



**U.S. National Library of Medicine**  
*National Network of Libraries of Medicine*



# Air Quality Awareness Week 2019

**Program Kit**

[nnlm.gov/all-of-us](http://nnlm.gov/all-of-us)

**All of Us**  
RESEARCH PROGRAM

The  
Future of  
Health Begins  
With You

# Activate!

## Program Summary

**Air Quality Awareness Week 2019** is Monday, April 29 – Friday, May 3, 2019. This National Health Observance is a collaboration led by the Environmental Protection Agency (EPA) and several government agencies that care about air quality.

Human health is influenced by genetics, lifestyle, and the environment. Perhaps the thing we take for granted the most is the air we breathe. Air is essential for life, and clean air is essential for health. Air pollution can be caused by many things, such as emissions from vehicles, industrial operations, and wildfires. Depending on the weather or other natural events, outdoor air pollution can vary day to day, and indoor air pollution is also a concern. Breathing polluted air can have short term and long term health effects, especially for children, older adults, and people with compromised respiratory systems or lung disease. While we can't control some types of air pollution, steps can be taken to improve the air quality around us and reduce exposure to bad air. Understanding air quality is the first step to improving the air around us and knowing what to do to improve our lung health. Libraries can make an impact through a week-long awareness program about air quality. By engaging community members with fun programs and quality, easy-to-understand information about air quality, the lives and health of the entire community can be enhanced.

## Air Quality Awareness Week Resources from the EPA

**Air Quality Awareness Week** (April 29 – May 3, 2019)

<https://www3.epa.gov/airnow/airaware>

**Environmental Protection Agency (EPA):** Air Quality Index (AQI) Basics (English and Spanish)

<https://airnow.gov/index.cfm?action=aqibasics.aqi>;

[https://airnow.gov/index.cfm?action=aqibasics.aqi\\_sp](https://airnow.gov/index.cfm?action=aqibasics.aqi_sp)

**AirNow**, <https://airnow.gov/>, provides air quality forecasts and real-time maps for your state, zip code, or current location and forecasts.

**Air Quality Index: A Guide to Air Quality and Your Health**,

[https://www3.epa.gov/airnow/aqi\\_brochure\\_02\\_14.pdf](https://www3.epa.gov/airnow/aqi_brochure_02_14.pdf)

Air Quality Index Levels of Health Concern	Numerical Value	Meaning
Good	0 to 50	Air quality is considered satisfactory, and air pollution poses little or no risk.
Moderate	51 to 100	Air quality is acceptable; however, for some pollutants there may be a moderate health concern for a very small number of people who are unusually sensitive to air pollution.
Unhealthy for Sensitive Groups	101 to 150	Members of sensitive groups may experience health effects. The general public is not likely to be affected.
Unhealthy	151 to 200	Everyone may begin to experience health effects; members of sensitive groups may experience more serious health effects.
Very Unhealthy	201 to 300	Health alert: everyone may experience more serious health effects.
Hazardous	301 to 500	Health warnings of emergency conditions. The entire population is more likely to be affected.

**Air Quality Index:** A Guide to Air Quality and Your Health, [https://www3.epa.gov/airnow/aqi\\_brochure\\_02\\_14.pdf](https://www3.epa.gov/airnow/aqi_brochure_02_14.pdf)

**Ozone:** Air quality is affected by components in the air, such as ground-level ozone and particulate matter. Do you or work outdoors during the summer? Be aware of **ozone** air quality levels, especially in the summer or when outdoor temperatures are high. Avoid exercising or working outdoors when **ozone** levels are high.

<https://toxtown.nlm.nih.gov/chemicals-and-contaminants/ozone>

**Particulate Matter:** Particulate matter, also called PM, is the term for tiny particles found in the air. These particles include dust, dirt, soot, smoke, and liquid droplets. The size of particles is directly linked to their potential for causing health problems. Particulate matter that are of most concern are PM-10, which is coarse, and PM-2.5, which is fine.

<https://toxtown.nlm.nih.gov/chemicals-and-contaminants/particulate-matter>

## National Library of Medicine Resources

**MedlinePlus**, <https://medlineplus.gov/>, is a great resource for extensive consumer health information in both English and Spanish. MedlinePlus features hundreds of health topics, including extensive information about air pollution and related health conditions. Specific Health Topic pages related to air quality include Air Pollution, Indoor Air Pollution, Secondhand Smoke, and health conditions such as Asthma and COPD.

