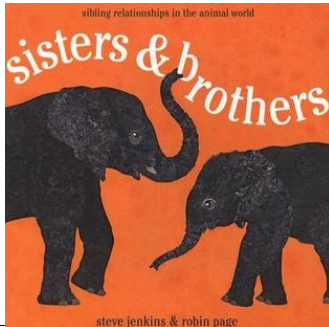


Math in literature ~ Intermediate

Selected by Debbie Nelson & Joan Pearce

Big Idea : Numbers

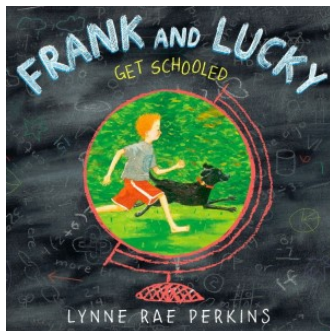


Sisters & Brothers: sibling relationships in the animal world

by Steve Jenkins and Robin Page

A resource filled with math and numbers about siblings. Identical quadruplets (multiples), family groupings (place value from hundreds, thousands or even millions)

At the back of the book you will find out more about each creature's size, what it eats and where it lives.



Frank and Lucky Get Schooled

by Lynne Rae Perkins

Lucky didn't eat Frank's homework. Lucky was Frank's homework. Perkins uses the school subject areas as a device to highlight all the concepts and facts that Frank and Lucky explore while having fun together. For example: wondering about skunks leads to learning about chemistry; sharing a bed involves proportions and fractions; leaving a chair pulled out from a table that holds a cake prompts an historical investigation; observing a silhouette against the horizon leads to art and a study of perspective; and swimming, fields, and snails are all about geography, of course.

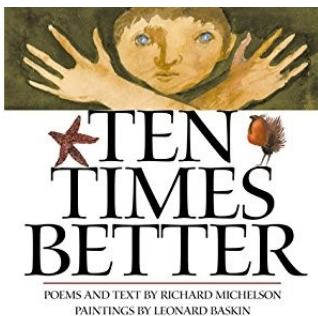


A Hundred Billion Trillion Stars: Can you imagine so many ...of anything?

By Seth Fishman

A book to help student's wrap their brains around large numbers. By comparing things that children can relate to, such as people to ants, this book will help students begin to see the relationships between huge numbers.

Co-create and post ideas: What things come in big numbers?



Ten Times Bigger

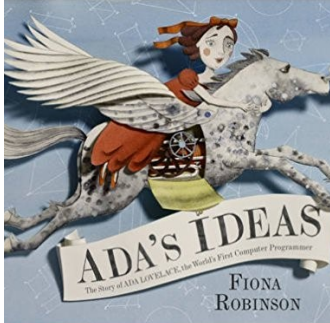
by Richard Michelson

Essentially the animals in this book try to best each other...one animal has an amazing attribute but there is always 'ten times better' (more, bigger, faster) than the one who started the bragging.

<https://letsplaymath.files.wordpress.com/3012/07/multiplication-matching-cards.pdf>

Math in Literature ~ Intermediate

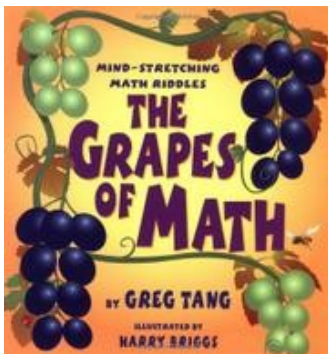
Big Idea : Fluency



Title: Ada's Ideas

by Fiona Robinson

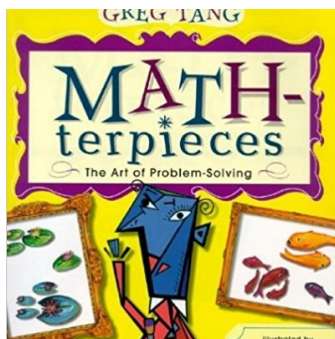
Ada considered mathematics "poetical science." Via her friendship with inventor Charles Babbage, she became involved in "programming" his Analytical Engine, a precursor to the computer, thus becoming the world's first computer programmer. This picture book biography of Ada Lovelace is a compelling portrait of a woman who saw the potential for numbers to make art.



