

Exponentials & Logarithms

Station guide

Resources at this station cover the topics of exponential functions and the meaning, behaviour and uses of logarithms.

The task [See the power](#) uses the familiar powers of 10 to introduce the exponential as a continuous function and also points towards logarithms as a useful concept. The perhaps unexpected rate of growth of exponentials is explored in a concrete way in [Reach for the stars](#) and more algebraically in [How fast does it grow?](#)

Logarithms to different bases are used in [Factorial fragments](#) and [Summing to one](#), where some interesting algebraic expressions and equations can be unpicked using appropriate tools. Deciding what methods are appropriate and relevant is a generally useful skill that is developed in [To log or not to log?](#)

The behaviour of logarithms as functions and their relative sizes are ideas that underpin [Logarithm lattice](#) and its follow-on activity [Logarithm lineup](#). They require students to approximate and compare the values of logarithms without using a calculator. Developing this number sense is helpful when working with logarithms and in addition to this, the resource [1950s calculators](#) also gives an opportunity for students to see one way in which logarithms were used historically.