



ADVENTURES IN **AIR QUALITY** with Miguel & Megan



3 COUNTIES

Northampton

Lehigh

Berks

**DRAW YOUR
OWN
BACK COVER!**

www.LVBCAir.org

OZONE

Mr. Healthair teaches his class about air quality. This Summer they will be armed with all the information they need to be Ozone Detectives. Ground-level ozone is bad ozone unlike stratospheric ozone that protects us from the sun. Bad ozone happens when the sun 'bakes' pollutants in the air. This makes the air unhealthy for our lungs.

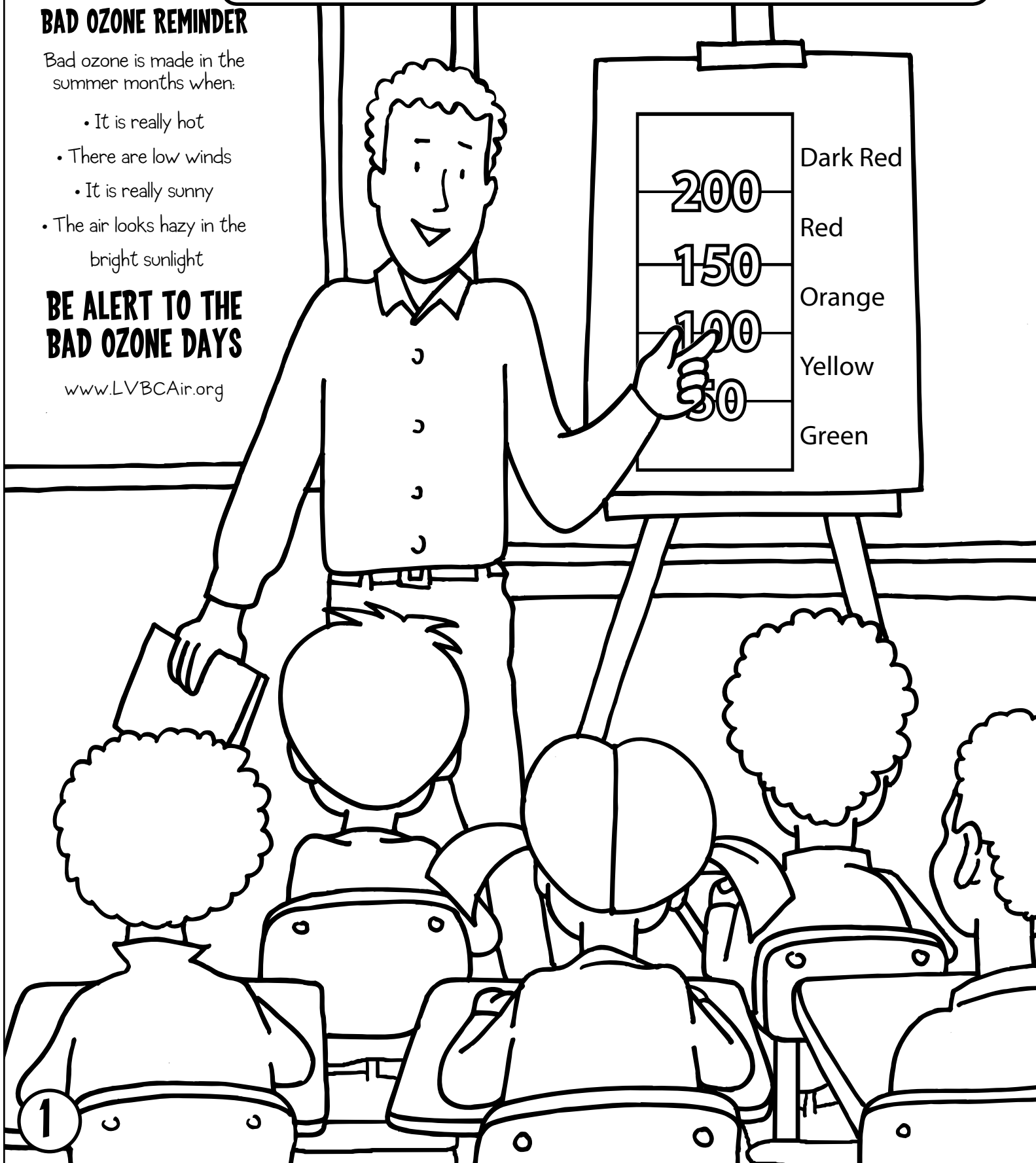
BAD OZONE REMINDER

Bad ozone is made in the summer months when:

