Learning Tip:

The Brain Science of Cramming

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The Brain Science of Cramming

An oversimplified model of the memory system in our brain:

- **Prefrontal Cortex**: Represents our working memory, where we hold and manipulate information.
- **Neocortex**: Serves as our long-term memory, which learns slowly but retains information effectively over time.
- **Hippocampus**: Functions as an intermediary between working and long-term memory. It learns quickly but is also susceptible to forgetting.

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How memories form:

1. Information from working memory is deposited into the hippocampus, which transfers it to the neocortex.
2. The initial neural links for this memory in the neocortex are weak, requiring the involvement of the hippocampus for recall.
3. With retrieval practice over time, these neural connections strengthen in the neocortex. The solidified memory can then be recalled directly into working memory, bypassing the hippocampus.

- Cramming for a test may accomplish Steps 1 and 2, which builds weak links in the neocortex that can be temporarily accessed through the hippocampus.
- But Step 3 takes time. Without further reinforcement, these weak links fade away. This is why cramming does not lead to long-term retention of information.