## 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.

