

## A Quick Guide to Working with Students with Dyscalculia

### **Characteristics of the Condition**

This is a general term is used to describe specific and unexpected difficulties with mathematics.

These problems may be developmental in origin or may result from a brain injury or neurological disease.

- Specific difficulties with quantitative concepts, estimation and comparison of magnitudes; e.g.,
  - Estimation of magnitude (e.g., length of a city bus; distance from NYC to Washington, D.C.)
  - Proportion of the earth covered by water.
- Specific difficulties with the acquisition of "number facts"
  - Memorization/retrieval of multiplication /division values
  - Concept of fractions
- Specific difficulties with basic computational operations and procedures
  - Confusion of application: e.g., addition rather than multiplication
  - Errors in organization of steps leading to (e.g.) errors in carry operations
  - Errors in sequencing of operations
  - Errors of omission or repetition of procedural steps.
- Specific difficulties in problem analysis or execution due to limitations on working memory or accurate interpretation of language.

### **Impact on Performance**

- Unexpected limitations in estimating absolute or relative quantities, amounts, distances, sizes, etc.
- Difficulty grasping and retaining basic quantitative ideas, e.g., mean or median
- Inaccuracies in arithmetic computation due to inaccurate recall of products or dividends
- Multiplication and division errors

### **Interaction with Student**

- Interactive and intensive practice with motivational materials such as online math software. The DSS office may be able to help students find software that is appropriate.  
...attentiveness during practice is as crucial as time spent

- Distributed practice, meaning much practice in small doses  
...for example, two 15-minute sessions per day, rather than an hour session every other day
- Small numbers of facts per group to be mastered at one time  
...and then, frequent practice with mixed groups
- Emphasis on working in multiple formats, not just practicing similar problems  
...In vertical, horizontal, and oral formats
- Student self-charting of progress  
...having students keep track of how many and which facts are mastered and how many more there are to go
- Instruction, not just practice  
...Teaching thinking strategies from one fact to another