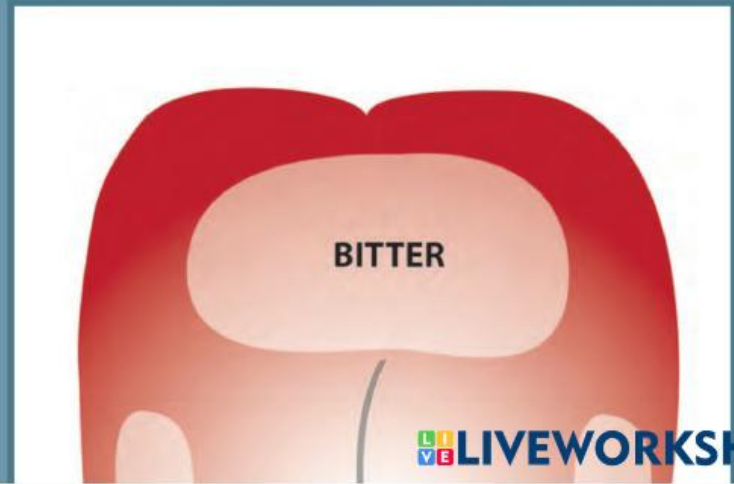


**6** Look at the sentences (1–4). Read the passage again carefully and complete the sentences. Use your answers from Exercise 5 to help you. Write **NO MORE THAN TWO WORDS AND/OR A NUMBER** for each answer.

- 1 The idea of the four basic tastes had its origin in the work of a .....
- 2 Close observation of the tongue revealed small cavities that looked like .....
- 3 Hanig's experiments suggested a link between the front of the tongue and ..... tastes.
- 4 Boring preferred to use the word ..... for the picture of the tongue he produced.

# THE FOUR BASIC TASTES



When humans eat, they use all of their five senses – sight, hearing, smell, touch and taste – to form judgments about their food. But as every cook knows, and scientists have long confirmed, it is taste that is most influential. Indeed, it was the Ancient Greek philosopher Democritus who first formulated the notion that people could perceive four primary tastes – sweet, sour, salty and bitter – which couldn't be replicated by mixing together any of the others.

When tongue cells were studied under a microscope in the late 19th century, they appeared to resemble tiny keyholes, and scientists put forward the idea that these cavities came in four different shapes, each corresponding to one of the primary tastes.

Then, in 1901, a German scientist named D.P. Hanig set out to measure the relative sensitivity of the tongue to the four known basic tastes. He concluded that this varied in different parts of the tongue, with sweet sensations peaking in the tip and salty ones more prevalent at the sides.

In 1942, Edwin Boring, a psychologist at Harvard University, took Hanig's raw data and created a visual image, what he termed a map of the tongue, showing which areas were most sensitive to which taste. The concept is easy enough to refute with a home experiment. Place salt on the side of your tongue and you'll taste salt. Place sugar on the other side and you'll taste sweet. But for some unknown reason, scientists never bothered to do this, and Boring's ideas and accompanying diagram continued to be widely accepted.

