

5 Ways Executive Functioning Issues Can Impact Math

By Kate Kelly

At a Glance

- Kids with executive functioning issues may struggle with math.
- They can find it hard to shift from one type of problem to another.
- Trouble with working memory can make it hard to solve multi-step problems.

Executive functioning skills play a big role in math success. They allow kids to apply the math knowledge they already have, plus build on it to acquire new math skills. So when kids have executive functioning issues, they may run into trouble with math—even if they understand it. Here are some common difficulties.

1. Rushing Through Math Homework

Some kids with executive functioning issues can be impulsive or impatient. They may rush through homework, which can lead to errors. With math problems, students need to have a good understanding of the directions. But kids with executive functioning issues may not take the time to really look at the assignment or think about what they're supposed to do. Instead, they tend to just dive right in.

For example, a child might assume that the math homework involves addition because it did yesterday. In his rush to get started, he doesn't notice that in today's assignment, all of the problems have a minus sign, not a plus sign. So he ends up getting all of the answers wrong.

2. Having Trouble Applying New Math Rules

Learning new things involves shifting gears as the activity changes. That takes flexible thinking skills. It also requires that kids stop and reflect before they respond. But some kids with executive functioning issues may fixate on what they already know. As a result, they have trouble stepping back and seeing that they may need a new strategy to complete a problem.

For instance, when a child is learning fractions, he might insist that $\frac{1}{4}$ is bigger than $\frac{1}{2}$. He knows the rule that 4 is bigger than 2. But in this case, a bigger number as the denominator means that the fraction is smaller. He has to keep this in mind and use a new rule for deciding which is larger.

3. Giving Automatic Answers to Math Problems

Some kids with executive functioning issues respond to problems based on habit. Instead of looking at each situation as different, they give an automatic response. When it comes to math, they may get stuck on approaching equations in a certain way. And that can lead them to ignore crucial pieces of information.

Let's say a child has been practicing addition. He answers $3 + 3$ with the number 6. Then he sees $3 - 3$ and writes down 6 for that one, too. It's not that he doesn't know how to do subtraction. But when he sees 3 and 3, he has trouble overriding his tendency to answer based on the first thing that comes to mind.

4. Getting Lost in the Middle of Complex Math Problems

Kids rely on working memory to keep up with complex math problems. They have to hold on to information—like a formula, an answer from a previous step, or the steps of the problem itself—so they can use it later to complete the problem. But kids with poor working memory skills can get lost in the problem.

Here's an example. When doing long division, a child forgets that he needs to bring down the remainder after subtracting. He can't remember what to do next and gives up, or comes up with a wrong answer.

Also, students might have to show their work on complex math problems. Often they'll use scrap or scratch paper to show the steps they've taken to arrive at the answer.

But kids with executive functioning issues can struggle with organization. They may scribble information across the paper in a disorganized way. And that can make it hard to move from one step to another with the correct information.

5. Not Catching Mistakes

Kids have to use self-monitoring to keep track of how they're doing as they go. Some kids with executive functioning issues have trouble stepping back and reflecting on their work. They may not realize their answer doesn't make sense and that they should go back to see where they went wrong, or get help.

Say a child with executive functioning issues finishes his math test early. But he doesn't go back and check his work, even though he has time. He's so confident that he did everything right that he sees no need for a second look.

How You Can Help

If executive functioning issues are getting in the way of your child's ability to do math, there are strategies that can help.

Start by having him look over the assignment before he begins. He can underline the directions and highlight key pieces of information. Those include things like directions or even plus and minus signs. He can also assess whether he knows how to do the problems or needs help. As your child does the work, encourage him to ask himself questions like, "Is this the same as the last problem, or is it different?"

Help your child create a personalized checklist of things to look out for before he decides that the work is done. Finally, you can teach him to check his work, either with a calculator or by reversing the operation to see if he gets the same answer.

Get more ideas on how to help your child with tricky math homework. You can also search for apps to help with math and organization issues.

If you suspect your child has executive functioning issues, but aren't sure, you may want to have him evaluated. You can request a free evaluation at school or look into getting a private one.

Key Takeaways

- **Kids with executive functioning issues tend to dive into assignments too quickly.**
 - **Difficulty with working memory, flexible thinking and impulse control can make it hard to learn new math rules.**
 - **If your child has executive functioning issues, there's a lot you can do to help him get better at math.**
-