Winolee Furtney

Dr. Bellon

LART 3106

24 March 2009

Annotated Bibliography

**Articles:**

Burns, M. (2005). Building a teaching bridge from reading to math. *Leadership Compass*, *3*(*2*), 1-3. Retrieved March 20, 2009, from the ProQuest database.

This article highlights the similarities and differences Math and Language Arts instruction. By understanding the connections between both types of instruction, teachers are better able to teach comprehension, help students develop meaning, and make sense of what they do. Burns explicitly provides teaching methods commonly utilized in reading classrooms that if implemented in math classrooms, can facilitate deeper student understanding. Of the strategies, vocabulary integrations, prediction and estimation, differentiation, classroom discussion, and varied problem solving reasoning are emphasized.

Davis, S., & Gerber, R. (1994). Content area reading in secondary mathematics classrooms. *Journal of Reading*, *38*(*1*), 55. Retrieved March 19, 2009, from the ProQuest database.

Davis and Gerber provide useful instructional strategies to implement in the math classroom that require students to use language and writing to convey mathematical concepts. The fact that students process information using language is highlighted and the need for math teachers to realize this is emphasized. The article suggests determining prior knowledge by using a knowledge rating chart. Teachers are encouraged to use nonlinguistic representations, such as graphic organizers, to help students organize acquired knowledge. A three-level guide can be used to encourage students to process the text and apply it to math problems. An interesting strategy called *word problem roulette* requires students to work in groups and discuss and solve word problems verbally, then in written form. Students can then synthesize the learned information into word problems with a strategy called *possible problems*. By encouraging students to communicate in the math classroom through writing and discussion, literacy and math proficiency will follow.

Harmon, J., Wood, K., & Hedrick, W. (2009). Interactive word walls: More than just reading the writing on the walls. *Journal of Adolescent & Adult Literacy*, *52*(*5*), 398-409. Retrieved March 20, 2009, from the ProQuest database.

This article details a study examining the efficacy of interactive word walls in middle and secondary classrooms. The importance of the visual and concrete reminders created by a word wall is emphasized through this strategy’s ability to facilitate discussion and encourage vocabulary use. This study highlights the word wall’s helpfulness in building background knowledge, making connections, and applying vocabulary to real-world situations. Although word walls are helpful in Language Arts classrooms, math teachers can also benefit greatly by using this strategy to encourage student use of correct mathematical terminology. By asking students to discuss a term’s meaning, its definitional limitations, and it applicable uses, students build concrete and abstract mathematical understanding. The interactive word wall is a literacy approach that enhances students’ mathematical understanding through vocabulary enforcement.

McDonald, J. (1999). Graphs and prediction: Helping children connect mathematics and literature. *The Reading Teacher*, *53*(*1*), 25-30. Retrieved March 20, 2009, from the ProQuest database.

This article provides teachers with examples of graphical representations that employ prediction as means for discussion and literacy development. By involving the entire class in discussion and predictive situations, students can create bar, pie, or picto graphs. By making comparisons between percentages and shapes of each graph, students are encouraged to further develop math vocabulary in appropriate contexts. McDonald suggests using stories to facilitate student prediction, graphical development.

Sarama, J., & Clements, D. (2006). Math and literacy: A powerful pair. *Scholastic Early Childhood Today*, *21*(*1*), 17. Retrieved March 20, 2009, from the ProQuest database.

This article emphasizes the importance of connecting math and literacy in the classroom and provides useful contexts in which to implement literacy techniques in the math classroom. Primarily, Sarama and Clements discuss the impact discussion and effective language skills have on students’ ability to successfully convey mathematical reasoning. Teachers are urged to talk about numbers, order, and patterns. By implementing math vocabulary, students are forced to explain their reasoning in problem solving and further develop math literacy.

Wood, K. (1992). Fostering collaborative reading and writing experiences in mathematics. *Journal of Reading*, *36*(*2*), 96-104. Retrieved March 20, 2009, from the ProQuest database.