Title: The Grapes of Math

by Greg Tang

"The Grapes of Math teaches four important lessons in problem solving. The first is to be open minded. Children will learn to look beyond the obvious in search of smarter solutions. Second, they are encouraged to think strategically by finding convenient sums that make adding easier. Third, kids are taught to save time by using a variety of skills when solving problems, such as subtracting to add. Finally, children learn to organize information by identifying patterns and symmetries." Tang



Math-terpieces

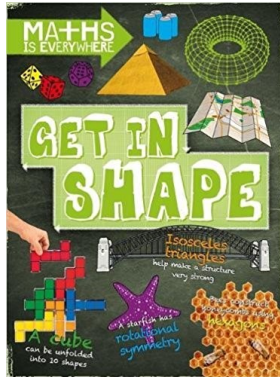
by Greg Tang

Conversations grounded within two main themes: quickness and efficiency. Students will be challenged with images and come to think in groupings. As their abilities to group become more automatic, they realize some groupings are more efficient than others. Some groupings lead to better organized strategies.

Math in Literature ~ Intermediate

Big Idea: Patterns

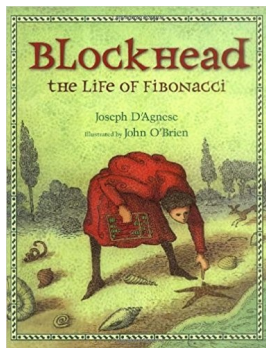
The Fibonacci Sequence, Tessellations, Fractals and More



Get in Shape

Rob Colson

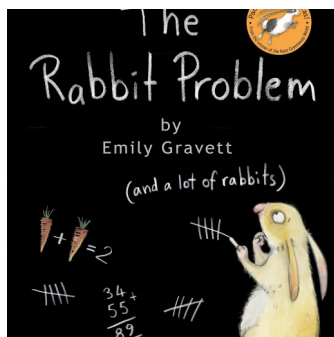
With a focus on 2D & 3D shapes/objects this book gives basic property facts about geometric shapes and explains how to calculate their perimeter, surface area or volume. Real-world connections and topics.



Blockhead

by Joseph d'Agnese

Written in modern idiom and illustrated with hatch-marked artwork ~ a picture-book biography of medieval Europe's greatest mathematician explains the Fibonacci numerical sequence found throughout nature.



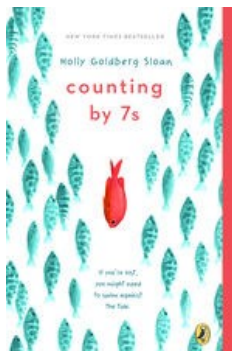
The Rabbit Problem

by Emily Gravett

Fibonacci's sequence & partitioning. Suppose that:

- 1) there is one pair of rabbits in an enclosure on Jan. 1st
- 2) this pair will produce another pair of rabbits on Feb. 1st
- 3) Each new pair will mature for one month and then produce a new pair on the first day of the 3rd month of its life and on the first day of every month thereafter.

<http://www5.sd71.bc.ca/math/index.php?page=lessons-activities-grade-6>



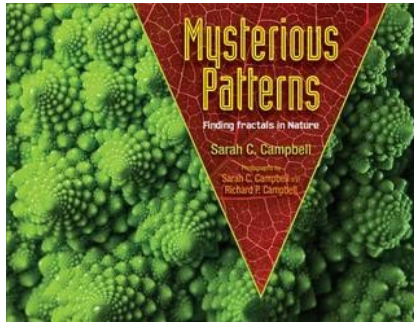
Counting by Sevens

by Holly Goldberg Sloan

Willow Chance, a twelve-year-old genius, is obsessed with nature and diagnosing medical conditions, and finds it comforting to count by 7s. It has never been easy for her to connect with anyone other than her adoptive parents, but that hasn't kept her from leading a quietly happy life...until now. Novel for lit. circles or interactive read-aloud.

Math in Literature ~ Intermediate

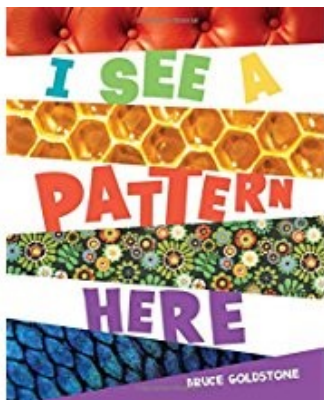
Big Idea: Patterns



Mysterious Patterns

By Sarah C. Campbell

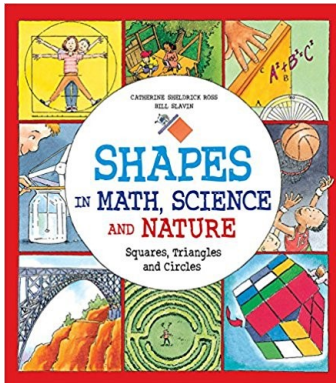
Patterns in nature, photos
The author explains Mandelbrot's observations of fractals (repeated smaller parts that look like the whole shape)



