

Education: “Math Challenge”*

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Many students with ADHD struggle with math. In children with ADHD, 26% have a specific math disability (Mayes & Calhoun, 2006). In addition to often struggling with number sense, some of these children have difficulty mastering the basic addition, subtraction, multiplication, and division facts. Their retrieval of these math facts for other uses is slower than other students’ (Swanson & Beebe-Frankenberger, 2004). These children have weaknesses in their working memory, leading to difficulty with word problems. In addition to problems with working memory, attentional problems, like the inability to block out extraneous stimuli from working memory, make math even more difficult (Platt, 2006). Furthermore, poor executive functioning affects math proficiency. Because of EF weaknesses, ADHD-affected students struggle with identifying the specific process steps necessary to solve problems. This makes math success that is dependent on “showing the work” difficult. These students can sometimes have the right answer, but cannot provide the step-by-step process on paper that is often required. They struggle with the tedium of solving a repetitive series of problems and the organizational skills needed to guarantee that no errors in calculation occur while solving problems on a small space on a piece of paper.

Because of difficulties with spatial organization, lack of good penmanship, and the ability to line up problems properly, many of these children will fail in math. They may look unmotivated when facing the daunting task of solving 20 or more problems that involve tedious steps, an undue amount of neatness for accuracy, and the excruciatingly boring task of showing all work. These students with ADHD are likely to give up before they start, find that they do not have the sustained attention to finish, or take hours to complete homework. This type of daily frustration can quickly lead students to develop a negative attitude toward math and their ability to be mathematically competent.

Strategies to Support Math

1. Allow students more space to solve problems. Many students, like children with ADHD, who struggle with fine motor and organizational skills find it very difficult to fit all the required work in the space provided on the worksheet. The space is usually too small, making it difficult to keep work aligned properly. Suggest that teachers allow the students to use graph paper or dry erase boards to show their work, which provide the space and organization that they need to successfully set up and solve problems.

2. Allow students to solve fewer problems. Students with attention issues often work very slowly. It may take them three hours to finish the same amount of work that other students can do in 30 minutes. Suggest that teachers reduce the number of problems to be fair

when considering the time it takes to complete the same number of problems.

3. Allow students to show work on only a few problems. Students with ADHD may solve things differently. They often can see the answer or can solve it in their heads but struggle with explaining the step-by-step process that they have used. Requiring them to show their work for all problems becomes a very time-consuming task. Suggest that the teacher allow them to solve one problem using the show-their-work process and then allow them to write just the answers for the rest.

4. Provide students worksheets with problems already written. Some students with ADHD struggle significantly with copying problems accurately from the textbook to the binder paper. If they copy the problem wrong, they have no chance of getting the answer correct. Suggesting that the teacher provide a photocopy or adapted worksheet with the problems on it would avoid this problem.

Check for Understanding

All students, including students with ADHD, need ample modeling and frequent checks for understanding during the instruction process. This process holds the children's attention and can be easily accomplished through the use of student whiteboards. Suggest that teachers use this process to ensure that students are clear on what is expected of them before they begin the independent practice.

References:

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