This article emphasizes the importance of collaborative reading and writing exercises within the math classroom. Because writing allows students to clarify their own understanding, writing and discussion assignments as part of math instruction requires students to reflect on learned material. Wood suggests several reading and writing strategies that utilize class participation and discussion, as well as individual learning. Of these strategies, paired or group retellings allow students to “talk aloud” and work through problems with peer support and clarification. Reaction guides are also encouraged as a mode of stimulating student thinking and show understanding. Students are required to answer conclusive math statements and provide explanation through writing. List-Group-Label and Write is also suggested as a strategy to encourage higher level thinking through categorization and summarization. Writing to show knowledge is emphasized in this strategy. Wood suggest an interactive guide that allows collaborative writing and reading that helps students realize process and gives them additional opportunities for learning. The strategy of capsule vocabulary is then suggested as a means for requiring students to use key terms in dialogue and create compositions with the vocabulary. Because math is a dynamic content area, student comprehension requires instruction that encompasses both reading and writing.

**Books:**

Balmond, C. (2008). *Number 9*. New York: Prestel Usa.

1. Published by Prestel USA in 2008 in New York.
2. No honors or awards.
3. Reading level: 8- 12 grade; Audience: Young Adult, Adult
4. Mathematical Fiction

“*The Search for the Sigma Code* has a dense plot and relies on another imaginary narrator, a boy called Enjil. If you have ever wondered why any prime number is greater than three will, when raised to the sixth power, leave a remainder of one when divided by nine, you will be at home with this book. As the tale of Enjil's search unfolds, so the use of the Sigma Code unlocks a hidden code beneath numbers, with startling results.”

Thorpe, V. (1998). *The Independent on Sunday*. Retrieved March 22, 2009 from http://www.amazon.com/Number-9-Cecil- Balmond/dp/3791340670/ref=pd\_bbs\_sr\_1?ie=UTF8&s=books&qid=1237859131&sr =8-1.

1. This novel explores mathematical conundrums and arithmetic mysteries. In this story, numbers are duplicit in nature and allow the main character to unlock codes. Students, especially those who struggle with understanding the importance of math, will be intrigued by the creative journey, which is centered around math, that unfolds.

Cameron, A. (1999). *The secret life of Amanda K. Woods*. New York City: Puffin.

1. Published by Puffin books in 1999 in New York
2. National Book Award finalist for Young People’s Literature, BCCB Blue Ribbon Book, Judy Lopez Memorial Award
3. Reading level: Grades 6-8; Audience: Young Adult
4. Fiction

“The main character, 11-year old Amanda, is finding growing up challenging. She finds the still childish side of herself, which she calls "Amanda Woods", and the new maturing side of herself, which she calls "Amanda K. Woods", difficult to reconcile. When it comes to her math homework, the AKW side finally triumphs, and she gets an A+. There is a scene involving long division. But the real mathematical surprise comes later, when Antoine, her pen pal from France, visits with his parents during summer vacation. Both the parents are mathematicians! On being told that Amanda is smart at math, they give her a Moebius strip, and she immediately figures out that it is one-sided: "It is called a Moebius strip," Mrs. Bonnier said. "It is important to geometry. And in life, too, sometimes the outside turns into the inside and the inside into the outside." And after the Bonniers went back to France, her mother wanted to know if she realized that the Bonniers were very special people and that being a mathematician was a very special thing, and that Amanda could be a mathematician one day, too, if she wanted.”

Emba, W. (n.d.). *Math Fiction*. Retrieved March 22, 2009 from http://kasmana.people.cofc.edu/MATHFICT/mfview.php?callnumber=mf212.

1. This novel is rich with positive outlooks toward math and open possibilities for those interested in math. Students with similar interests as the main character will be able to relate, fostering a deeper interest in math. The idea of the Moebius strip is mathematical, yet practical to the real-world. This connection between math and life will be beneficial to adolescent readers.

Clement, R. (1991). *Counting on Frank*. Milwaukee: Gareth Stevens Publishing.

1. Published by Gareth Stevens Publishing in 1991 in Milwaukee
2. Honour Book, Children’s Book Council Book of the Year Awards (1991), Winner of the Young Australian Best Book Awards (1991), Shortlisted Kid’s Own Australian Literature Awards (1993)
3. Reading level: Ages 9-12; Audience: Children, Young Adult
4. Picture book, Children’s Literature

“This short read shows how students and adults can find math in our everyday world. The illustrations leave students in awe, and allows them to see math in a fun way. Just one of those "did you ever think about that" stories of a young boy and his dog named Frank. Focus on estimation, fractions, large numbers, simply how numbers can be calculated in our lives.”

