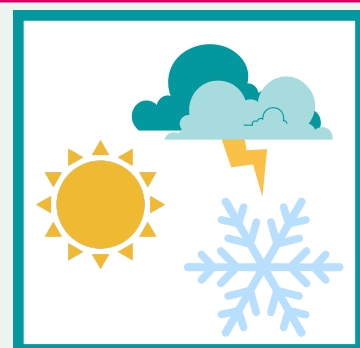




Weather and Air Quality

How does weather affect our air?

The **weather** can have a big impact on our daily air quality. It can make it **better**, but it can also make it **worse**. Here's how:



Weather systems are often defined as being either high or low-pressure. **High-pressure** systems hinder vertical motion and air dispersal and often lead to cold temperatures, fog, low clouds, and stable air. This contributes to **pollutants** in the air.

Low-pressure systems can bring winds and/or precipitation. Wind, rain, and snow storms are sometimes called **scrubbers** because they help clear out air pollution. However, high wind can also cause an increase in air pollution, when it blows **dust**, **pollen**, and other **pollution** into the air.

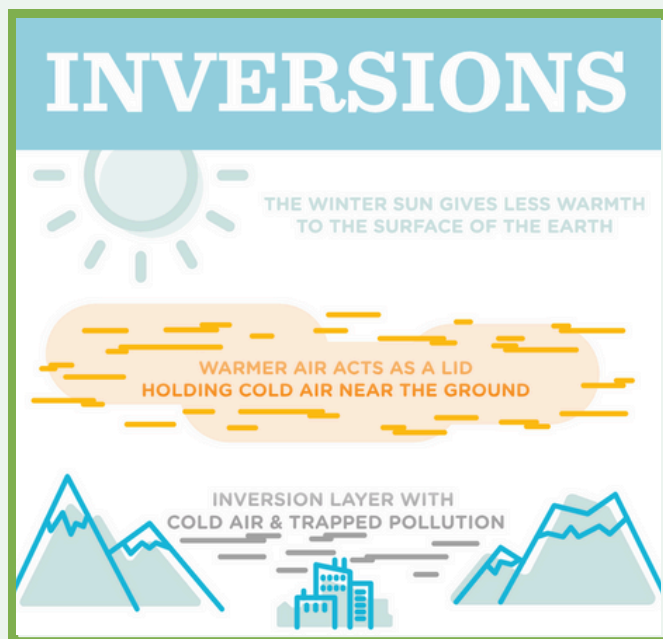
Air pollution can also accumulate during a temperature inversion. During an inversion, a layer of warmer air above a layer of colder air traps pollutants near ground level. Inversions are common during winter and can persist during the **night** and **morning** hours.

Even though we can't control the **weather**, we can take steps to reduce **air pollution**!

You and your family can help by:

- Reducing car trips by carpooling
- Taking the bus
- Avoiding burning wood
- For more, visit: SpokaneCleanAir.org

Understanding these weather events can help contribute to maintaining **healthier** air quality in our communities.

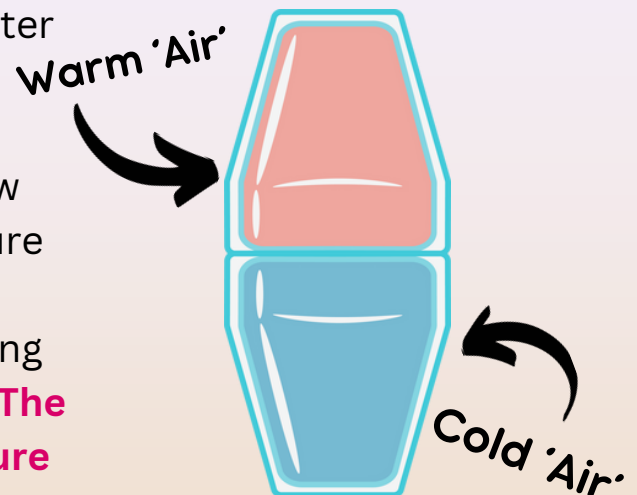


Make an inversion at home!

What will you need?

- | | | |
|---------------------------------------|-----------------------------|---------------|
| 1. Two identical glasses | 4. Thin, hard plastic layer | 6. Cold water |
| 2. Red, green, and blue food coloring | (ex: cutting board) | 7. Plate |
| 3. Measuring cup | 5. Hot water | |

1. Using the measuring cup, fill one glass to the top with cold water
2. Put 2 drops of blue food coloring in the cold water and stir. **The cold water represents cold air, which is heavier than warm air.**
3. Add 1 drop of green food coloring to the cold water and stir. This represents pollution in the air. **In an inversion, pollution gets trapped in the cold layer of air.**
4. Fill the other glass to the top with hot water using the measuring cup.
5. Put 2 drops of red food coloring in and stir. **The red water represents warm air, which is lighter than cold air.**
6. Place the cup of cold water on the plate.
7. Put the thin, hard, plastic layer over the opening of the cup of hot water. Holding it so that you do not break the seal, carefully flip the cup upside down.
8. Lay the cup on top of the glass of cold water so that the opening of each glass is connected.
9. Slowly slide out the plastic layer and allow the water in each cup to touch, making sure that the sides of the glass line up.
10. Observe how even though there is nothing separating them, the layers do not mix. **The same thing happens during a temperature inversion!**



If you are trying the inversion activity at home, ask your friends and family for help! While you are doing the activity with them, share what you know about inversions in Spokane!

Air Quality Forecast

Every morning, Spokane Clean Air develops an air quality forecast. Our air quality forecaster uses several sources of data and information when developing the forecast, including:

- Current air quality trends
- Weather reports, trends, and forecasts
- Smoke and active fire maps and models (during wildfire season)

This forecast is then posted to our website for the public to view and use. Visit

SpokaneCleanAir.org to see today's forecast!

How do we report air quality?

With the Air Quality Index! (AQI)



GOOD
0-50



UNHEALTHY
151-200



MODERATE
51-100



VERY UNHEALTHY
201-300



UNHEALTHY FOR SENSITIVE GROUPS
101-150



HAZARDOUS
301-500

Natural sources of air pollution

Most pollution is caused by humans, but what about natural weather events? Think about where you live. What natural weather event might affect air quality in your neighborhood? How about in your city? Or your state? If you don't know already, do some research!

Weather can be both **GOOD** and **BAD** for our air!

Wind can increase dust particles in our air

Rain can wash away air pollutants

Hot, sunny weather can increase ozone formation

Wind can help disperse pollution

Stagnant air can cause pollutants to build up in our air

Snow can pull pollutants to the ground



EnviroKids is a collaborative effort among multiple environment-focused agencies in the Spokane Region. We work together to provide locally relevant educational resources to teachers and families.

