Particle Pollution Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 

with Air Now

Date: \_\_\_\_\_\_\_\_\_\_\_

We will be using the [https://www.airnow.gov](https://www.airnow.gov/?city=Durham&state=NC&country=USA) website for this worksheet.

1. What do the letters AQI stand for? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. How is it used? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Use the “Aqi-basics” [**https://www.airnow.gov/aqi/aqi-basics/**](https://www.airnow.gov/aqi/aqi-basics/)section to answer the following questions:

1. Fill in the missing information, and if you have colored pencils, color the rows the correct colors.

|  |  |  |  |
| --- | --- | --- | --- |
| **Daily AQI Color** | **Level of Concern** | **Values of the Index** | **Description of Air Quality** |
| Green | Good | 0 to 50 | Air quality is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and air pollution poses little or no risk. |
| Yellow |  |  | Air quality is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. However, there may  be a \_\_\_\_\_\_\_ for some people, particularly those who are  unusually sensitive to \_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. |
| Orange |  |  | Members of \_\_\_\_\_\_\_\_\_\_\_\_\_ groups may experience health effects. The general public is less likely to be affected. |
| Red | Unhealthy |  | Some member of the general public may experience health effects; members of sensitive groups may  experience more \_\_\_\_\_\_\_\_\_\_\_ health \_\_\_\_\_\_\_\_\_\_\_\_. |
| Purple | Very Unhealthy |  | \_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_: The risk of health effects is  increased for \_\_\_\_\_\_\_\_\_\_\_\_\_\_. |
| Maroon |  | 301 and higher | Health \_\_\_\_\_\_\_\_\_\_\_ of \_\_\_\_\_\_\_\_\_\_\_\_ conditions; everyone is more likely to be affected. |

1. **Read this selection from the article “Air Quality Guide for Particle Pollution” and answer the questions that follow.**

Info from EPA.gov’s AirNow <https://www.airnow.gov/sites/default/files/2021-03/air-quality-guide_pm_2015_0.pdf>

**What is particle pollution?**

Particle pollution comes from many different sources. Fine particles (2.5 micrometers in diameter and smaller) come from power plants, industrial processes, vehicle tailpipes, wood stoves, and wildfires. Coarse particles (between 2.5 and 10 micrometers) come from crushing and grinding operations, road dust, and some agricultural operations.

**Why is particle pollution a problem?** Particle pollution is linked to a number of health problems, including coughing, wheezing, reduced lung function, asthma attacks, heart attacks and strokes. It also is linked to early death.

**Do I need to be concerned?** While it’s always smart to pay attention to air quality where you live, some people may be at greater risk from particle pollution. They include:

* People with cardiovascular disease (diseases of the heart and blood vessels)
* People with lung disease, including asthma and COPD
* Children and teenagers
* Older adults
* Research indicates that obesity or diabetes may increase risk.
* New or expectant mothers may also want to take precautions to protect the health of their babies.

**Summarize: In your own words, what is particle pollution and why do we care?**

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We can do many things to help our air quality and our health, a few things we can do at home is:

--Drive less

--Pay attention to the daily AQI

--Avoid making fire

--Avoid using gas powered lawn tools

--Avoid activities that add dust and particulate matter: such as blowing leaves.

1. **The Problem with Leaf Blowers**

Read this selection of “The Problem with Leaf Blowers” an article by Wendy Priesnitz, leader of Canada’s green party, author, and activist wrote in “The Natural Life.”

|  |  |
| --- | --- |
| Where I live, there are lots of leaves on the ground this time of year. That means there are also lots of leaf blowers in use. In many cases, landscaping companies use them year-round to clear pathways, sidewalks, and driveways from freshly mowed grass. Supporters say these noisy, smelly beasts are the most efficient way to keep lawns and sidewalks neat, and point out that some older people are not able to rake. However, there are a number of serious downsides to their use. | **Underline the ideas for why leaf blowers are supported.** |
| First, there’s the noise. The roar of a typical gasoline-powered, two-stroke leaf blower registers at between 90 and 112 decibels on the noise measuring scale. As I wrote in [this article](https://www.life.ca/naturallife/1506/guide-to-noise-pollution.htm) about noise pollution, anything over 75 decibels can be problematic for our hearing. The top end of the leaf blower noise scale is reportedly louder than an airplane taking off, a freight train going by, or being at a live rock concert. | **Circle the decibel amount that is the beginning of a volume that can hurt our hearing.** |
| Then there’s what they blow around, along with the leaves. Leaf blowers circulate allergens, toxins, pollutants like herbicides and pesticides, and pathogens into the air, along with dust. Fallen leaves – especially in damp climates – grow mold. And mold is an allergen. Mold allergies can create the same symptoms as other seasonal irritants: itchy, watery eyes, runny nose and nasal congestion, sore throats, and headaches. Leaf mold can also make asthma worse. | **List out the problematic elements that leaf blowers can put in your air:** |
| The American Lung Association recommends that everyone avoid leaf blowers due to the toxic dust they create. A study published by the California Environmental Protection Agency in 2000 found that landscape workers running a leaf blower are exposed to ten times more ultra-fine particles than someone standing next to a busy road. | |
| As part of a campaign to have leaf blowers banned in one New York town, doctors at Mt. Sinai Children's Hospital's Environmental Health Center signed a letter detailing concerns about their effect on health. It read, in part:  *“Leaf blowers pose multiple hazards to human health. Children are the most susceptible members of our population to these hazards because they breathe more air per pound of body weight per day than adults and thus inhale more of any pollutants that are thrown into the air by this equipment. Children's vulnerability to the health effects of this equipment is further magnified by the fact that … their lungs, ears, eyes, and other organ systems are inherently more sensitive to environmental hazards than the organs of adults.”* | **While others may be experiencing a “green” day on the AQI scale, what are two groups mentioned in the article that could easily be experiencing a higher amount of PPM in the air they breathe?** |

With your remaining class time, explore the different features, including the interactive maps, on [https://www.airnow.gov](https://www.airnow.gov/?city=Durham&state=NC&country=USA).