Kasman, A. (n.d.). *Math Fiction*. Retrieved March 22, 2009 from http://kasmana.people.cofc.edu/MATHFICT/mfview.php?callnumber=mf291

1. This picture book shows students how math relates to everyday life. By providing fun math facts, readers are intrigued and can relate measurement to real-world scenarios.

Ekeland, I. (2006). *The cat in numberland*. Chicago, Il: Cricket Books.

1. Published by Cricket Books in April 2006 in Chicago, Illinois
2. No awards or honors
3. Reading level: Grades 3-7; Audience: Children, Young Adult
4. Fiction, Picture book

In this clever tale, Mr. and Mrs. Hilbert are the proprietors of the Hotel Infinity, an establishment for Numbers of all sizes. The odds and evens live happily together, playing games like addition and subtraction until Zero comes to call. Mr. H refuses to admit him on the grounds that, Zero is not a Number…Numbers serve to count things. His wife disagrees, and she offers 10, 100, and 1000 as cases in point. Defeated, her husband agrees to give him a room, but which one? The hotel is fully occupied. Zero suggests each guest move up one. Everyone is happy but the cat, who ponders how a hotel that was already full could suddenly accommodate another guest. Zero tells the others about a place called Alphabet where the Letters live. They cannot play the games we know, but they know others that are very interesting…. When they invite the Letters for a sleepover, Zero proposes that he move to Room 26, and the others follow suit. Again, the cat cannot fathom where all these extra rooms have come from. In the end, the Hotel Infinity becomes famous far and wide as it is always full, yet there is always room. The clever black-line and crosshatch sketches portray the number and letter people as comical aliens. Readers will particularly enjoy poring over the scenes of the numbers at play as they search for recognizable patterns and number sentences…”

Auerbach, B. (n.d.) *School Library Journal*. Retrieved March 23, 2009 from http://www.amazon.com/Cat-Numberland-Ivar- Ekeland/dp/081262744X/ref=sr\_1\_1?ie=UTF8&s=books&qid=1237893009&sr= 1-1.

1. This book explains odd and even numbers, number operations, patterns between numbers, fractions, algebra concepts, and the concept of infinity. Although the term *infinity* is not used often, the concept is simplistic enough for young readers, and explicit enough for older readers.

Green, J. (2006). *An abundance Of Katherines*. unknown : Dutton Childrens Books.

1. Published by Dutton Childrens Books in 2006.
2. 2007 Michael L. Printz Honor book and a finalist for the Los Angeles Times Book Prize, An ALA Best Book for Young Adults, A Booklist Editors' Choice, A Kirkus Reviews Best Book of the Year, A Horn Book Fanfare Best Book of the Year
3. Reading level: 8-12 grade; Audience: Young Adults, Adults
4. Mathematical Fiction

“Green follows his Printz-winning *Looking for Alaska* (2005) with another sharp, intelligent story, this one full of mathematical problems, historical references, word puzzles, and footnotes. Colin Singleton believes he is a washed-up child prodigy. A graduating valedictorian with a talent for creating anagrams, he fears he'll never *do* anything to classify him as a genius. To make matters worse, he has just been dumped by his most recent girlfriend (all of them have been named Katherine), and he's inconsolable. What better time for a road trip! He and his buddy Hassan load up the gray Olds (Satan's Hearse) and leave Chicago. They make it as far as Gutshot, Tennessee, where they stop to tour the gravesite of Archduke Franz Ferdinand, and meet a girl who isn't named Katherine. It's this girl, Lindsey, who helps Colin work on a mathematical theorem to predict the duration of romantic relationships. The laugh-out-loud humor ranges from delightfully sophomoric to subtly intellectual, and the boys' sarcastic repartee will help readers navigate the slower parts of the story, which involve local history interviews. The idea behind the book is that everyone's story counts, and what Colin's contributes to the world, no matter how small it may seem to him, will, indeed, matter. An appendix explaining the complex math is "fantastic," or as the anagrammatically inclined Green might have it, it's enough to make ‘cats faint.’”

Cindy Dobrez Dobrez, C. (n.d.). *Review of an abundance of katherines*. Retrieved March 22, 2009 from http://www.amazon.com/Abundance-Katherines-John- Green/dp/0525476881/ref=pd\_bbs\_sr\_1?ie=UTF8&s=books&qid=123785410 7&sr=8-1

1. Content connections: This novel incorporates mathematical terms and relates real-world experiences to mathematical applications. By attempting to explain relationships and breakups, the main character employs math, showing readers the various applications of mathematical concepts.

