Brain Considerations for Block Planning

Considerations and Classroom Implications with Downloadable Planning Tool

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Primacy - Recency Effect

Considerations

We remember best that which we learned first (**primacy effect**) and second best that which we learned last (**recency effect**). This occurs because the brain encodes initial information more deeply into long-term memory, and recent information remains in working memory. The middle content receives less attention and encoding, making it more susceptible to forgetting.

Planning Reflections / Classroom Implications

Use language intentionally to leverage this effect by placing critical concepts and key vocabulary at the beginning of lessons and revisiting them at the end. Provide only accurate information during those times, as errors in primacy positions become deeply encoded. Structure lessons to bookend important content with reinforcement activities.

Prime Time and Downtime

Considerations

The brain has limited cognitive resources. **Prime time** occurs when students are alert and can focus deeply, typically early in a lesson or class period. During this time, the brain can engage in complex thinking, synthesis, and problem solving. **Downtime** refers to periods of lower cognitive demand, when students are fatigued or less focused. Using prime time for administrative tasks (attendance, paperwork) wastes the brain's peak performance window.

Planning Reflections / Classroom Implications

Utilize downtime for reinforcement activities such as review, practice, or low-stakes quizzes. Save complex new content, discussions, and synthesis activities for prime time, when students' brains are most capable of deep processing. This strategic scheduling maximizes learning efficiency and retention.

Sense and Meaning

Considerations

> Use a real-world situation to drive the students into the content. David Sousa's research (*How the Brain Learns*, 2022)shows the significance of ensuring content enters the brain through a meaningful context; that ensures that information is stored such that it can be retrieved and applied to new and novel situations.
>
> The brain doesn't learn isolated facts well; it learns through meaning and connection. When students encounter a real-world situation or problem that matters to them, their brains activate emotional centers and create stronger neural pathways. This relevance triggers the brain to pay attention and encode information more deeply. Without meaning, information remains superficial and is quickly forgotten.

Planning Reflections / Classroom Implications

Meaning creates and connects to **schemas**—the mental frameworks students use to organize knowledge. Start lessons with authentic, real-world scenarios that students care about. Connect new content to existing knowledge and student experiences. This approach activates prior learning and creates stronger neural networks, making new information "stick" better and be more retrievable.

Social Interaction

Considerations

We learn best from one another.

Social interaction activates multiple brain regions simultaneously—language processing, emotional centers, and memory systems. When students discuss ideas with peers, they must articulate their thinking, hear alternative perspectives, and negotiate meaning. This multi-sensory, interactive processing creates stronger neural connections than passive learning. The brain is fundamentally social and learns best through dialogue and collaboration.

Planning Reflections / Classroom Implications

Discussions in large and small groups support knowledge transfer.

Discussions in large and small groups support knowledge transfer by requiring students to process information verbally, listen actively, and integrate new perspectives. Pair-shares, think-pair-share protocols, and collaborative problem solving leverage the brain's social learning strengths. These interactions also increase engagement and motivation through social connection.