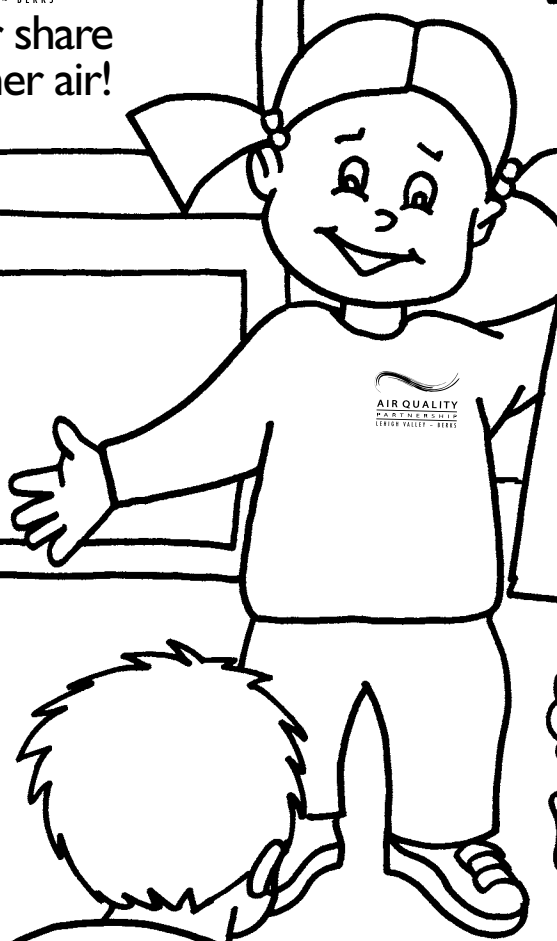
- It is really hot
- There are low winds
- It is really sunny
- The air looks hazy in the bright sunlight

BE ALERT TO THE BAD OZONE DAYS

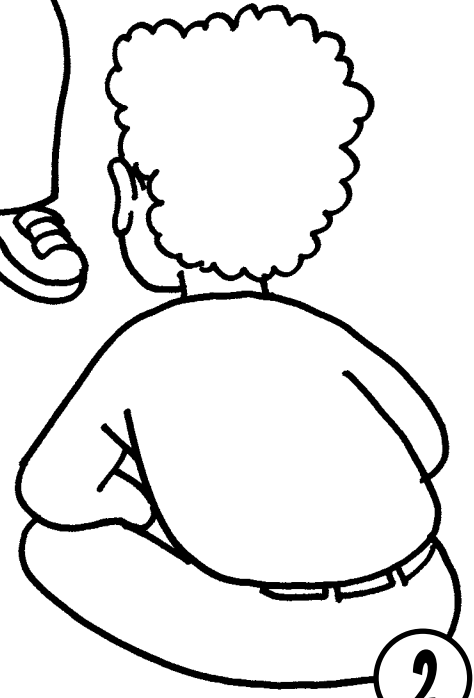
www.LVBCAir.org



A few friends have gathered at Megan's house over the summer to watch the weather forecast. The local news says that today is an **AIR QUALITY ACTION DAY** for **OZONE**. They decide to split up and check the neighborhood to see what people are doing on an Air Quality Action Day. Megan makes a list of good and bad things that might be happening.



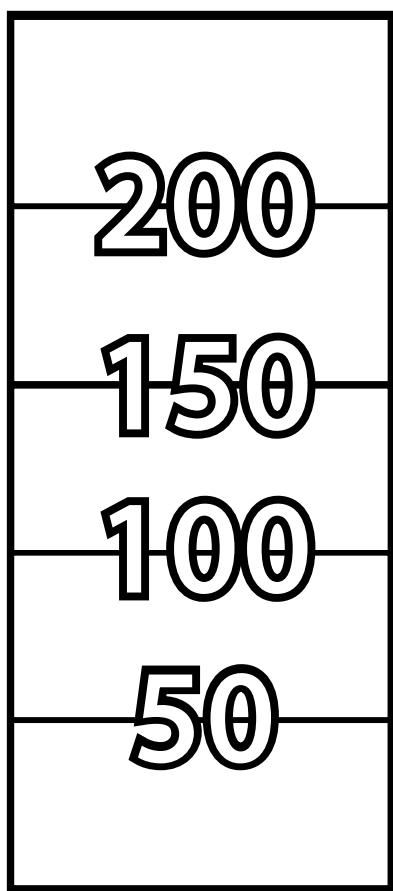
- GOOD**
- walking, riding bike,
 - packing lunch, stopping at the click, carpooling,
 - riding the bus, turning off lights
- BAD**
- gas lawnmower, oil paints,
 - highly emitting factories,
 - charcoal grills, high emissions from vehicles