Griffin, A. (2004). *Hannah, divided*. Logan, Iowa: Perfection Learning.

1. Published by Perfection Learning in 2004 in Logan, Iowa.
2. No awards or honors; although, author received numerous awards for other novels.
3. Reading level: Grade 5-8; Audience: Young Adult
4. Fiction
“Hannah, 13, loves math. In fact, she has ‘a gift for numbers.’ But it's 1934, and ‘math [is] more practical for boys,’ at least, that's what her teacher says. In her hometown of Chadds Ford, Pa., the most she can hope for is tutoring the younger students and invoicing all of her family's dairy accounts. Only her Granddad McNaughton recognizes the possibilities that Hannah's talent could offer her until Mrs. Theodora Ann Sweet waltzes in from Philadelphia to assess whether Hannah's school should be awarded money from the Wexler Foundation. Griffin (The Other Shepards) makes inventive use of a third-person narration to demonstrate Hannah's computer-like brain and quirky personality. Hannah sums up Mrs. Sweet as ‘seven suit buttons, eleven footsteps, and five syllables in her name. From bag to beret, Theodora Sweet seemed to be an odd-numbered, slant-sided sort of person’; and she meditates on her favorite number, 32, to try to clear her mind. She travels to Philadelphia to study and to try out for the Wexler Scholarship, but feels divided between math and home. The author remains true to Hannah's personality, laying out the ways in which her eccentricities inhibit her even as she wins over friends who see through to her strengths. Her friend Tru, for instance, offers soothing parting words to Hannah: ‘All it takes is one chum to make the world shrink to a comfortable size. Wouldn't you say?’ Griffin leaves the conclusion realistically and satisfyingly ambiguous, but readers will feel confident that Hannah will come out on top.”

(2002). *Publishers Weekly*.Retrieved March 22, 2009 from http://www.amazon.com/Hannah-Divided-Adele- Griffin/dp/075692975X/ref=pd\_bbs\_sr\_1?ie=UTF8&s=books&qid=123786154 8&sr=8-1

1. This novel deals less explicitly with math operations or formulas, but it still provides helpful insight into a math-oriented mind. Because the main character views the world differently, readers are provided a glimpse into how it feels to see the world through math. Math is conveyed as a positive in this novel, and teachers will be able to utilize the math vocabulary found in the novel during instruction. Students can be questioned to analyze the ways in which the main character describes personal characteristics mathematically.

Haber, M. G. (2004). *Heroic adventures of Hercules Amsterdam*. New York City: Puffin.

1. Published by Puffin Books in 2004 in New York City
2. 2007 Indian Paintbrush Book Award Nominee
3. Reading Level: Grades 4-6; Audience: Young Adult
4. Mathematical Fiction

“The plot focuses on a three inch tall boy who runs away from humans to live with mice, only to discover that the mice are regularly massacred by rats every seven years. The mice, however, cannot anticipate the attacks because they can't count past three. As a result, Hercules must teach them to count in base four.... The book contains a mathematical appendix to teach readers how to count correctly in base 4 (Hercules doesn't do it well in the text); an appendix to the appendix that discusses base two; and an appendix to the appendix to the appendix, which teaches kids to count in hexadecimals.”

Haber, M. (n.d.). *Math Fiction*. Retrieved March 22, 2009 from http://kasmana.people.cofc.edu/MATHFICT/mfview.php?callnumber=mf477

1. This novel introduces children to concept of counting in a base other than ten. Because students are taught solely this base in math instruction, the understanding of counting in any other base is absent. By using mice and a small boy to present a different form of counting, the author creates an interesting plot that will appeal to young adults.

Haddon, M. (2004). *The curious incident of the dog in the night-time*. New York: Vintage

1. Published by Vintage in May 2004 in New York City
2. 2003 Whitbread Book of the Year and 2004 Commonwealth Writers’ Prize for Best First Book
3. Reading level: Grades 6-8; Audience: Young Adult
4. Mathematical Fiction

