

Clean Air Kids



Activity Book

Sponsored by:

Hamilton County Environmental Services
Air Quality Management Division

What Causes Air Quality Problems?

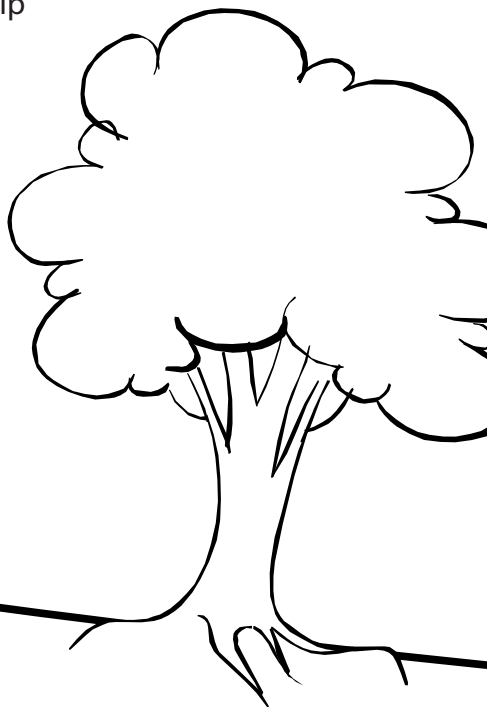
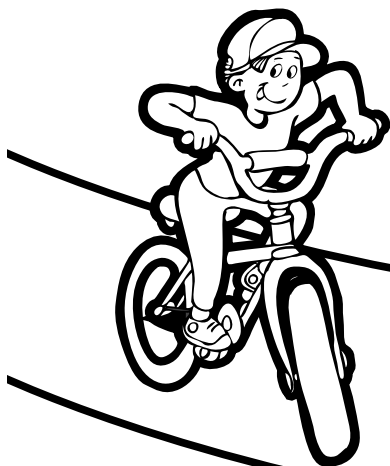
Here in Southwest Ohio we have a pretty big problem that we would like you to help us clean up. That problem is air pollution. Air pollution comes from many different places such as cars and trucks, factories, power plants and even fires. So you don't drive a car or work in a factory, but we all produce air pollution everyday. Even leaving the television or light on uses electricity which is made in our area by burning coal, which produces air pollution.

When we go somewhere in the car, when instead we could safely ride a bike or walk to get there, we create air pollution. When we buy things that we don't really need, we add even more air pollution. Making things in factories releases air pollution, and a factory needs electricity, which causes even more pollution. So you see, there are lots of things that we can do to help keep our air clean! Can you think of something else you can do to clean the air?