OZONE

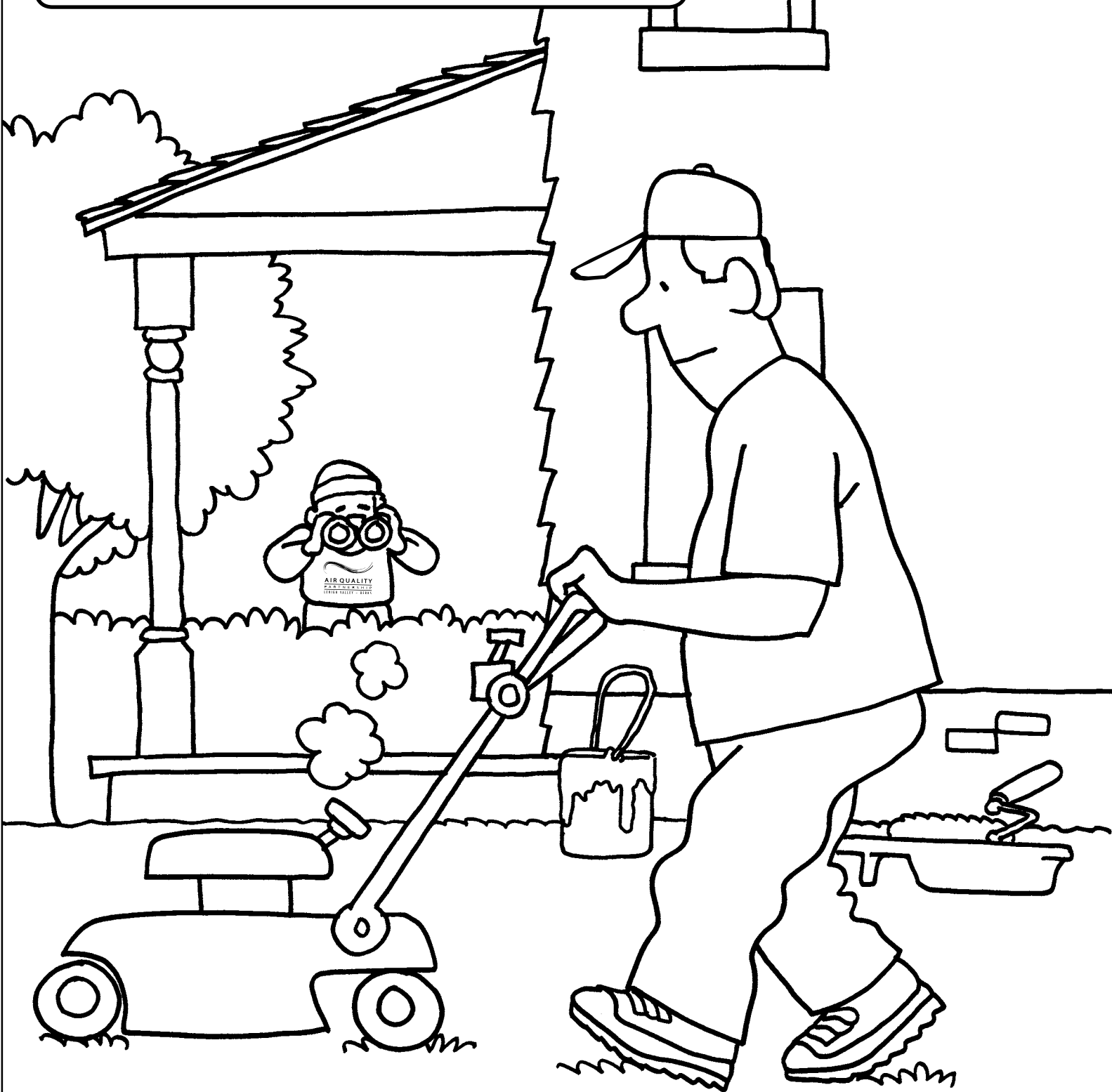
Discover Good and Bad Activities for an Air Quality Action Day

Today is an Air Quality Action Day for **OZONE** (Bad Ozone is too high). Color in the Scale with the correct colors. Then cross out the bad activities with an "X" and circle the good activities.



Just a block away Miguel hears a lawnmower. He decides to check it out. Mr. Jones is mowing his lawn with a **GAS LAWNMOWER**. Miguel also saw that Mr. Jones has been painting his house with **OIL PAINT** earlier.

