

SMART KIDS LAB



How clean is the air you breathe? Is swimming water the same as drinking water? How many microbes live in the soil beneath your feet? And what does it all mean? DISCOVER how healthy your neighbourhood is and what you can do to improve it. SMART KIDS LAB lets you examine the water, noise, air, earth and light around you with homemade measuring instruments. On the smarkidslab.nl website, you'll find out how to make the measuring instruments (meters) and how you can GET STARTED.



PARTICULATES!

YOU ARE INVESTIGATING HOW MUCH PARTICULATE MATTER IS IN THE AIR. THESE ARE VERY SMALL PARTICLES FLOATING THROUGH THE SKY. We don't see them, but we breathe them in everyday. Fine particulates! They're bad for our lungs (not so nice). We can measure the particles with our **HOMEMADE PARTICULATES METER**.

By knowing how much PARTICULATE MATTER is in the air, we can choose to take the healthiest cycling or walking route.

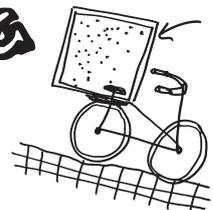
#FRESH AIR

If you wipe a window outside with your hand you'll see a lot of dirt... particulates!

HOW DOES IT WORK?

If all begins with the QUESTION: What do you want to measure? Do you already know? GREAT! Now you can GET GOING.

SMOG



STEP 1.

You start by making the MEASURING INSTRUMENT. *What you'll need: [Smart Kids Lab / making meters](#).

STEP 2.

Now it's time to go do RESEARCH and experiment. Before you start, think about what you want to investigate in your area and how to go about doing it.

For example, do you want to find out which route you walk or cycle to school is the healthiest? Then place your particulate meters at different points along the different routes you take.

After a day or two, collect all the meters again. Inspect the meters to find out where the most particulate matter is. And then choose a different way!

*What you'll need: [The Smart Kids Lab / experiments worksheet](#). This explains how to measure the amount of particulate matter in the air with your homemade meter.

STEP 3.

Collect the measurement DATA on the Smart Kids Lab worksheet. *What you'll need: [the Smart Kids Lab / experiments worksheet](#). You can record your measurements here.

STEP 4.

Go grab the COMPARE-O-METER so you can compare your measurement data to that of others. You'll also find a lot of interesting information here. *For this you'll need: [Smart Kids Lab / compare-o-meter worksheet](#).

STEP 5.

Take a picture of your measurement data and put it on the GREAT DATA MAP. You can find it at smarkidslab.nl.

*What you'll need: You can take a photo with a phone or digital camera. THE GREAT DATA MAP can be found at smarkidslab.nl (in the menu bar).



How much
particulate matter
is floating in the air?

SMART KIDS LAB
compare-o-meter



PARTICULATES are very small and float in the air... Dangerous **TINY PARTICLES** that hide out in your **LUNGS!**

Dirty lungs = short of breath
NO FUN!

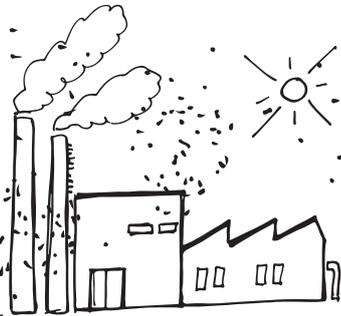


CONDENSATION TRAILS in the air are water droplets that form around the **PARTICULATES** the airplane produces!

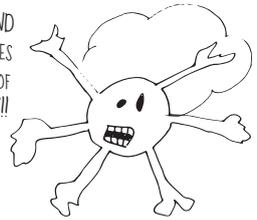


WAAAY TOO MUCH!

JUST A BIT



FACTORIES AND BUILDING SITES CAUSE A WHOLE LOT OF **FINE PARTICULATES!**



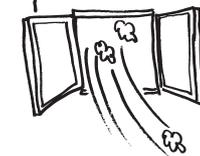
BETTER NOT BIKE!

Did you know:



Is there a lot of particulate matter in your **HOUSE**? **TEDDY BEARS**, old blankets, carpets and **PILLOWS** can quickly fill up with **DUST!** It also makes a difference which window you open (the one near the road or the one near the garden?). But the air inside is almost always dirtier than outside! So ventilate well!

STILL A LOT

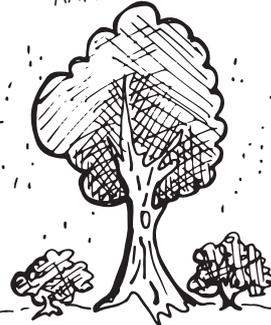


VENTILATION!

Parks in the rain have very few **FINE PARTICULATES**
AAHHH CLEAN AIR



CITY PARK



Traffic jam on a sunny day?
NO FRESH AIR.

Gggg
SMOG particles

TIP



LOOK for open **GREEN CYCLING ROUTES** running through the city but not too close to major roads.



PLAY OUTSIDE!

How much
particulate matter
is floating in the ?

SMART KIDS LAB
making meters

DISCOVER HOW HEALTHY YOUR NEIGHBORHOOD IS AND WHAT YOU CAN DO TO IMPROVE IT!
We don't see them, but we breathe them in every day: PARTICULATES! If we know where there's a lot of particulate matter in the air, we can protect our lungs by choosing healthier cycling and walking routes.

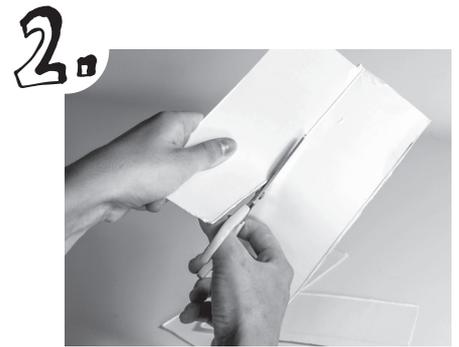
Make your own PARTICULATES METER: With a milk carton & Vaseline... of course.

WHAT DO YOU NEED?

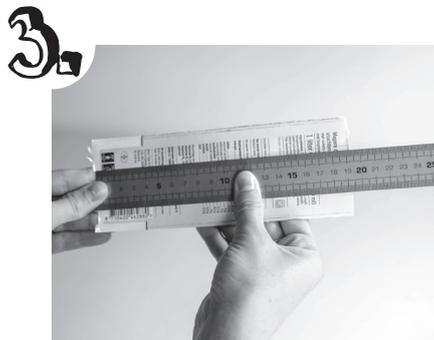
- Empty carton of milk
- Vaseline
- Double-sided tape
- Scissors
- Ruler



1. Cut off the top and bottom of the milk carton.



2. Cut the sides along the folds to make long strips of cardboard.



3. Measure how long each strip is and cut them each to the same size.



4. Place a piece of double-sided tape on the printed side of the cardboard.



5. Smear petroleum jelly (Vaseline) over the entire surface of the blank side.



6. Carefully remove the protective sheet off the double-sided tape.

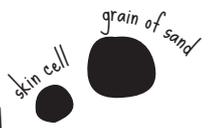


7. Place your particulates meter where you want to take measurements and then wait a few days.

TIP

Measure a **BUSY STREET** or intersection and a **PARK** to see the difference. Or even inside if you have a **GAS STOVE!**

Look how many dark dots appear on your meter. The more dots, the more particulate matter is in the air.



PARTICULATE MATTER