I See a Pattern Here

By Bruce Goldstone

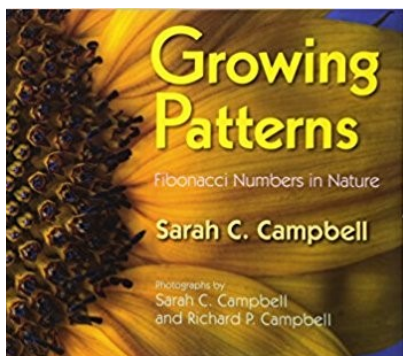
Goes beyond most other books by explaining elements of pattern making, such as translations, rotations, reflections, symmetry, scaling and tessellations. Photos from the natural world and depicting a variety of world cultures.



Shapes in Math, Science and Nature

by Catherine Sheldrick Ross

Geometric topics; patterns, fractals, Fibonacci numbers. Short narratives, challenges and hand-on activities.



Growing Patterns: Fibonacci Numbers in Nature

by Sarah C. Campbell

Photos highlighting the different spirals seen on pinecones, sunflowers and pineapples.

The photos gradually increase in size in proportion to the numbers in the Fibonacci sequence.

Math in Literature ~ Intermediate

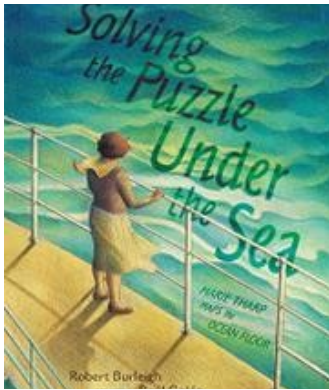
Big Idea: Geometry and Measurement



Title: Which One Doesn't Belong? A Shapes Book and Teacher's Guide

by Christopher Danielson

Danielson writes, "I made this book to spark conversations, thinking and wonder". Bold-color shapes book is a resource to promote student's and teacher's geometric thinking and student's ability to craft mathematical arguments in support of their choices. <http://wodb.ca/>

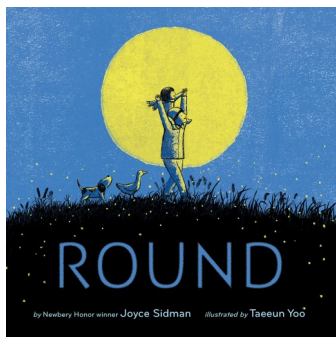


Title: Solving the Puzzle Under the Sea

by Robert Burleigh

In the 1940's Marie Tharp wonders how deep are the oceans? Is the seafloor flat or are there mountains on the ocean floor?

What skills and tools would it take to investigate and map the ocean floor?



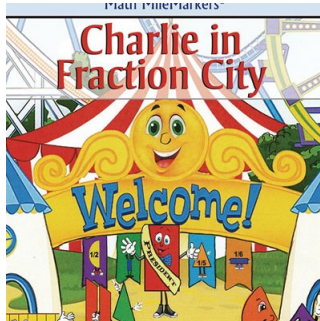
Round

By Joyce Sidman ill. Tae-eun Yoo (2017)

A contemplation of all things circular. Not to be missed ~ the final pages explore: Why are so many things in nature round?

Math in Literature ~ Intermediate

Big Ideas : Fractions



Title: Charlie in Fraction City by Lynda Brennen

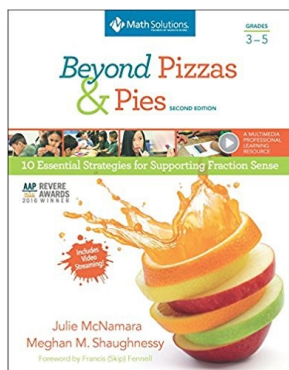
The focus of the book is how various fractions are part of the whole unit. Visuals include use of rectangles, both tall and wide, as well as circles and ways to divide them into fraction.



Title: Sir Cumference and the Fracton Fair

by Cindy Neuschwander

Sir Cumference and Lady Di discover "Fracton numbers" while purchasing cloth and cheese at the Fracton Faire. While twofourths may seem like the same as one-half, in truth it denotes two parts of one-half, or two quarters of the whole. But the real mystery is the fact that items at the fair keep disappearing, and Sir C, Lady Di, and the Earl of Fracton must set a numeric trap for the thief, teaching an important lesson along the way about the comparative size of fractions.