**Tox Town**, <https://toxtown.nlm.nih.gov/>, provides consumer-level information on everyday locations and situations where you might be exposed to indoor/outdoor toxic chemicals in the air. This site can help you better understand risks of exposure, potential health effects, and how to protect yourself.

**Environmental Health Student Portal**, <https://kidsenvirohealth.nlm.nih.gov/> provides educational materials about environmental issues that can affect health just for middle school students. The site includes an entire Air Pollution section, including information about indoor and outdoor air pollution, including particulates and ozone.

## Other Quality Resources

**Centers for Disease Control and Prevention**, <https://www.cdc.gov/air/>, CDC's National Center for Environmental Health plans, directs, and coordinates a program to protect the American people from environmental hazards.

**Kids Environmental Health**, <https://kids.niehs.nih.gov/> is a resource for kids, parents, and teachers to find educational materials related to health, science, and the environment we live in today. Librarians will appreciate the quality, free materials to use with science programs for kids; visit the site to find activities, lesson plans, games, and even coloring books related to air quality and other topics.

**AirNow Publications in Spanish:** [https://airnow.gov/index.cfm?action=pubs\\_spanish.index](https://airnow.gov/index.cfm?action=pubs_spanish.index)

# Collaborate!

## Possible Partnerships

This program could involve many community partnerships and activities. Some examples include:

- Contact local or state air quality agencies for resources and inquiries about educational events and programs <https://airnow.gov/index.cfm?action=airnow.partnerslist>
- Seek out researchers to engage patrons with a citizen science project that concerns air quality in your community.
- Colleges and Universities (as a connection for guest speakers and local experts)
- Local public health departments
- K-12 schools (science educators)

Look for inspiration with other libraries' focus on environmental issues in communities. Libraries are connecting patrons with projects, tools, and local experts for engagement. A great example is the Carnegie Mellon University partnered with over 100 libraries who empowered community members to borrow an air quality monitor to detect indoor particulate matter.

<https://www.wesa.fm/post/libraries-offer-air-quality-monitors-through-cmu-program>.

For help connecting with potential partners in your community, contact your NNLM Regional Medical Library, <https://nnlm.gov/regions>.

# Educate!

## Relevant NNLM and NLM Trainings

**Information about NNLM Trainings**, <https://nnlm.gov/training>, and full course descriptions can be found online. Many of the courses are offered throughout the year online; however, feel free to reach out to your local NNLM representative to discuss the possibility of in-person training for your library. NNLM course offerings include:

### **TOXNET® Tutorials & Recordings**,

<https://nnlm.gov/nto/training/tutorials-recordings/toxnet-tutorials-recordings> Here you can find self-paced tutorials and recordings from the NNLM National Training Office covering various TOXNET databases.

**ToxTutor**, <https://toxtutor.nlm.nih.gov/> ToxTutor is a self-paced tutorial covering key principles of toxicology for users of the National Library of Medicine (NLM) chemical and toxicology databases.

## Videos, Infographics, and other Resources

**Air Pollution 101**, YouTube video from National Geographic: <https://youtu.be/e6rglsLy1Ys>. This short video answers the question “What is air pollution?” Learn how greenhouse gasses, smog, and toxic pollutants affect climate change, and human health.

**Be Smart, Protect Your Heart from Air Pollution, YouTube Video from EPA:**  
<https://youtu.be/yHXUPZCUuGs>

**Educational videos for middle school students:**  
<https://kidsenvirohealth.nlm.nih.gov/generic/3/videos>

**Infographics and Posters:**  
The Air Quality Index and You:  
[https://www3.epa.gov/airnow/weathercasters/Fact\\_Sheet\\_AirNow\\_the\\_AQI\\_and\\_You.pdf](https://www3.epa.gov/airnow/weathercasters/Fact_Sheet_AirNow_the_AQI_and_You.pdf)

## Program Plan

### Air Quality Flag Program

Libraries can help community members learn about air quality and its impact on health by implementing this easy, low-cost program. From the U.S. Environmental Protection Agency, the Air Quality Flag Program uses brightly colored flags based on the U.S. EPA’s Air Quality Index (AQI) to notify people and their communities about outdoor air quality conditions. Organizations raise a flag outside or as part of an indoor display each day that corresponds to their local air quality forecast. The Flag Program creates public awareness of outdoor air quality conditions. The program could be done in conjunction with other health-related programs, such as indoor or outdoor exercise programs or health information sessions. For instance, there are materials about air pollution and heart health, and a fun, innovative program about air quality and asthma for children aged 4-8 called “Why is Coco Orange?” Extensive materials are available in both English and Spanish. The website includes three sections: Get Started, Outreach Materials, and For Schools. Resources in each of the sections will be directly useful or could be modified for library programs.