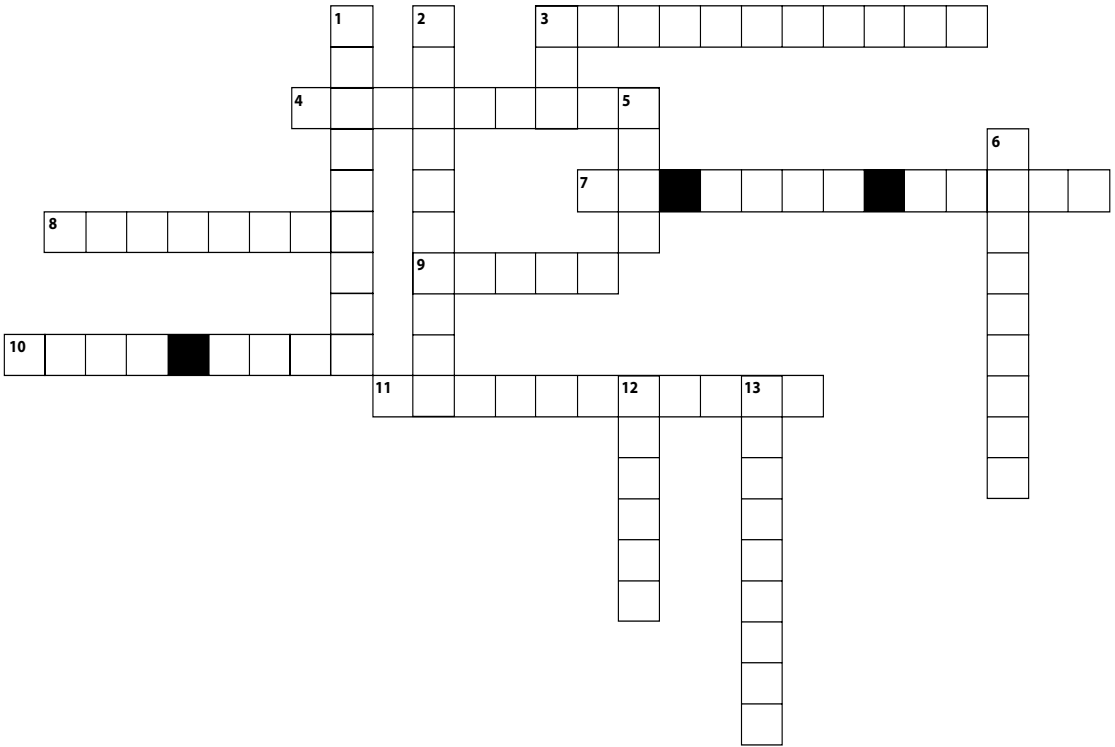
Working Together

We all have to **do our share for cleaner air.**

Industries help by developing new products, like cars that run on cleaner fuels. Elected officials help by passing laws to make sure individuals and businesses protect the environment. Individuals and community groups help by pushing businesses and government agencies to work harder for cleaner air. We all need to work as a team to make sure our air is clean. What can you do to help?



Clean Air Criss-Cross



Across

3. This is another name for cars.
4. Pollen and mold can cause these in many people.
7. By riding the bus or turning off a light, you can _____ for cleaner air. (3 words)
8. This bakes pollution to make smog.
9. This is one of the main pollutants that makes smog.
10. This type of pollution can harm plants, affect rivers and lakes and eat away at statues. (2 words)
11. Global warming is an increase in the _____ of the earth's atmosphere.

Down

1. This harms people and the environment.
2. These gases are thought to cause global warming.
3. This rainbow-colored guide tells us about the air quality.
5. _____ is created when ozone, particulate matter and other pollutants are baked in the sun.
6. Only use this to cut the grass after 6 p.m.
12. Many children and adults suffer from this respiratory disease.
13. This is another name for carpool.

