



CLEAN AIR EDUCATIONAL ACTIVITIES AND RESOURCES

In response to COVID-19 and the closure of schools across the America, federal, state, local and tribal clean air agencies are making available educational activities and resources to teachers, parents and students providing opportunities for continued learning while staying safe at home.

Below please find some of the outstanding educational resources that have been made available. We will continue to update this list as we learn about more educational resources.

LOCAL AND STATE AIR POLLUTION CONTROL AGENCIES

ALASKA

The Alaska Department of Environmental Conservation has developed two educational activity guides for kids that focus on dust and woodsmoke.

<http://dec.alaska.gov/media/7472/dust-activity-book.pdf>

<http://dec.alaska.gov/media/5604/burnwise-activity-book.pdf>

MARICOPA COUNTY, ARIZONA

In response to COVID-19 Arizona school closures, Maricopa County has developed activity sheets that teachers and parents can download to complete with their students or children.

Here is a link to those activity sheets: <http://cleanairmakemore.com/education/kids/>

If you scroll down the page, you will find links to several PDF documents.

In addition, Maricopa County is in the process of creating a five-module online air quality class for middle and high school students. The modules will include a “virtual field trip” to the Maricopa County Air Quality Department’s air monitoring division warehouse facilitated by Mr. Ben Davis, Air Monitoring Division Manager; a “hands-on lab,” and more.

<http://cleanairmakemore.com/tools-downloads/6-12onlineclass/>

PIMA COUNTY, ARIZONA

Pima County Department of Environmental Quality has an [Eco Kids Corner](#) website. DEQ is also making available the following educational resources:

Little Green Riding Hood story [book](#), [worksheet](#) for younger kids, and [discussion questions](#) for older kids.

Desert Dwellers Know [11”x17”](#) and [8.5”x11”](#) activity sheets, with puzzles and info on ozone.

[Bike vs. Car](#) worksheet using math to calculate emissions and time savings.

[Facts and Fun for Kids About Air](#) brochure.

[Finish the Sentence](#) worksheet for younger elementary students.

Littering is UnIAWFUL worksheets for grades [K-2](#) and [3-6](#).

[EcoKids](#) – Kids Can Help Protect the Environment.

CALIFORNIA AIR RESOURCES BOARD

The California Air Resources Board has several websites and links to help reduce air pollutant and greenhouse gas emissions, protect human health, and help implement California's Education and the Environment Initiative (EEI) to foster environmental literacy for all students.

Grade 5 - Adult

Glossary of Air Pollution Terms.

<https://ww2.arb.ca.gov/about/glossary>

The Clean Car Buying Guide has helpful information, tips, and resources on advanced technology and alternative fuel vehicles, charging and fueling stations, and more.

<https://driveclean.ca.gov/>

"Carbon Monoxide, The Silent Killer" is a four-minute video on actions to take to prevent carbon monoxide poisoning.

https://www.youtube.com/watch?v=FRn_sONlrRI

"With Every Breath: Health Effects of Smog" is a 20-minute video (no more free DVDs) on where smog comes from, how it is formed, and how it can damage your body.

<https://ww3.arb.ca.gov/research/health/school/smog-vpform.htm>

Strategies and resources to protect yourself from wildfire smoke.

<https://ww2.arb.ca.gov/protecting-yourself-wildfire-smoke>

"The Next Frontier: Engineering the Golden Age of Green" is a one hour video on renewable, clean energy technologies that can improve our future and create significant economic opportunities.

<http://thenextfrontiermovie.com/>

"We've Got the Power" is a one hour video on how we can replace fossil fuels with clean energy in a way that is economically beneficial to consumers and businesses alike, and ensures a safer environment for future generations.

<http://wevegotthepower.com/> and <https://www.youtube.com/watch?v=nf1ny2R8QKY>

Kindergarten – Grade 12

The EEI has lesson plans, teaching units, and other resources that help blend the environment into the teaching of the traditional academic subjects of science, history, and English language arts.

