

## Working Memory Strategies

Prime memory prior to teaching. Encourage students to preview, or look ahead at a task before beginning it. For example, reading the questions at the end of chapters or on worksheets before they start reading or using published summaries such as Wikipedia, Sparknotes, or Cliff Notes prior to studying a new topic or reading a new book.

Be an active reader. Encourage students to ask themselves specific comprehension questions as they're reading, solving a problem, etc., to help consolidate that information into memory. Students should also underline, highlight, or jot key words down in the margin when reading chapters. Jotting down notes and underlining or highlighting text can help students keep the information in mind long enough to answer questions about it. Students can then go back and read what is underlined, highlighted, or written in the margins. To consolidate this information in long-term memory, they can make outlines or use graphic organizers.

Encourage self-testing techniques. For example, stop and ask questions about information just read or try to anticipate questions on tests and quizzes.

Encourage estimation strategies in math. Practice estimation as both a step in verifying the logic of performed calculations and as a practical mental math tool.

Encourage individuals to recount an experience in a concise and orderly fashion. For example, you could ask them to recount their experiences at a soccer game or what they did during a visit to a friend's house. Asking questions and giving them feedback could encourage them to stay on-topic, be orderly, keep thoughts connected, and lessen repetition.

Ask students to repeat what you have said or to paraphrase it in their own words. This a simple way to both assess and increase their working memory.

Encourage students to connect an emotion to something they want to remember. For example, if they are trying to remember information for a history test, ask them to consider how they might have felt if they were in that setting and connect that emotion to what they are trying to remember.

Help students develop cues when storing information, such as acronyms or other mnemonic devices. For example, the acronym HOMES can be used to represent the names of the Great Lakes – Huron, Ontario, Michigan, Erie and Superior. The acronym is a cue that is used when the information is being learned, and recalling the cue when taking a test will help the student recall the information. Alternatively consider chunking strategies: a chunk is any coherent group of items of information that we can remember as if it were a single item. This is why a mnemonic device works. Chunking works best when information is limited to 9 pieces of information or less.

Give directions in multiple formats, such as visual and verbal formats. For example, write tasks down so that the student can look at them. Say them out loud so the student can hear them. Toss a ball back and forth while you discuss the tasks the student needs to complete.

Enhance learning through visualization strategies. Have students visualize an image and connect it to themselves personally (e.g., create a picture in his mind of what he's just read or heard). Alternatively, use cartoons, diagrams, simple flow charts, etc.

Break down tasks and instructions into smaller components. For example, write task instructions in different colored ink in order to create a visual cue for students to keep track of their place. Alternatively have the student complete tasks one-step-at-a-time to avoid being overwhelmed by too much information (e.g., multiple directions at once).

Create a connection between familiar information and new information. Provide time for students to elaborate on new information, by linking it to prior knowledge. For example, use concept maps that allow students to illustrate similarities and differences between the features of new information and what they already know about it. Creating concept maps may help students process and relate ideas in reading, math, science, etc.

Create a reminder checklist to make sure students have everything they need to bring to school. Have students use the checklist when they finish homework the night before to avoid rushing around in the morning.

Use to-do lists yourself, so that the student sees this is a lifelong coping strategy for all kinds of tasks, including recreational, household, and academic.

Develop specific routines, procedures, or steps for common classroom tasks, such as turning in homework, editing essays, and/or working through math word problems. Such routines can be taught verbally and coupled with a written list. As daily or weekly tasks become more engrained in long term memory, working memory demands can subsequently decrease.

Play popular family games such as *Uno*, *Crazy Eights*, *Memory*, *Go Fish* and *Concentration* that require memory and the use numbers, sets, and mathematical concepts. To get the most benefit from this, point out the memory strategies that lead to success in the game. You can also turn license plates into a game. Take turns reciting the letters and numbers on a license plate and then saying them backwards, too.

Consider apps for games that build working memory, such as *Crazy Copy Game*, *Music Game for iPhone* and *Brain Workout for Android*.

The following book is a good resource for additional information on working memory:

*The Working Memory: Train Your Brian to Function Stronger, Smarter, Faster*  
by Tracy and Ross Alloway.