

# Foundational concepts and knowledge

Ensuring pupils master foundational concepts and knowledge before moving on is likely to build pupils' confidence and help them succeed.

Foundational concepts are key ideas that pupils need to understand before they can progress to the next level of understanding. Without an understanding of such foundational concepts, pupils will struggle to grasp future learning in that subject (Enser 2019).

Hence, explicitly teaching pupils the knowledge and skills they need to succeed within a subject area is beneficial and should be designed into the curriculum.

## When should foundational concepts be taught and revisited?

Every subject has foundational concepts that form the basis of a pupil's mental models. These concepts are often introduced to children early on in their education to be revisited and built on as they grow and develop their mental models.

### An example

In geography pupils need to master the foundational concept of tectonic plates in order to build their understanding of this key subject area throughout their education:

The concept of tectonic plates may be introduced to children in the Early Years, where they may paint pictures of exploding volcanoes.

- **In Key Stage 1**, pupils might learn about famous historical examples of volcanoes and earthquakes.
- **In Key Stage 2**, pupils might learn about the different tectonic plates around the world and how these led to the types of natural disasters they encountered in Key Stage 1.
- **In Key Stage 3**, pupils might learn about how volcanoes and earthquakes are caused by the movement of tectonic plates.
- **At Key Stage 4**, pupils may learn about how the direction and speed of tectonic plates moving relative to one-another determines the type, magnitude, and frequency of tectonic activity.
- **At Key Stage 5**, pupils may learn how scientists monitor the movement of tectonic plates in order to predict and alert people to potential earthquakes and volcanic eruptions.
- **At university**, students might learn about plate tectonic modelling and they may go on to write their PhD thesis on the constraints of tectonic subduction.

As you can see from this example, the concept of tectonic plates is revisited at different stages of a pupil's education, each time building on the knowledge that has come before. This enables pupils to learn new ideas by linking those ideas to existing knowledge and incorporating them into their mental models.