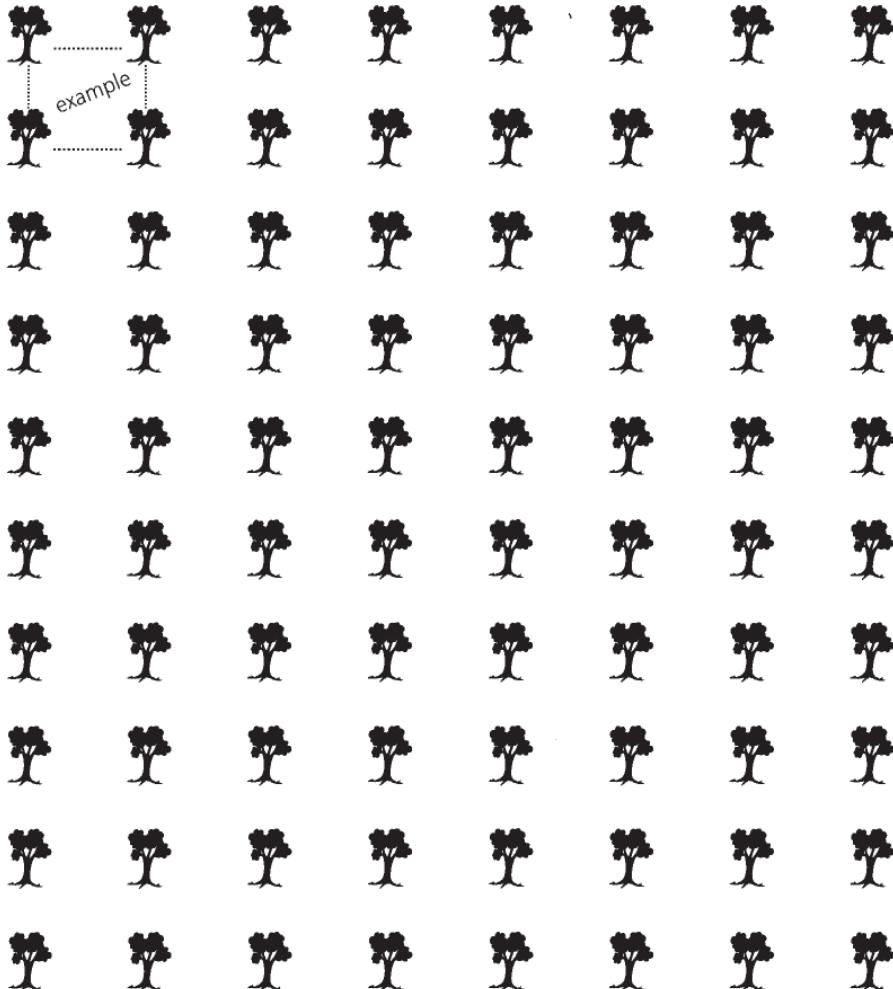
Tree Square

Trees and plants can help clean the air we breathe! Plant leaves and roots can remove and biodegrade certain pollutants in the air.

Trees remove extra carbon from the air when they take in carbon dioxide and convert it to oxygen. This process of changing carbon dioxide to oxygen is called photosynthesis. Photosynthesis allows plants to act as air filters and remove certain pollutants from the air.

Directions

Find a friend and see who can plant the most trees. Each player takes a turn connecting two trees, either horizontally or vertically. The player drawing the last line to form a square puts his or her initials inside the square, and has planted a tree! When all the trees are connected, the player with the most trees planted (squares) wins.



What is smog?



Smog is pollution that comes from things we use everyday like automobiles and lawnmowers. When pollution is mixed with heat and sunlight, smog is formed. Smog is bad for you. It can hurt your lungs and make it hard to breathe.

You can help fight smog!

Watch and listen for Smog Alerts on television, in the newspaper and on the radio. A Smog Alert warns you that the next day will be smoggy. Practice some of the tips in this activity book to help fight smog.

Do Your Share for Cleaner Air

What Can You Do? Word Search

K U Y N R N S R X W N S
L H U N O E C E Z S I C
A R R B L J V F K V A O
W B U S L R H A F T H O
P I D W E R T T E Z C T
G C E S R E E O P K P E
T N N P B O Y Y Q Y I R
L O Q O L A O K O Z R B
C O A C A R P O O L T V
B R R J D G Q N J W F V
D M N M E E L C Y C E R
E R A H S E D I R Q O H

BIKE

CONSERVE

ROLLERBLADE

SKATEBOARD

BUS

RECYCLE

RUN

TRIPCHAIN

CARPOOL

RIDESHARE

SCOOTER

WALK

What can you do to clean the air? A lot! Here are some tips:

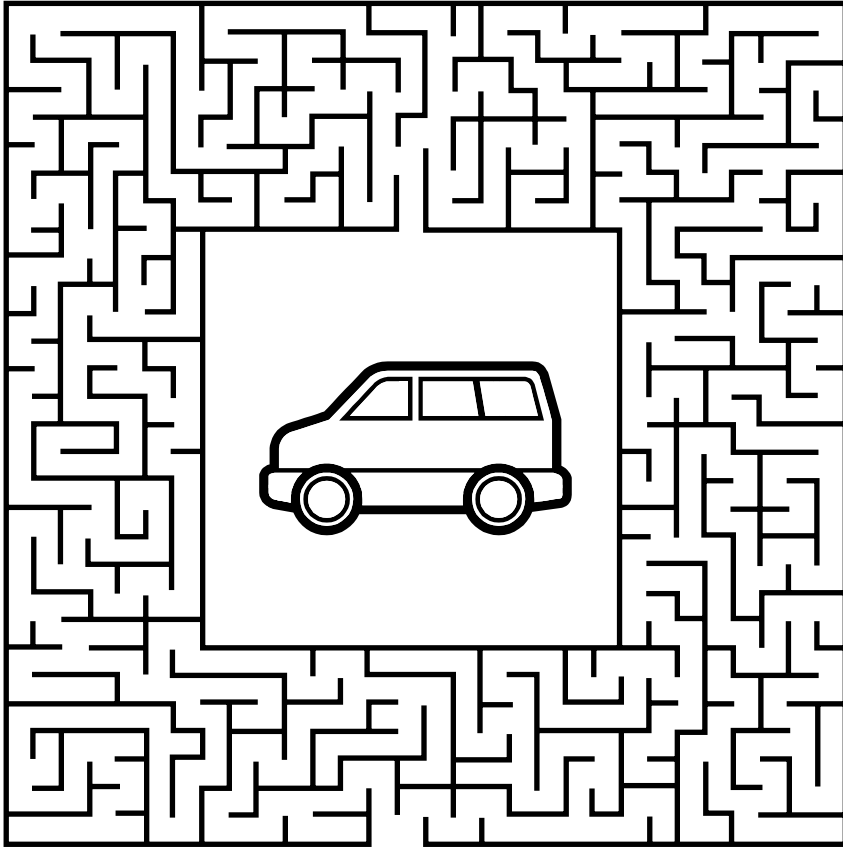
- Walk, rollerblade, skateboard or ride a bike or scooter on short trips.
- Conserve electricity by turning off the lights, the TV and the computer when you're not using them.
- Ride the bus, carpool or rideshare.
- Recycle and buy recycled products — it takes less energy to make products out of recycled materials.
- Tripchain — help your parents plan their errands so that they go to each place one right after the other. This will save gas and reduce air pollution!
- Spread the word — tell your parents and other adults in your life how they can help to clean the air!

