



NJ AIR QUALITY FLAG PROGRAM

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GROUND-LEVEL OZONE

- Created by chemical reactions between oxides of nitrogen and volatile organic compounds
- Occurs when pollutants chemically react in the presence of sunlight
- Levels are usually highest during the hot days of spring, summer, and fall
- Can reach unhealthy levels in both urban and rural areas
- **NJ's most persistent air pollutant**



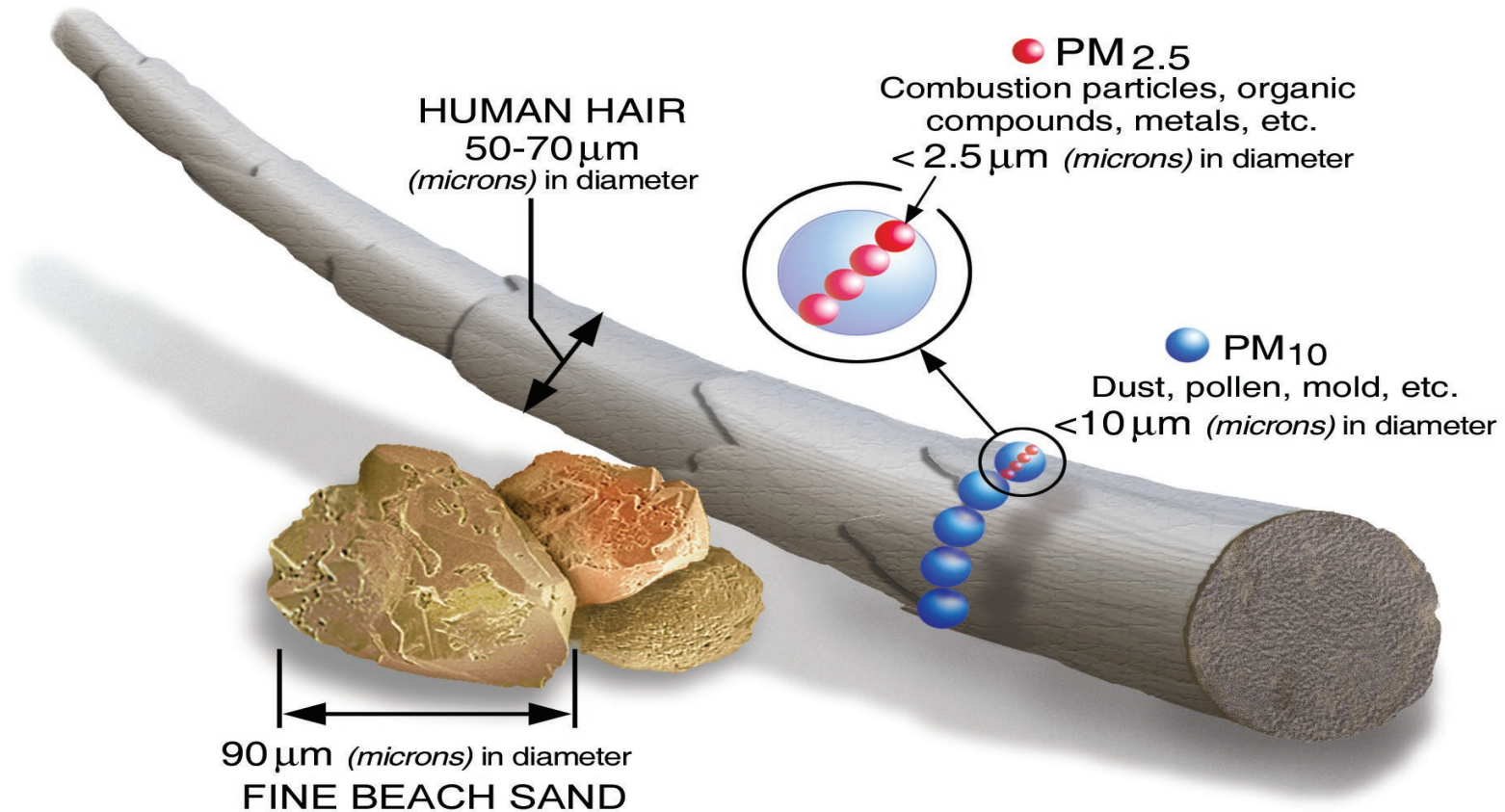
(New Jersey Department of Environmental Protection, 2023)

FINE PARTICULATE MATTER (PM 2.5)

- Mixture of solid particles and liquid droplets found in the air
- PM 2.5 are fine inhalable particles which have diameters that are generally 2.5 micrometers and smaller. These pose the greatest risk to health
- Children are at greater risk from air pollution because their lungs are still developing and they breathe more air per pound of body weight than adults

(New Jersey Department of Environmental Protection, 2023)

