

# CONTENTS

Introduction	4
Puzzles	
Dot Puzzles	6
Spiral Galaxies	22
Product Placement	34
Pyramid Descent	46
Dutch Loop	56
Hive	68
Factor Cave	82
Factor Blobs	96
Fraction Sumsdoku	108
Sum Squares	124
Paint the Town	136
Decimal Numbercross	150
Hints	165
Solutions	191

# ABOUT THIS BOOK

Beast Academy Puzzles 4 contains more than 500 puzzles in 12 different styles. Every puzzle style is aligned with the broader Beast Academy level 4 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 shape classification, symmetry, multiplication, exponents, factoring, logic, fractions, integers, and decimals as taught in the Beast Academy level 4 series. The difficulty ranges from straightforward puzzles meant to give a feel for how each puzzle works to diabolical stumpers written by world puzzle champion Palmer Mebane.

## 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

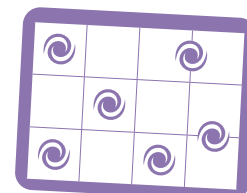
Solving puzzles makes us smarter. What do we learn?

- **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.

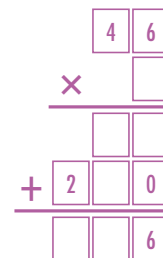
Dot Puzzles



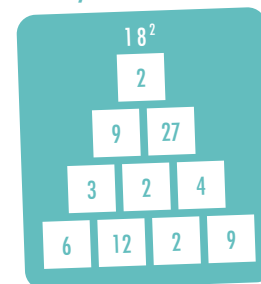
Spiral Galaxies



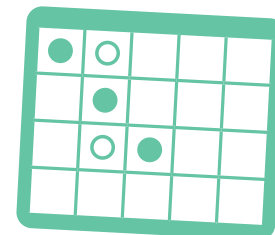
Product Placement



Pyramid Descent

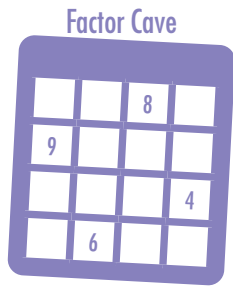


Dutch Loop

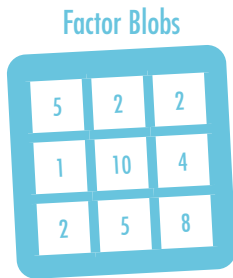


Hive

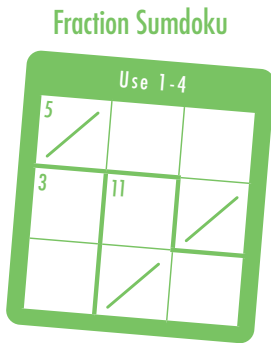




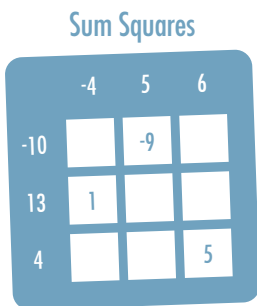
Factor Cave



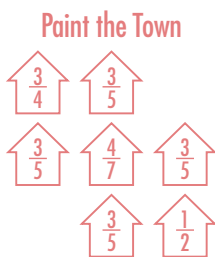
Factor Blobs



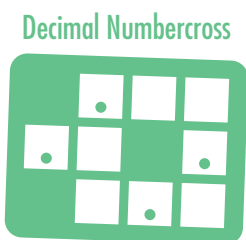
Fraction Sumdoku



Sum Squares



Paint the Town



Decimal Numbercross

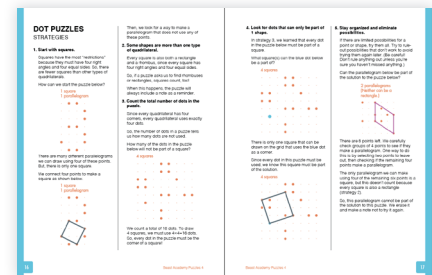
# USING THIS BOOK

This book is divided by puzzle type into 12 sections, followed by HINTS beginning on page 165 and SOLUTIONS beginning on page 191.

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 4, and what math skills they reinforce.

Dot Puzzles	Chapter 1	Shape identification and classification. New Puzzle!
Spiral Galaxies	Chapter 1	Symmetry. Find more like this in BA Online.
Product Placement	Chapter 2	Multiplication. Find more like this in Practice book 4A.
Pyramid Descent	Chapters 3&7	Exponents and factoring. Find more in Practice books 4A and 4C.
Dutch Loop	Chapter 6	Logic and spatial reasoning. Classic puzzle.
Hive	Chapter 6	Logic. Find more like this in Practice book 4B.
Factor Cave	Chapter 7	Factoring. New puzzle!
Factor Blobs	Chapter 7	Factoring. Find more in Practice book 4C.
Fraction Sumdoku	Chapter 8	Adding fractions. New puzzle!
Sum Squares	Chapter 9	Adding integers. Find more in Practice book 4C.
Paint the Town	Chapter 10	Fractions. Adaptation of Fraction Fill in Practice book 4D.
Decimal Numbercross	Chapter 11	Converting fractions to decimals. New puzzle!