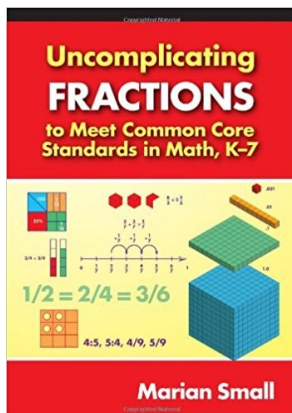


Beyond Pizzas & Pies

by Julie McNamara

Teacher professional resource. 10 Essential Strategies for supporting fraction sense.

Explores partitioning, equivalency, comparison and multiple meanings of fractions.



Uncomplicating Fractions

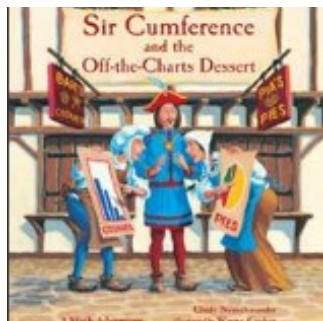
by Marian Small

Shows teachers how to uncomplicate the teaching of fractions by focusing on the most important fraction ideas that students need to grasp.

Provides support for differentiated instruction.

Math in Literature ~ Intermediate

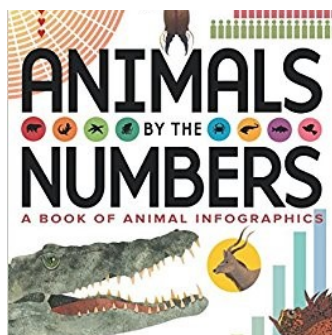
Big Idea : Data and Probability (graphs, outcomes)



Title: Sir Cumference and the Off-the-Charts Dessert

by Cindy Neuschwander 2013

A bake-off of statistical proportions to determine this year's Harvest Treat. How to determine a winner between the best pies in town and cookies. Ultimately, the pie graph and bar graph which are constructed showing favorites among the pies and cookies make the selection obvious. Teacher will need to emphasize the purposes (comparing quantities as opposed to comparing parts to the whole) of these two 'competing' displays of data.

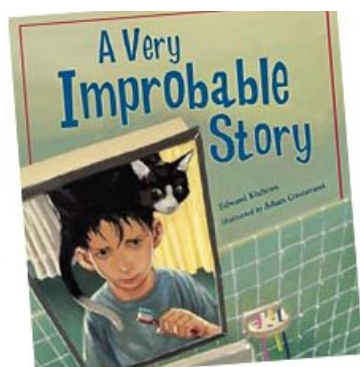


Title: Animals by the Numbers

by Steve Jenkins

Filled with inquiry questions: *Do...., Which animals..., How big..., How fast..., How loud....?*

We use numbers to measure and compare things. Facts and figures about animals are presented visually as graphs, symbols, and illustrations.

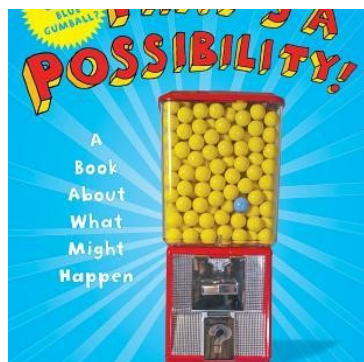


Title: A Very Improbable Story

by Edward Einhorn

Considering odds and outcomes.

The probability scenarios are kid-friendly and the oil paintings add a great deal to the storyline. In using this title for teaching probability, it's recommend you stop and discuss the scenarios as you come to them. The book moves fairly quickly, and students may just listen to the story and miss the math lesson embedded.



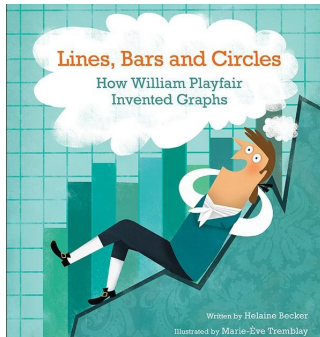
Title: That's a Possibility ~ A book about something that might happen

by Bruce Goldstone

introduces children to the idea of something being possible, probable, or impossible. Easy-to-understand scenarios such as dice rolling, with questions about probable outcomes and simple explanations. In the vein of *Great Estimations*, this is a perfect book for getting across important math concepts in a fun way.

