

Using questioning to build complexity

Overview

Carefully crafted questions that build in complexity create pathways for all students to think deeply.

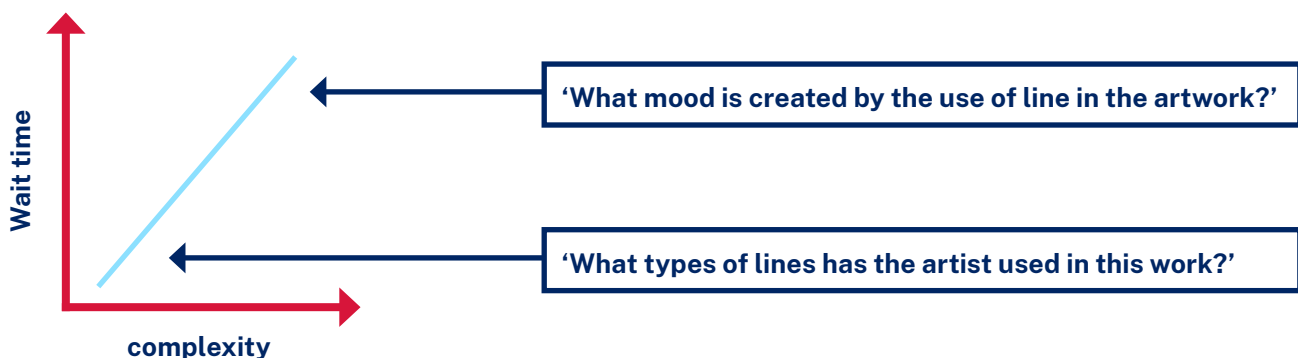
Effective questioning allows students to rehearse and expand their knowledge within relevant schema, make connections between ideas, and enhance long-term retention of learning (Sherrington 2019).

Planned questions should align with learning intentions and success criteria to check understanding and guide student focus (AERO 2024).

Key considerations

- Plan question sequences at the right challenge level to cater for all learners.
- Use a variety of questioning techniques to make connections to prior learning, build schema and strengthen knowledge retention (AERO 2023).
- Provide wait time before and after questioning, using strategies such as a countdown timer, or a Think-Pair-Share activity to prompt knowledge recall (Stahl 1994).
- Classroom culture is essential. Students should expect to be called on at any time and feel safe to engage with difficult questions and potentially make mistakes.

Wait time increases with increasing question complexity



Wait time has to be increased to several seconds in order to give students time to think, and everyone should be expected to have an answer and to contribute to the discussion.

(Black et al. 2004:13)