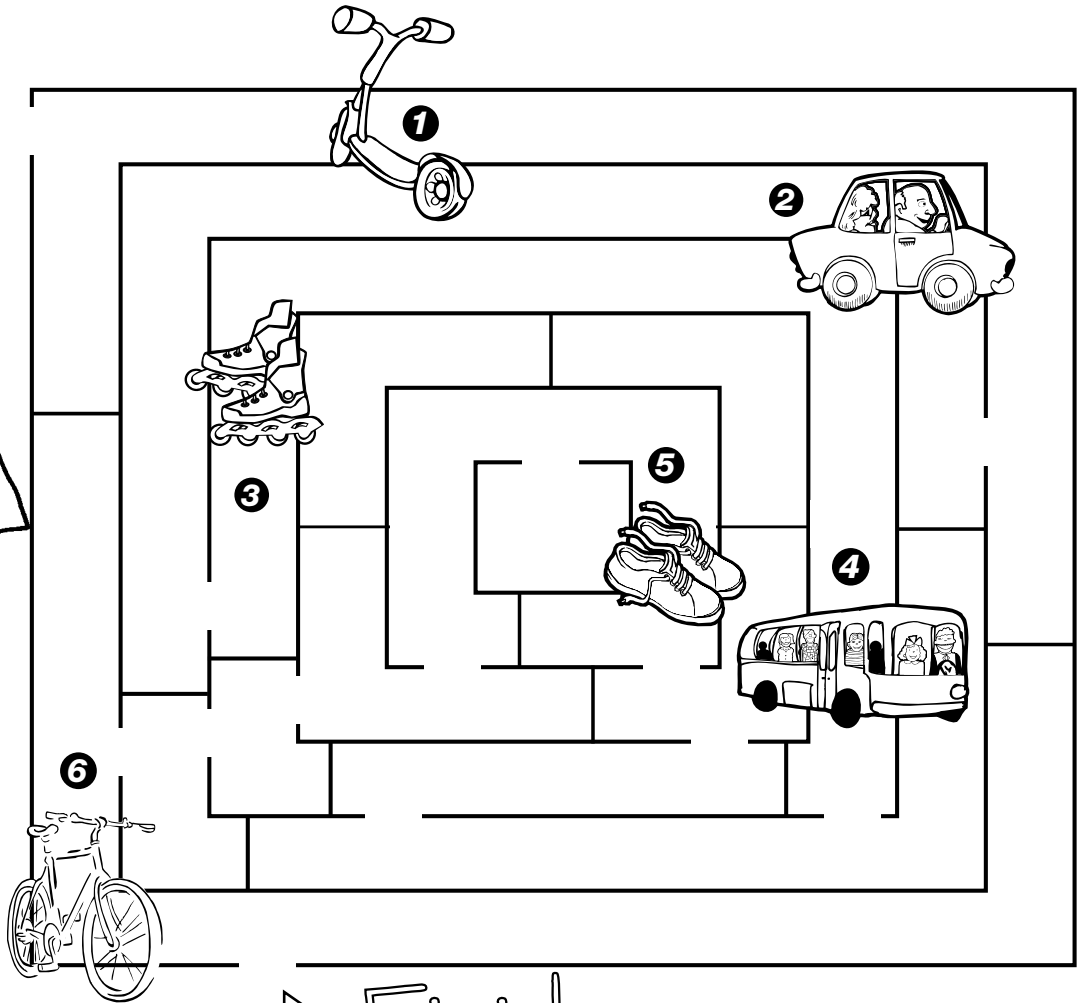
OZONE



Maze Game

Help Miguel and Megan get around town so that they can spot more good and bad activities. Be sure to use transportation that reduces the amount of bad ozone. List the forms of transportation below with their corresponding number.

Start →



→ Finish

1. _____

4. _____

2. _____

5. _____

3. _____

6. _____

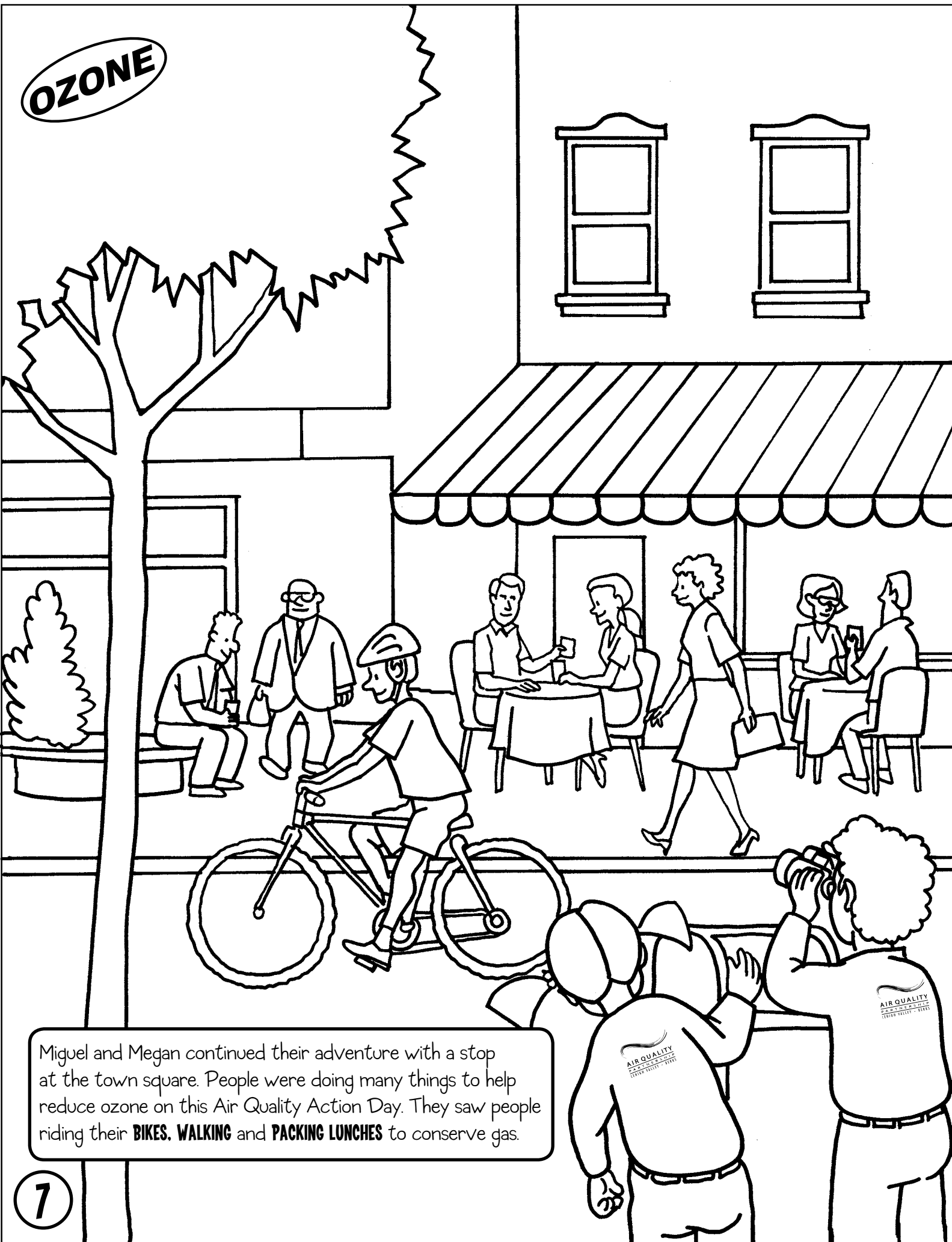
Megan and Miguel get off the bus at the LANTA station. They know it's a good idea to use the bus to help reduce the bad ozone. Megan notices 22 people riding the next bus. Miguel says, "That's great!"

