B3 TASTE: CHEMESTHESIS

Story Starter

Have you ever wondered what it would be like to be the best in the world at something and own a world record? An Indian woman is the Guinness World Record holder for eating 51 of the world's hottest chillies in just two minutes! The crowd watched in amazement as the woman didn't even seem to notice the heat and the pain usually caused when eating this unusual food. For most people, eating a single seed from the chilli will cause watering eyes, a runny nose and a burning sensation in the mouth and throat that can last up to five hours. This exceedingly hot chilli carries a fearsome reputation. Not only are its effects incredibly painful, but, sadly, in a few cases, they have also proved fatal.

RESOURCES

To source

- Cold fizzy drinks, preferably very fizzy canned drinks like 7 up or RWhites lemonade.
- Tabasco
- Menthol sweets (e.g. eucalyptus)
- Onions
- Popping candy (available in the baking section at supermarkets)
- Drinking cups
- Timers
- Paper and pens

N/C link LKS2:

Children should describe the simple functions of the basic parts of the digestive system in humans. Elsewhere, they should explore the rest of the digestive system, through activities such as modelling the digestive system, this should include work on the teeth

OUTCOMES AND IMPLICATIONS:

The sensation of chemesthesis protects our bodies and warns us against high chemical concentrations in food. Chillies contain a chemical called capsaicin which makes them spicy and hot. One or two won't hurt you but if you eat lots of them it can be dangerous. Capsaicin is such a powerful chemical it is used as a paint stripper. Some of the hotter chillies, such as habaneros, can be felt on the skin as the capsaicin will produce a burning sensation.

FLAVOUR SENSENATION SCIENCE

Some food and drinks stimulate nerve endings in the nose, mouth and eyes (the trigeminal nerve) which carry signals, usually those involving pain. This is known as chemesthesis and relates to a variety of sensations including tingling, stinging, burning, cooling, warming and irritation. The tingling caused by carbon dioxide in the bubbles of a fizzy drink stimulates your tongue's pain receptors. This makes the drink more interesting and is enjoyable as long as you swallow the drink before it gets too painful!