BIG QUESTION: How is the tongue helpful in tasting?

EXPERIMENTAL PROCEDURE

1. ASK the children to imagine that they are shipwrecked on a desert island. What would it be like to find food, not from the supermarket, but from wild plants and animals on the island? How would we tell if something is safe to eat or poisonous?

2. The last thing that we do before ingesting our food is put it in our mouths. It is therefore very important that our body gives us signals as to whether a food may be harmful or nutritious. Explain to children that we have thousands of 'bodyguards' in our mouths called taste buds. These help us to decide whether a food is delicious and good for us, or perhaps harmful.

3. Our taste buds can sense five different tastes and give us information about the foods we eat:

- Sour taste - can tell us that food is not ripe or may be over-ripe and fermenting.
- Bitter taste - can be unpleasant and tells us there may be poisons in food. Early humans probably developed sensitivity to bitter taste as a way to protect us, by making poisonous plants taste unpleasant.
- Salt taste – can tell us that there are important minerals in food. Sodium, for example, helps keep the blood flowing round your body and Calcium gives you good strong bones.
- Sweet taste – can tell us there are sugars in the food which give us energy.
- Umami taste - (often called savoury taste) – tells us there are amino acids in the food, often found in proteins. Amino acids and proteins help to give us strong muscles.

4. Explain that some of these tastes will be very familiar and others may be new or even strange! We are going to use the taste buds on our tongues to learn more about the five different tastes. We call this tongue mapping.

5. Your teacher is going to give you five different samples to taste (one for each type of taste). Try one sample at a time by dipping a cotton bud into the solution until it is saturated and then wipe the cotton bud all over your tongue.

6. For each sample, Ask: What do you taste? Where can you taste this most on your tongue? How do you think you could record this information to compare with others?

7. You could record what you tasted and where you tasted it on an image of a tongue (it could be a photo, your own drawing or a photocopy). You might decide to colour, highlight or write on your image and then compare this with other people working in your group to look for patterns/similarities / differences in results.

8. ASK the children to share their responses; they will see that they are likely to differ. For example, some may say that they taste sour on the tip of their tongue only, some may say that they taste it on the sides, or even one side only.

9. ASK: What can we conclude from the difference in responses?

RESOURCES (In Kit)

- Sour, Bitter, Umami tastants

RESOURCES (To download)

- Tongue image
- Tongue map explained

RESOURCES (To source)

- Cotton buds x 5 per child
- Plain paper for the children to record their results
- Pens, coloured pencils, highlighters, and other materials suggested by the children
- Sugar
- Salt