LANTA

LEHIGH AND NORTHAMPTON
TRANSPORTATION AUTHORITY



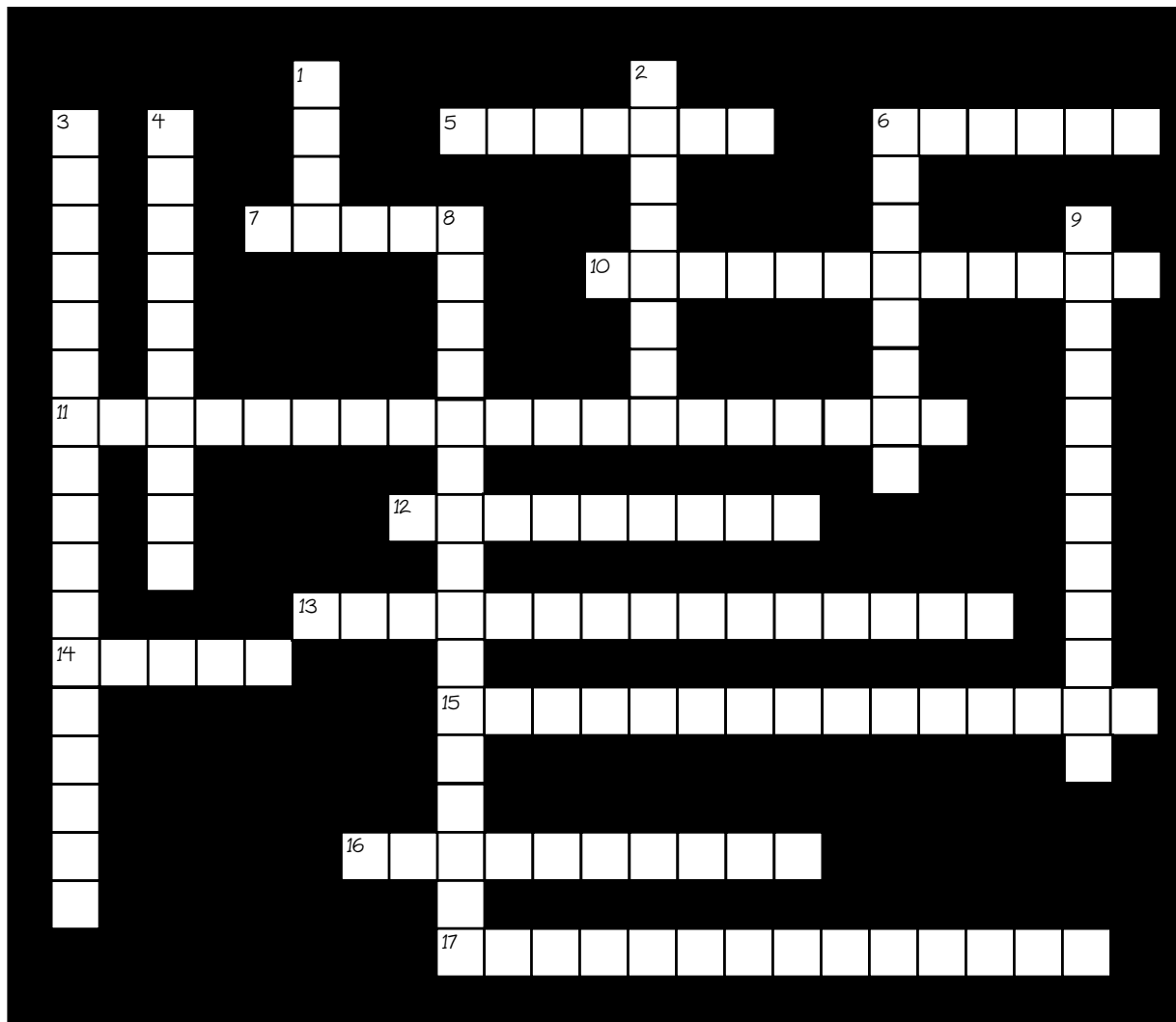
OZONE



Miguel and Megan continued their adventure with a stop at the town square. People were doing many things to help reduce ozone on this Air Quality Action Day. They saw people riding their **BIKES**, **WALKING** and **PACKING LUNCHES** to conserve gas.

