

PART 2: USING THE PUZZLES

Warning – These puzzles are tough! They will challenge even the most mathematically gifted sixth graders. But then, that kind of challenge is just what these students want and need.

GRADE LEVELS

General grade level recommendations are given below. But as you know, gifted children vary widely in their degree of giftedness and experience. Some sixth graders with little experience in mathematical reasoning will be best served by starting at the beginning of the book and working their way forward, possibly skipping a few puzzles here and there as they sharpen their reasoning skills. Some highly gifted fourth graders will need to begin with the puzzles recommended for fifth or sixth graders in order to find a suitable challenge.

I've suggested using the puzzles with fourth through sixth graders because most mathematically gifted children in those grades will find a large number of puzzles at an appropriate level, making this book a worthwhile investment for you as their teacher or parent. Mathematically gifted third graders are likely to be able to solve a handful of the puzzles, but their options will be more limited.

General grade level recommendations:

Grades 4 and up: By the Numbers, Lost Sums, Picture Puzzles

Grades 5 and up: Cross Numbers, KenKen, Addition Logic, Kakuro

Grades 6 and up: Buzzippers, Transformers, TriSquares

GROUPING

The puzzles can be used as an individual activity, in small groups, or with an entire class. When used as an individual activity, they will be helpful in situations such as homeschooling or the regular classroom, in which there are a limited number of gifted students who need an extra challenge.

When an individual within the regular classroom is pursuing a more difficult activity than his peers, a problem can occur if he gets stuck and is unable to progress on his own. He needs help, but it can be difficult for the teacher to provide assistance, when the other children are working on a different activity at the same time. The “Helps” have been designed to reduce the stress on both student and teacher by granting the student greater independence. He can be given the appropriate set of “Helps” as needed, to provide just enough direction to enable him to solve the puzzle successfully.

Small groups of students can work together to complete individual puzzles. Each group can work on a puzzle at its own level of difficulty and interest. The children can help each other to find the best starting points and discuss various approaches to solving the puzzles among themselves. If they reach an impasse, they can use the “Helps” to trigger ideas that lead to the solutions.

Discussing the puzzles in large group settings will contribute to growth in many of the Common Core Standards for Mathematical Practice. The students can consider various approaches to solving a puzzle, justify their reasoning, and critique the reasoning of others. If needed, the “Helps” can be used to initiate discussions.