# 3 How scents travel

**Gases move easily. SCENTS are gas particles we can smell that are carried along by the air.**

Anything that we can smell is a gas. The gas may start off as a liquid perfume that you put on your skin, as solid blocks of air freshener placed in a room, or on the petals of a flower, but to become a scent the substance has to change steadily into a gas.

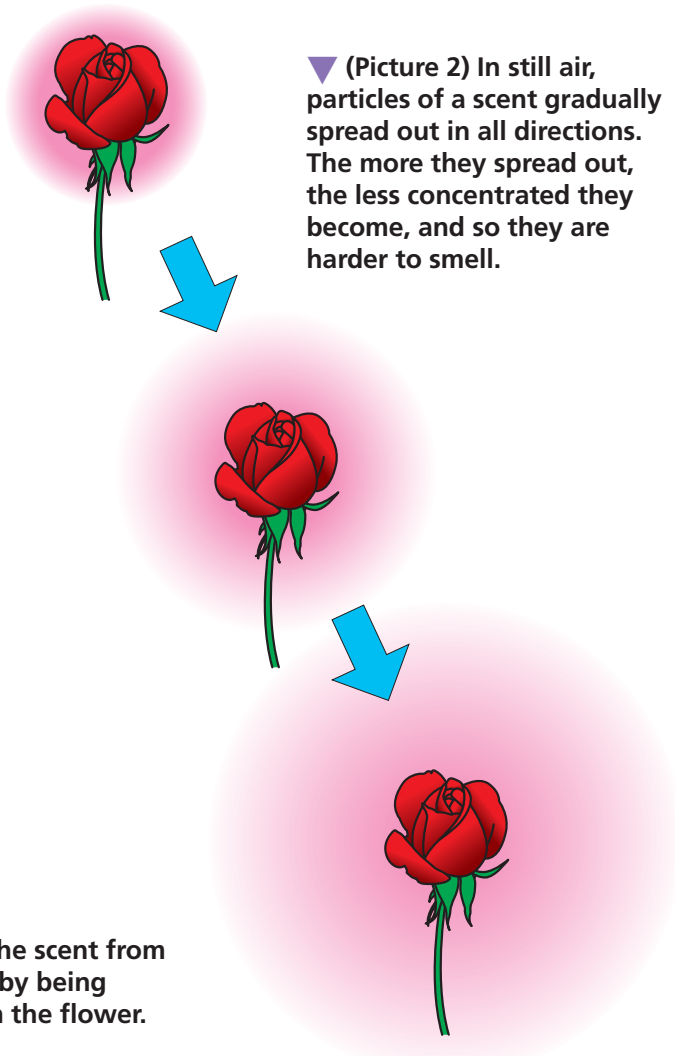
## Scents move about easily and quickly

On pages 6 and 7 we saw how good the air is at mixing with gases. This is why you can often smell what is being cooked in the kitchen before you see the food.

The reason that a scent, or an unpleasant smell, can travel is that the air is not completely filled with gases. There is still plenty of room for new particles of gas to get into the air and then move around.

Left undisturbed, gases will mix themselves up evenly. However, when a new gas enters the air (Picture 1) it is concentrated just at one place. It immediately begins to spread out so that it, too, becomes evenly mixed in the air (Picture 2). This means that the scent of a flower spreads out all around the flower – in the same way that food smells will spread all around a kitchen.

◀ **(Picture 1) The scent from a flower starts by being concentrated in the flower.**



▼ **(Picture 2) In still air, particles of a scent gradually spread out in all directions. The more they spread out, the less concentrated they become, and so they are harder to smell.**



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## Why scents fade away

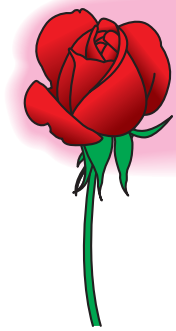
Have you noticed how a perfume sprayed onto your hand smells strongly for a while and then fades away? Or how the smell of cooking gradually disappears? This happens because the gases of the scent from the perfume and the cooking gradually mix with air and become less concentrated.

Our noses are only good at smelling quite concentrated gases, so after a while, although the gases produced by the flower and during cooking are still there, they have become spread so thinly that we don't notice them.

A dog, which has a much more sensitive nose, will still be able to smell gases when they have become far too faint for us (Picture 3).

## The effect of a breeze

When a breeze blows, the air is no longer still, but is flowing in one direction. This means that the scent particles are carried along in the same direction as the air (Picture 4). As a result, they form a long stream of particles, and the scent can only be smelled from one direction. Insects follow this stream of scent back to the flower. Other animals follow scents to the source of their favourite foods.



▲ **(Picture 4) When a breeze blows, the scent will still spread out. The moving air will carry the scent in only one direction, but it can be smelled from further away.**

### Summary

- **A scent is a gas we can smell.**
- **Scents mix with the air, so we can breathe them in.**
- **Scents spread out over time, until they are too faint for us to smell.**

▶ **(Picture 3) Dogs have noses that are much more sensitive to the smells of gases than humans.**



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