Crossword Puzzle

OZONE



Across

- 5 How to get somewhere without driving. Not running.
- 6 The season when ozone is the highest.
- 7 When you tell people how to protect air quality. What teachers do.
- 10 Burns fuel to cut grass. (Available in electric models)
- 11 The name of a day when ozone levels or particle pollution exceeds health standards.
- 12 Word that describes a substance discharged into the air, especially by an engine.
- 13 The name for something that replaces gasoline.
- 14 There are two kinds of this. Stratospheric and Ground-Level.
- 15 AQI
- 16 When people share a ride.
- 17 Phrase that encourages people not to overfill their gas tanks.

Down

- 1 A mode of transportation with two wheels.
- 2 Applied with a brush. (Latex version is better for the air).
- 3 Another name for "running" cars (or trucks) that aren't moving.
- 4 Something you can do to help clean the air. It involves digging a hole. They grow tall.
- 6 The type of day when Ozone is a concern. The opposite of a cloudy day?
- 8 Another reason ozone is a concern. The opposite of low temperatures.
- 9 The name of the area we live in.



AIR QUALITY
PARTNERSHIP
LEHIGH VALLEY ~ BERKS

PM 2.5

School is back in session for the Fall. Mrs. Cleanair is Miguel and Megan's new teacher. She is talking to the class about **PARTICULATE MATTER** (PM 2.5). This Fall they will be armed with all the information they need to be PM 2.5 Detectives. PM 2.5 are tiny drops of liquid or small particles of dust, metals and other materials that float in the air. These small particles are bad for our health because they can accumulate in the respiratory system and cause health problems.

Be alert to the PM 2.5 Air Quality Action Days

200

150

100

50

Dark Red

Red

Orange

Yellow

Green

Particulate Matter Reminder :

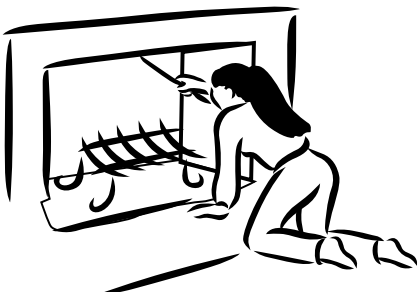
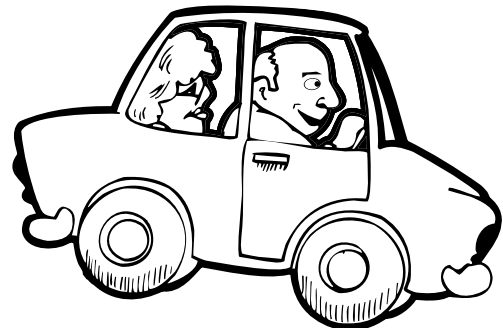
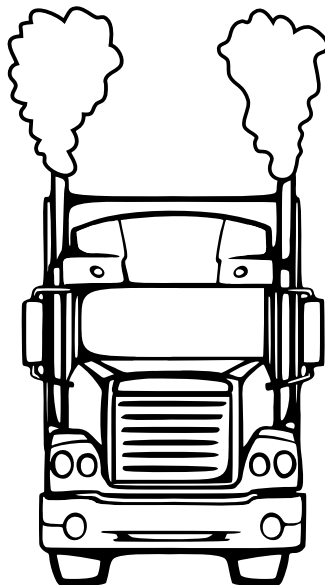
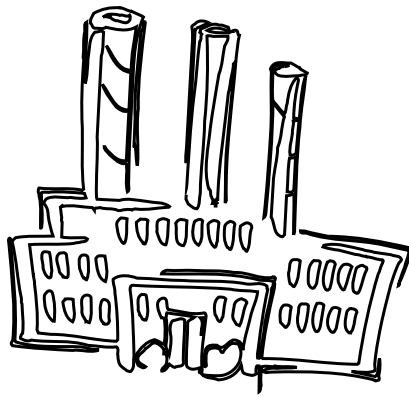
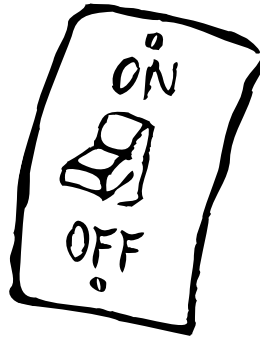
Fine particles that are less than 2.5 micrometers in diameter are called PM 2.5

PM 2.5 often comes from open burning, dirty chimneys, highly emitting power plants, and diesel trucks.



Good and Bad Activities for an Air Quality Action Day

Today is an Air Quality Action Day for **PM 2.5**
(Particulate Matter is too high). Color in the Scale with
the right colors. Then cross out the bad activities with
an "X" and circle the good activities.



