

Give Burn Barrels the Boot

Educating Wisconsin 4th and 5th-graders on the issues posed by the burning of household trash: An Activity Guide for Teachers and County Health Specialists

Roleplaying, songwriting, singing, and thinking! A fun, hands-on, informative environmental workshop that requires few outside resources! Meets many Wisconsin Model Education Standards!

Introduction:

What happens when we burn our trash, and are there better ways to handle it?

The kit contains lessons, activities and songs for Wisconsin's children to help them think about the impact of the open burning of trash and to consider those impacts when they make decisions (now or as adults) about trash disposal.

People have always burned trash and garbage. Thousands of households, mostly in rural areas, small towns and villages, still burn their trash and garden debris instead of recycling, reusing, composting or landfilling. However, the composition of trash and garbage today (especially items containing plastic and various other chemicals) can turn the burning of household waste into a real health concern. Household waste tends to burn at a relatively low temperature and with poor combustion and, as a result, generates all sorts of pollutants. Burning garbage creates air pollution containing toxic chemicals and particles that can take a toll on even healthy lungs. (Definition of "toxic": "Harmful, destructive, or deadly; poisonous.") Individuals with respiratory conditions such as asthma may suffer as a consequence. Burning garbage can also generate chem-

icals known as dioxins, which are highly toxic to people and wildlife. The ashes and unburned wastes that are left often contain high levels of metals like lead and cadmium, which are especially dangerous to young children. Today, the Wisconsin Department of Natural Resources estimates that about 500,000 burn barrels exist in the state. We need to consider alternatives to burning our household wastes.

"Give Burn Barrels the Boot" provides 4th and 5th grade students with the tools necessary to begin learning and thinking about what we do with the waste we produce. Through the use of various activities, a video, and even a kids' songwriting workshop, teachers and county health personnel will discover a new way to



approach this largely under-appreciated topic. We encourage teachers to work closely with county health personnel and the Wisconsin Department of Natural Resources when planning these sessions.

The program includes information about what happens to garbage when we burn it, the health consequences of burning waste and encourages students to think about alternatives. *Note: The Department of Natural Resources has developed a Web site containing extensive information and resources about open burning. The site can be found at <http://www.dnr.state.wi.us/Environment.html>. Then click on the button for “open burning.”*

The program consists of three parts:

Part 1: Introduction and science focus. Students learn about the environmental and health consequences of open burning.

Part 2: Social studies focus. Students use maps to locate landfills and recycling centers. Students conduct a brief survey.

Part 3: Songwriting workshop. A music or classroom teacher can lead this workshop. Students create their own songs!

(A wall poster is included in the kit, and suggestions for Wisconsin Model Academic Standards follow each activity.)

Part 1. Introduction: Science Focus. What happens to garbage when we burn it?

Activity #1: “Give Burn Barrels the Boot” Video

Approximate time

Introduction and discussion (5 minutes)
Give Burn Barrels the Boot video (10 minutes)

Objective

Introduce students to the potential environmental and health consequences of burning waste. A teacher or a guest presenter (typically a county health specialist) will help students think critically by leading a discussion on open burning and the use of burn barrels and how it relates to air and other pollution in rural areas.

The “Give Burn Barrels the Boot” video is a fun way for students to learn about pollution generated from open burning, how it can affect their lung health and to begin thinking about alternatives to burning waste.

Materials needed

Give Burn Barrels the Boot video.

Background information

“Air pollution is a big problem all over the world. You’ve heard of acid rain? That damages trees and lakes. Ground level ozone in cities? That hurts people’s lungs. Carbon dioxide emitted from power plants and cars? Many scientists think carbon dioxide is accelerating changes in our climate, giving us hotter summers here and melting the glaciers at the North and South Poles.”

“There’s another source of air pollution that most people don’t know about, maybe because everyone thinks air pollution comes only from cities. But this kind of pollution comes from the country!! It’s called open burning.”

(Teachers: Your students already know more about open burning than lots of other Wisconsin kids that do not live in the country. After completing this activity, they will also know how open burning affects our environment, and what they can do to protect our air. We hope young kids will teach others about it.)