SOURCES OF FINE PARTICULATE MATTER



HEALTH EFFECTS



- Increased respiratory symptoms including irritation of the airways, coughing, or difficulty breathing
- Development of chronic bronchitis
- Asthma
 - Sayreville Students with Diagnosis of Asthma or Reactive Airway Disease: **485**

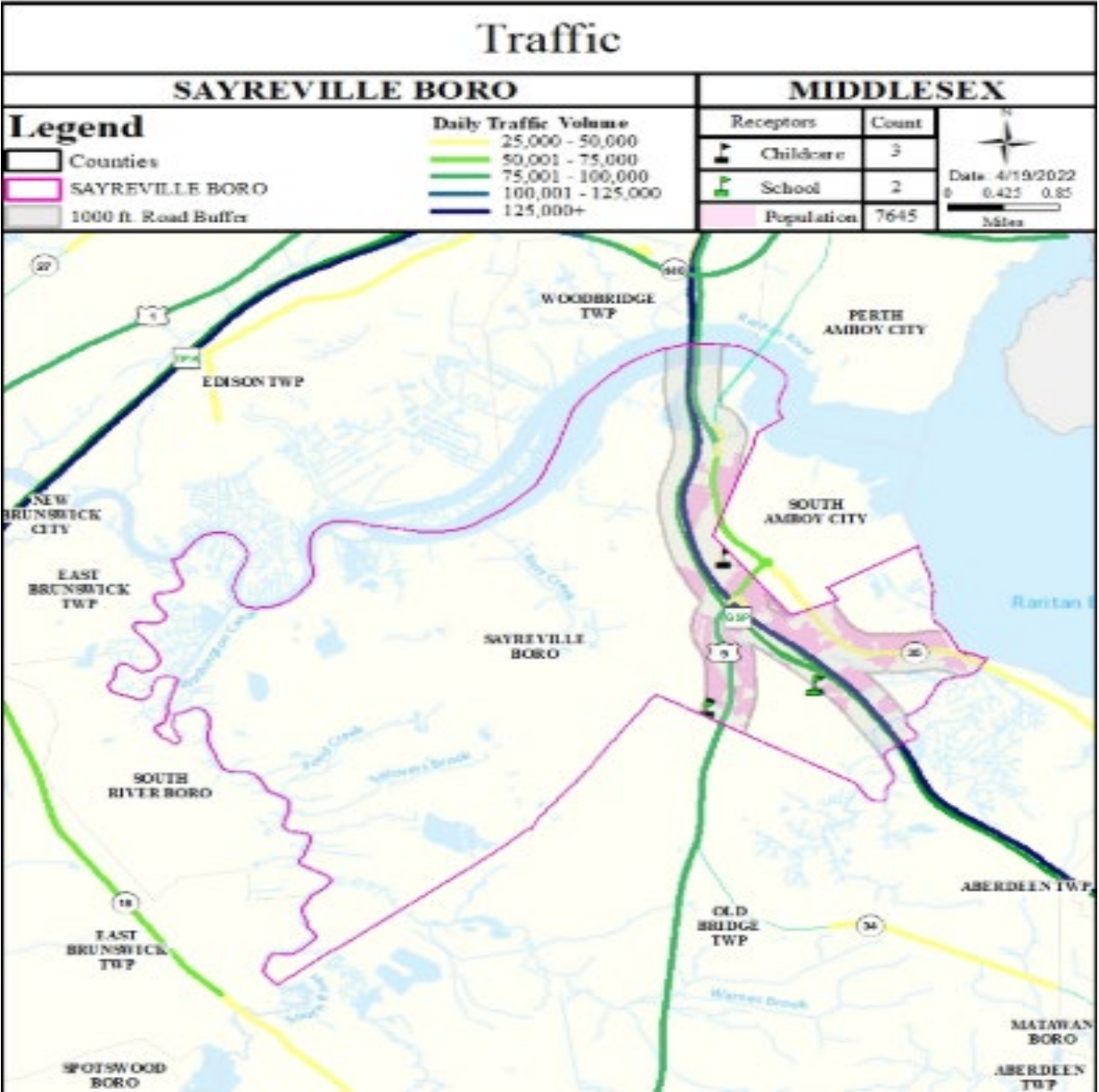
(New Jersey Department of Environmental Protection, 2023)

AIR QUALITY INDEX (AQI)

- Environmental Protection Agency's index for reporting air quality
- Tells you how clean or polluted your air is, and what associated health effects might be a concern
- Color-coded system which runs from 0-500
- Divided into six categories, each category representing a different level of health concern



(New Jersey Department of Environmental Protection, 2023)



(New Jersey Environmental Public Health Tracking, 2022)

NJ AIR QUALITY FLAG PROGRAM

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- Each day a colored flag gets raised in order to inform the school & community of outdoor air quality conditions for that day
 - Flag colors are based on the Environmental Protection Agency's Air Quality Index (AQI)
 - Schools are considered an eligible partner in the program and qualify for free flags



