

Apply learning principles

Here are some of the learning principles we designed into the Practice Book problems. How many did you spot?

1. The worked examples model the thinking process at each stage. This reduces the cognitive load for students, who can focus on understanding the explanation initially rather than having to do it for themselves.
2. The explicit use of the 3-step approach detect, recall, solve encourages metacognition – think about one's thinking. This is a fundamental learning principle.
3. The questions in speech bubbles are to encourage 'self-explanation'. Research shows best students explain what's going on to themselves. They engage in an inner dialogue while solving problems. This helps them gain a better understanding.
4. The first your turn question is essentially identical to the example but with different information to make it an easy step. This again reduces the cognitive load for students and allows them to look back at the working to check what to do.
5. The hints can act as support, reducing the challenge for students who need it, while still allowing them to be successful.