“Christopher Boone, the autistic 15-year-old narrator of this revelatory novel, relaxes by groaning and doing math problems in his head, eats red-but not yellow or brown-foods and screams when he is touched. Strange as he may seem, other people are far more of a conundrum to him, for he lacks the intuitive ‘theory of mind’ by which most of us sense what's going on in other people's heads. When his neighbor's poodle is killed and Christopher is falsely accused of the crime, he decides that he will take a page from Sherlock Holmes (one of his favorite characters) and track down the killer. As the mystery leads him to the secrets of his parents' broken marriage and then into an odyssey to find his place in the world, he must fall back on deductive logic to navigate the emotional complexities of a social world that remains a closed book to him. In the hands of first-time novelist Haddon, Christopher is a fascinating case study and, above all, a sympathetic boy: not closed off, as the stereotype would have it, but too open-overwhelmed by sensations, bereft of the filters through which normal people screen their surroundings. Christopher can only make sense of the chaos of stimuli by imposing arbitrary patterns (‘4 yellow cars in a row made it a Black Day, which is a day when I don't speak to anyone and sit on my own reading books and don't eat my lunch and Take No Risks’). His literal-minded observations make for a kind of poetic sensibility and a poignant evocation of character.”

(2003). *Publishers Weekly*. Retrieved March 23, 2009 from http://www.amazon.com/Curious-Incident-Dog-Night- Time/dp/1400032717/ref=sr\_1\_1?ie=UTF8&s=books&qid=1237863095&sr=1 -1.

1. This novel incorporates deductive reasoning and mathematical logic through intriguing mystery that will appeal to young adult readers. Readers can also relate to the main character’s social awkwardness. The main character may also be relatable to readers with similar forms of autism.

Haldeman, J. (2008). *The accidental time machine*. New York: Ace

1. Published in 2008 by Ace in New York
2. Finalist for the Nebula Award
3. Reading level: 9-12; Audience: Young adult, Adult
4. Science Fiction

“Hugo-winner Haldeman's skillful writing makes this unusually thoughtful and picaresque tale shine. Matt Fuller, a likable underachiever stuck as a lab assistant at a near-future MIT, is startled when the calibrator he built begins disappearing and reappearing, jumping forward in time for progressively longer intervals. Curiosity and some unfortunate accidents send Matt through a series of vividly described, wryly imagined futures where he gradually becomes more adaptable and resourceful as experiences hone his character. The young woman he rescues from a techno-religious dictatorship gives him a chance at a mature relationship, while teaming up with an AI that intends to press on to the end of time forces him to decide what he wants from life.”

(2007). *Publishers Weekly*. Retrieved March 22, 2009 from http://search.barnesandnoble.com/The-Accidental-Time-Machine/Joe- Haldeman/e/9780441016167/?itm=1.

1. This novel deals with time travel that is shaped by geometric series. Specifically, each time jump increases by a time of 12 years. Algebra topics are also developed throughout the novel.

Heinlein, R.(1977). *The best of Robert Heinlein 1939 - 1942 (Lifeline, The Roads Must Roll, And He Built a Crooked House, The Unpleasant Profession of Jonathan Hoag)*. London: Sphere Books.

1. Published by London: Sphere Books in 1977.
2. No awards or honors
3. Reading Level: Grades 8-12 ; Audience: Young Adult, Adult
4. Science Fiction, Mathematical Short Story

“He Built a Crooked House”

“A clever architect designs a house in the shape of the shadow of a tesseract, but it collapses (through the 4th dimension) when an earthquake shakes it into a more stable form (which takes up very little room in our 3-dimensional space.)”

Kasman, A. (n.d.) *Math Fiction*. Retrieved March 22, 2009 from http://kasmana.people.cofc.edu/MATHFICT/mfview.php?callnumber=mf98.

1. This short story develops detailed geometry and trigonometry concepts through the narrator’s oddly-shaped house. This interesting story uses dimensions in a real-world setting, which will appeal to creative young readers.

Hathout, L. (2007). *Crimes and mathdemeanors*. Wellesley, MA: A K Peters, Ltd.

1. Published by A k Peters, Ltd. In 2007 in Wellesley, MA
2. No awards or honors
3. Reading level: Grade 6-12; Audience: Young Adult
4. Children’s Literature, Fiction

“A collection of short detective stories for young adults who are interested in applying high school level mathematics and physics to solve mysteries. The main character is Ravi, a 14-old math genius who helps the local police solve cases. Each chapter is a detective story with a mathematical puzzle at its core that Ravi is able to solve. The author invites the reader to solve the case on his or her own and then explains the mathematics used to find the solution to the puzzle.”