<https://www.californiaeei.org/>

Kindergarten – Adult

Cool California provides information, links to curricula, and resources for schools, homes, and others to reduce their environmental impact and be part of the climate change solution.

<https://coolcalifornia.arb.ca.gov/>

A list of 50 simple steps you can take in your everyday life to help improve air quality.

<https://ww2.arb.ca.gov/resources/fact-sheets/simple-solutions-help-reduce-air-pollution>

LOS ANGELES, CALIFORNIA

The South Coast Air Quality Management District provides educational resources to parents, teachers, and students through the Why Healthy Air Matters (WHAM) Program. Through the WHAM Program, South Coast AQMD hopes to increase awareness of air quality issues within the South Coast Basin and empower youth to drive positive change during a time when they are developing and forming their own habits.

Please visit the following website to access program resources:
<https://www.aqmd.gov/home/programs/community/wham-resources>

SAN FRANCISCO, CALIFORNIA

The Bay Area Air Quality Management District has made available to K-5 educators, the *Spare the Air Activity Book* for students.

<http://www.sparetheair.com/publications/SpareTheAirActivityBook2010.pdf>

Earth Day Bingo

https://www.baaqmd.gov/~media/files/communications-and-outreach/earth-day-materials/earth-day-bingo-cards-1_5_final.pdf?la=en

Earth Day Jeopardy

https://www.baaqmd.gov/~media/files/communications-and-outreach/earth-day-materials/earth-day-jeopardy_2020-pdf.pdf?la=en

SAN LUIS OBISPO, CALIFORNIA

The San Luis Obispo County Air Pollution Control District, in conjunction with California Polytechnic University students, offers the Clean Air Ambassador Program, to provide environmental education and lesson plans in classrooms. Although the Ambassadors cannot be in classrooms right now, the partners have continued to develop videos and other resources that parents and kids can use at home!

<https://www.slocleanair.org/community/teacher-resources.php>

<https://www.slocleanair.org/community/videos.php>

CONNECTICUT

As part of an outreach and education effort, the Connecticut Department of Energy and Environmental Protection (DEEP), along with the University of Connecticut Healthy Environments for Children Initiative, has developed a children's book on air quality, titled **Casey's Clean Air Week (flipbook)** (<http://online.fliphtml5.com/hatj/keun/>). The purpose of this book is to teach young children (approximately 4 to 7 years old) about the importance of clean air to protect both human health and the environment. The book advises children and adults of simple steps they can take to help prevent or reduce air pollution when using cars.

A companion **parent/guardian/teacher guide and children's activity book** (<https://portal.ct.gov/~media/DEEP/air/diesel/anti-idling/CaseysCleanAirWeekGuidepdf.pdf?la=en>) is also available. The booklet includes suggestions for adults who read the book to children, activities for children to reinforce the educational messages in the book, and additional information about actions adults can take to improve air quality.

The book and companion guide are free and available to the public at www.ct.gov/deep/casey.

DISTRICT OF COLUMBIA

DC Department of Energy and Environment (DOEE) Air Quality Division has worked with AirNow, Clean Air Partners and Casey Trees to develop the District's Air Quality Distance Learning Packet designed to help students understand air quality index, the importance of good air quality, and the correlation between air pollution and public health.

<https://coronavirus.dc.gov/page/kids-and-school-resources>

BROWARD COUNTY, FLORIDA

Broward County Environmental Engineering and Permitting Division has created a webpage of virtual resources including games, activities, puzzles, coloring books, and videos for story time.

Virtual Environmental Learning Resources

<https://www.broward.org/Environment/Pages/VirtualResources.aspx>.

JOHNSON COUNTY, KANSAS

Public outreach in the Kansas City area is coordinated by the Mid-American Regional Council (MARC), the local regional planning organization. Their Educational Resources page helps kids learn more about air quality – and about simple, everyday actions that can help keep the air clean – through its clean air video and children’s book.

