

# Smelly Balloons

How can we detect things that are too small to see?

## Description

In this activity, kids sniff out scents hidden in balloons!

Suitable for kids ages 3 and up.



## Materials

Round balloons in a variety of different colors  
Several different scented extracts (such as vanilla)  
Medicine dropper (optional)  
Hand pump for inflating balloons (optional)  
Matching game activity sheet (optional)  
[download from \*whatisnano.org\*](http://download.from.whatisnano.org)  
Crayons or markers (optional)



## Time

**Preparation:** 5 minutes

**Activity:** 5 minutes

**Cleanup:** 5 minutes

## Safety

Use normal precautions while doing this activity. Popped balloons can present a choking hazard to young children. Supervise children at all times.

Many balloons are made of latex. This activity is not suitable for individuals who are sensitive or allergic to latex.

# Step 1

Put about a half teaspoon of extract in each balloon, by pouring carefully or using a medicine dropper. Use a different color balloon for each kind of extract.

Blow up the balloons and tie them securely. Give them a shake.

## TIP

A hand pump makes it much easier to inflate the balloons.



# Step 2

Kids, investigate the balloons!

Smell the balloons. Can you figure out which scent is hidden in each balloon?



# Step 3

Fill in the activity sheet. (Optional.)

Color in the balloons. Next to each one, write the scent that's hidden inside.

## TIP

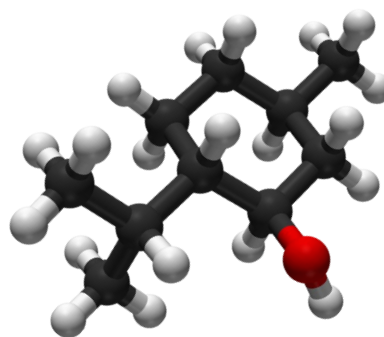
You can also jumble the order of the balloon colors and scents, and play a matching game!



# What's going on?

Tiny scent molecules are leaking out of the balloons. They're too small to see, but you can smell them!

Your sense of smell works by identifying the shape of scent molecules. Molecules are made of particles called atoms that bond together. Everything in the world is made of atoms, including the balloon you're holding and the scented air inside it.



Model of a menthol scent molecule

# How is this nano?

Scent molecules are so small that they can travel through the outside of the balloon. In fact, they're so tiny that they're measured in nanometers! A nanometer is a billionth of a meter.

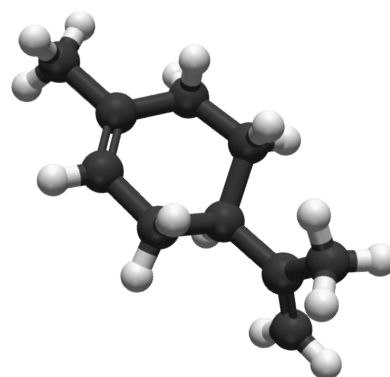
So if you can smell, your nose is your very own nano-detector!



# Atoms and molecules

Nanotechnologies include new materials and tiny devices—so small they are sometimes built from individual atoms and molecules!

For example, researchers are creating nano-sized sensors that can sniff out very small amounts of chemicals in the air. Some of them work the way your nose does, by detecting the different shapes of molecules.



Model of a limonene scent molecule

## Learn more

Learn more at:

**[www.whatisnano.org](http://www.whatisnano.org)**



## Credits



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This activity was adapted from "Odors Aloft," in No Hassle Messy Science with a Wow: Chemistry in the K-8 Classroom, published by the Oregon Museum of Science and Industry, 1998 and 2007.

Activity photographs: Gary Hodges Photography for the NISE Network  
Menthol and limonene molecules: wikipedia/public domain  
Girl and flower: [www.istockphoto.com](http://www.istockphoto.com)