A K Peters Ltd. (n.d.) Retrieved March 22, 2009 from http://search.barnesandnoble.com/Crimes-and-Mathdemeanors/Leith- Hathout/e/9781568812601/?itm=1#TABS.

1. This collection of short stories creatively incorporates math into mystery. Although appealing to students interested in math, these mystery shot stories can interest all students. Math is applied in real-world situations, an organization beneficial to young readers.

Isdell, W. (1993). *A gebra named Al: A novel*. Minneapolis, Minnesota : Free Spirit Publishing.

1. Published by Free Spirit Publishing in 1993 in Minneapolis, Minnesota.
2. A “Children’s Books Mean Business” Selection, American Booksellers Assn. 1994 and Best Children’s Book Award of Merit, Midwest Independent Publishers Assn. 1994
3. Reading Level: Grades 6-8; Audience: Young Adult
4. Mathematical Fiction

“Julie hates algebra--until she meets a gebra named Al, and the Periodic horses journey through the Land of Mathematics, where the Orders of Operations are real places and fruits that look like Bohr models grow on chemistrees. Wonderfully written and a joy to read, this novel is filled with math and science basics made fun and accessible.”

Free Spirit Publishing. (n.d.) Retrieved March 23, 2009 from http://www.freespirit.com/catalog/item\_detail.cfm?ITEM\_ID=212

1. This novel deals with algebra and chemistry in an amusing, interesting way that will attract young adult readers. The text is sprinkled with algebraic problems and mathematical terminology. With concepts, such as order of operations, illustrated in a fun way, students will read for enjoyment, while gaining a more supported knowledge of math.

Kasman, A. (2005). *Reality conditions: Short mathematical fiction*. Washington: The Mathematical Association Of America.

1. Published by The Mathematical Association of America in 2005 in Washington
2. No awards or honors
3. Reading level: Grades 7-12; Audience: Young Adult, Adult
4. Science Fiction

“The Exception”

Sam has to do a report for school. She asks her grandfather what is he proud of. He tell her than when he was young he studied mathematics. He tries to explain what he did. She follows him with the help of Interface – something that she has in her head. Grandfather tells Sam a few things about prime and even numbers. We learn that even numbers can be written as a sum of two prime numbers. Grandfather was working with a professor who was a genius. They tried to answer the question: ‘Is it always true that an even number is the sum of two primes?’ The story is educational, explanatory and fun.”

Kasman, A., Dezman, S. (n.d.) *Math Fiction*. Retrieved March 23, 2009 from http://kasmana.people.cofc.edu/MATHFICT/mfview.php?callnumber=mf500

1. This short story relates to young readers through the main character, but it also develops algebraic concepts, such as Goldbach’s Conjecture, that make readers acquainted with math through literature. Number theory and fictional mathematics are explored as well.

Leinster, M. (1950). *Sidewise in time. And Other Scientific Adventures.*. Boston: Shasta.

1. Published by Shasta in 1950 in Boston. First appeared in *Astounding*, June 1934.
2. No awards or honors, but the Sidewise Awards for Alternate History were named after the novel
3. Reading level: Grades 8-12; Audience: Young Adult, Adult
4. Science Fiction

"The protagonist is a frustrated mathematician, whose genius (which Leinster makes some attempt to convey) is not recognized by his teachers and peers. So when reality goes blooey, and the mathematician is the only person to realize what is going on, he leaps at the opportunity to become a somebody in an alternative reality. At one point, when questioned why he is such a megalomaniac, he says rather matter of factly that it beats being a Jerkwater U math professor."

Emba, W. (n.d.). *Math Fiction*. Retrieved March 21, 2009 from http://kasmana.people.cofc.edu/MATHFICT/mfview.php?callnumber=mf151.

1. Although this book is science fiction and deals with alternate worlds, math is discussed throughout. By having the main character as a mathematician, students interested in math may relate.

L'Engle, M. (2007). *A wrinkle in time*. New York: Square Fish.