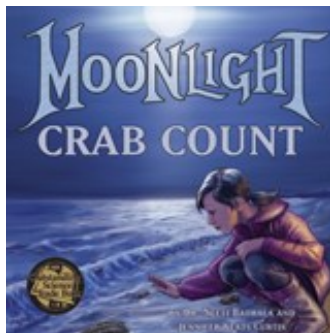
Math in Literature ~ Intermediate

Big Idea : Data and Probability (graphs, outcomes)



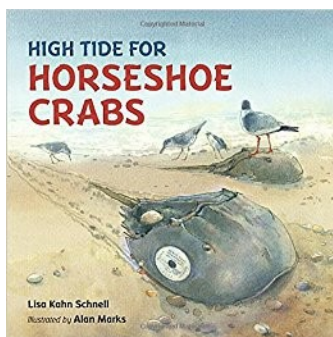
Title: Lines, Bars and Circles by Helaine Becker

This text explores math concepts such as measurement and geometry, as well as history, with sidebars on subjects such as the Industrial Revolution and steam engines. In addition, the book teaches the important lesson that everyone should follow their own curiosities to wherever they lead. The end matter includes historical notes, as well as more detailed explanations of the three types of graphs.



Moonlight Crab Count (2017) by Dr. Neeti Bathala & J.K. Curtis

Citizen scientists can help scientists who can't be everywhere to study and count all the world's horseshoe crabs. A study in making observations, collecting and reporting data.

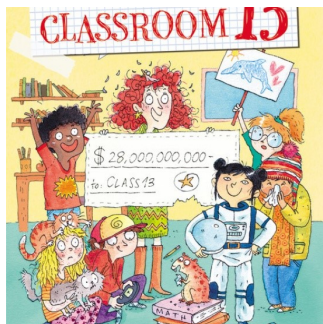


High Tide for Horseshoe Crabs by Lisa Kahn Schnell

A support book for Moonlight Crab Count. Excellent resources for further investigation on back pages.

50 Strangest animal series:

<https://www.youtube.com/watch?v=Bm81EQ2hgVE> 2:23

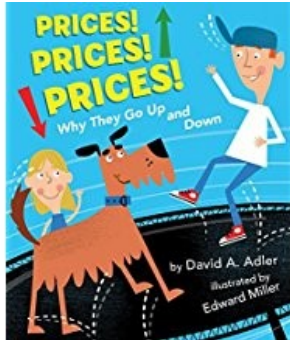


The Unlikely Lottery Winners of Classroom 13 by Honest Lee

When unlucky teacher Ms. Linda LaCrosse wins the lottery, she shares her winnings with her class--giving each student over a BILLION DOLLARS! As the students of Classroom 13 are about to learn, winning the lottery is *not* always lucky. Chapter book.

Math in Literature ~ Intermediate

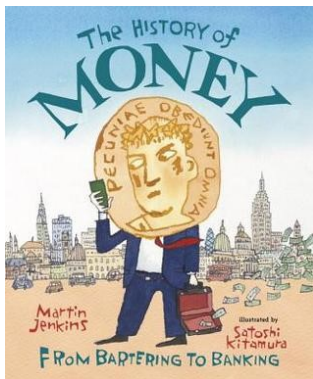
Big Idea : Financial Literacy



Title: Prices! Prices! Prices! Why they go up and down

by David Adler

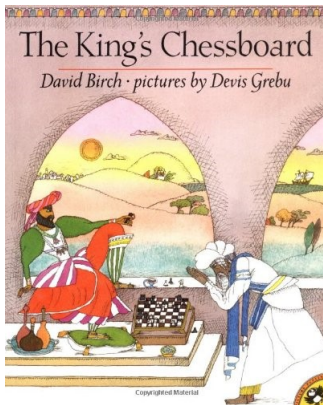
Sometimes prices go up and up and up. Then they suddenly crash. Why? In simple language this picture book explains the basic laws of supply and demand, using examples kids will understand, such as dueling lemonade stands on the same block. Terms such as "fixed costs" and "variable costs" are clearly explained, and a glossary as well as a helpful graphic summary are included.



The History of Money: From Bartering to Banking

by Martin Jenkins

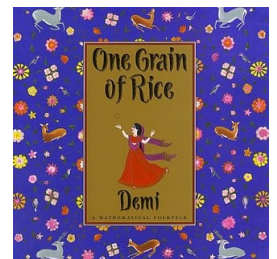
What can take the form of a stone with a hole in the middle, a string of shells, a piece of paper, or a plastic card? The answer is money, of course. But when did we start using it? And why? What does money have to do with writing? And how do taxes and interest work? This lighthearted and engaging account traces the history of the stuff that makes the world go round.



The King's Chessboard

by David Birch

Would you rather have \$100 or payment of rice for each square of the king's chessboard—the amount to be doubled each day?



Lunch Money

by Andrew Clements

Greg Kenton has always had a natural talent for making money -- despite the annoying rivalry of his neighbor Maura Shaw. Then, just before sixth grade, Greg makes a discovery: Almost every kid at school has an extra quarter or two to spend almost every day. Multiply a few quarters by a few hundred kids, and for Greg, school suddenly looks like a giant piggy bank.