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# ABOUT THIS BOOK

Beast Academy Puzzles 5 contains more than 400 puzzles in 12 different styles. Every puzzle style is aligned with the broader Beast Academy level 5 math curriculum. Whether used on their own or as part of the complete Beast Academy curriculum, these puzzles will delight and entertain puzzle solvers of all ages.

The puzzles in this book cover a broad range of topics including integer operations, combining like terms, averages, factors and multiples, prime factorization, sequences, ratios, fractions, decimals, percents, and the Pythagorean theorem as taught in the Beast Academy level 5 series. The difficulty ranges from straightforward puzzles meant to give a feel for how each puzzle works to diabolical stumpers written by U.S. national puzzle team members.

## WHY PUZZLES?

### Entertainment

Puzzles intrigue us and capture our attention in ways that many other problems don't. What makes puzzles so captivating?

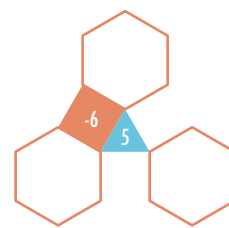
- **Breakthroughs.** The "Aha!" moments of ingenuity and insight that come when solving a well-written puzzle are energizing.
- **Satisfaction.** Not every puzzle has an "Aha!" moment of inspiration. Many involve a series of steps that are satisfying and encouraging in their own way.
- **Accomplishment.** Solving a puzzle that is just at the edge of your ability level gives a wonderful sense of achievement.
- **Gratification.** Unlike many other problems you face, it's often immediately obvious when you've solved a puzzle correctly.

### Enrichment

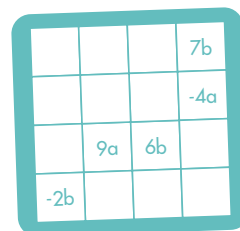
Solving puzzles makes us smarter. What do we learn?

- **Problem Solving.** The skills we learn by solving puzzles—observing, testing, fiddling, and making connections—help us become better, more resilient problem solvers in other areas.
- **Math Skills.** Every puzzle in this book was written to reinforce specific math skills. Puzzles take the monotony out of skill drill and make practice fun.
- **Spatial Reasoning.** Many puzzles require elements of path tracing or grouping that help us build spatial awareness.
- **Pattern Recognition.** Solving puzzles helps us recognize patterns and encourages us to search for new ones.

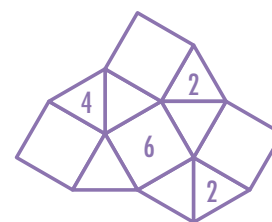
Integer Tiles



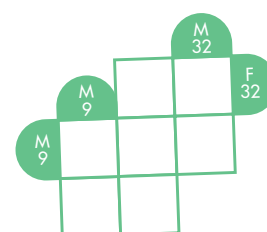
Like Terms Corral



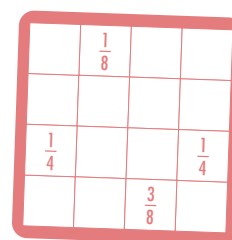
Averatiles



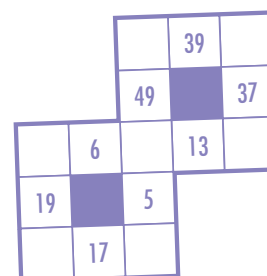
F&M Grids



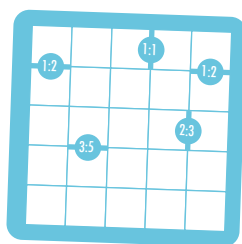
Shikaku Fractions



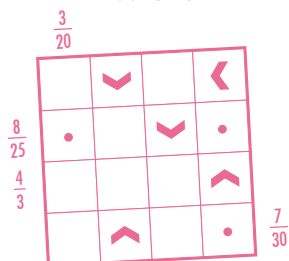
Cross-Sequences



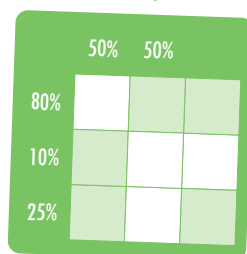
## Ratio Rooms



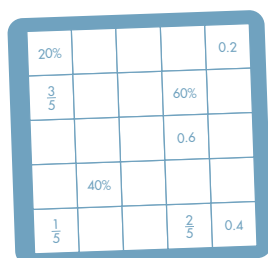
## Frac-Turns



## Percent Squares

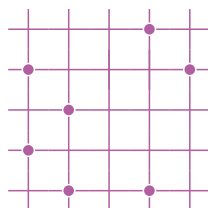


## Equivalink

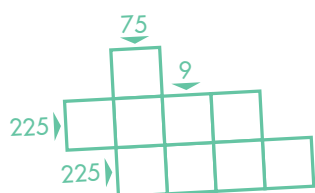


## Pythagorean Paths

$$\sqrt{2} \quad \sqrt{8} \quad \sqrt{2} \quad 2 \quad \sqrt{2} \quad 2$$



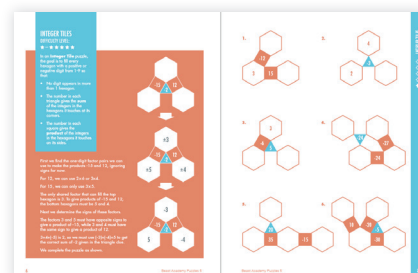
## Prime Power Grids



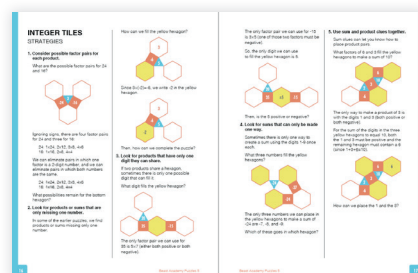
# USING THIS BOOK

This book is divided by puzzle type into 12 sections, followed by HINTS beginning on page 169 and SOLUTIONS beginning on page 187.

Each section includes instructions, a solved example, and difficulty ratings. The ratings at the edge of the page refer to the difficulty of the hardest problem on the page and are highly subjective.



At the end of each puzzle set is a STRATEGIES section. We recommend reading the strategies section even if you've already solved all of the puzzles. There may be an approach you haven't considered.



## Supplementing the BA Curriculum

If you are using this book to supplement the Beast Academy math curriculum, below is a list of the different puzzle types, the chapters they supplement in BA level 5, and what math skills they reinforce.

Integer Tiles	Chapter 2	Adding and multiplying integers. New Puzzle!
Like Terms Coralls	Chapter 3	Combining like terms. Find more in Practice book 5A.
Averatiles	Chapter 4	Averages. Find more like this in Practice book 5B.
F&M Grids	Chapter 5	Factors and Multiples. New Puzzle!
Shikaku Fractions	Chapter 6	Fractions and spatial reasoning. Find Shikaku puzzles in BA Online.
Cross-Sequences	Chapter 7	Arithmetic sequences. Find more like this in Practice book 5C.
Ratio Rooms	Chapter 8	Ratios and spatial reasoning. New puzzle!
Frac-Turns	Chapter 9	Fractions and decimals. Find more in Practice book 5C.
Percent Squares	Chapter 10	Percents. Find more like this in Practice book 5D.
Equivalink	Chapter 10	Fractions, decimals, and percents. Find more in Practice book 5D.
Pythagorean Paths	Chapter 11	Pythagorean theorem. Find more like this in Practice book 5D.
Prime Power Grids	Chapter 12	Prime factorization. New puzzle!