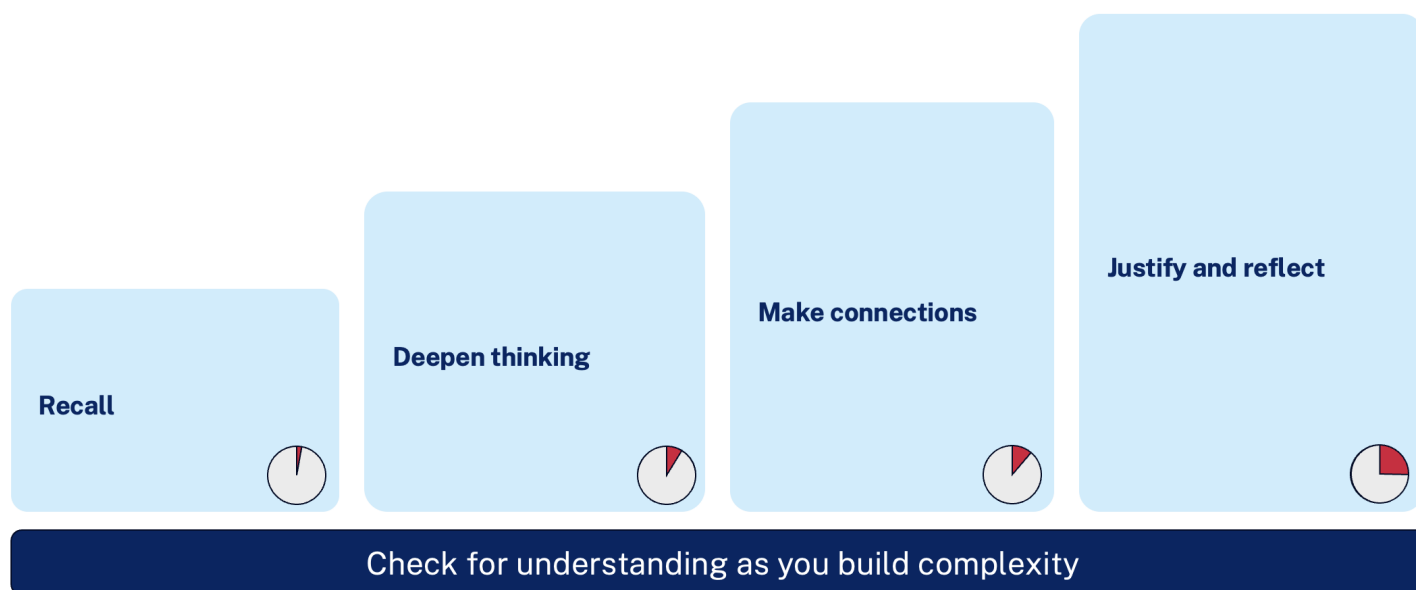
Using effective questioning resources



<https://edu.nsw.link/explicit-teaching-using-effective-questioning>

Classroom application

Questions can be used to retrieve prior knowledge, to help students deepen their thinking, to connect ideas and to support students to justify their thinking and reflect on their reasoning.



While using questioning that builds in complexity, it is important that we check for student understanding frequently throughout the lesson. 'Checking for understanding regularly during a lesson allows you to identify misunderstandings as they develop, rather than allowing students to repeat mistakes, practise incorrectly and commit misconceptions to memory' (AERO 2024:4).

Stage 2 Mathematics

Students at the end of Stage 2 have been learning how to determine the relative location of one-quarter and one-half when a number line extends beyond one. Students have had a high success rate locating one-half on number lines that extend beyond one. Students have marked the location of one-quarter on a 0–1 number line and a 0–2 number line.

The teacher:

- asks students to **recall** 'How did you locate one-quarter on the 0–2 number line?' (wait time)
- **deepens thinking** by asking 'How did you know to do this?' (wait time)
- supports students to **make connections** by asking 'Using what you know about locating one-quarter, how would you locate one and one-quarter?' Students turn and talk to share their strategies
- encourages students to **justify and reflect** by asking 'If zero, one-half and 2 were marked on a number line, would you still need to locate one-whole to accurately mark one-quarter?' (wait time). Students Think-Pair-Share.

Syllabus reference: Partitioned fractions B: MAO-WM-01 and MA2-PF-01

Content

Determine the relative location of one-quarter and one-half when a number line extends beyond one

Stage 4 Visual Arts

The teacher shows a sample artwork. Students are then given time to examine the artwork and apply prior learning from the previous lesson on the qualities of lines.

The teacher:

- asks students to **recall** prior learning by asking 'What types of lines has the artist used in this work?' and then 'How can line create mood?'
- prompts students to **deepen thinking** by asking 'Why do you think the artist has used 3 different types of lines?' (wait time)
- The teacher then shows another artwork by a different artist. This artwork is significantly different to the first artwork.

The teacher:

- encourages students to **make connections** between 2 artists by asking 'How does the artist's use of line compare to the use of line in the previous artwork?' (wait time; students turn and talk)
- asks students to **reflect** by asking 'What mood does the use of lines create in this work?'

Syllabus reference: Art critical and historical studies: Viewpoints: VA4-CHV-01

Content

Investigate how artworks represent systems of signs, symbols, codes and forms of visual and/or multisensory language to structure and communicate meaning

More resources

NSW Department of Education –checking for understanding

<https://education.nsw.gov.au/teaching-and-learning/curriculum/explicit-teaching/explicit-teaching-strategies/checking-for-understanding>

NSW Department of Education –connecting learning

<https://education.nsw.gov.au/teaching-and-learning/curriculum/explicit-teaching/explicit-teaching-strategies/connecting-learning>

References

Mathematics K–10 Syllabus © NSW Education Standards Authority (NESA) for and on behalf of the Crown in right of the State of New South Wales, 2022

Visual Arts 7–10 Syllabus © NSW Education Standards Authority (NESA) for and on behalf of the Crown in right of the State of New South Wales, 2025.

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Stahl RJ (1994) 'Using "think-time" and "wait-time" skillfully in the classroom', *ERIC Digest*.

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