### Resources (see also Spanish resources)

**Four Steps to Starting an Air Quality Flag Program:**  
[https://airnow.gov/index.cfm?action=flag\\_program.four\\_steps](https://airnow.gov/index.cfm?action=flag_program.four_steps)

**Quick Start Guide:** <https://www3.epa.gov/airnow/flag/quick-start.pdf>

**Program Fact Sheet:** <https://www3.epa.gov/airnow/flag/aqfp-fact-sheet-2015.pdf>

**For all of the resources in English or Spanish, visit the links below:**

**English:** [https://airnow.gov/index.cfm?action=flag\\_program.index](https://airnow.gov/index.cfm?action=flag_program.index)

**Spanish:** [https://airnow.gov/index.cfm?action=flag\\_program.spanish](https://airnow.gov/index.cfm?action=flag_program.spanish)

## Audience

All community members, but programs can be customized for different age groups.

### **Program materials for children age 4-8: Why is Coco Orange?**

[https://airnow.gov/index.cfm?action=picture\\_book.index](https://airnow.gov/index.cfm?action=picture_book.index)

### **Heart Disease, Stroke, and Outdoor Air Pollution:**

<https://airnow.gov/index.cfm?action=pubs.heartdisease>

### **The Air Quality Flag Program and Older Adults:**

[https://airnow.gov/index.cfm?action=flag\\_program.olderadult](https://airnow.gov/index.cfm?action=flag_program.olderadult)

## Planning

### **The Coordinator's Handbook includes everything you need to make your program a success:**

<https://www3.epa.gov/airnow/flag/handbook-2015.pdf>

## Marketing

### **Posters, Messaging, Infographics, and more on the Outreach Materials page:**

[https://airnow.gov/index.cfm?action=flag\\_program.outreach](https://airnow.gov/index.cfm?action=flag_program.outreach)

## Implementation

Order flags and other materials. Schedule events to coincide with Air Quality Awareness Week or Earth Day. Children's librarians can incorporate the program into storytime with the "Why is Coco Orange" book and coloring pages, along with bulletin board displays or presentations for adults using the materials on the website. Physical activities could be planned that correspond with the air quality on any given day, using the Outdoor Activity Guidance tools

[https://airnow.gov/index.cfm?action=flag\\_program.outdoorguid](https://airnow.gov/index.cfm?action=flag_program.outdoorguid). The week-long observance could also include guest speakers from the local air quality district, interactive activities, presentations, and demonstrations on air quality and things anyone can do to reduce air pollution.

## Evaluation and Reporting

For evaluation of this program if you receive NNLM funding -- The NNLM National Evaluation Office, <https://nnlm.gov/neo/members/evalmaterials>, has a list of evaluation methods that should be used when completed this project. For any questions, please feel free to contact your regional NNLM office. Library staff involved in the project will fill out the *All of Us* Partner Staff Questionnaire as well as any additional follow-up surveys for staff.

## Example Budget

Summary budget is presented as an example. You can edit and modify budget to fit the needs of your library, your individual library program plan, and prices of your library's approved vendors for materials.

Item	Price	Quantity	Total
Flags (Air Quality Flags set nylon)	\$100.00	1	\$100.00
Flag pole bracket/holder	\$10.00	1	\$10.00
Printing – Coco book, coloring pages, posters and handouts	\$300.00		\$300.00
Staff time to plan and conduct the program	\$30.00	40	\$1200.00
<b>Total</b>			\$1610.00

## Program Plan

### Air Quality Awareness Resource Information Session

#### Resources

- Tablets or computers
- Prompts or scenarios that can be used to explore resources

#### Audiences

- Adaptable to ages tween and up

#### Planning

The goal of the health information session is to introduce patrons to health information resources including MedlinePlus and resources about air quality and pollution such as Tox Town and the Environmental Health Student Portal. This program allows for participants to improve skills of both health literacy and digital literacy. These health information sessions can be targeted towards certain population groups (students, seniors, educators, new adults) or with a particular environmental topic in mind (water quality, air quality, etc.). Decide on what focus would be best for your community and their health information needs. Schedule a space to conduct the health information sessions.

