



Try This!

SAFETY: If your balloons are latex, warn visitors of possible allergic reactions.

1. Each balloon has a different scent inside it. Your challenge is to figure out which scent is in which balloon.
2. Smell the balloons. Can you identify all the extracts?

What's Going On?

Matter is made of atoms that bond together to form molecules. These particles are too small to see, but we can smell some of them! Scent molecules are so small they can travel through the balloon membrane.

Scent molecules are very volatile, which means that they easily vaporize from liquid extract into a gas. We added a liquid extract to the balloon, but it soon vaporized, filling the balloon with scented air.

Air gradually leaks out of the tied balloon. This is because the tiny air molecules inside the balloon move through the pores of the balloon's skin, in a process known as diffusion. Air always diffuses from areas of higher pressure to areas of lower pressure. An inflated balloon has greater air pressure inside it, so the air gradually diffuses into the lower air pressure surrounding the balloon.



Learning Objectives

- Molecules are too small to see, but we can smell some of them.
- Scent molecules are so small they can travel through the balloon membrane by diffusion.

Materials

- Selection of scented balloons (*Requires advance preparation; see below.*)

Advance Preparation

- Round balloons in different colors
 - Variety of extracts (e.g. vanilla, strawberry, garlic, smoke)
 - Pipettes or eye droppers
 - Balloon pump
1. Use a pipette or eyedropper to put about $\frac{1}{2}$ teaspoon extract in a balloon. Insert the dropper as far as possible into the balloon before you squeeze it, so the extract doesn't get onto the neck of the balloon.
 2. Holding the balloon carefully so you don't get extract in your mouth (or balloon pump), blow up the balloon and tie it.
 3. Shake the balloon a few times to encourage the extract to vaporize.
 4. Repeat steps 1-2 for all your extracts. Choose a different color balloon for each extract.
 5. Make a key identifying the scent in each balloon. Optional: Make a list of the scents—without keying them to the balloon colors—for visitors to see.

Credits

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