

Additional Resources

Note: All links were confirmed as working at the time this list was created. If you find a link that doesn't work, let us know so we may find a suitable—and working—link.

Information on Human-Made Environmental Disasters

<https://www.youtube.com/watch?v=4fkcTA7YX44> More information on the London Fog.
<https://list25.com/25-biggest-man-made-environmental-disasters-in-history/> List of the 25 biggest man-made environmental disasters in History (for teachers only).
<https://www.youtube.com/watch?v=0Yhaei1S5oQ&feature=youtu.be> (5:25) Longer video on Japan's mercury dumping and resulting impact. OK for teachers and older students (a little graphic, fast paced, and a slightly advanced vocabulary).
<https://www.epa.gov/laws-regulations/summary-pollution-prevention-act> More information on the Pollution Prevention Act—more suitable for teachers than for students.

Additional Green Chemistry Websites and Articles

<https://www.youtube.com/watch?v=B45LMANkckI&t=1s> People at three companies describe what is green chemistry.
<https://www.global-green-chemistry-initiative.com/educational-videos> Various green chemistry educational videos. They are a bit older than elementary level—so not good introductory videos—but may be good as secondary videos to reinforce key concepts (ideas of feedstocks (aka input materials)), solvents, catalysts).
<https://www.acs.org/content/acs/en/greenchemistry/what-is-green-chemistry/principles/12-principles-of-green-chemistry.html> Definitions of green chemistry according to the American Chemical Society. Likely too advanced for students but a great teacher resource.
<https://www.acs.org/content/acs/en/greenchemistry/what-is-green-chemistry/history-of-green-chemistry.html> Teacher resource on the history and thinking behind green chemistry.
<https://www.epa.gov/greenchemistry/basics-green-chemistry> Green chemistry according to the EPA.
<https://greenchemistryandcommerce.org/projects/education> A series of training webinars might be of interest for the teachers.
<https://www.beyondbenign.org/cur-elementary-school/> Beyond Benign is focused on green chemistry and sustainable living. They have a number of elementary lessons that dive a bit deeper into individual science topics.
www.ecology.wa.gov/GreenChemK12 Washington Department of Ecology green chemistry K–12 education page has additional resources, as does their main landing page www.ecology.wa.gov/GreenChem.
<http://www.compoundchem.com/2015/09/24/green-chemistry/> Cool green chemistry poster. Too advanced to use for an introduction but may be a good example for summative challenge activities or to reinforce ideas as you work through the unit.
<https://www.nobelprize.org/prizes/chemistry/2005/summary/> Some more information about the Nobel prize award to Yves Chauvin, Robert H. Grubbs, and Richard R. Schrock in 2005.

Additional Green Chemistry Companies in the United States (Grouped by Geographic Region)

Pacific Northwest

[Tidal Vison](#) uses waste salmon skin and crustacean shells (think lobsters and crabs) to make various leather alternatives and antimicrobials.

[Promus Energy](#) is developing innovative ways to make renewable energy more cost competitive.

[Apana](#) is developing new software to help with large scale water management.

[Aunt Fannies](#) is developing safer chemicals for pest control.

[Diatomix](#) is developing safer chemicals for floor coatings.

[Eco-Pro polymers](#) is developing safer chemicals for adhesives (industrial glue).

<https://www.northwestgreenchemistry.org/event/inspirational-entrepreneurs> A webinar with Mickey Blake from Floral Soil Solutions and Zach Wilkinson from Tidal Vision.

Southwest/California

[Living Ink](#) makes ink algae that can be printed onto papers, greeting cards, and more.

[Ceres Imaging](#) is helping farmers use less water.

[Ecologic Brands](#) makes plastic bottle alternatives out of paper.

South/Southeast

[Resource-fiber](#) is an Alabama-based company working to increase the amount of bamboo used in American manufacturing and products.

[Mobius](#) is a Tennessee-based company creating renewable chemicals, materials, and energy from organic waste.

Their first product is a biodegradable plastic made from lignin.

Northeast

[Modern Meadow](#) uses collagen (a protein) to make leather.

[Ecovative Design](#) makes a packaging replacement for Styrofoam out of mushroom materials.

[Ginko Bioworks](#) is using microorganisms to grow new materials and products.

Midwest/Central

[Blue Marble Biomaterials](#) is a Montana-based company designing new materials from plant inputs.

[Ecovia Renewables](#) is developing new bio-based super absorbent polymers

More startups in green chemistry are available here:

<https://greenchemistryandcommerce.org/startup-network/list-of-startups>