200
150
100
50

Word Search

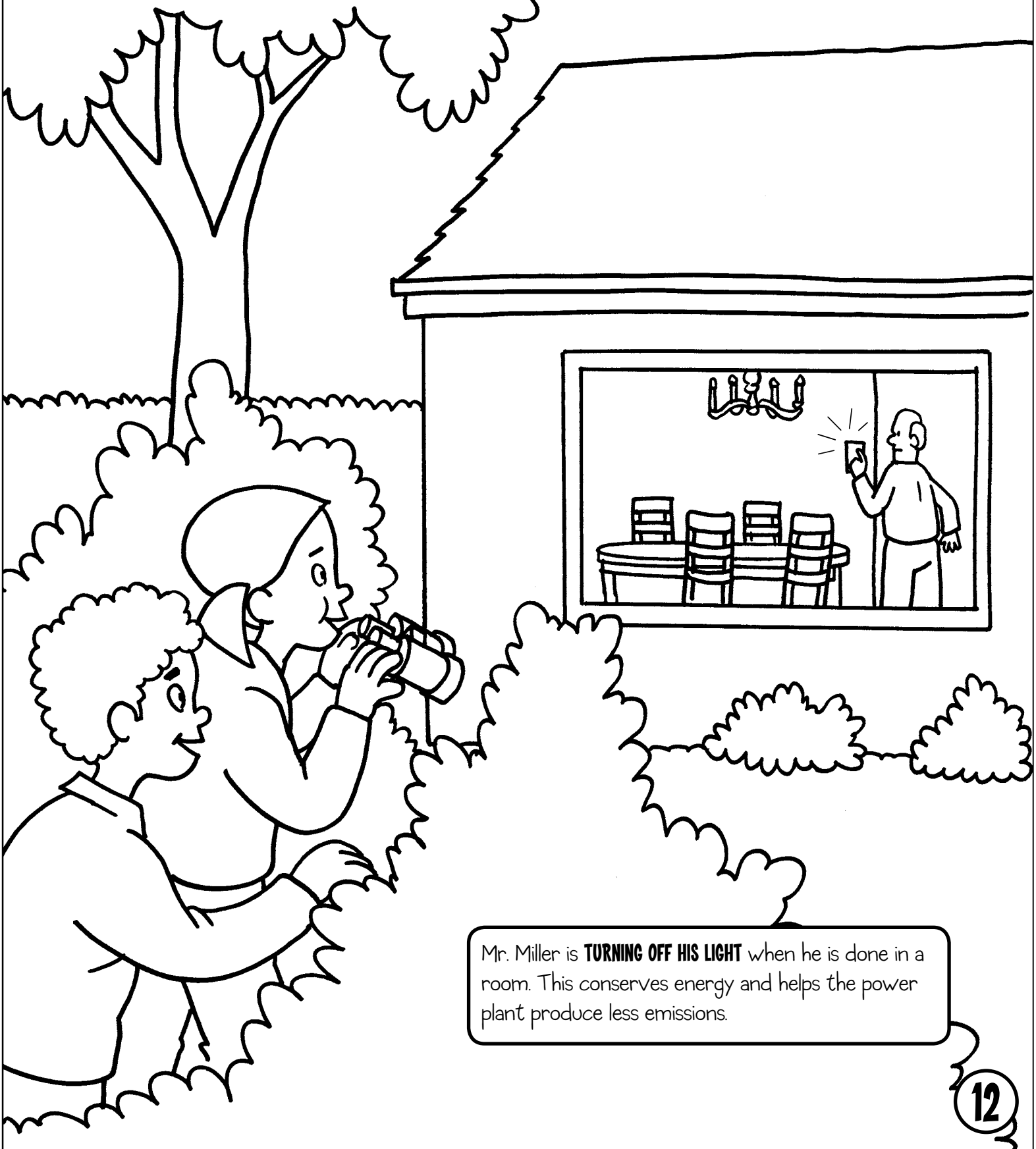
Search for the words that are bold in the sentences below.

p r e l i y r q t v l i r t
a f c o d a e l e i e h m e
r l l a i r q u a l i t y t
t a e t e a c h o t h e r s
i a a r s a h c l c t h b r
c o n s e r v e e n e r g y
u n c n l i e o t u p n r t
l l h h t a u p r f a l l a
a m i c r o m e t e r s r e
t m m y u u w n e a t a u c
e m n p c r i b t i n d e x
m r e y k l n u n h e l m a
a s y p s e t r i m r r i t
t f i v g e e n t y s x r n
t f a c t o r i e s h y g s
e r r r r n r n u i i e r e
r c t e l n n g h y p t l y
m n a e t i r p t v s i m x

1. **PARTICULATE MATTER** refers to fine particles from power plants, diesel trucks and open burning.
2. Fine particles less than 2.5 **MICROMETERS** can accumulate in the respiratory system.
3. Emissions from **FACTORIES** can contribute to particulate matter in the air.
4. A great way to help reduce air pollution is to **CONSERVE ENERGY**.
5. The black exhaust from **DIESEL TRUCKS** is an example of visible particulate matter.
6. **OPEN BURNING** should be avoided whenever possible.
7. A **CLEAN CHIMNEY** produces less pollution.
8. During an **AIR QUALITY** Action Day reduce emissions whenever possible.
9. Study air quality **INDEX** to know the quality of the air you're breathing.
10. **TEACH OTHERS** about how they can protect air quality.
11. **FALL** and **WINTER** are two seasons that are bad for PM 2.5.
12. Find out more about Air Quality **PARTNERSHIPS** at www.LVBCAIR.org

Miguel and Megan remembered their summer adventure. They decided to look for what people were doing on the Air Quality Action Day for PM 2.5. Here is what they found...