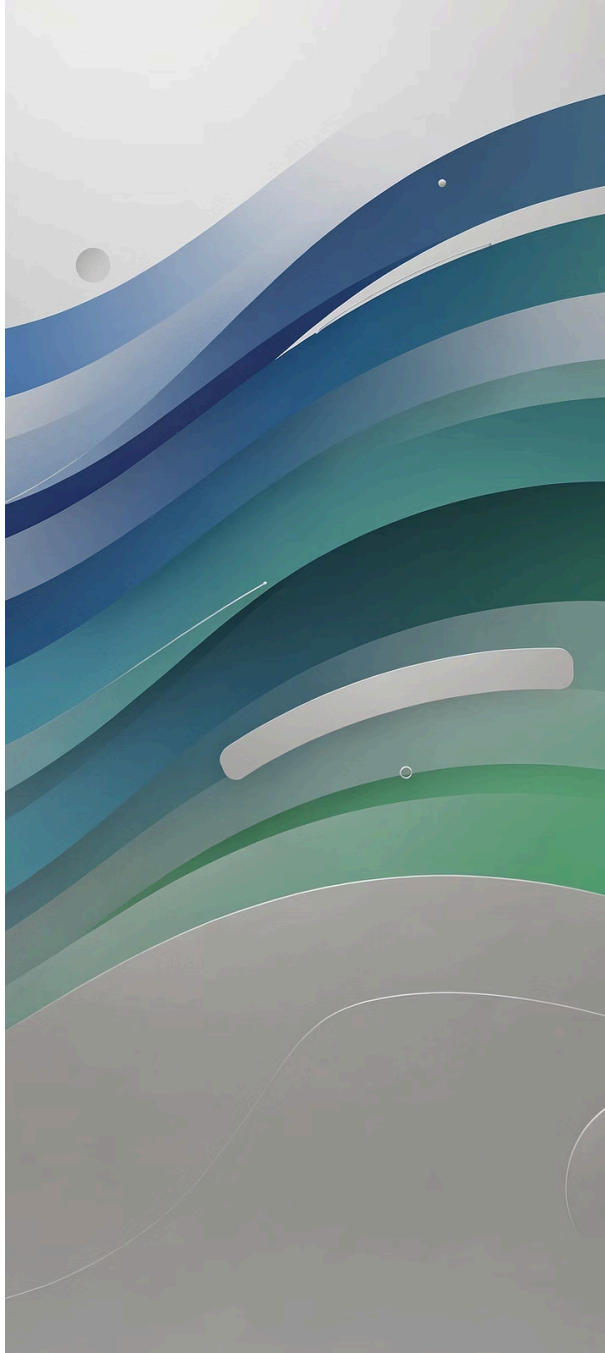
Movement

Considerations

- When we move, oxygen and blood flow to the brain, which enhances cognitive function, memory consolidation, and overall learning performance. Physical movement also releases neurotransmitters like dopamine and endorphins, improving mood and focus.
- Movement can signal a shift in cognitive demand or activity type, helping the brain transition between different modes of thinking and preventing cognitive fatigue.

Planning Reflections / Classroom Implications

Incorporate movement breaks between lessons or activities to refresh cognitive resources and increase blood flow to the brain. Use movement to signal transitions—changing locations, standing up, or changing positions helps the brain reset and prepare for new content. Even brief movement (1-2 minutes) can significantly boost attention and retention.



Novelty

Considerations

The brain seeks new (novel) stimuli through situations, the environment, images, problem solving, and unexpected experiences. Novelty captures attention because the brain is wired to notice changes and new information; this is an evolutionary survival mechanism. Novel stimuli activate the reticular activating system, which filters what the brain pays attention to.

Planning Reflections / Classroom Implications

New stimuli release adrenaline and dopamine, focusing the brain's attention and enhancing memory encoding. Vary your teaching methods, use unexpected examples, change the learning environment, or introduce surprising facts to maintain novelty. This keeps students' brains engaged and prevents habituation, where repeated stimuli become "invisible" to the brain.

Brain Considerations for Block Planning

Considerations		Planning Reflections / Classroom Implications
Primacy - Recency Effect	• We remember best that which we learned first, and second best that which we learned last. • Use language intentionally to leverage this effect; provide only accurate information during those times.	
Prime Time and Down Time	• Maximize prime brain time for focus and synthesis, not for administrative tasks • Utilize down-time for reinforcement.	
Sense and Meaning	• Use a real-world situation to drive the students into the content. • Meaning creates and connects to schema.	
Social Interaction	• We learn best from one another. • Discussions in large and small groups support knowledge transfer.	
Movement	• When we move, oxygen and blood get to the brain, which enhances learning and performance. • Movement can signal a shift.	
Novelty	• The brain seeks new (novel) stimuli through situations, the environment, images, problem-solving, etc. • New stimuli release adrenaline and focus the brain's attention.	

Planning Tool

Download this **planning tool** to maximize brain considerations when planning for an instructional block.

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Learn more!

Read Dr. Nancy's Blog Post on **Two Approaches to Teaching in the Block**.

Join us for a **Virtual Learning Community in January** on Maximizing Time in a Block Schedule! (Take advantage of our BOGO VLC seat 10-packs through the end of December 2025.)