Find Your Way to Cleaner Air

Taking good care of your family's car is another way to help make the air cleaner for everyone. Changing the oil, keeping the tires properly inflated and using a clean air filter make the car more efficient and less polluting.

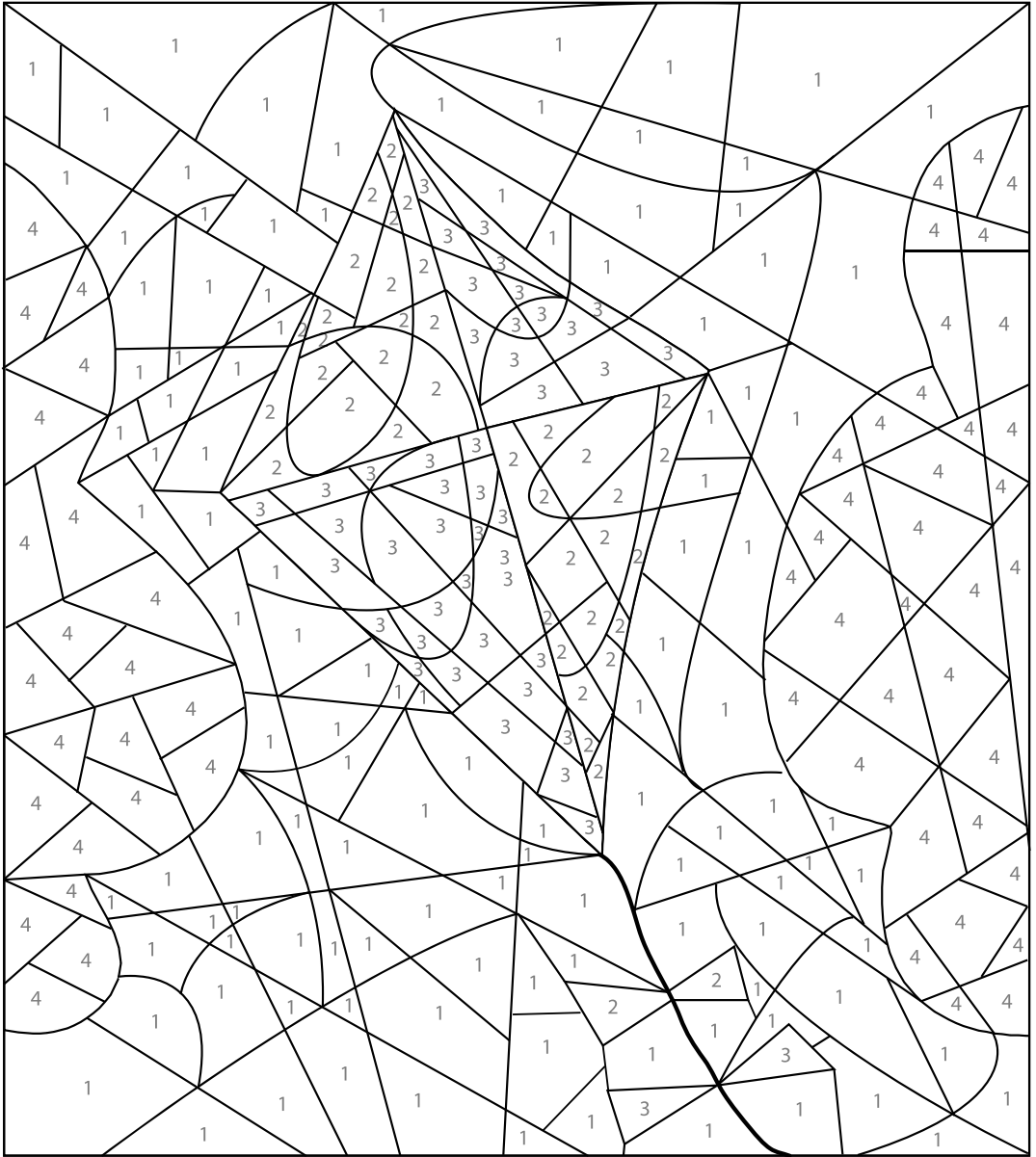
Directions

Lead the minivan through the maze to the Clean Air Kids Garage so it can get its tune-up and run as cleanly as possible!



