

THE TASTE OF WATER: Sequence Overview

Australian Curriculum: Mathematics (Year 10)

ACMSP253: Evaluate statistical reports in the media and other places by linking claims to displays, statistics and representative data.

ACMSP277: Investigate reports of studies in digital media and elsewhere for information on their planning and implementation.

ACMSP278: Calculate and interpret the mean and standard deviation of data and use these to compare datasets.

Summary of lessons

Who is this Sequence for?

This sequence introduces students to informally conducting experiments to test hypotheses. Students should be familiar with ideas associated with variation, randomness and probability and have some facility with the use of spreadsheets.

Lesson 1: The Taste of Water

Students test whether they can taste the difference between tap and bottled water by collecting and interrogating experimental data. This lesson can serve as an introduction to the concept of the p-value as students compare their results to the likelihood of finding the same result by sheer chance.

We value your feedback after these lessons via our website.

Reflection on this sequence

Rationale

Variation is a natural part of the real world. This sequence begins to formalise ideas associated with variation by looking at how much variation we can expect in a random process. This allows students to decide whether a result they observe could have occurred by sheer chance or whether there is an alternative explanation.

reSolve Mathematics is Purposeful

- Students connect mathematical concepts to scientific experimentation.
- Students are introduced to the important idea of hypothesis testing, which is used in all areas of science and social science to determine a threshold for distinguishing meaningful from random variation.

reSolve Tasks are Inclusive and Challenging

- Several different approaches to the task are outlined, with varying degrees of mathematical sophistication and formality.
- The context is one with which all students are familiar and addresses an issue of environmental significance.

reSolve Classrooms Have a Knowledge Building Culture

- Students have input into the design of the experiment and discuss the strengths and limitations of different possibilities.
- The different results obtained by students from a randomised trial using a spreadsheet provide a springboard for comparison and discussion of variation.