Method

- ❖ Begin discussion with kids by asking the following questions. Consider recording their answers.
 - ✓ How does your family get rid of garbage?
 - ✓ How many of you have a burn barrel at home? (*Show of hands.*)
 - ✓ How many of your friends or grandparents have a burn barrel or burn pile?
 - ✓ How many of you help your family and friends burn?
 - ✓ What have you seen burned in burn barrels? (*Let students give different examples.*)
 - ✓ How many of you know someone with asthma or another lung disease?
- ❖ Explain to students that burning trash is convenient, but it can produce a lot of pollution and people next door sometimes can get sick from the smoke. Some people have even written to the DNR asking for help to stop their neighbors from burning garbage! They may have asthma or other lung diseases that can get worse from breathing smoke. Sometimes the pollution goes way up in the sky and adds to pollution from cities!! All these are reasons why, in Wisconsin, burning most kinds of garbage is against the law.
- ❖ Show “Give Burn Barrels the Boot” video to students.

This video will provide students with more background information about the use of burn barrels and open burning.

Activity #2: “What’s in a burn barrel?”

(Includes description of Wisconsin laws regulating open burning.)

Approximate time

25 minutes.

Objective

Students will learn what happens when different household items are burned as trash and what kinds of air and other pollution can result from open burning. Refer to Pollutant Chart on page 7.



Materials Needed

- ❖ Cardboard burn barrel from the teacher tool kit.
- OR
- ❖ Teachers may build their own burn barrel kit using the following materials:
 - ✓ Small trash can as burn barrel
 - ✓ Items to include in the burn barrel: Diaper; newspaper and white paper; piece of tire; aerosol can or bottle half-full of cleaning solution; greasy rags; treated or painted wood; food scraps.

Background information (Activity follows)

What are the consequences of burning?

Burn barrels are **unhealthy, unnecessary, un-neighborly, unsafe, and frequently used illegally.**

Unhealthy:

Burn barrels burn at low temperatures, with poor combustion and no pollution controls and, as a result, generate different kinds of toxins. Today's garbage frequently contains plastics and other synthetic materials. The smoke from burning garbage contains toxic compounds, often including dioxin, furans and other carcinogens. Dioxins, for example, are among the most toxic man-made chemicals in our environment. A single burn barrel can generate as much dioxin as a municipal incinerator serving thousands of households. The ash, which some folks place on their garden, may contain heavy metals such as lead and cadmium.

People used to think burning was a good way to get rid of trash. That's why, 20 or 30 years ago, many municipal incinerators were built. They had air pollution emissions controls built in, but were often very expensive to operate. Today, Wisconsin has only **two** municipal incinerators left that meet air pollution control standards. But, according to recent estimates, we've got more than 500,000 miniature incinerators (burn barrels) operating in people's backyards in Wisconsin.

Typical burn barrels burn at up to 500 degrees Fahrenheit. If this sounds very hot, think twice. Regulated municipal incinerators must operate at temperatures reaching 2,200 degrees Fahrenheit! The high temperatures ensure complete combustion, reducing the amount of toxins produced or destroying them completely.

Unnecessary:

Ask your students to look in their own burn barrel, if they have one. All Wisconsin communities are required to offer effective recycling programs and use licensed engineered landfills. And the state recycling law requires recycling of glass, many plastics, paper, cardboard, and newspapers. Therefore, these items should not be placed in burn barrels.

Today, in many rural areas, waste hauling companies offer wheeled carts for end-of-driveway collection of waste and recyclable materials. In other areas, drop-off sites for trash and recyclables are maintained by local officials for the convenience of residents. In areas where the homeowner pays for trash collection directly to the hauler, the cost is generally less than 50 cents a day.

Unneighborly:

Unlike regulated incinerators, burn barrels operate at ground level and the smoke lingers right there in the area. Each year, DNR and local officials get thousands of complaints from neighbors because of smoke, odor or health concerns, or because they are worried the fire may spread to their property.