1. Published by Square Fish in May 2007 in New York.
2. A Newbery Medal Book, A ALA Notable Children’s Book
3. Reading level: Grades 5-9; Audience: Young Adult, Adult
4. Science Fiction/ Fantasy

“Winner of the Newbery Medal in 1963, L'Engle's work of fantasy and science fiction combined with some Christian theology has now been read by several generations of young enthusiasts. The author went on to write three others, forming a quartet based on the Murry family, and including themes like the power of love and the need to make responsible moral choices. In this story, Meg Murry, her extraordinary little brother Charles Wallace, and schoolmate Calvin O'Keefe make the acquaintance of eccentric Mrs. Whatsit and friends (who turn out to be extraterrestrial beings). Together they journey through a wrinkle in time, a tesseract, to rescue the Murrys' missing father from an evil presence (likened by some interpreters to a black hole), and a sinister brain called IT. Although this is fantasy, the characters are portrayed realistically and sympathetically; it is Meg's ability to love that enables them to return safely to Earth and make secure the right to individuality…”

Talcroft B.(2005). *Children’s Literature*. Retrieved March 21, 2009 from http://search.barnesandnoble.com/Wrinkle-in-Time/Madeleine-LEngle/e/9780312367541/?itm=1

1. This novel has characters who travel to alternate dimensions and explore geometry and trigonometry concepts. Elliptical polygons and tessellations are mentioned, and the main character approaches math in a unique way. Readers can relate to her use of shortcuts in math. The parents are mathematicians as well.

Neuschwander, C. (1999). *Sir cumference and the first round table: A math adventure*. Watertown, MA: Charlesbridge Publishing.

1. Published in 1999 by Charlesbridge Publishing in Watertown, Massachusetts
2. 2005, 2006, 2007 California Collection Award
3. Reading level: Grades 3-6; Audience: Children, Young Adult
4. Picture book, Mathematical Fiction, Children’s Literature

“King Arthur was a good ruler, but in this math adventure he needs a good ruler. Geometry is explained with humor in *Sir Cumference and the First Round Table*, making it fun and accessible for beginners. What would you do if the neighboring kingdom were threatening war? Naturally, you'd call your strongest and bravest knights together to come up with a solution. But when your conference table causes more problems than the threat of your enemy, you need expert help. Enter Sir Cumference, his wife Lady Di of Ameter, and their son Radius. With the help of the carpenter, Geo of Metry, this sharp-minded team designs the perfect table conducive to discussing the perfect peace plan. Thanks to *Sir Cumference and the First Round Table*, even the most hesitant will be romancing math.”

Charlesbridge Publishing, (n.d.). Retrieved March 22, 2009 from http://www.charlesbridge.com/productdetails.cfm?PC=4461.

1. This book explores geometry by using octagons, parallelograms, diameter, radius, and circumference.

Neuschwander, C. (2001). *Sir cumference and the great knight of angleland: A Math Adventure (Sir Cumference)*. Watertown, MA: Charlesbridge Publishing.

1. Published in April 2001 by Charlesbridge Publishing in Watertown, Massachusetts
2. No honors or awards
3. Reading level: Grades 3-6; Audience: Children, Young Adult
4. Picture book, Mathematical Fiction, Children’s Literature

“Radius, the son of Sir Cumference and Lady Di of Ameter, ventures on a heroic quest to earn his knighthood. He first proves his ability to make a ‘knightly right angle,’ as Sir D'Grees has trained him, and then doubles the right angle to make a straight angle. So he is sent off with the family medallion, in the shape of a circle to rescue the missing King Lell. Falling bridges, a cryptic riddle, a crocodile-infested moat, and a winding labyrinth all must be mastered before finding the king and his twin dragons, known as ‘Pair of Lells…’”

(2002). *School Library Journal*. Retrieved March 22, 2009 from http://www.charlesbridge.com/productdetails.cfm?PC=4467.

1. This book explores different types of angles and their uses. The use of protractors is emphasized.

Neuschwander, C. (2003). *Sir cumference and the sword in the cone: A Math Adventure*. Watertown, MA: Charlesbridge Publishing.

1. Published in September 2003 by Charlesbridge Publishing in Watertown, Massachusetts
2. ABC Best Books for Children
3. Reading level: Grades 3-6; Audience: Children, Young Adult
4. Picture book, Mathematical Fiction, Children’s Literature

“King Arthur has issued a challenge. The first knight to find the sword Edgecalibur will be the next king. Join Sir Cumference, Lady Di of Ameter, and their son, Radius, as that race to help their friend, Vertex, find the sword and discover the secrets of cubes, pyramids, cylinders, and cones.”

Charlesbridge Publishing, (n.d.). Retrieved March 22, 2009 from http://www.charlesbridge.com/productdetails.cfm?PC=4474.

1. This book presents geometry through cones, cubes, pyramids, and cylinders. Vertices and surfaces are examined as characteristics of these geometric shapes.

