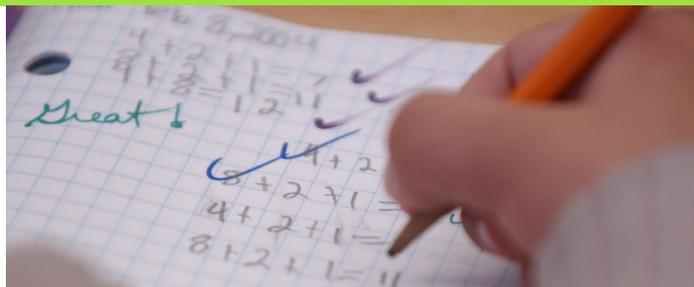




jump math[™]
MULTIPLYING POTENTIAL.



How JUMP Math Works

Engagement

With the great disparity in math accomplishment at school, it may seem that some children are born genetically pre-wired for math, while most are not. However, advances in cognitive science are revealing that the brain is far more plastic than was previously suspected and that when we learn, we don't just change what the brain holds, we change what it is (its capacity to learn). In practical terms, this means that we can safely start with the assumption that with careful instruction, every student can develop a deep understanding of, and proficiency at, math. Ensuring attentive engagement in learning and practice is the key.

Continuous Assessment

JUMP draws on the latest cognitive science research to build upon the best of math programs from across Canada and around the world. While many programs seek to exploit the strengths of the human mind, we believe that JUMP's equal concern for its limitations sets us apart. For example, it is particularly difficult to hold many new concepts in short term memory, so a guiding principle of JUMP is to ensure that students have mastered and consolidated one step before moving on to the next or combining steps. We also know that frustration can sap attention and arrest learning and that once committed to long term memory, misconceptions take longer to correct. Therefore, JUMP emphasizes continuous assessment to enable teachers to spot and correct potential problems early.

Building Confidence Through Discovery

Contextualization and discovery are important concepts in learning, but if the leaps are too large, the hoped-for voyage of discovery can feel like groping in the dark to many students. JUMP's guided discovery approach builds confidence and excitement by ensuring that each step is only incrementally more difficult than the previous step, thereby making discovery accessible to even the least proficient students. Allowing students to take small steps early on equips them with the knowledge and confidence required to take large steps later.

Ready-to-use Resources for Busy Teachers

JUMP also recognizes that few elementary school teachers are math specialists, so we take special care to ensure that our Teacher Guides include clear explanations of math concepts and how they link to other subjects, other areas of math, real world applications, and higher level mathematics. Our lesson plans provide detailed scripts for teachers who need them, but can also be used as a resource package for teachers who just want ideas.

Originally, the primary manifestation of the JUMP program was our student Assessment and Practice (AP) books. However, after spending much time in the classroom and with teachers, it became clear that more was required to communicate the subtle richness and flexibility of the thinking behind the worksheets. Thus, JUMP embarked upon a multi-year program of revising and expanding its Teacher Guides.

For teachers, the guides are now the core of the program. They provide multiple detailed options for every lesson, at both the classroom and individual levels; strategies for carefully structuring group work so that all students are guaranteed full participation and meaningful roles; hands-on activities and practice; techniques for assessing all students' understanding simultaneously and at



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a glance; techniques for diagnosing barriers; and multiple engaging approaches for rapidly overcoming those barriers. On average, every 30-90 seconds of teaching is followed by 4-5 minutes of exploration, practice, assessment and real time remediation. Rapid assessment identifies where instruction and practice are and are not required. This ensures maximum efficiency – students do not waste time practicing material they have already mastered.

The student Assessment and Practice books echo the Teacher Guide and remain critical tools for assessment and ensuring that students get the deep and subtle practice required to consolidate learning. Simplified language ensures that the material is accessible to students at all levels of language proficiency so this is not a barrier to learning math.

Together, the AP books and Teacher Guide enable teachers to focus their scarce time planning how best to teach their students, rather than finding or creating, and photocopying, practice sheets. Similarly, students spend their time solving problems, rather than copying them down. We find that students also value their AP books for another reason: as students fill the books with their work they become their own valued creations - evidence of the effort they have invested and the success they have achieved.

Engaging the Collective

JUMP's unique combination of depth, careful scaffolding, continuous assessment and a variety of innovative instructional approaches enable teachers to accomplish the seemingly impossible task of teaching to the whole class while tailoring to students' individual needs. By reducing difficult concepts to manageable steps, JUMP ensures that all students experience success and the kind of positive reinforcement that creates engagement and propels further learning. At each stage, learning is consolidated by practice. Innovative bonus questions based completely on the core lesson keep "naturals" engaged, energized and learning, allowing teachers to spend time with struggling students. Children constantly apply their problem-solving skills, reflecting, connecting concepts and justifying their solutions. And, only when all students have mastered the fundamental building blocks of math are these integrated to deliver a true understanding of complex concepts. Children who were formerly classified as "fast" and "slow", "bored" and "frustrated", "disruptive" and "checked out" begin to converge – negative peer pressure dissipates, enthusiasm grows and all achieve higher levels of individual and collective success. By ensuring that students succeed together, we avoid creating false hierarchies that can destroy the relaxed, safe learning environment. Moreover, progress accelerates over time, as gaps in knowledge are eliminated, neural circuits are consolidated and class cohesion grows.

JUMP lessons are scaffolded to help focus children's (and teachers') attention and limit extraneous information until students are ready to deal with it, so as not to tax attention skills and working memory.

JUMP Math is Fun for All!

Our writers' have a powerful combination of experience explaining complex concepts to children and deep (PhD level) knowledge of mathematics. They truly believe that math is fun and are driven to find teaching approaches that enable children and teachers to share that fun and replace deep-seated math phobias with a newfound, life-enriching enthusiasm for math. A growing body of high quality research and steady stream of comments from students, parents and teachers indicates that they are succeeding.

Every child can learn math. Every teacher can teach math. And everyone can love it!