Pirate Math: Word-Problem Solving Program at Second Grade

Pirate Math comprises whole-class (primary prevention) and small-group (secondary prevention) levels of word-problem instruction for use with students at second grade instructional level. The focus is single-digit and double-digit word problems that fall under three schema: Total, Difference and Change.

Scientific evaluations of Pirate Math indicate that not-at-risk and at-risk second-grade students make greater progress with Pirate Math compared to students who do not participate in Pirate Math on assessments of word problems.

The Pirate Math manual contains the teacher lessons and student materials necessary to implement Pirate Math at the whole-class level. Sections in the manual include:

- Introduction;
- Basic information about implementing Pirate Math;
- Schedule for implementation;
- Information about pairing students for partner work;
- List of materials and how to copy materials;
- Lessons 1 – 34;
- Teacher lessons;
- Activity guides;
- Guides to core lesson components (teachers are referred to Activity Guides in the lessons);
- Posters;
- Templates for posters to use during lessons;
- Fidelity Checklists;
- Checklist to ensure proper implementation of Pirate Math;

Pirate Math Supplementary Material packet contains the tutor lessons and student materials for conducting Pirate Math Small – Group Tutoring for students at-risk for poor outcomes with the Pirate Math Whole – Class Instruction program. Each Packet contains:

- Transparencies and templates for materials that teachers use during each lesson;
- Teacher-led problem and partner work (PW);
- Pirate Problems (PP);
- Pirate Problems Answer sheet (PPAS);
- Treasure Map

Pirate Math Second Grade Order Form

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**METHOD OF PAYMENT:**

We accept either PURCHASE ORDERS or CHECKS payable to VANDERBILT UNIVERSITY. Fax ORDER FORM with PURCHASE ORDER to (615 936-5803). Reference Pirate Math on CHECK and mail payment to:

Vanderbilt University
Attention: Lynn Davies / Pirate Math
PMB 228
110 Magnolia Circle, Suite 418
Nashville, TN 37203-5721

If you have questions please contact Lynn Davies at:
Phone: (615) 343-4782: lynn.a.davies@vanderbilt.edu

Prices effective 2/4/14.
Pirate Math was designed to supplement the regular mathematics curriculum in the area of addition and subtraction word problems. The individual tutoring activities, when conducted with appropriate levels of fidelity, effectively teach students with math difficulties to:

- Focus on and identify the underlying conceptual framework of three types of word problems (i.e., Total, Difference, and Change problems);
- Identify and ignore extraneous information;
- Set up an algebraic equation to correspond to the structure of word problems;
- Solve for the missing variable (i.e., “X”), as expressed in the algebraic equation; and
- Self-evaluate the reasonableness of solutions.

Why “Pirate Math?” Students are taught to “find X” in an equation (to solve for missing information), like pirates “find X” on a treasure map. To make the program interesting and motivating for students, we integrate the pirate theme across many aspects of the program, particularly within the reinforcement and motivation schedule. Students are handed token “treasure coins” throughout each lesson, to reward on-task behaviors such as listening, following directions, completing the activities, and increasing accuracy. The coins are counted at the end of the session, and students color in the same number of “footsteps” on a “treasure map”. Once a student colors in all footsteps leading to a large printed “X”, the student earns a small prize from a treasure chest. A new map is used starting with the next session.

Pirate Math was developed as part of a 5-year study funded by the National Institute of Child Health and Human Development. We have scientifically evaluated the program with randomized control trials and found that Pirate Math significantly improves the word-problem skill of elementary-aged student.