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.