<http://airqkc.org/community/education/>

OMAHA, NEBRASKA

As part of the Omaha-Council Bluffs (Nebraska) ozone reduction campaign, its MPO, the Metropolitan Area Planning Agency has developed a curriculum and activity guide designed for 3rd to 5th grade teachers. Although the curriculum and activity guide were designed to be used in the classroom, there are a number of lessons and activities that can also be used at home. The curriculum also includes links to many other online resources from the EPA and other air quality organizations.

Little Steps. Big Impact. Air Quality Curriculum Unit

<http://4cleanair.org/sites/default/files/Documents/Omaha-AirQualityCurriculumUnit-Final.pdf>

Little Steps. Big Impact. Activity Guide

<http://4cleanair.org/sites/default/files/Documents/Omaha-LSBIActivityGuide.pdf>

LANE COUNTY (SPRINGFIELD), OREGON

The Lane Regional Air Protection Agency has identified several AirNow educational resources that they are making available to parents and children while kids are at home.

Acid Rain (PDF) – <https://bit.ly/3blmtL9>

Acid Rain (Interactive) – <https://bit.ly/2WYMjq6>

AQI “toolkit” for teachers/parents – <https://bit.ly/2w5WLBj>

AQI flash game for K-1 – <https://www3.epa.gov/airnow/k1/k1.html>

AQI Flash game for ages 7-10 – <https://bit.ly/2w4S6iU>

Ozone flash game – <https://www3.epa.gov/airnow/o3qb/o3qb.html>

SOUTH CAROLINA

The South Carolina Department of Health and Environmental Control have identified several useful educational resources for K-12 students and teachers.

<https://www.scdhec.gov/environment/k-12-schools-students-teachers>

OLYMPIC REGION (THURSTON, MASON, PACIFIC, JEFFERSON, CLALLAM AND GRAYS COUNTIES), WASHINGTON

The Olympic Regional Clean Air Agency has been providing teachers, parents and students with resources for the past month through its “Home Learning” blog posts. Links to those posts are provide below:

<https://www.orcaa.org/learning-opportunities-at-home/>

<https://www.orcaa.org/teaching-tools-for-kids-stuck-at-home/>

<https://www.facebook.com/photo?fbid=3153056504725240&set=a.900580306639549>

WISCONSIN

The Wisconsin Department of Natural Resources offers a suite of resources for students and teachers (including non-formal educators like scout leaders, public health staff and more recently parents managing virtual learning with their children)

- Preschool – 3rd grade:
 - [Clean Air Healthy Children](#) introduces preschool through third-grade children to the concepts of respiratory health, air quality, and caring for the environment with in-class and take-home activities. This guide is also available in [Spanish](#).
 - How Lungs Work poster ([front](#) and [back](#)) shows the respiratory system and how asthma affects the lungs. Also available in Spanish ([front](#) and [back](#)).
- 3rd-5th grades:
 - [Air, Air Everywhere](#) – Teachers use this guide to teach about the composition of air, what air pollution is, where it comes from, and what we can do about it. The ten teacher/parent-led, hands-on activities in this guide are aimed at 3rd through 5th grades, but can be adapted for other levels.
 - [Give Burn Barrels the Boot!](#) – Use this guide filled with background information, activities and facts to teach children about open burning, air quality and human respiratory health.
- 7th-12th grades:
 - [Where's the Air?](#) teachers activity guide that introduces students to the concept of atmospheric structure and the formation of ground level ozone.
- All ages
 - Wisconsin DNR's [Clean Air Month](#) webpage is filled with resources, videos and information on Wisconsin's clean air.

