Calculus meets Functions

Station guide

At this station we continue to focus on differentiation and integration of powers of a single variable, but now with an approach that links back to earlier work on functions and graphs. For example, in What else do you know? and Slippery slopes students can consider how transformations affect the gradient function or integral of a given function. The thinking that may be developed by working on these resources can help to support understanding of the chain rule, which is introduced at a later station.

Gradients of gradients introduces the second derivative and how it is related to the graph of a function. Points of inflection are also discussed here.

Two-way calculus offers an opportunity to bring together lots of elements of calculus and functions. This resource and Can you find...curvy cubics edition ask students to generate examples of functions which satisfy certain criteria. Both of these resources can be approached in many ways and could be used to introduce integration as the reverse of differentiation.