

Science Resources

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Lessons, Activities, and Videos

- **National Institutes of Health (NIH) Curriculum Supplements**
 - 16 FREE curriculum supplements for elementary, middle, and high school; some of my students' favorite ones are listed below
 - Excellent critical thinking and problem-solving activities for partnered and group work
 - Cross-curricular lesson plan with suggested timeline
 - TONS of great science background info for the teacher and students
 - Has all handouts and answer keys available for download online (or you can have them mail you FREE hard copies of each book)
<https://science.education.nih.gov/>
 - *Rare Diseases and Scientific Inquiry*
 - Students explore how scientists use inquiry to research rare diseases and treatments and to further understand the workings of the human body.
<https://science.education.nih.gov/MiddleSchool/RareDiseasesAndScientificInquiry>
 - Follow-up videos about Rare Disease Day and the rare disease necrotizing fasciitis:
 - <https://www.rarediseaseday.org/>
 - <https://www.wrbl.com/news/local-news/fort-benning-basic-trainee-battles-life-threatening-flesh-eating-bacteria/1860009821>
 - https://www.eurekalert.org/pub_releases/2019-02/hm-rft021419.php
 - <https://www.wral.com/flesh-eating-bacteria-nearly-killed-wake-forest-widow-robbed-during-husband-s-funeral/18273289/>
 - <https://youtu.be/LZpUI346Nx0>
 - *Chemicals, the Environment, and You*
 - Probably my students' FAVORITE experiment (grew radishes in the computer lab; students even came to the learning center on their "off" days to check on their experiment
<https://science.education.nih.gov/MiddleSchool/ChemicalsEnvironmentYou>
 - *Looking Good, Feeling Good: From the Inside Out*
 - Incredible experiment on the role of minerals and collagen on bone health.
<https://science.education.nih.gov/MiddleSchool/LookingGoodFeelingGood>
 - *The Brain: Understanding Neurobiology Through the Study of Addiction*
 - Really interesting material, especially for students who suffer from addiction or have family members who do.
<https://science.education.nih.gov/HighSchool/TheBrainStudyOfAddiction>
- **CollectEdNY**
 - Resources for educators preparing students for high school equivalency and beyond
 - Science topics <http://www.collectedny.org/fpsubjects/3-science/>
- **The CUNY HSE Curriculum Framework**
 - SECTION 3 – Science: Matter & Energy
<http://www2.cuny.edu/academics/academic-programs/model-programs/cuny-college-transition-programs/adult-literacy/cuny-hse-curriculum-framework/#1459190086595-d951028a-34f7>

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- The science section provides an introduction to matter and basic chemistry with extensions to science/math connections. This section includes a curriculum map with 23 topic descriptions and key questions, and three complete inquiry-based model lesson plans.
- If you teach science in adult literacy/HSE, you may be interested in the Science Teacher Forum for the CUNY HSE Curriculum Framework. We share teaching ideas and lessons for teaching science: <https://groups.google.com/d/forum/ccf-science>
- **Open Educational Resources (OER) Commons**
 - OER Commons is a public digital library of open educational resources. Explore, create, and collaborate with educators around the world to improve curriculum.
 - Searchable by key word, subject, and education level (including adult education) <https://www.oercommons.org/>
- **Annenberg Learner**
 - Excellent resource for online professional development and resources for use with teachers and students <http://www.learner.org/resources/discipline-science.html>
- **TV411**
 - TV411 is a rich source of multimedia teaching materials that combine streaming videos with related interactive web lessons on reading, writing, math, science, and financial literacy. You can use our materials to supplement your adult literacy curriculum, create new lessons, and enable students to practice their skills on their own. You can also join our discussion groups to exchange ideas with other ABE professionals and adult learners. <http://www.tv411.org/science>
- **PBS Learning Media**
 - Explore natural phenomena and scientific practices with videos, lesson plans, and interactive tools. <https://www.pbslearningmedia.org/subjects/science/>
- **System for Adult Basic Education Support (SABES)**
 - Math truly is all around us and opportunities to apply it to real-world issues and situations are plentiful. We often forget that disciplines like history, social studies, civics, and science all have natural overlaps with math.
We've compiled a list of web resources that provide rich situational contexts that can provide a cross-discipline backdrop for some meaningful mathematic activities and conversations. Choose from the list below to learn more about the resources as well as our suggestions for lesson topics and activities. <https://www.sabes.org/content/web-resources>
- **CK12**
 - Wonderful FREE site with simulators, lesson plans, flex books, videos, quizzes; all materials are related to STEM topics.
 - Great real-world connections in each lesson, including one of my favorites (below) that I stumbled on with a great connection to Heifer International. www.CK12.org

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- Methane (“Poop to Power”) <https://www.ck12.org/physical-science/Hydrocarbons-in-Physical-Science/rwa/Poop-to-Power/>
 - The Park Spark Project <https://parksparkproject.com/home.html>
- Biogas Program with Heifer International <https://www.heifer.org/join-the-conversation/magazine/2015/spring/refuse-reuse.html>

- **BetterLesson**
 - Free lesson plans, slides, videos, and activities aligned to the CCSS www.BetterLesson.com

- **Florida IPDAE**
 - Free lesson plans designed for Reasoning through Language Arts, Mathematics, Science and Social Studies.
 - Look at the *Antibiotic Resistance* and the *Superbugs are Here!* lesson plans. <https://www.floridaipdae.org/index.cfm?fuseaction=resources.GEDAHS&caid=D8347DD26C9BC92AC00CD5AB9F547266A43907FE413D5F3617A20BD9F050194E>

- **What are Scientific Theories?**
 - Eugenie Scott discusses what a scientific theory is and is not, and the role science plays in our understanding of the universe. This is part of a longer video from which this section was extracted because it was the most referenced portion of that video in science educational explanations. <https://www.youtube.com/watch?v=-M1hxGj5bMg>

- **Mr. Parr’s Science Songs**
 - See YouTube for playlist of popular songs with science lyrics <https://www.youtube.com/channel/UCJjstNDkwktHyvUdtcBfb2g>

- **LINCS**
 - Includes science courses that help teachers use science in adult education classrooms. These courses introduce instructors to the importance of science education, curriculum planning, and the use of science in adults’ daily lives.
 - Includes a science community of practice for practitioners, researchers, advocates, and policymakers to explore issues pertaining to teaching science in the field of adult literacy. <https://lincs.ed.gov/>

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Tools, Manipulatives, Simulators, and Books

- **PhET Interactive Simulations**

- Free interactive math and science simulations!
- PhET sims are based on extensive education research and engage students through an intuitive, game-like environment where students learn through exploration and discovery.
<https://phet.colorado.edu/>

- **The Biology Corner**

- Has some great (FREE) tools, online books, and resources for science instruction, especially when you don't have a science lab.
<https://www.biologycorner.com/>
- Scientific Method and the Simpsons
<https://www.biologycorner.com/2016/05/30/scientific-method-and-the-simpsons/>
- Photosynthesis Virtual Lab
http://www.glencoe.com/sites/common_assets/science/virtual_labs/LS12/LS12.html
- Virtual Frog Dissection
https://www.biologycorner.com/worksheets/frog_alternative.html

- **Manipulatives and Experiment Kits**

- Balancing Chemical Equations, Item # 840656
<https://www.carolina.com/teacher-resources/Interactive/carolina-quick-tips-balancing-chemical-equations/tr40502.tr>
- Epidemic Simulation Classroom Kit, Item # 154665
<https://www.carolina.com/bacteria/epidemic-simulation-classroom-kit/154665.pr#>