



RESEARCH & SOLUTIONS

Activity 1: Research One or Two Environmental Issues

Conduct research to learn more about the topic(s). Research is a systematic and organized process for learning more about something. Written materials, the Internet, interviews and even visuals are all sources for research. Your teacher also will provide you with sources for your research.

How do you go about conducting research?

Choose an issue you may want to explore. List all the questions you have about an issue. Asking questions is the best way to start your research and will help you narrow your search.

To help you get started, below are **examples** of questions for the issue of “Air Pollution.” Please note these are only examples and do not include all the questions you could list for an issue or answers to those questions.

1. What is air pollution?

Contamination of the indoor or outdoor environment by any chemical, physical or biological agent that modifies the natural characteristics of the atmosphere. (Source: World Health Organization)

2. What are the major causes of air pollution in the U.S.?

Mobile sources (e.g. cars, trucks, buses) and stationary sources (e.g. factories, refineries, power plants) as well as indoor sources (e.g. some building materials and cleaning solvents). Some air toxins are released from natural sources such as volcanic eruptions or forest fires).

(Source: U.S. Environmental Protection Agency)

3. What are the major causes of air pollution in your state?

Mobile sources (on road vehicles such cars, trucks, and off-road vehicles such as planes, construction equipment, locomotives, marine engines and planes, boats). Also consumer products (paints, residential heater and fuel use, gasoline stations, dry cleaners, and commercial heating).

(Source: New Jersey Department of Environmental Protection)

If you selected two topics of interest from the chart (pg. 16), go through the same process to learn more about it.



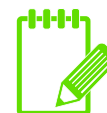
TIP

If you have a school library or media center, the librarian or media center coordinator could be a good source for how to conduct research and find resources.



DON'T FORGET

Always cite and record the source of your information. If you use the information word for word, the information should be in quotation marks.



NOTE

You may have additional questions to answer for the issue you select. The 3 questions are only examples.



RESEARCH & SOLUTIONS

Decide your questions.

Choose an issue you may want to explore. List all the questions you have about an issue. Asking questions is the best way to start your research and will help you narrow your search.

To help you get started, below are **examples** of questions for the issue of “Air Pollution.” Please note these are only examples and do not include all the questions you could list for an issue or answers to those questions.

1. What is _____?
2. What are the major causes of _____ in the U.S.?
3. What are the major causes of _____ in your state?



TIP

Consider a bulletin board or other space where you could add and ask others to add one or more “did you know” facts found in your research.

Enter your key research findings in the third column of the chart.

Discuss your research findings with your team members.

**Example topic provided below.*

What did you find that was of particular interest to the team?

***Example Topic**

After discussing the findings about the causes of air pollution and specifically air pollution in your state, the team agreed to find out more about reducing air pollution caused by cars.

This option will require more targeted research to answer the question: How can car emissions be reduced? Examples of findings from this additional research are:

Minimize vehicle use – plan fewer and more efficient trips (multiple errands in one trip, walk or bike when you can, take public transportation, carpool, use ride-sharing-services, work from home).

Drive wise – go easy on the gas pedal and brakes, maintain your car—get regular checkups, follow the manufacturer’s maintenance schedule, and use the recommended motor oil.

Choose fuel-efficient vehicles – electric vehicles, plug-in hybrid electric vehicles, hydrogen fuel cell vehicles, cleaner burning gasoline vehicles.

Don’t idle – unnecessary idling of cars, trucks, and school buses pollutes the air, wastes fuel and causes excess engine wear.

Optimize home deliveries – ask online companies to have your packages sent in one shipment and with minimal packaging.

Use efficient lawn and gardening equipment – use manual mower for small lawns, look for new technologies such as electric and battery-powered machines that are quieter and pollute less than gas-powered ones, properly maintain lawn and garden equipment.

(Source: U.S. Environmental Protection Agency)



RESEARCH & SOLUTIONS

Environmental Issue Chart

Environmental Issue	Issue Definition	Key Findings
Climate Change		
Loss of Biodiversity		
Air Pollution		
Plastic Pollution		
Water Pollution		
Water Scarcity		
Use of Chemicals, Pesticides & Toxins		
Agricultural Practices		
Food Waste		
E-Waste		
Fast Fashion & Textile Waste		





RESEARCH & SOLUTIONS

Activity 2: Select One Cause/Problem to Address

**Using our example topic from the previous list: Stop or limit car idling*

State your cause or problem as a claim (belief).

Example: Car Idling causes air pollution.

Share the evidence of your claim supported by your research.

Example: Idling a vehicle reduces the vehicle's fuel economy, costs more money, and creates pollution. Idling for more than 10 seconds uses more fuel and produces more emissions that contribute to smog and climate change than stopping and restarting the engine.

(SOURCE: U.S. Department of Energy)

Activity 3: Find and Decide on a Solution and Set a Project Goal

With your team, brainstorm ideas for a solution. Be bold and creative in your possible solutions. No idea is too small or too big or too silly.

If you do not find a solution from your first round of brainstorming, try again.

Example of a Solution Using Our Example Topic

A "no idling" campaign to stop cars idling at the front of the school.

1. Decide on a project goal. This is what you want to happen as a result of your solution (action).

Example Topic: Our team's project goal is: As a result of this project, there will be no cars idling in front of the school.

2. Keep this goal in mind when making decisions about your solution. This outcome will determine your project's success.

3. Decide on a strategy for keeping all project-related materials in one place. It may be Google Classroom, other digital platform used by your school, or a dedicated notebook. It is important is that all team members have easy access to the project material.