Frequently Used Illegally:

Open burning of household solid wastes, whether or not in a burn barrel, is prohibited by law, with limited exceptions. This prohibition includes all plastic materials, kitchen wastes, dirty or wet paper wastes, treated or painted wood, furniture, and demolition material - or any other material that creates a nuisance.

The exceptions (for households only - not businesses) include lawn and garden debris, small quantities of clean, untreated, unpainted wood and clean paper waste that is not recyclable, unless limited or prohibited by local ordinance.

Outdoor fires for cooking, or for "warming up," are okay and do not require any special approvals unless environmental conditions pose a wildfire risk.

Unsafe:

Open debris burning is one of the leading causes of wildfires in Wisconsin, causing about one-third of wildfires in areas under special fire control management. Fighting these preventable fires costs taxpayers hundreds of thousands of dollars. And, each year, debris fires put the safety of fire fighters and private citizens at risk. Open burning is needlessly costly and dangerous to you, your family and to firefighters. And, if someone's debris fire causes a wildfire, they could have to pay hundreds or thousands of dollars for the costs of putting it out.

What are alternatives to burning?

There are many. Teachers can help students think about the following alternatives:

- ❖ Reduce waste: buy in bulk or products with less packaging.
- ❖ Reuse items: reuse it yourself or find someone else who can use it, have a yard sale or

donate items that are in good condition to an organization that can sell or reuse them.

- ❖ **Recycle:** newspaper, office paper, cardboard, corrugated cardboard, magazines, aluminum, metal and acceptable plastics.
- ❖ **Compost:** leaves, grass, vegetable food waste and plant clippings.
- ❖ **Chip:** brush and clean wood to make mulch or decorative chips.
- ❖ **Dispose:** waste materials that can't be recycled, reused or composted in a licensed landfill.

Method

Each barrel contains seven items. Ask seven kids to come singly to pull one item out of the barrel. Each item provides a discrete opportunity to discuss the above objectives. It might be good to write the following basic points on flash cards too, if deemed helpful.

First item (except for food scraps, the order may vary): Diaper. What do you think happens when a disposable diaper is burned? [Answer: plastics cause toxic air pollution, etc.] In fact, ANY kind of burned plastic—like bags and toys—creates toxic air pollution! [Discuss acrid smells of burning plastic, hold up a Baggie, etc.] Can you think of an alternative to burning a diaper or other plastic things? Answers: landfill, cloth diapers, others?

Second item: Newspaper and white paper. What do you think happens when paper is burned? [particulates into lungs, waste of a good recyclable resource, plus some paper is coated and more toxic when burned.] What about glossy paper from magazines? [The coatings and ink can contain harmful chemicals and metals. This is a good time to mention asthma and other lung diseases. Ask kids if they know someone with breathing problems. Ask them if they've even gotten close to a burn pile. What happened? Coughing, maybe.] What are alternatives? Is paper always "real" trash? [recycling, reuse, etc.]

When we're done with our barrel, we're going to think a little more about particulates and asthma.

Third item: Piece of tire. What happens when a tire is burned? [toxic gases, particulates. Mention asthma again.] Alternatives? Can tires be re-used? [Some playgrounds use shredded tires as a mat. Recycling, landfill.]

Fourth item: aerosol can, or bottle half-full of cleaning solution. What happens, etc. [toxics.] Is this "real" trash? Alternatives? [landfill, introduce concept of "clean sweeps," not available everywhere. Kids may not know that special "hazardous waste" landfills exist in some states for these things.]

Fifth item: Greasy rags: "Real" trash? What happens when burned, etc. [toxics.] Alternatives: [landfill, others.]

Sixth item: Treated and/or painted wood. Does this have to be "real" trash? What happens when burned, etc. [toxics, particulates.] Alternatives? [landfill.]

What about regular wood? [Pull out a piece of clean siding or a 2x4.] Is this "real" trash? What can you do with it instead? [create heat in wood stove, reuse.] Does regular wood create air pollution? [See if kids figure this out.]