Color by Numbers

Fill in the numbered sections with their matching colors to reveal an activity we do that involves air. What are some other fun activities that use air?



1: Blue

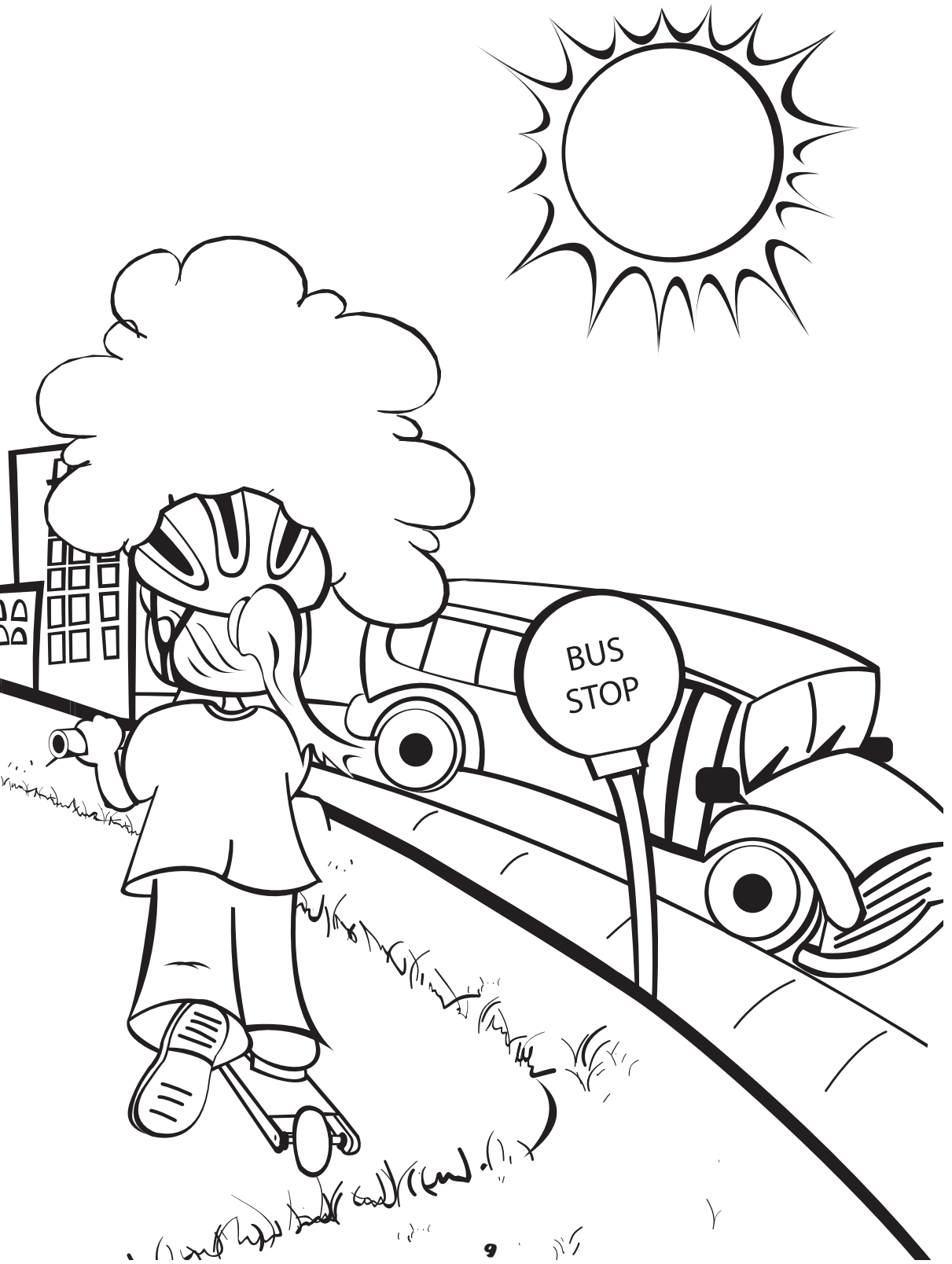
2: Red

3: Yellow

4: White/Grey

Color in this picture of kids helping to clean the air. Draw in your own picture of someone doing a clean air activity!





