning Community.

If you have any questions about these or other resources, contact Dave Bauman, davbauman@pa.gov.

Classroom Materials

[Print Free Graph Paper](#)

Print graph paper free from your computer. This site is perfect for science and math homework, craft projects and other graph paper needs. All graph paper files are optimized PDF documents requiring Adobe Reader for viewing.

[Graphing/Charting and General Data Visualization App](#)

Charts are a great tool because they communicate information visually. On meta-chart.com you can design and share your own charts online and for free.

Curriculum/Lesson Resources

NSTA has multiple resources and is giving everyone access to resources.

[eBooks](#) (K-12) are available for multiple grade levels.

[Daily Do](#) (K-12) focuses on phenomena and a question to solve.

[NSTA Classroom Resources](#) (K-12) offer lessons and resources for all levels.

[American Association of Chemistry Teachers](#) (K-12)

Multiple classroom activities and lessons.

[Exploratorium](#) (PK-12)

A vast collection of online experiences and education resources to support online teaching and learning.

[STEM From the Start](#) (PK-2)

A curriculum resource for teaching STEM content to PreK-2 students. Blending animated adventures with guided activities, these free lessons are engaging, effective, and easy to prepare.

[Inquiry Project](#) (3-5)

Activities and resources for inquiry and science notebooking.

[BSCS Science Learning](#) (6-12)

Resources for online learning

[OpenSciEd](#) (5-8)

High-quality, open-source, full-course science instructional materials, while at the same time supporting the implementation of middle school science instructional units.

Smithsonian Museums (K-12) have multiple activities, lessons, videos covering a range of topics and interest levels.

[Smithsonian for Kids](#) (K-12)

[National Museum of Natural History](#) (K-12)

[Air and Space Museum](#) (K-12)

[JPL](#) – Jet Propulsion Laboratory of California Institute of Technology (K-12)

Activities for both students and teachers.

[NASA STEM Engagement](#) (K-12)

STEM resources for K-12 educators.

[Games at NOAA](#) (K-12)

An arcade portal to games and interactive activities focused on ocean and air themes that highlights the science and the activities of the National Oceanic and Atmospheric Administration (NOAA) and other agencies and organizations promoting environmental stewardship.

[PBS Learning](#) (K-12)

Curated free standards-based videos, lessons, interactive activities.

[National Geographic](#) (K-12)

Curated collections for all grade levels with activities for all ages with minimal materials.

[TRAILS](#) (9-12)

Teachers and Researchers Advancing Integrated Lessons in STEM is an NSF project that is bringing together high school science (Biology or Physics), and Engineering/ Technology Education teachers through integrated STEM.

[Data Nuggets](#) (9-12)

Free classroom activities designed by scientists and teachers for students to get messy with data. An NSF project with Michigan State University.

[Science News for Students](#) (Grades 4-12)

Current events in science, online activities and videos with further resources, 'power' words, and readability levels.

[NSDL](#) (PK-12)

Searchable library for PA Standards based STEM resources.

[Technovation Families](#) (K-12)

Includes design challenges and family challenges.

Activities and videos are appropriate for at home learning with minimal materials.

[STEM Teaching Tools](#) (K-12)

The STEM Teaching Tools site has tools that can help you teach science, technology, engineering and math (STEM).

[Science Buddies](#) (Grades 1-6)

Includes lessons, activities, projects and activities for students in all areas of science.

[PHET](#) (Grades K-12)

Simulations in all areas of science, lessons, STEM focus, and includes tips for at home labs.

[MIT BLOSSOMS](#) (9-12)

BLOSSOMS video lessons are enrich students' learning experiences in high school classrooms. The Video Library contains over 100 math and science lessons, all freely available as streaming video and Internet downloads.

[Phenomena](#) (K-12)

Photographs and materials for starting discussions and investigations around natural phenomena.

[Concord Consortium High-Adventure Science](#) (K-12)

Includes lessons and interactive activities.

[HHMI BioInteractive](#) (9-12)

Real science, real stories and real data to engage students exploring the living world. Activities for students and lessons for teachers.

[NOVA Labs](#) (K-12)

Simulations, lesson plans, activities for both students and teachers from PBS NOVA.

[Learn.Genetics](#) (9-12)

Educational resources include simulations, videos, and are learner based.

[OER Commons](#) (K-12)

Search for activities and resources with PA Standards.

[Agriculture in the Classroom](#) (Grades K-HS)

The National Agricultural Literacy Curriculum Matrix is an online, searchable, and standards-based curriculum map for K-12 teachers. Search the instructional, classroom-ready resources.

[ck12.org](#) (Grades 1-5 by concept, Grades 6-12, by concept or textbook)

CK-12 Foundation is a non-profit organization dedicated to increasing access to high quality educational materials for K-12 students all over the world. We offer free high-quality, standards-aligned, open content in the STEM subjects.

- FlexBooks – Our books are fully customizable and can easily be kept up-to-date. You can rearrange the chapters or even add, remove, and edit content.
- Concepts – These bite-sized lessons can be added to a FlexBook or assigned directly to students for independent learning.
- Interactive Learning Objects – Videos and multimedia simulations bring learning to life.
- Exercises – Enable students to track their progress with instant feedback.
- Teaching Materials – Get assessments, answer keys and ideas for differentiated instruction.