

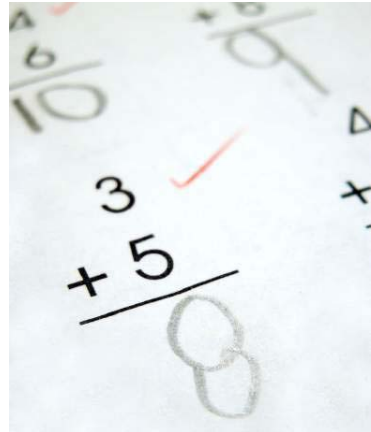
READING IN THE MATHEMATICS CLASSROOM

It could be the reading when...

- #1. The math is easier than figuring out what the question is asking.
- #2. Word problems are the hardest parts of tests.

Teaching the Reading Aspects of Math

Many dyslexic students benefit by explicit instruction in the language of math as well as the structure of math textbooks.



"...mathematical texts contain more concepts per sentence and paragraph than any other type of text. They are written in a very compact style; each sentence contains a lot of information, with little redundancy. The text can contain words as well as numeric and non-numeric symbols to decode. In addition a page may be laid out in such a way that the eye must travel in a different pattern than the traditional left-to-right...there may also be graphics that must be understood for the text to make sense; these may sometimes include information that is intended to add to the comprehension of a problem, but instead be distracting. Finally, many texts are written above the grade level for which they are intended."

- Literacy Strategies for Improving Mathematics Instruction

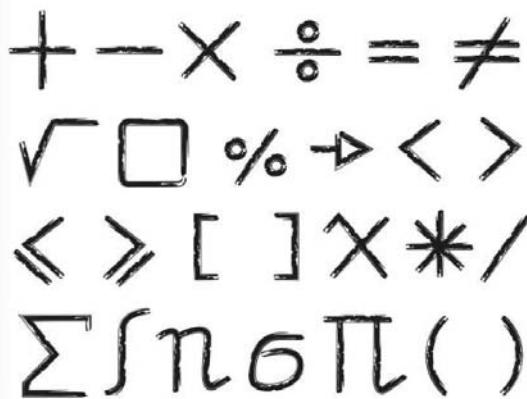
Students reading through math problems often read one sentence after another, missing where the background and supporting information ends and the math question begins. The structure of math paragraphs is often the exact opposite of non-math paragraphs. Instead of starting a paragraph with the topic sentence, math paragraphs usually end with the key idea, forcing students to re-read passages if they are to fully understand them.

Math Symbols and Words are Often Ambiguous

Math textbooks may often not address the common sources of confusion for dyslexic students such as directional differences (e.g. the procedure for long division starts from the left, whereas in subtraction, the procedure begins from the right) or the use of the same word in different contexts (remainder in division vs. subtraction).

Many general teachers may also be tasked with teaching math although they have not been given specialty training in the area, much less instruction for math teachers of dyslexic students. As a result, a teacher may be surprised at mistakes that dyslexic students make without realizing that additional explicit instruction in the language aspects of math may be necessary for some dyslexic students to succeed.

Looking at common math symbols on the right, is it any surprise that students can confuse similar appearing symbols or make errors when recopying equations?



Many dyslexic students benefit by being able to work with formula and procedure cards while they are still mastering the problem type. Allowing extra time and color coding for symbols can also reduce the frequency of errors.

Best practices for teaching math to dyslexic students include: providing handouts / Teacher notes before class; allowing recording (or creating a "flipped classroom" whereby students watch videos before concepts are reviewed in class); and frequent checking for understanding for the words and symbols that form the texts for math. Teachers should model and paraphrase questions to check that students have fully comprehended their meaning. It's also very important to create a positive classroom environment where questions and mistakes are seen as a healthy part of the learning process.