

BIG QUESTION: Do we taste what our parents did?

EXPERIMENTAL PROCEDURE

1. **Set the scene** by telling the story.
2. **ASK:** Why do you think some people could taste the bitter PTC, others only slightly and some nothing at all?
3. **Discuss** ideas and responses as a whole class, encouraging children to think scientifically and offer hypotheses.
4. **Explain** that scientists called Geneticists tell us that we may have inherited our ability to taste or not taste PTC from our parents. Our genes carry information that makes us who we are and what we look like. Many of these things are passed from one generation to the next in a family by genes. PTC will either taste very bitter, slightly bitter or tasteless depending on the genes of the taster.
5. **You are going to find out** about your PTC tasting gene by placing a special type of paper on the tip of your tongue. Leave the paper there for only a few seconds, then remove it. Do you taste anything? (ALERT - if not don't hold the paper there for too long!)
6. **ASK:** Could you taste the bitter PTC?
7. **ASK:** If so, could you taste it a little, or a lot?
8. **Discuss** how those that removed the paper first are more likely to be 'super-tasters' as they tasted the bitterness very quickly. Those who did not taste it at all are called 'non-tasters', whereas everyone else (those who tasted a slight bitterness) are called 'medium-tasters'.
9. **Everyone** has two forms of the gene (otherwise called two alleles) and you can either get two sensitive ones, two insensitive ones, or one of each.
10. **ASK:** Can you determine whether you have inherited the non-taster PTC gene or the super-taster PTC gene?
11. **Tell** the children to form groups according to their response to PTC. They could express this data as either fractions, or percentages of the total number in the class. It would be interesting to compare this data with the national average which will usually be approximately 25% non-tasters, 50% medium-tasters and 25% super-tasters.

WORKING

SCIENTIFICALLY

- Planning different types of enquiries to answer questions
- Taking measurements
- Recording data and results of increasing complexity
- Using test results to make predictions
- Reporting and presenting findings from enquiries
- Identifying scientific evidence that has been used to support or refute ideas or arguments

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

WHAT NEXT?

Children may wish to participate in a further research activity examining a range of responses to broccoli and/or cabbage. They could set up their own tests and ask subjects to describe the taste, texture, aroma and look of vegetables containing bitter compounds similar to PTC. They could then compare the results from those who are a) super-tasters b) medium-tasters and c) non-tasters and present their findings to an invited audience.

Ensure the children remove the papers after a few seconds.

When taste testing is taking place, you must ensure you have up to date information relating to any food allergies children may have and take appropriate precautions.

SAFETY