Clean Air Cryptogram

Numbers have been substituted for letters to hide a secret clean air message! Use the key to change the numbers into a healthy reminder!

1	26	8	5	25	5	6	11	9	8	26	7	16	8	19	8	11	12	10	25	8
---	----	---	---	----	---	---	----	---	---	----	---	----	---	----	---	----	----	----	----	---

17	11	8	5	3	9	8
----	----	---	---	---	---	---

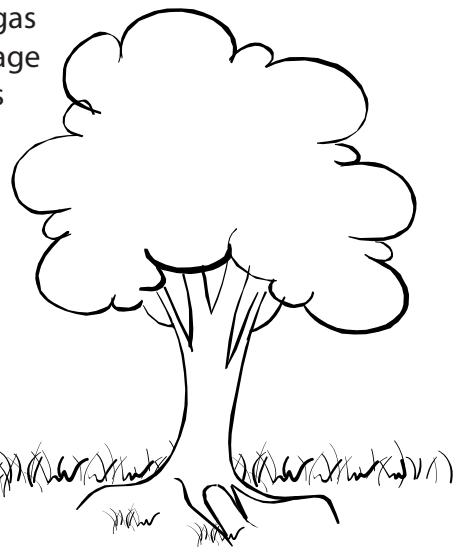
8	5	16	6	8	11
---	---	----	---	---	----

A	B	C	D	E	F	G	H	I	J	K	L	M
5	17	1	14	8	24	21	9	6	23	15	26	4

N	O	P	Q	R	S	T	U	V	W	X	Y	Z
25	10	7	18	11	16	3	22	19	13	20	12	2

Do you have asthma or do you know someone who has asthma? Asthma is a disease of the lungs in which the airways become blocked or narrowed, making it hard to breathe. Over 18 million people in the United States have asthma.

How can you avoid (or help someone you know who has asthma avoid) an asthma attack? By helping to keep the air clean, you can release fewer pollutants, which can help people breathe easier. Ride your bike on short trips, mow the lawn after 6:00 p.m. and tell your parents not to top off their gas tanks. Pay attention to the Air Quality Index (see page 14 of this book) and try not to play outside on days when air pollution levels are high.



Word Scramble

Solve the word puzzles by filling in the blanks with the letters listed to the right of each clue.

