

# Anticipating common misconceptions

In module 3 you learnt how process questions are more likely to reveal pupil misconceptions, and in module 4, how to monitor pupil work for misconceptions. In this module we are going to focus on how you can work to anticipate and tackle common misconceptions as part of careful curriculum design.

A misconception is a wrong or inaccurate idea based on faulty thinking or understanding. A common misconception is a wrong idea that many people have.

## Which misconceptions are important to anticipate?

For pupils, the most important common misconceptions to anticipate are the ones which relate to foundational concepts. This is because misconceptions can be difficult to shift but doing so can lead to big gains in learning (Education Endowment Foundation (2018) Improving Secondary Science Guidance Report).

Therefore, anticipating common misconceptions within subject areas is also an important aspect of curriculum knowledge and working closely with colleagues to develop an understanding of likely misconceptions is valuable.

Here are some examples of common pupil misconceptions:

### Science - Biology

#### Misconception

All cells are the same size and shape.

#### Correct idea

Different cells can have different sizes and shapes.

### Geography - plate tectonics

#### Misconception

The earth's plates are made of solid rock that can never be seen because the plates are always deep within the earth.

#### Correct idea

Earth's plates are made of solid rock, and they can be seen where they are not covered by soil, loose rocks, or water.

*The above example was taken from: [AAAS Project 2061](#)*

### Modern Foreign Languages - French

#### Misconception

J'ai is translated as 'I am'.

#### Correct idea

J'ai is translated as 'I have'.

This misunderstanding stems from pupils learning that 'J'ai onze ans' is translated as 'I am 11 years old'; j'ai is used in this context leading pupils to think that 'j'ai' means 'I am'.

### History - capitalism

#### Misconception

Thinking capitalism is synonymous with democracy.

#### Correct idea

Capitalism is an economic system, and so capitalist economies can operate in dictatorships & other non-democratic regimes, as well as in democracies.

So good curriculum design includes being aware of common misconceptions and this requires secure subject knowledge:

“The most effective teachers have deep knowledge of the subjects they teach... As well as a strong understanding of the material being taught, teachers must also understand the ways students think about the content, be able to evaluate the thinking behind students’ own methods and identify students’ common misconceptions.”

Coe et al 2014, p.2

Consequently, when embarking on a new topic with pupils, it is good practice to first consider your own subject knowledge and any potential knowledge gaps you may need to close, particularly those concerning foundational concepts and knowledge. It might sound obvious but making sure your subject knowledge is secure is one of the best ways to enable you to teach the content well and help pupils to master the critical components of the subject.

## Identifying subject knowledge gaps



### Over to you!

Review the content of your sequence of work and record any potential knowledge gaps or areas you want to strengthen using the [notes tab](#) (or your own notebook). If you have identified a need for subject knowledge development, be prepared to share this with your mentor in your next meeting and discuss the best steps you can take to address it.