Seventh item: Food scraps. "Real" trash? What happens when burned, etc. Alternatives? [compost. Using food scraps for compost takes them out of the category of "real" trash.] What do you think you could use compost for? Did you know that some people use WORMS to help make compost?

[Standards addressed: Fulfills State Standards #H.8.3. Science in Social and Personal Perspectives.

Understand the consequences of decisions affecting personal health and safety. **A.4.3.Environmental Education.** Develop answers, draw conclusions, and revise their personal understanding as needed based on their investigations.

A.8.5. Environmental Education. Use the results of their investigations to develop answers, draw conclusions, and revise their personal understanding. C.8.1. EE: Define and provide examples of environmental issues, explaining the role of beliefs, attitudes, and values. **B.8.17.Environmental Education.** Knowledge of environmental processes and standards: Explain how human resource use can impact the environment; e.g., erosion, burning fossil fuels.]

Activity #3: "Decisions, decisions. What's trash, what's not always trash, and what can we do with it?"

Approximate Time

20 minutes

Objective:

We want students to think critically about how we classify garbage and what it means to throw things out. This activity requires kids to think about choices. An information sheet on typical pollutants from burn barrels is included.

Background information:

Lots of garbage is hard to classify. We make decisions daily about what to keep and what to toss. How do we classify garbage? Do we make a distinction between "real" trash (for landfills) versus other trash that we can reuse, recycle or use for composting?

Materials

No materials needed.

Method

Have each student, or teams of two students, imagine disposal options for any item they see in their classroom or school. Discuss the possible ways each item could be classified (i.e., paper: Is it "real" trash? What about glass bottles? Broken rulers? Worn-out chairs? Ten-year-old computers?) and what alternatives exist. Should each item be placed in the trash? Should any of the items be burned? Have children seen any of the items burned in a barrel? What might the school do with this trash?

[Standards addressed: Fulfills State Standards #A.8.5.Environmental Education. Use the results of their investigations to develop answers, draw conclusions, and revise their personal understanding. B.8.15. Analyze how people impact their environment through resource use. B.8.20.Environmental Education. Identify types of waste and methods of waste reduction.]

Activity # 4: "Burning anything makes pollution."

Approximate time

10 minutes

Objective

A graphic way to show how easy it is to dirty our air, and that the dirt goes into our lungs.

Materials needed

Candle
Pyrex glass
Pieces of sponge
Safety glasses



Background information

Everything that burns produces smoke. The smoke contains particulate matter (soot), which can irritate our respiratory system.

When trash is burned, little particles of soot and dust are created, which we call particulates. Burning clean wood, newspapers or leaves also produce small particulates. When we breathe the smoke, larger particles are trapped through our nose, throat and upper respiratory airways. Eventually we get rid of them. However, the smaller-sized particulates can travel deep into our lungs where they can stay trapped. Over time, this can cause respiratory disease. Symptoms caused by particulate matter include cough-

POLLUTANT CHART



Item	Can Burn?	Pollutants given off during burning	Alternatives
Dirty diaper; Plastic food bag	No	Cancer causing chemicals and metals Acid gases, such as hydrochloric acid vapor	Use cloth diapers; Recycle plastic containers; Dispose in landfill.
Newspaper; White notebook paper	Yes	Carbon Monoxide Small Particulate Matter Cancer Causing chemicals, from paper coatings & inks	Recycle.
Glossy magazine	No	Toxic chemicals and heavy metals. Carbon Monoxide Small particulate matter	Recycle.
Tire shred	No	Cancer causing chemicals such as heavy metals & dioxins. Acid gases. Lead, which adversely affects children's intellectual development. Carbon monoxide and small particulate matter contained in black oily smoke.	Must be recycled.
Aerosol can; Bottle of household cleaner	No	Chemicals in can or bottle are released in smoke. Chemicals in can or bottle make new toxic gases when burned. Aerosol cans can explode when heated and metal shrapnel can shoot out of the barrel.	Dispose in landfill "clean sweep."
Greasy rags	No	Carbon monoxide. Small particulate matter.	Dispose in landfill.
Treated and painted wood	No	Arsenic is released to the air. Arsenic is a poison and can cause cancer. Carbon monoxide Small particulate matter	Reuse; Use larger pieces to build birdhouses, etc.; Dispose in landfill.
Clean wood	Yes	Carbon monoxide Small particulate matter	Use in fireplace/wood furnace; Reuse larger pieces; Chip for mulch.
Dry leaves	Yes	Chemicals known to irritate our respiratory system.	Compost.
Food scraps	No	Carbon monoxide Small particulate matter	Compost vegetable food waste; Dispose in landfill.
Wet materials	No	Burn at low temperatures, which causes incomplete combustion. More chemicals are released as well as Carbon monoxide.	Landfill anything that cannot be recycled, reused or composted.

