

# A Question of Taste

## Key Stage 5



This workshop gives students the chance to analyse and compare their version of a bitter taste receptor gene (their genotype) to their ability to taste PTC (their phenotype). Students learn about molecular biology techniques by using research-quality equipment.



### Length of Session:

9.30am - 3pm

### Maximum group size:

20 students accompanied by one member of staff

### This session is based on the following curriculum themes:

- DNA codes for proteins and is central to our understanding of how organisms function
- Variation drives natural selection
- DNA can be manipulated using a variety of molecular biology tools and techniques such as restriction enzymes, gel electrophoresis and the polymerase chain reaction

## Session outline

**Part 1:** Students carry out a taste test to determine their taste phenotype.

**Part 2:** Students isolate their own DNA from cheek cells and use the polymerase chain reaction to amplify a key fragment of a taste receptor gene.

**Part 3:** Students use a restriction enzyme digest of their PCR product to differentiate between 'taster' and 'non-taster' alleles

**Part 4:** Students use gel electrophoresis to visualise their digested DNA to discover their genotype and compare this to their phenotype

**Part 5:** Results are discussed in the context of human evolution.



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