

Review of learning

Overview

Retrieval practice is actively recalling information from long-term memory. It is one of the most effective ways to help students learn. One way to do retrieval practice is through regular review.

What is review?

Review is a planned opportunity for students to bring prior learning back into their working memory. The more often students retrieve information, the more the learning becomes easily recalled. Ease of recall supports students in using their learning, including making connections between prior knowledge and new knowledge.

Research shows that regular review can improve students' ability to retrieve information quickly, even automatically (Rosenshine 2012; Agarwal et al. 2020). This frees up working memory, making it easier to learn new, related ideas (Rosenshine 2012; Agarwal et al. 2020).

Reviews work best when they're intentional and structured. They can happen anytime during a lesson, tailored to your students' needs. For example:

- in primary classrooms, a brief daily review of key concepts could occur
- in secondary classrooms, a short review within a subject could occur once or twice a week.

Review becomes even more powerful when retrieval is **spaced** over time (Dunlosky 2013; McDermott 2021). This means revisiting content from last lesson, last week, last term or even last year. While there's no perfect spacing formula, repeated, spaced review improves long-term retention (Kang 2016).

For review to be effective, students need to **actively recall** information, not just re-read or recognise it. The retrieval should be effortful enough to strengthen memory, but not so hard that students get frustrated or fail (McDermott 2021). This means planning review tasks so that students are likely to experience success.

In short, embedding regular, spaced and thoughtfully designed reviews into your teaching routine helps students build durable knowledge, making future learning easier.

Key considerations:

- Teachers design reviews using prior learning. Reviews are facilitated by the teacher. They are:
 - planned and scheduled
 - responsive to student learning
 - short in duration.
- School-wide routines may help manage students' cognitive load when doing reviews.
- Review can use a variety of techniques including multiple choice, fill-a-gap, examples versus non-examples or whole-sentence answers.
- Teachers provide the correct answers to each question. They do not reteach during the review. If a teacher notices a gap in knowledge, they will note it and select an appropriate time outside of the review to reteach (Agarwal et al. 2025).
- The underpinning principles of retrieval practice include spacing and challenge. Spacing should be distributed over time rather than clustered. Challenge level should be effortful but achievable.

What review isn't

- Asking, 'What did we do last lesson?'
- Being too easy or too hard for students to engage in successfully.
- Reteaching or revising recent skills or knowledge.
- Students reading notes from a previous lesson.
- Taking up large portions of time within a lesson or day.
- Activating prior knowledge is not the same as retrieval practice, though it does require retrieval. Activating prior knowledge is used to bring information into working memory so students may connect it to learning that is about to happen. Retrieval practice consolidates learning through effortful recall that is strategically spaced over time.

'Retrieval practice doesn't take more classroom time – it involves using classroom time more effectively.'

(Agarwal et al. 2020).

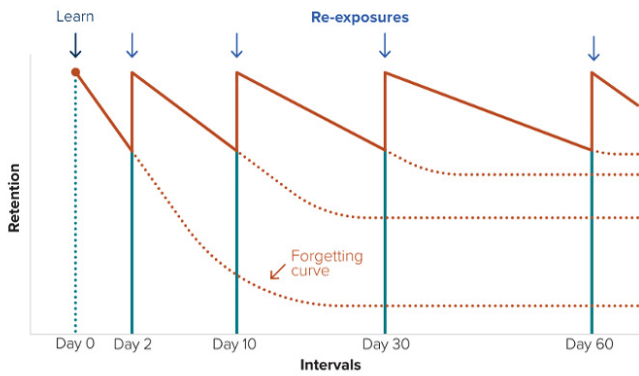


Figure 1: Forgetting curve' by Australian Education Research Organisation, adapted from original by Productive.fish, used under CC0 licence.

'Students may be able to recall information immediately after they've learnt it, but without regular review, the ability to recall may fade. The forgetting curve (Figure 1) demonstrates how each recall of learning makes it more likely to be retained and not forgotten' (AERO 2024).

Source: Adapted from Productive.Fish, used a CC0 licence.

Planning for review

Example

A Stage 4 science teacher has used a spreadsheet to create a schedule for spaced retrieval practice of skills and knowledge. She lists the content in the left column. The content is taught for the first time (green box), then reviewed the first time 2 days later (yellow box). The second review (blue box) and third review (pink box) happen in the following weeks.

For example, the review on Monday Week 3 will contain questions about 2 points of content:

1. how the human body responds to stimuli (blue box)
2. the structure and function of the nervous system (yellow box).

The teacher then moves to new learning about infectious and non-infectious disease (green box) that lesson.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1	When the content is first taught	Green															
2	The first time it is reviewed	Yellow															
3	The second time it is reviewed	Blue															
4	The third time it is reviewed	Pink															
5																	
6																	
7																	
8	Define and model homeostasis, use models to explain ideas and make predictions	Green															
9	Describe how the inability to maintain homeostasis can lead to illness		Green														
10	Human body responses to stimuli and validity and reliability in practical investigations			Green													
11	Practical investigation: the heart's response to stimulus and analysing data and information				Green												
12	Role of feedback loops in maintaining homeostasis					Green											
13	Structure and function endocrine system and analysing data and information						Green										
14	Structure and function of the nervous system and analysing data and information							Green									
15	Compare and contrast responses of nervous and endocrine systems								Green								
16	Distinguish between infectious and non-infectious disease and identify causes of each									Green							
17	Process and analyse data and information – causes of infectious disease										Green						
18	How infectious diseases can be spread, use models to explain ideas and make predictions											Green					
19	How the body prevents entry to pathogens and how it responds to pathogens that do enter												Green				
20	How vaccination stimulates the body to produce antibodies to fight infection													Green			
21																	

This example has been written by NSW Department of Education. This example is adapted from an [article written by Reid Smith](#) which discusses the use of Orche Education resources for review.

A primary school has crafted a school-wide routine to conduct reviews. Committing to the same routine across the school takes into consideration students' cognitive load as they know what to expect in their reviews. Stage teams have made the design of reviews efficient by sharing who writes the questions, with agreed principles for a simple design of the slides without any unnecessary graphics or information. This helps to reduce any extraneous load from being introduced and maintains focus on the content for review.

What type of map is this?

- A) Grid
- B) Relief
- C) Column
- D) Choropleth



Low stake response system could be used such as choral response.

Record the correct answer.

What would you see on a relief map?

- A. The names of cities and towns.
- B. Variation in the height of land using colour, shading or pattern.
- C. The types of animals living in an area.
- D. The weather forecast for each region.

Turn and talk with your partner

Use the sentence stem to answer in a full sentence.

A relief map is used to show variation in _____ of land using _____ shading or _____.

Answer:
A relief map is used to show variation in height of land using colour, shading or pattern.

Compass directions

What are the other compass directions?

North



More resources

Explicit teaching – Connecting learning

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

Explicit teaching – Activating prior knowledge

[https://education.nsw.gov.au/teaching-and-learning/curriculum/explicit-teaching/explicit-teaching-strategies/connecting-learning#:~:text=Activating%20prior%20knowledge%20%E2%80%93%20technique%20guide%20\(PDF%20157.8%20KB\)](https://education.nsw.gov.au/teaching-and-learning/curriculum/explicit-teaching/explicit-teaching-strategies/connecting-learning#:~:text=Activating%20prior%20knowledge%20%E2%80%93%20technique%20guide%20(PDF%20157.8%20KB))

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