ing, wheezing, chest pain or shortness of breath. People with asthma are affected the most. Particulates can trigger an asthma attack.

Method

We're going to make some of our own particulates right now! The teacher will first don safety

goggles, then light a candle and cover it with Pyrex glass. The glass becomes black with soot. Blow out the candle. After the glass has cooled, wipe it with a sponge. Those holes in this sponge are like the pores in your lungs, and they can fill up with black soot if you breathe enough of it. It can be bad, even for people who don't have asthma! For people who do, it's worse.

Activity #5: "How asthmatics feel when their air is polluted."

Approximate time

10 minutes.

Objective:

How does it feel to have impaired breathing?

Materials needed

Hollow cocktail or coffee stirring straws.

Background information

Air pollution affects the respiratory health of everyone, regardless of age and health status. It can harm our immune system, which is our defense system against infections. Air pollution can also affect our airways and lungs, by reducing the amount of oxygen we take into our body. We may experience symptoms ranging from mild irritation to the nose, eyes, and throat, to reduced ability to exercise outdoors. Air pollution can also increase the risk of having a respiratory infection. Children, the elderly and persons with asthma are most affected.

Method

Distribute one straw to each student in the class. Ask students to pinch their noses closed and then try to breathe through this straw. It's hard, isn't it? Tell them that people with asthma often have the same experience when they try to breathe, and it gets worse when they inhale smoke from the burning of leaves, trash, paper, wood, and anything else!

[Standards addressed: Fulfills State Standards #C.8.3. Health. Goal-setting, decision-making. Analyze how decisions regarding health behaviors have consequences for themselves and others. A.4.4. Social Studies. Describe and give examples of ways in which people interact with the physical environment, including use of land, location of communities, methods of construction, and design of shelters. C.4.1. Social Studies. Identify and explain the individual's responsibilities to family, peers, and the community, including the need for civility and respect for diversity.]

Asthma Basics

The following information provides an introduction to asthma.

What is Asthma?

Asthma is a chronic lung disease that can restrict a child's ability to breathe.

What is an Asthma Episode?

During an asthma episode or attack the airways narrow and it becomes difficult to breathe.

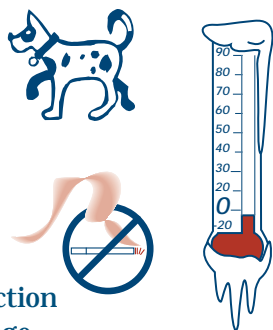
There are three factors that contribute to this occurrence:

1. the muscles around the airways tighten, narrowing the airways;
2. the airways narrow and are blocked due to swelling and inflammation; and
3. more mucus than usual is produced inside the airways, further blocking them.

What Causes an Asthma Episode?

Episodes of asthma are usually caused by some condition or stimulus commonly referred to as an asthma trigger. Triggers vary between children and the following list is not all-inclusive.

- ❖ airpollution
- ❖ tobaccosmoke
- ❖  pets
- ❖ dustmites
- ❖ aerosols,perfumes & strong odors
- ❖ cockroaches
- ❖ woodsmoke
- ❖ exercise
- ❖ viralrespiratoryinfection
- ❖ coldair/weatherchange



What are the Warning Signs and Symptoms of an Asthma Attack?

