Landmark Teaching Principle™ #4

Ensure Automatization through Practice and Review

REFERENCES AND MEMORY

Many students, especially those who have ADHD and executive function difficulties, have difficulty remembering concepts and processes. Strategies—including repetition, use of imagery, determination of patterns, and organization of ideas—can all help students enhance memory. At the same time, creating references means that students can refer to them when they hit roadblocks or want to review ideas for an assessment. The following are some references that students can create and use as they develop their skill and knowledge in a class.
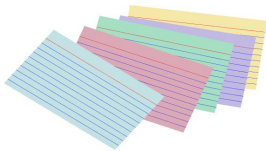
ORGANIZING INFORMATION FOR REVIEW AND REFERENCE

NOTEBOOKS & BINDERS

Students who maintain an organized notebook will be better able to reference equations, steps in the writing process, scientific formulas, dates of events, etc. As many students cannot develop this skill without explicit instruction and guided practice, be sure to help them set up their notebooks (including the format of their notes) and organize their binders. In order to demonstrate the relevance of this, have students refer back to their notes when creating study guides or ask them questions in class, on homework, or during assessments that require them to utilize their notes to find the answer.

CARD CASCADES

Writing concepts and examples on index cards can help students distill their notes into key ideas, formulas, steps, and relevant information. The act of creating and organizing the cards ensures they review and consolidate what they learned in class. If they then label each card with a heading and attach them in a cascade down a page of their notebook or folder, they can flip to it and access what they need in order to complete various assignments.

POSTERS & CHARTS
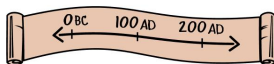
Students who have difficulty remembering important information can benefit from referencing posters and charts placed around their classrooms. This can be as simple as a number line taped to their desk, the steps in the writing process or a scientific experiment hanging on the wall, or a timeline of events that runs around the room. While these references will still be useful to jog their memory as they work, having students help create them can add an opportunity for them to work through ideas, review concepts, and prioritize information.

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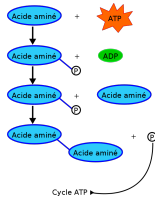
CONCEPT MAPS

Concept maps and other visual displays of information can give students an opportunity to discover patterns and relationships among ideas. In addition to providing teachers with a snapshot of how students conceptualize what they are learning, students themselves can use them as review of material. When they are complete, students can save them in their notebooks as a reference that incorporates key terms and shows their relationships.

USE OF REFERENCES
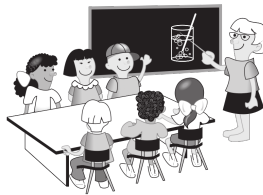
DURING LEARNING

Creating references when learning new material not only helps students organize ideas, enhancing their memory of key concepts, but also requires the kinesthetic act of writing or drawing those ideas. This engages an additional sensory mode (as well as reading, hearing, or seeing information). As they work through a unit, students can further develop their initial references by elaborating or making needed adjustments and corrections.

DURING STUDYING

If students created references during their learning in a unit, they can use these in active ways to review for assessments. Utilizing their references in new ways will help ensure that information and ideas become more easily accessible in memory. Quizzing classmates, reviewing and summarizing notes, taking practice tests, participating in review games, and creating and completing a study guide are just a few helpful approaches to solidify students' learning.

DURING DEMONSTRATION OF KNOWLEDGE/SKILL ON ASSESSMENTS

If the purpose of an assessment is not to test memorization, encourage students to use the references they've created to guide them through the assessment. Removing the cognitive load on memory frees up space and time for students to demonstrate higher order thinking skills, as well as their knowledge and abilities more successfully. Note that this requires them to create useful references and know how to utilize them appropriately during an assessment—both skills that need to be modeled, explicitly taught, and practiced with teacher guidance.

HOW DOES THIS ENSURE AUTOMATIZATION?

- By having students go over material, create references, and utilize these tools, they are reviewing content and practicing working with and organizing the material in a way that makes sense to them.