

Everyday Science

The Triangle Test



Purpose: Do smells always remind you of memories? Whenever I smell ginger cookies, it makes me remember loving hugs from my grandpa since his cardigan always smelled like ginger cookies. Can you remember what you smell? Do you think you have a talented nose? Can you tell the difference between two closely related smells? The “Triangle Test” is given to job applicants in the perfume and fragrance industry to see how well they smell.

Materials*: 1) scissors, 2) coffee filter paper, 3) ruler, 4) sharp knife, 5) fresh lemon, 6) fresh lime (or two similar essential oils, e.g. lemon and orange), 7) spoon, 8) pencil, 9) blindfold and someone willing to volunteer for your experiment

Procedures – Preparing Test Strips

– Cut the coffee filter paper into strips about 20 cm wide and 8 cm long. You need three strips for each test – hence the name “triangle test”

– Transfer the oils, which contain the molecules you smell, from the citrus fruit to the end of the test strips. To release the oils, cut strips of the peel and place it on the filter strips outside skin side down. Press the skin down on the paper using a spoon to squeeze the oil onto the filter paper.

– Make one lemon strip, one lime strip, and the other strip can be either lemon or lime.

– Number the ends of the strips so you know which is which.



Procedures – Running the Triangle Test

– Tell a blindfolded friend or family member that you are going to present three smells and they are to tell you which two are alike.

– As you hold a strip under your friend’s nose, state the number. Do three trials for the test, randomize the order in which you present the strips each time.

– To refresh their nose between sniffs, ask them to sniff a tissue or a sleeve.

Observations – How did your volunteer do? Have your volunteer try the triangle test on you. How did you do? Do the triangle test on as many people as you can. Are females more talented smellers than males? Are children better smellers than adults?

Inquire further: Expand the triangle test above by testing other pairs of smells that are similar in composition, e.g.:

- two brands of coffee
- two similar cheeses (e.g. cheddar and mozzarella)
- two similar perfumes or shampoos
- another pair of citrus fruits (e.g. grapefruit, nectarines)
- almond extract or cherry extract/juice/candy
- two kinds of chocolate (e.g. chocolate chips, candy bars)

Some of these items could just be tested via “whiffs”. Still test your volunteer blindfolded, but you can skip the step of preparing the test strips. You ask them to sniff the items as you hold them under their nose.



*Ask adult to help you with sharp knife and scissors



#CBU_WISE
@CBU_WISE