The main symptoms of an asthma attack are:

- ❖ Shortness of breath
- ❖ Wheezing
- ❖ Tightness in the chest
- ❖ Persistent cough

Warning signs are physical changes that can occur before an asthma episode becomes evident. Warning signs can be recognized hours or days before more obvious symptoms appear. Children will have different signs at different times. The most common warning signs include changes in breathing patterns:

- ❖ Coughing
- ❖ Shortness of breath
- ❖ Wheezing
- ❖ Rapid breathing
- ❖ Breathing through the mouth

Children may also experience:

- ❖ Being easily out of breath
- ❖ Achy chest
- ❖ Dark circles under eyes
- ❖ Mood changes

Some children can experience allergy symptoms, such as a stuffy nose and itchy watery eyes, prior to showing asthma symptoms.

What Types of Medication Help Treat Asthma?

There are many different forms of medications for asthma available through a doctor's prescription. The most common form is the inhaler and medications given through a nebulizer. Asthma medications are used for two main purposes:

1. To help control and prevent airway inflammation. These are also called anti-inflammatory medications. These medications prevent asthma episodes and must be taken on a daily basis.
2. To help relieve asthma symptoms by relaxing the muscles around the airways. These include the bronchodilators. These medications are used during an asthma episode to help open the airways and are taken as needed.

Activity # 6: "This is what happens to someone who has an asthma attack."

Approximate time

10 minutes (longer if used in conjunction with Activity #5 above)

Objective

A pictorial way to look inside the body to understand the effect of pollution on lungs.

Materials needed

Two posters (included in kit). The first depicts normal lung function. The second depicts lungs as they look during an asthma attack.

Background Information

Our respiratory system:

Breathing is something that most of us do without even being aware of it. We breathe 25,000 times per day, taking in nearly 10,000 liters of air. Our respiratory system includes our nose, mouth, throat, windpipe, and lungs. The function of the respiratory system is to supply oxygen to our muscles, organs, and tissues and remove carbon dioxide from the blood. The airways in the nose, throat, and windpipe are lined with mucous and tiny hairs called cilia that trap dust and foreign particles inhaled from the environment. Air enters the nose and mouth, passes through the windpipe and throat before filling the lungs. The exchange of oxygen and carbon dioxide take place in tiny sacs in the lungs called alveoli.

Air pollution can hinder the function of our lungs and diminish the body's natural defense system. Effects can range from irritation and discomfort to even death. Air pollution in the

form of particulate matter, carbon monoxide and hydrocarbons emitted during the burning of yard waste, garbage, and wood irritates the respiratory system. These forms of air pollution can significantly affect the respiratory health of children by altering the structure and function of their respiratory organs.

The following are examples of different forms of air pollution released from open burning and its effects on our health.

- ❖ **Particulate matter** consists of small particles of dust, soot and liquids suspended in air. Particulates can penetrate deeply into the lungs and aggravate existing lung disease in addition to damaging the lung, impairing breathing, and altering the immune system. This pollutant can slow down the exchange of oxygen and carbon dioxide, which causes shortness of breath and increases the workload of the heart.
- ❖ **Carbon monoxide** is the result of incomplete combustion. Carbon monoxide binds to hemoglobin, which carries oxygen in the blood. Therefore, this pollutant hinders the respiratory process by reducing the amount of oxygen delivered to our muscles and organs.
- ❖ **Hydrocarbons** are released during the burning of leaves, garbage, and wood. Hydrocarbons can irritate our lungs, and even some of these substances are suspected or known carcinogens.

Method

Compare and contrast the poster of normal lungs with the poster of lungs during an asthma attack.

Part 2: Social Studies Focus

What else can we do with our household waste in our community?

Activity #7: "Where are our landfills and recycling centers?"

Approximate time

10 minutes

Materials needed

County map
Sticky dots of various colors

Objective

Kids may not know that landfills and recycling centers exist in their counties. They offer bins for recycling cans, bottles, metals, and newspaper. Students and teachers will locate their homes, drop-off recycling centers and landfills on the map.

