



Quarterly Problem

- Science Edition -

Can you smell it?



Smell is one of the basic senses through which we perceive scents or odours caused by chemical substances in the inhaled air. Smell is related to the taste of food, it is used in aromatherapy, but it can also warn against danger, for example, in the case of incipient fire. Anosmia, the complete loss of smell, or hyposmia, the partial loss, can be very unpleasant for humans. Currently, this is one of the covid-19 symptoms, when up to 60% of patients lose their sense of smell. This phenomenon usually disappears after 4 weeks; however, it can be long-lasting as well. Olfactory disorders are examined by OMT (Odour Memory Test) or PMT (Perfumed Markers Test) tests, and olfactory training is recommended for recovery.

Explore the sense of smell in the people around you. Use various spices and create a test set. Which smell can be certainly identified? Which is perceived as good /bad?

What chemical substances are the smell of flowers or spices caused by?

What aromatic substances can be detected, for example, in a mixture of curry or gingerbread spices?

Aromatic substances that cause good or bad smell are of interesting chemical structures. Use the structures and create an avant-garde work of art.

Here are some websites dealing with flavourings and smell. What information is the most interesting for you?

- <https://www.compoundchem.com/2014/03/13/chemical-compounds-in-herbs-spices/>
- <https://www.fifthsense.org.uk/what-is-smell/>
- <https://abscent.org/learn-us/smell-training>

Brainstorm-Box

Why can we feel the smell (scent or odour)?

Do we all smell in the same way?

What is the strong scent of spices caused by?



Whose method is the most accurate?

Focus on phrasing your approach in a clear and comprehensible way.

Also state what foundation you have used for your research and results.

© Veronika Machkova/University of Hradec Kralove and Martin Bilek/Charles University, Czechia, International Centre for STEM Education (ICSE), 2021

CC-BY-NC-SA 4.0 License granted

Picture license: Own production: Veronika Machkova & Martin Bilek

