



SPECIAL EDUCATION INSTRUCTIONAL TECHNIQUES UNDERPINNING *HELP MATH*

Key Instructional Strategies for Disadvantaged Students	HELP MATH Feature
Integrate verbal, symbolic & non-symbolic representation needed to understand number & problem solving; ability to move from English to math & math to English. (Sharma, 2008; Bull, 2007)	Explicitly teaches vocabulary; includes a bilingual & pictorial dictionary & contextual hyperlinks (every page). Includes key concept vocabulary (fractions, tessellation), supporting vocabulary (numerator, plane) & academic English (simplify the expression, which of the following, if not X then Y)
Systematically teach vocabulary as language represents numbers (Geary, 2005; Baumann & Kame'enui, 2004)	Key Terms dictionary and contextual hyperlinks as above
Build prior concept knowledge & pre- requisite skills (Marzano, 2004; Dochy, Segers, & Buehl, 1999)	Provides comprehensive foundational lessons and tools to individualize & customize lessons and curriculum. Both grade level and prior grade content are always easily accessible.
Explicitly teach math concepts and procedures (Fuchs et al., 2008; Baker, Gersten, & Lee, 2002)	Discrete nature of skill presentation & clear explanations broken down into bite-size steps (on every page)
Provide massed practice and cumulative and judicious review (Heward, 2009; Fuchs et al., 2008)	Presentation of declarative, procedural & conceptual knowledge always followed by review and interactive practice throughout the program
Demonstrate procedural steps and algorithms associated with problem solving (Rivera & Smith, 1987)	Provided as an integral feature; distributed throughout the HELP curriculum and during feedback loops & hints; Try-It & Test Skills sections focus on steps associated with problem solving.
Sequence tasks progressing from easy to more difficult (Sharma, 1990)	HELP content organization within & between sections, e.g., Try-It (one step) to Problem Solving Skills (multi-step)
Use real-life examples (Lock, 1997)	Real-World Scenario precedes each lesson.
Use plenty of manipulatives (Wright, 1996)	Manipulatives available throughout the program (e.g. calculator, protractors, rulers, fraction strips & wheels, thermometers, etc.); incorporates games, puzzles and interactivities throughout all lessons (e.g. number lines, base10 blocks, drag & drop, money, matching, etc.) which consistently repeat, vary and contextualize the math concepts and vocabulary.
Employ motivators to help students regulate attention (Fuchs et al., 2008)	Immediate corrective and/or positive feedback throughout lessons and quizzes
Provision of performance data to teachers and students (Baker, Gersten, & Lee, 2002)	Real-time formative quiz data for progress monitoring graphs; diagnostic and placement tests provided
Scaffold the learner (Jitendra et al., 2005; Smith & Ragan, 1999; Vygotsky, 1978)	In addition to all of the above techniques, HELP is also replete with music, animation and color, providing a non-threatening environment for practice, knowledge construction and "play". The "math coach" in the audio speaks at a moderate rate with a mild and encouraging tone. If the student does not understand, they can replay the audio or look up the Key Terms which they do not understand or get a visual example of the term.

For more information, please visit our website: www.helpprogram.net