Background Information

What forms of waste handling and disposal are available in your community? To find out locations of landfills and recycling centers, students and teachers can contact their local county, city, village or town government or their local Wisconsin Department of Natural Resources office. The DNR website also contains contact information for solid waste disposal and recycling. <http://www.dnr.state.wi.us/Environment.html>

Method

Hang laminated map on board and provide sticky dots.

Let's see if we can find your house (or street) on this map. Let's see how far it is from a landfill, drop-off center or transfer station. Have kids write their names on sticky dots and place them on map.

[Standards addressed: Fulfills State Standards #A.4.5. **Social Studies.** Use atlases, databases, grid systems, charts, graphs, and maps to gather information about the local community. E.4.6. **Social Studies.** Give examples of group and institutional influences such as laws, rules, and peer pressure on people, events, and culture.]



Activity #8: "What does our family do with its trash?"

Approximate time

Two class periods, 1 hour each.

Objective

Most kids never question how their family disposes of trash. This will involve a little detective work and expose family members to new ideas. Students will administer an opinion survey.

Method

Distribute survey (next page) to students
 Ask students to interview their family members and neighbors
 Tally or graph results and compare responses from students

[Standards addressed: Fulfills State Standards #**C.4.5.Science**. Use data they have collected to develop explanations and answer questions generated by investigations. **C.4.6.Science**. Communicate the results of their investigations in ways their audiences will understand, by using charts, graphs, drawings, written descriptions, and various other means, to display their answers. **C.4.8. Science**. Ask additional questions that might help focus or further an investigation. **C.8.3. Science**. Design and safely conduct investigations that provide reliable quantitative or qualitative data, as appropriate, to answer their questions. **C.8.10. Science**. Discuss the importance of their results and implications of their work with peers, teachers, and other adults. **A.4.6.Social Studies**. Identify and distinguish between predictable environmental changes, such as weather patterns and seasons, and unpredictable changes, such as floods and droughts, and describe the social and economic effects of these changes. **A.4.7.Social Studies**. Identify connections between the local community and other places in Wisconsin, the United States, and the world. **E.8.1.Mathematics**. Work with data in the context of real-world situations. **E.8.4. Mathematics**. Use the results of data analysis to make predictions, develop convincing arguments, and draw conclusions.]



Open Burning Opinion Survey

Hello, my name is _____

I am a student at _____ School. I am researching trash disposal and open burning issues in the State of Wisconsin. I would like to ask you several questions about this topic.

1. Do you consider air pollution to be an important health problem in your community?

Yes _____ No _____ Undecided _____

2. Do you burn trash?

Yes _____ No _____ If yes, how often? (Circle one)

Once a week

Once a month

Twice a month

More often

If yes, what kinds of trash do you burn _____

3. Do you burn leaves?

Yes _____ No _____ If yes, why do you burn leaves? _____

For the following statements, tell me whether you strongly agree, agree, are neutral, disagree, or strongly disagree. (circle one)

4. Leaf burning is an important contributor to air pollution in our community.

Strongly Agree

Agree

Neutral

Disagree

Strongly disagree

5. State or local government should stop the open burning of trash.

Strongly Agree

Agree

Neutral

Disagree

Strongly disagree

[Note: Burning clean paper and wood, cardboard and leaves is legal in many communities.]

6. People should be required to recycle or reuse clean paper instead of burning it.

Strongly Agree

Agree

Neutral

Disagree

Strongly disagree

7. People should be required to recycle or reuse clean wood instead of burning it.

Strongly Agree

Agree

Neutral

Disagree

Strongly disagree

8. People should be required to compost leaves instead of burning them.

Strongly Agree

Agree

Neutral

Disagree

Strongly disagree

9. Penalties for the illegal open burning of trash should be enforced.

Strongly Agree

Agree

Neutral

Disagree

Strongly disagree

10. Recycling is an important way to reduce open burning.

Strongly Agree

Agree

Neutral

Disagree

Strongly disagree

11. Scientists should investigate whether open burning is an important source of air pollution or health problems in my community.

