

Introduction

Perfumes is a set of activities designed to teach separating techniques through a motivating context. It can be used in its entirety, or just dipped into. Students imagine they are on the writing team of a teen magazine, researching an article about perfumes by making or testing fragrance, and then writing about it. In this way, Perfumes provides opportunities to develop literacy skills.

There are 3 activities. The first two are aimed at pupils of all abilities. For each one, pupils do 'Research' on the topic (the experiment) and then 'Writing' (the article). The third activity - *Science of Smell* – is an extension.

Requirements (per group)

For steam distillation experiment:

Raw material for perfume: approx 25g orange peel. It's best to grate the peel before the pupils use it.

Bunsen

Tripod, gauze, ceramic mat

Large Pyrex conical or round bottomed flask

Small gauze 'basket' to hold raw material in, enabling steam to penetrate (Alternatively, a string bag that is used to package citrus fruit)

Long glass delivery tube

Test tube

Large beaker

Ice

Small stoppered bottle or jar to store perfume. Or a 35-mm plastic film case. Labels.

Ethanol (optional extra)

For grinding and filtering experiment:

Raw material for perfume: lavender, rosepetals or other flowers, fruit, mint leaves, or kitchen spices (if using citrus fruit, grate first)

Mortar and pestle

Filter funnel

Filter paper

Small stoppered bottle or jar to store perfume. Or a 35-mm plastic film case. Labels.

For testing perfumes

Several commercial brands of perfume (pupils may bring)

Dropping pipette

Filter paper

Scissors

Metre rule

Timer

Safety

- Pupils should wear eye protection for all the experiments, particularly for steam distillation
- Pupils should take sensible precautions when heating liquids
- Check that there are no hairline cracks in flasks being used for steam distillation
- Make sure the delivery tube is long enough to keep the test tube well away from the flame
- Pupils should be aware of 'suck back' possibility during distillation