



## Particle Air Monitor Activity

TIME: 15-20 minutes

### Required Resources:

Con-Tact paper, fine sand, glitter, coffee, flour, etc. (anything to simulate particles), Sharpies, an Air Quality Health Index scale (poster, online) to reference.

*\* nice to have a piece of white cardstock to place monitors on and a table cloth to collect mess*

### Desired Outcomes:

1. To understand that there are particles in the air that we may not see.
2. To investigate how air quality is monitored and reported to the public.
3. To encourage the use of the Air Quality Health Index (AQHI) and the Air Quality Flags.

### Pre-Activity:

1. Begin a discussion with students about how we affect air quality using the following questions as a guide:

- a. Where does air pollution come from?

Idling the car, heating our homes, forest fires, burning wood in a campfire or fireplace.

- b. What might you notice when air quality is poor?

Air can smell bad, you can see smog or smoke, plants are affected.  
“Sometimes we cannot see the pollution that is in the air.”





2. Discuss particulate matter – small particles in the air:
  - a. Can come from dust (construction, farming, dirt roads), smoke, exhaust (cars, factories) or from chemicals in the atmosphere
  - b. Some particles are large (easy for our body to get rid of through swallowing, coughing or sneezing) and some are very tiny (harder for our body to get rid of, can affect our health)
  - c. Particles in the air are measured using air monitors out in the field and in communities.

### **Air Monitor Activity:**

1. Break class into 4 groups (1 group for each category of AQHI/flag colour).
2. Each group will get 2 pieces of clear Con-Tact paper and a ziplock bag of air pollutants (fine sand, glitter, coffee, dirt, flour, etc.). Each group will get a different amount of pollutants.
3. Remove backing from 1 piece of Con-Tact paper and lay sticky side up on a flat surface to act as a surface to collect air pollution/particles – like particulate monitor in the field does. Each student will take turns scattering the “pollution” onto the Con-Tact paper. Lay a second sheet of Con-Tact paper on top to make a sandwich - trapping the pollutants in the middle.

[Explain how we are simulating the pollution being collected in fast forward. Monitors in the field draw air through a filter and into a machine to measure the amount of particles]

4. Each group will try to guess which AQHI level or flag their monitor represents, based on the amount of pollution they’ve collected. Ask them to write the number and the colour of the flag on the monitor with a Sharpie.





the air quality  
**flag** program

5. Start a discussion by asking questions like: What would the conditions be like? What might you feel, see? What might you do – would you change your activities or behaviour?
6. Compare all four monitors by having each group send 1 person up with the monitor. Have the class line them up from Low, Moderate, High to Very High AQHI categories.
7. Clean-up may be required (using wipeable, plastic table cloths should make for quick clean up).

**Post-Activity:**

1. Begin a discussion on how we can change our behaviour.
  - a. How can we pollute less?
  - b. What about on High-Risk (Red Flag) air quality days, how could we change your activities? Both to protect our health and to pollute less.
  - c. Talk about why we use AQHI scale and Air Quality Flags.

