

PARTICLE PICKER-UPPERS

Classes will observe what the particulate matter in their schoolyard looks like and discuss if emissions are a factor.

Students will test different areas around their schoolyard using the Particle Picker-Uppers and will visually represent the air quality around their school.

Each Particle Picker-Upper should be placed at a special location in the schoolyard (near a parking lot? up high, down low? near a tree? near the front entrance? ect) They should be securely tied to an object near their chosen location and left out for 1 week (unless there is rain in the forecast!)

Teachers can make a control to place in a ziplock bag in the classroom for comparison.

Each student will get a Particle Picker-Upper card and will fill out the information asked (except the sample location). This experiment may be done altogether in 1 week, or in groups over a few weeks, based on what works best for the class. The students will have to assess the weather each morning for the week and note it down; they will also have to look up the Air Quality Health Index: http://weather.gc.ca/airquality/pages/abaq-001_e.html and make note of it daily as the week goes on. Students can use their data collection sheet to note these observations.



Interacting with particulate matter and pollution

Students should make a hypothesis about what they think their Particle Picker-Upper will look like after the experiment and why.

After filling out the information asked on the card each student should smear a thin layer of petroleum jelly within the box on the back and tie a string through the hole.

Students can then go out and find a spot to place their card and they can secure their Particle Picker-Uppers to their special experiment spot (they should bring a pencil and note down their sample location on the card now). They can also make notes on their data collection sheet when they return.

The cards can be checked each morning or afternoon and notes can be made about the weather, AQHI or general observations on the data collection sheet.

After a week they should be taken down carefully. A magnifying glass can be used to count particulate matter and notes can be made on their hypothesis.

The cards can be taped on a wall in the class and compared to each other and the control.

What were the results of the experiment? Why did some cards collect more particulate matter than others? Is this an indicator of air pollution? Can we improve the air quality around our school? Are emissions and idling a factor?

Students will keep their Particle Picker-Uppers as well as their data collection sheets to compare with a professional air quality monitoring device in the following few weeks.

Materials:

Particle Picker-Upper cards	35
Petroleum Jelly	1
String	30
Data collection sheet	35