1. Often produced by people and dirties the air. LOPTOLI

_ _ _ _ U _ _ _ N

2. Dangerous air pollutants are often called _____ air pollutants (HAPs). USADAROZ

H _ _ _ _ _ _ _ _

3. Small pieces of dirt and dust in the air. ETAARUIT TAREM

P _ _ _ C _ _ L _ _ _ _ _ T _ _ _

4. Harmful kind of air pollution. NEOZ

O _ _ _ _

5. We breathe this gas out. RBCOA IIDEO

_ _ _ _ _ N D _ _ x _ _ _

6. Scientists worry that the Greenhouse Effect is causing this. LLOAG RANIGW

_ _ _ B _ _ _ _ M _ _ _

7. Cars, trucks, planes, trains and boats are all different forms of this. OROTTNAIASP

T _ _ N _ _ _ R _ _ _ _ _

8. Solar, wind and hydro are all reusable types of this. EWEALE ERYE

R _ N _ _ _ B _ _ _ N _ _ G _

9. We should avoid exercising outdoors when the air is this. EUYHAHTN

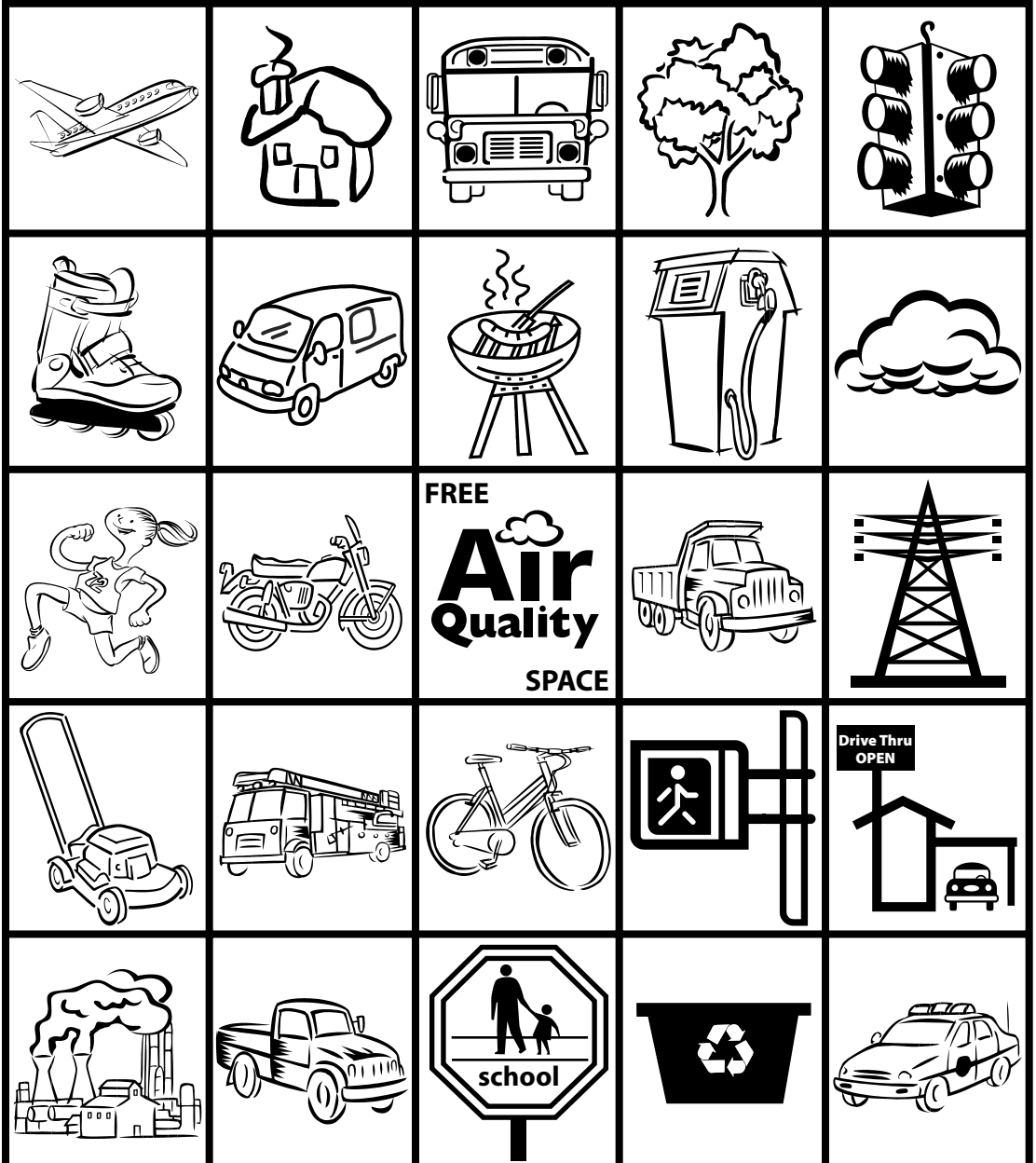
_ _ _ _ _ L _ _ _

10. People who have trouble breathing may suffer from this disease. AMSTA

_ _ _ H _ _

Air Quality Bingo

Here's a game to play when you're on your way home from school or on a trip. When you see one of the objects pictured here, mark it with a pencil. If you are playing with a friend, the first person to see an object should mark it on their card. To win, mark all the objects in a straight line, or play black out and mark all the objects. Good luck!



Air Quality Index

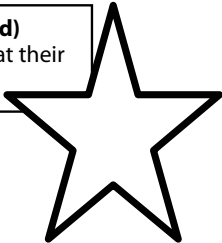
Have you heard about a special color-coded system called the Air Quality Index (AQI)? The AQI tells us how much pollution is in the air every day. If there's a lot of pollution in the air, the AQI gives us tips about what we can do to protect ourselves from the effects of breathing the bad air.