Strongly Agree

Agree

Neutral

Disagree

Strongly disagree

Please answer the following questions so I can record demographic information:

Person Responding:

Male _____ Female _____

Age: <20 _____ 20-40 _____ 41-60 _____ 60+ _____

Do you have any other comments on this topic?

Thank you for your time!

If you interested, consider sending your survey and results to
DNR Air Education, CE/6, P.O. Box 7921, Madison, Wisconsin, 53707.

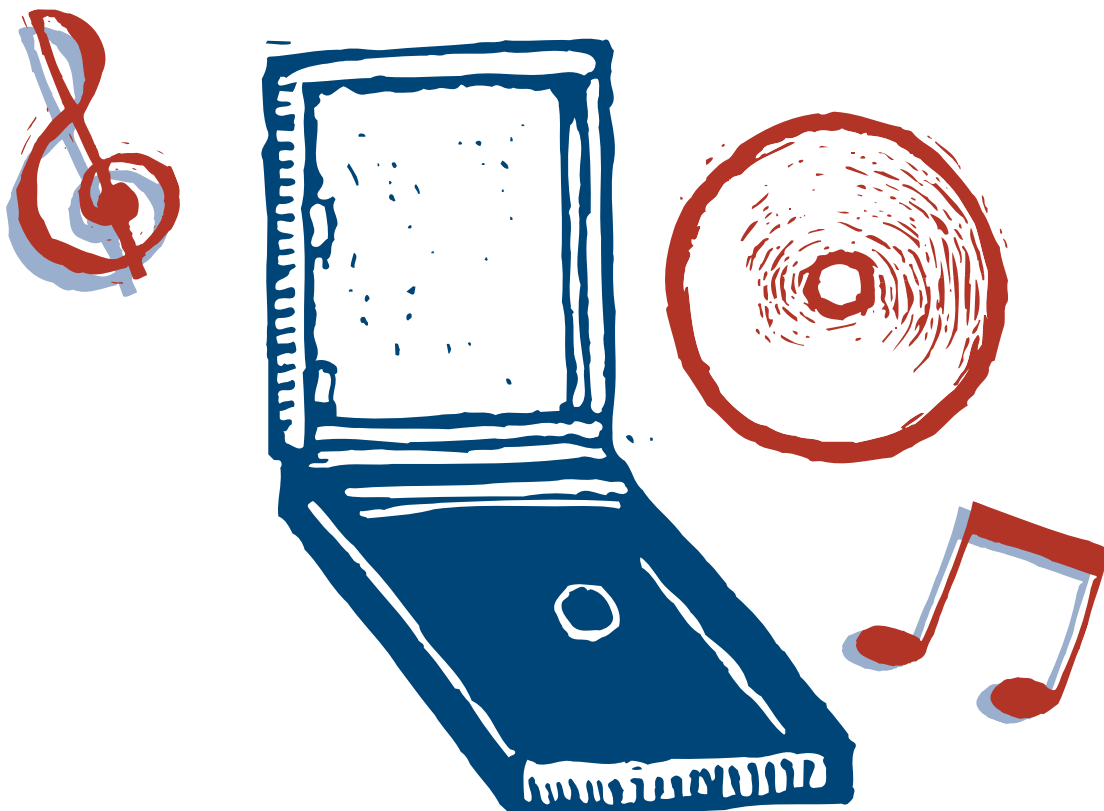
Part 3: Songwriting Workshop.

Activity #9: "Add your own lyrics to this song."



Students will listen to the music on the CD-ROM (provided in kit) which contains original songs written by Wisconsin schoolchildren and folksinger Stuart Stotts. A music or classroom teacher will use the CD-Rom as a guide to encourage kids to write new verses to the songs. A score for both piano and guitar are provided in kit.

[Standards addressed: Fulfills State Standards #**C.4.6. Science**. Communicate the results of their investigations in ways their audiences will understand, by using charts, graphs, drawings, written descriptions, and various other means, to display their answers.
B.8.1. English. Create or produce writing to communicate with different audiences for a variety of purposes.]



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