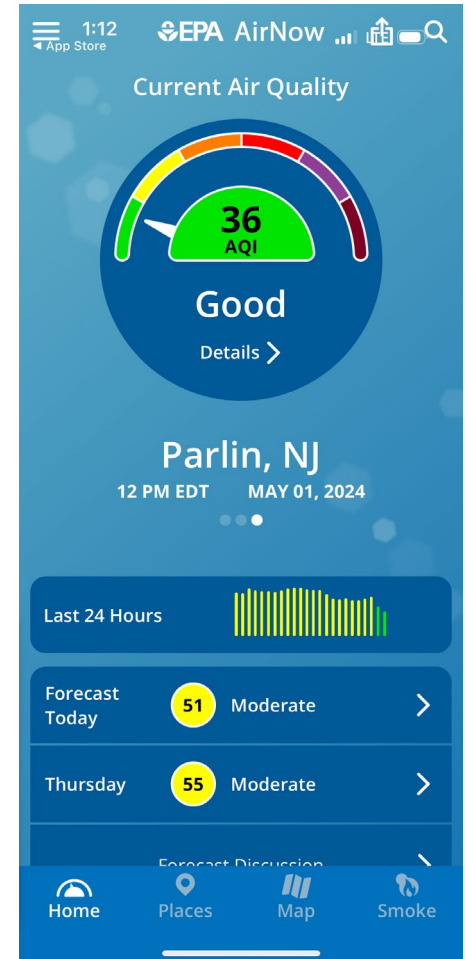
ACTIONS BASED ON THE AIR QUALITY FORECAST

Air Quality Index Level	AQI Value Actions to Protect Your Health
Good (1-50)	None
Moderate (51-100)	Unusually sensitive individuals should consider limiting prolonged outdoor exertion.
Unhealthy for Sensitive Groups (101-150)	Children, active adults, and people with respiratory disease such as asthma should limit prolonged outdoor exertion.
Unhealthy (151-200)	Children, active adults, and people with respiratory disease such as asthma should avoid prolonged outdoor exertion: Everyone else should limit prolonged outdoor exertion.
Very Unhealthy (201-300)	Children, active adults, and people with respiratory disease such as asthma should avoid outdoor exertion. Everyone else should limit outdoor exertion.
Hazardous (301-500)	Everyone should avoid all physical activity outdoors.

(New Jersey Department of Environmental Protection, 2023)


CHECKING THE AIR QUALITY FORECAST

- Subscribe to ENVIROFLASH: The air quality forecast can be sent to your email or via text message
- Download the AirNow App



EDUCATE & INFORM

What Color is Your Air Today?
Complete each sentence with the correct color name.
Draw a line from each flag to the correct sentence.



_____ means the air is good.

_____ means the air is moderate.

_____ means the air is unhealthy for sensitive groups.

_____ means the air is unhealthy.

_____ means the air is very unhealthy.

Grade 1-2

Why is Coco Orange?



Coco the chameleon can't change colors and his asthma is acting up.

What's Up There Besides Air? 

Grade: 5
Subject: Science, Language Arts
NGSS (DC) Connections: ESS5.C
Time: 1 to 2 Class Periods

Background Information

Clean air is healthy for us to breathe. However, air can become polluted—that is, contaminated with particles and gases that are not supposed to be there—making the air dirty and unhealthy. In general, air pollution is any visible or invisible particulate gas found in the air that is not part of the normal composition of air.

Some air pollution is from natural causes, but much of it comes from man-made sources such as cars, factories, fires, and products that we use. It is important to note that both indoor air and outdoor air can be polluted. This lesson is focused on outdoor air. Air pollutants can be in one of two forms: particles or gases. Particle pollution is in the form of small solids or droplets. Dust, smoke, soot, ash, soot, and pollen are examples of particle pollution. Particle pollution is often seen for its color because it can make the air look dirty or smoky. Sometimes we can see particle pollution when it settles out of the air and accumulates on surfaces—our cars can be covered with yellow pollen, outdoor surfaces can be covered with dust and exhaust can become dirty from deposited soot.

Gaseous air pollutants are in the form of a gas. Carbon monoxide, radon, ozone, and sulfur dioxide are a few examples. Some gaseous pollutants are invisible and odorless, making them more difficult to detect than particle pollution. Two such pollutants are carbon monoxide and radon.

Student Objectives

- Define air pollution.
- Demonstrate the presence of air pollution in the air around us.
- Hypothesize on the source of air pollution in the air around us.

Materials

- Worksheet and pencil for each student
- 8 wells (cups) for each student, four in groups of students
- Shallow colored liquid base
- Waterproof marker
- Disposable compass
- Measuring glass
- Colored pencils, markers or crayons
- Flour (not optional)
- Plastic spoon (not optional)

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(New Jersey Department of Environmental Protection, 2022)

REFERENCES

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