Okanogan Nature Camp **#OKNatureCamp**

Resources for outdoor learning and exploration

Nature Activities: Week 5, Air

Trapping Air Pollution: Temperature Inversions

A lesson from https://airnow.gov/index.cfm?action=resources.aqi_toolkit

This activity demonstrates how changes in air temperature can play an important role in air pollution. Under normal weather conditions, the air is cooler further away from the ground. Air pressure decreases with altitude and with less pressure the air cools. An *inversion* occurs when this reverses—the cool air is below the hot air, becoming "trapped". Any pollutants in the cooler air are also "trapped" under the warm air and cannot move up and away. Until the weather changes or the wind blows the air pollution away, the air quality during an inversion can be unhealthy.

To lead this activity, you will need 4 identical clear glass jars (baby food jars or 4 oz jam jars will work), 2 shallow pans, 2 index cards, and food coloring. Do each activity without sharing which experiment represents the different conditions.

Normal Weather Conditions: place two of the jars in one of the shallow pans. Fill one jar with hot tap water (about 500 degrees) and one with ice water, both to the brim. Once the ice water has cooled, remove any remaining ice. Put several drops of food coloring (air pollution) into the hot water jar. Place an index card over the top of the ice water jar, quickly flip the jar on top of the hot water jar, align the jar openings, and then carefully pull the index card out. Write down or discuss your observations. Leave the jars in place to compare later.

Temperature Inversion: place the remaining two jars in the other shallow pan. Fill the jars exactly as above, but this time, add several drops of food coloring (air pollution) to the *ice water jar*. Place an index card over the *hot water jar*, quickly flip the jar on top of the ice water jar, align the jar openings, and then carefully pull the index card out. Write down or discuss your observations.

What happened in each experiment? What happened to the air pollution? Which models normal weather conditions and which models an inversion? Why? How might this affect people's health?

Questions? Contact Kim Kogler at kimberly@okanogancd.org

Share your results and post pics of your discoveries to our Facebook page with #OKNatureCamp and teach us all something new! You can tag us by using @Okanogan Conservation District.

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Nature Activities: Week 5, Nature Awareness

Path of Knowledge

A lesson adapted from Joseph Cornell's *Sharing Nature with Children II*

Before starting the activity, secretly take around 10 photos of striking scenes or of distinctive trees, rocks, or other natural items. Take the photos in an area where you can easily define boundaries for the participants and where you feel comfortable with children wandering.

Gather everyone together and explain that it is their job to find the subjects of each photo. After finding the exact location of one photo, they can move on to the next, until they find all the photos. If time and interest allows, take turns taking photos and hunting for the location/subject of the photos.

More resources:

Cornell, Joseph (1998) *Sharing Nature with Children*. DAWN Publications.

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