FEDERAL AGENCIES

U.S. ENVIRONMENTAL PROTECTION AGENCY

EPA has been using social media to share educational resources for students, parents and teachers to use at home during COVID-19. Some of EPA's approved "Tweets" include:

- Have any kids in K-3? Visit our children's site to learn about the effects of #acidrain on the ecosystem surrounding Lucy Lake.
https://www3.epa.gov/acidrain/education/site_kids/index.htm
- For older students, check out our acid rain site that focuses on the basics of #acidrain. It even has games for a more entertaining educational experience.
https://www3.epa.gov/acidrain/education/site_students/index.html
- If you have time and vinegar to spare, play around with some of the at-home experiments detailed in our Acid Rain Teacher's Guide. Learn how to make a natural pH indicator, observe the effects of acidity on plants, and more! <https://www.epa.gov/sites/production/files/2017-03/documents/teachersguide.pdf>
- At home with the kids? Check out EPA's Air Quality Index (AQI) toolkit for teachers. It has age-appropriate lesson plans on air pollution that you can do with materials around the house.
https://www.airnow.gov/index.cfm?action=resources.aqi_toolkit
- Check out online, interactive games that teach younger kids about air quality basics at https://www.airnow.gov/index.cfm?action=agikids_home.index
- Kids can learn more about how our actions and the weather affect air pollution with the online game, Smog City 2.
<https://www.airnow.gov/index.cfm?action=student.index>
- For air quality lesson plans you can do at home with kids ages kindergarten through high school, go to https://www.airnow.gov/index.cfm?action=flag_program.educational or https://www.airnow.gov/index.cfm?action=flag_program.educational_sp for Spanish versions.

- Learn about air pollution from your backyard! Check out the Air Strips lesson plan for kids in grades 6-8.
<https://www3.epa.gov/airnow/flag/Air-Strips-LP.pdf>
- The What's Up There Besides Air? lesson plan is a great way to teach your kids in grades 3-5 about air quality while everyone's stuck at home.
<https://www3.epa.gov/airnow/flag/Whats-Up-There-Besides-Air.pdf>
- Here's a fun and educational activity about air quality that you can do with your kids in grades K-5 while at home.
<https://www3.epa.gov/airnow/flag/birds-eye-lesson-nov-2019.pdf>
- AirNow has a website just for kids! Check it out at
https://www.airnow.gov/index.cfm?action=agikids_home.index
- Even the Magic School Bus benefitted from the Diesel Emissions Reduction Act. You can get your own Magic School Bus book about reducing school bus emissions for free – but quantities are limited.
<https://www.epa.gov/dera/magic-school-bus>
- Print out the Burn Wise Wood Smoke activity book, courtesy of @AlaskaDEC and Carolyn Kelly of the Quinault Tribe, to give your kids a fun way to learn about best burn practices.
<https://www.epa.gov/burnwise/wood-smoke-activity-book>
- Coco the chameleon can't change colors, and his asthma is acting up. Read how Coco and his friends at Lizard Lick Elementary solve this mystery as they learn about air quality and how to stay healthy when the air quality is bad. <https://www.epa.gov/asthma/asthma-picture-book-why-coco-orange>
- It's a bird, it's a plane, no, it's the sound of learning! When your kids are discovering more about noise pollution in these printable materials, all you'll hear are pages turning.
<https://www.epa.gov/clean-air-act-overview/noise-pollution-materials-kids-and-teachers>
- We love jigsaw puzzles and Legos as much as the next person, but this ozone science crossword puzzle is fun, educational, and has no missing pieces! <https://www.epa.gov/ozone-layer-protection/ozone-science-crossword-puzzle>

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

"Fifty years ago, on April 22, 1970, people around the world marked the first Earth Day. Thousands gathered to raise awareness about the importance of protecting our beautiful planet for future generations.

On this Earth Day, as we physically separate ourselves by necessity, we can still collectively appreciate the wondrous beauty of our planet and the extraordinary science that helps us understand how it all works – and we can do it from our homes."

#EarthDayAtHome with NASA

<https://www.nasa.gov/feature/goddard/2020/earthdayathome-with-nasa>

U.S. DEPARTMENT OF ENERGY

The U.S. Department of Energy makes available free educational resources to explore energy, building science and solar energy in the classroom and beyond.

<https://www.energy.gov/eere/education/education-resources>