#### Marketing

Highlight the program in the library's program newsletter and/or website.

## Implementation

### *Steps for the program lesson plan*

- Schedule a space where you can hold an Air Quality health information session for interested participants without much interruption. This is also a good program to do for outreach to a set population (senior center, youth drop-in center, school, etc.) and/or focus on a specific health issues (Asthma, COPD).
- Introduce participants to the NLM environmental health resources to review Air Quality topics (like Tox Town or Household Products Database),. Provide an overview, demonstrate how to use, and assist if they are navigating it on their own device along with you.
- It may also be helpful to prepare prompts or scenarios that attendees can use to look up health information. For instance, provide a list of possible environmental issues that are relevant to your community for further examination.
- These health information sessions can be as short or long as you would like, experiment with different formats for your patrons. Conduct short 15-minute demonstrations of online and mobile app resources at outreach events or health fairs or long in-depth instruction in conjunction with a computer class or health-focused guest speaker at the library. The possibilities for this program are numerous and all aim to show the library as a source of connecting patrons with trusted information.

## Evaluation and Reporting

For evaluation of this program if you receive NNLM funding -- The NNLM National Evaluation Office, <https://nnlm.gov/neo/members/evalmaterials>, has a list of evaluation methods that should be used when completed this project.

Please use a post-survey questionnaire for event evaluations. NNLM funded projects and events will require Activity Reporting Form completion post event. For any questions regarding evaluations, please feel free to contact NNLM Coordinator connected to the funding award.



# Program Plan

## Air Quality Awareness through Citizen Science

(Note - this will only be relevant if there is an actual project in the city or area where the library is located)

### Resources

- Handouts of NLM Resources and Local Environmental Resources
- Air Quality Awareness Citizen Science Toolkits
- Guest Speaker (optional)

### Audiences

- Adaptable to various ages

### Planning

Create citizen science toolkits for specific project(s) or create them based on the interest of target populations for the program. You can search for citizen science projects here:

- **National Geographic Citizen Science Projects**, <https://www.nationalgeographic.org/idea/citizen-science-projects/>
- **Scistarter**, <https://scistarter.com/>, find, join, and contribute to science through providing people access to more than 2700 searchable formal and informal research projects and events.
- **CitizenScience.gov**, <https://www.citizenscience.gov/>

**U.S. Environmental Protection Agency: Citizen Science Project:** SmokeSense to increase awareness associated with exposure to wildfire smoke and advance scientific understanding of the relationship of wildfire smoke and health impact.

- **EPA: Smoke Sense Study: A Citizen Science Project Using a Mobile App:** <https://www.epa.gov/air-research/smoke-sense-study-citizen-science-project-using-mobile-app>

### Marketing

Highlight the program in the library's program newsletter and/or website. Create library displays surrounding air quality and environmental issues that will be discussed in the program.

## Implementation

This program can be led by interested library staff who take participants out of the library to gather information. If the citizen science kits are available for independent check-out from patrons, provide opportunities for feedback and follow up about projects or opportunity for different participants to connect and share information about their findings.

- **Tox Town's Community Action Tools**, <https://toxtown.nlm.nih.gov/community-action-tools>
- **CDC's National Environmental Public Tracking**, <https://ephtracking.cdc.gov/InfoByLocation/>
- **Librarian's Guide to Citizen Science**, (from Arizona State University and SciStarter). Learn about creating air quality kits that can be checked out by patrons or installing an air quality sensor at the library to monitor local air quality conditions and to give your patrons access to the data:  
[https://s3-us-west-2.amazonaws.com/orrery-media/misc/CitSci\\_Librarians\\_Guide\\_03\\_12.pdf](https://s3-us-west-2.amazonaws.com/orrery-media/misc/CitSci_Librarians_Guide_03_12.pdf)

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Item	Price	Quantity	Total
Tablets or computers for NLM resource interaction/ demonstrations	\$350.00	8	\$2,800.00
Purple Air PAll outdoor air sensor for library	\$229	1	\$ 229.00
Paper and printing for programs	\$100.00	1	\$100.00
Supplies for Citizen Science Kits (air sensors, tablets with downloaded apps, notebooks and pencils, tips for best practices, and additional supplies for selected projects)	\$2,000.00	1	\$2,000.00
Marketing and Promotion, printing and copying	\$100	1	\$100.00
Staff Time: to plan and conduct program (per hour)	\$30.00	80	\$2,400.00
<b>Total</b>			<b>\$7629.00</b>

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