Read what each color means and listen and look for the AQI on the radio, television, in the newspaper or at www.hcdoes.org. This will help you plan your outdoor activities and is a good indicator of how well everyone is doing their share for cleaner air.

Color the stars with their corresponding AQI colors!

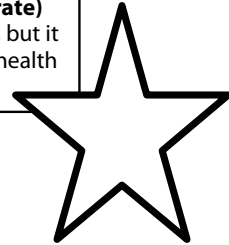
Green (AQI word: good)

Air pollution levels are at their lowest.



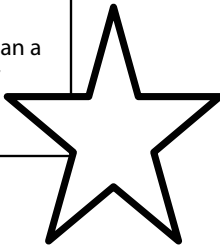
Yellow (AQI word: moderate)

There is some air pollution, but it shouldn't cause too many health problems for people.



Orange (AQI words: unhealthy for sensitive groups)

Air pollution levels are higher than a yellow day. People who are very sensitive to air pollution may experience health effects.



Red (AQI word: unhealthy)

Air pollution levels are high and can affect healthy and sensitive people.



Purple (AQI words: very unhealthy)

Air pollution levels are very high and everyone should try to stay inside in order not to feel the health effects.



Air Quality Quiz

(Circle the correct answer under each question)

1. People with which disease are sensitive to unhealthy air?
 - a) Asthma
 - b) Chicken Pox
 - c) Measles
2. On the AQI, the color orange means:
 - a) Start your engines
 - b) Stay inside
 - c) Unhealthy for sensitive groups
3. What is smog?
 - a) A mixture of pollutants baked by the sun
 - b) A small hog
 - c) A group of air quality organizations
4. What things pollute our air?
 - a) Cars
 - b) Dust
 - c) Factories
 - d) All of the above
5. During which season are ozone levels usually highest?
 - a) Spring
 - b) Winter
 - c) Summer
6. Doing this to your car can make it more fuel efficient and less polluting:
 - a) Painting it blue
 - b) Properly inflating its tires
 - c) Changing its headlights
7. What does carpooling mean?
 - a) Having more than one person in a car going somewhere
 - b) Swimming in a car
 - c) Combining trips to make fewer stops
8. This is the word for having a car turned on but not moving.
 - a) Turning
 - b) Idling
 - c) Speeding
9. On Smog Alert days, after what time should you mow the lawn?
 - a) 10 a.m.
 - b) 1 p.m.
 - c) 6 p.m.

The solutions to the puzzles in this book and more fun games and activities can be found at www.hcdoes.org/airquality/webpages/kidsweb.htm.

Web Resources:

Easy Breathers - play fun interactive games and make your voice heard by sending in your stories, art, songs and information about what you are doing to help in your community. They even have a homework help page.

www.easybreathers.org/

Smog City - control the temperature and wind, change the number of cars or trucks, play with the population and see how you can have an effect on smog conditions.

www.smogcity.com

Air Info Now - calculate how much carbon dioxide your family adds to the atmosphere. Interactive games and activities show how ozone is made and what pollution can do to your lungs.

www.airinonow.com/html/activities.html

Save Planet Polluto - meet the micron monsters at this interactive site!

www.planetpolluto.com/fun.html



This activity book has been designed by the Hamilton County Environmental Services' Air Quality Management Division (AQMD) to help young people learn about air pollution in Southwest Ohio. Our goal is to show students how they can have a positive influence on our air quality. We at the AQMD hope you will go through this book with your children/students and discuss some of the important ideas presented.

If you would like more information about local air quality, call (513) 946-7777, visit www.hcdoes.org or write to:

Hamilton County Environmental Services

Air Quality Management Division, Attn: Public Affairs Specialist
250 William Howard Taft Road
Cincinnati, OH 45219

Air Quality

Hamilton County Air Quality Management Division

Serving Butler, Clermont, Hamilton and Warren Counties

Air Quality Management Division
250 William Howard Taft Road
Cincinnati, Ohio 45219
www.hcdoes.org

HAMILTON COUNTY ENVIRONMENTAL SERVICES

www.hcdoes.org

Air Quality Hotline Numbers:

Air Quality Index/Pollen and Mold Hotline
(513) 946-7753

24-Hour Complaint Hotline
(513) 946-7777
(800) 889-0474 (toll areas)

Smog Information
(800) 621-SMOG

To order a Living With Allergies Brochure
(513) 946-7747