



LESSON 5: SAFETY TESTING SUBSTANCES



Level:	Key Stage 4 or Key Stage 3
Duration:	30 - 45 minutes
Resources:	Safety testing substances presentation (including XCellR8 film) pH 4, 6 and 7 in beakers labelled 'A', 'B' and 'C' Universal indicator strips Safety goggles
Overview:	Students will test the pH of three substances and use the data they collect to determine if the new substances are safe for human use. They will analyse their results and evaluate how reliably the data from animal experiments predicts what will happen in humans and learn about some human-relevant techniques emerging in this field.

LEARNING OBJECTIVES

The pH scale for measuring acidity/alkalinity; and indicators
The development of scientific thinking
The ways in which scientific methods and theories develop over time

STARTER

Use slides 1 and 2 to introduce the differences in human, dog and rat skin pH and how this leads to a different range of tolerated pHs for each species.

MAIN

Students carry out practical work as detailed in the *Practical instructions*.

Show students the XCellR8 film to introduce them to the world of human-relevant safety testing techniques.

PLENARY

Think, pair, share: Do you think it is ethical to test on animals? Do you think it is good science to test on animals?