

How to Improve Working Memory

What is Working Memory?

Working memory is one of the brain's executive functions. It's a skill that allows us to work with information without losing track of what we're doing. Think of working memory as a temporary sticky note in the brain. It holds new information in place so the brain can work with it briefly and connect it with other information.

Kids use working memory all the time to learn. It's needed for things like following multi-step directions or solving a math problem in your head. You can help your child improve working memory by building simple strategies into everyday life.

Examples of Trouble with Working Memory:

- Doing mental math – The teacher asks kids to add 21 and 13 in their heads, and then subtract 6 from the sum. Kids might remember the numbers the teacher said to add: 21 and 13. But they might not recall what they're supposed to do with them. Or they might not hold on to the sum (34) so they can subtract 6 from it.
- Following practical instructions – When people are told a set of instructions, like driving directions, they may not remember all of the steps, or they might not remember the correct order.
- Using information later – Some people may find that the information they *have* remembered doesn't make much sense. Because of working memory problems, the brain didn't package it properly in the first place.

Strategies for Improving Working Memory

1. Work on visualization skills.

Encourage kids to create a picture in their mind of what they've just read or heard. For example, say you've asked your child to set the table for five people. Have your child imagine what the table should look like, and then draw it. As kids get better at visualizing, they can describe the image instead of drawing it.

2. Have your child teach you.

Being able to explain how to do something involves making sense of information and mentally filing it. Maybe your child is learning a skill, like how to dribble a basketball. Ask your child to teach you this skill. Teachers do something similar by pairing up students in class. This lets them start working with the information right away rather than waiting to be called on.

3. Try games that use visual memory.

There are lots of matching games that can help kids work on visual memory, like the classic game concentration (or Memory). You can also do things like give kids a magazine page and ask them to circle all instances of the word *the* or the letter *a*. License plates can also be a lot of fun. Take turns reciting the letters and numbers on a license plate and then saying them backwards, too.

4. Play cards.

Simple card games like Crazy Eights, Uno, Go Fish, and War can improve working memory in two ways. Kids have to keep the rules of the game in mind. They also have to remember what cards they have and which ones other people have played.

5. Encourage active reading.

There's a reason highlighters and sticky notes are so popular: Jotting down notes and underlining or highlighting text can help kids keep the information in mind long enough to answer questions about it. Talking out loud and asking questions about the reading material can also help with working memory. Active reading strategies like these can help with forming long-term memories, too.

6. Chunk information into smaller bites.

Ever wonder why phone numbers and social security numbers have hyphens in them? Because it's easier to remember a few small groups of numbers than it is to remember one long string of numbers. Keep this in mind when you need to give your child multi-step directions. Write them down or give them one at a time. You can also use graphic organizers to help break writing assignments into smaller pieces.

7. Make it multisensory.

Using multiple senses to process information can help with working memory and long-term memory. Write tasks down so your child can look at them. Say them out loud so your child can hear them. Walk through the house as you discuss the family chores your child needs to complete. Using multisensory strategies can help kids keep information in mind long enough to use it.

8. Help make connections.

Help your child form associations that connect different details and make them more memorable. One way is to grab your child's interest with fun mnemonics. (For instance, the made-up name "Roy G. Biv" can help kids remember the order of the colors in the rainbow — red, orange, yellow, and so on.) Finding ways to connect information helps with forming and retrieving long-term memory. It also helps with working memory, which is what we use to hold and compare new and old memories.

9. Rhymes

They use rhythm and 'acoustic encoding' to make concepts easier to remember. This means that phrases which 'roll off the tongue' are easier to remember because they are appealing to our brains.

Example:

*I before e, except after c,
And when sounding like a
As in neighbour and weigh.*

Other Strategies to Support Working Memory

1. Encourage note-taking!
2. Use a planner, check list or visual schedule with task reminders.
3. Provide alternate modes of instruction such as offering written instructions versus verbal only.
4. Ensure you have a child's attention first and reduce distractions. – Avoid giving new information while the child is still processing and be as concise and brief as possible.