PM 2.5



Mr. Miller is **TURNING OFF HIS LIGHT** when he is done in a room. This conserves energy and helps the power plant produce less emissions.

PM 2.5

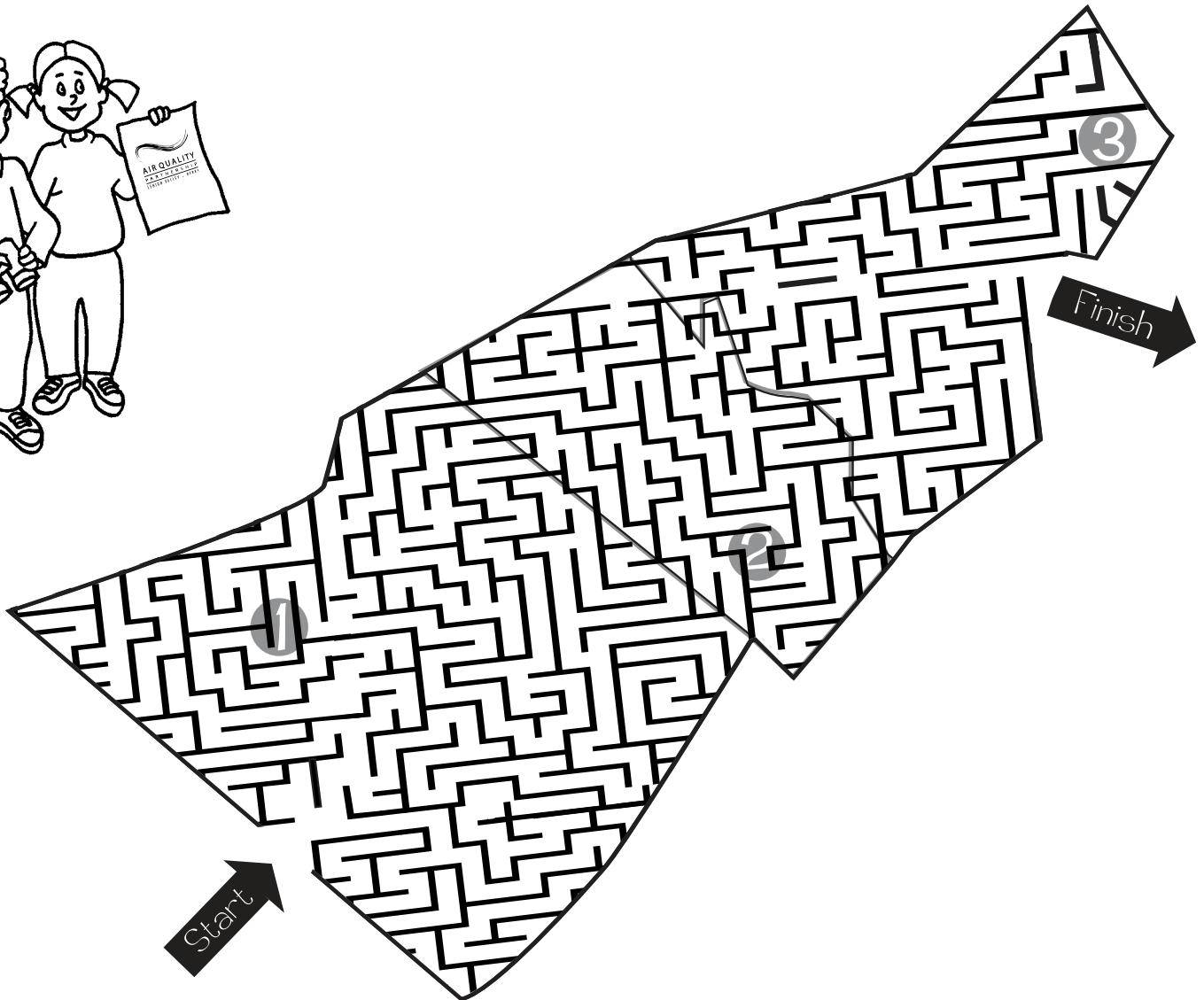
From inside Megan's house they spied an **OPEN FIRE** in Mrs. Acre's back yard. This fire was producing many particles that were polluting the air around their house.



Another Maze Game

PM 2.5

Help Miguel and Megan make a difference! Be sure to take them through all three counties. List the counties below with their corresponding number.



1. _____
2. _____
3. _____

Draw an activity that you can do that helps improve the air quality.