Calculus of Powers
Station guide

At this station, we introduce the idea of calculus as a set of tools, along with methods for differentiation and integration of expressions built from powers of $x$.

**Gradient spotting** is a resource that can be used to explore the derivatives of quadratic and cubic functions of $x$, searching for patterns and a general rule. Differentiation is exercised as a tool for finding turning points on curves in Floppy hair and for identifying tangents and normals to curves in Tangent or normal.

The use of integration to find the areas under curves is explored in Meaningful areas alongside some other techniques drawing on ideas of symmetry and averages. The resource **Integral chasing** provides an interesting context for practising definite integrals, and also spotlights the connection between an integral and an area.

A large number of Review questions are available, providing opportunities to reinforce the methods covered at this station.