Neuschwander, C. (2004). *Sir cumference and the dragon of pi: A math adventure*. Watertown, MA: Charlesbridge Publishing.

1. Published by Charlesbridge Publishing in 2004 in Massachusetts.
2. No honors or awards
3. Reading level: Grades 3-6; Audience: Children, Young Adult
4. Picture book, Mathematical Fiction

“When Sir Cumference turns into a dragon, Lady Di of Ameter helps him hide, while Radius searches for the cure–the magic number that is the same for all circles.”

Charlesbridge Publishing, (n.d.). Retrieved March 22, 2009 from http://www.charlesbridge.com/productdetails.cfm?PC=4478.

1. This book is made fun by including math puns throughout the story. Students are presented with math vocabulary, such as radius and pi in a way that reinforces use but also entertains.

Neuschwander, C. (2006). *Sir cumference and the isle of immeter (Math Adventures)*. Watertown, MA: Charlesbridge Publishing.

1. Published in June 2006 by Charlesbridge Publishing in Watertown, Massachusetts
2. No awards or honors
3. Reading level: Grades 3-6; Audience: Children, Young Adult
4. Picture book, Mathematical Fiction, Children’s Literature

“When young Per visits her uncle Sir Cumference and his family, she learns how to play the game, "Inners and Edges." After she finds a clue linking the game to the mysterious castle on the island of Immeter, she must figure out how to find the perimeter and area of a circle to unlock the island's secret.”

Charlesbridge Publishing, (n.d.). Retrieved March 22, 2009 from http://www.charlesbridge.com/productdetails.cfm?PC=4480

1. The math concepts presented in this book include: finding the perimeter of a circle and square and finding the area of a circle and square. The Calculus concept of measuring a curve with a straight line is mentioned.

Oren, Y. (1986). *The imaginary number: Short stories*. New York: Benmir Books.

1. Originally published in Hebrew, Benmir books in 1986 in New York.
2. No honors or awards
3. Reading level: 8-12; Audience: Young Adult, Adult
4. Science Fiction

“In this peculiar and humorous story, a complete stranger shows up at physicist Benjamin's door, with an imaginary tale of their childhood friendship, marriage to twin sisters, and his deed to certain property from before the war and Israeli statehood, and he asks Benjamin's help to locate it.

Confronted with reality, the imaginary takes a beating and the stranger becomes depressed, while Benjamin and his wife take greater and greater interest in the stranger's imaginary past. With a long historical and philosophical appeal to the mathematical and physical meaning of sqrt(-1), Benjamin convinces a clerk in the appropriate bureaucracy to use imaginary numbers to identify the stranger's imaginary deed, and so make everyone happy…”

Emba, W. (n.d.). *Math Fiction*. Retrieved March 21, 2009 from http://kasmana.people.cofc.edu/MATHFICT/mfview.php?callnumber=mf626.

1. This short story explores number theory, square root of -1, and algebra. The narrator applies use concept of the imaginary number, *i*, to solve a real-world problem.

Pappas, T. (1997). *The adventures of penrose the mathematical cat*. San Carlos, CA: Wide World Publishing, Tetra.

1. Published by Wide World Publishing/Tetra in 1997 in San Carlos, CA
2. No honors or awards
3. Reading level: Grade 4-8; Audience: Young Adult
4. Children’s Literature, Fiction

“Penrose, a cat with a knack for math, takes children on an adventurous tour of mathematical concepts from fractals to infinity. When the fractal dragon jumps off the computer screen and threatens to grow larger than the room itself, Penrose must find out if fractal patterns can work in reverse, getting smaller instead of larger.”

 Wide World Publishing, Tetra. (n.d.). Retrieved March 21, 2009, from http://www.amazon.com/Adventures-Penrose-Mathematical- Cat/dp/1884550142/ref=sr\_1\_1?ie=UTF8&s=books&qid=1237890277&sr=1-1.

1. This book explores fractals, square roots, tangrams, and other math concepts.

Scieszka, J. (1995). *Math curse*. New York: Viking Juvenile.

1. Published by Viking Juvenile in 1995 in New York.
2. Maine's Student Favorite Book Award, the Texas Bluebonnet Award, and New Hampshire's The Great Stone Face Book Award
3. Reading level: Grades 2-6; Audience: Children, Young Adult
4. Fiction, Picture book

“…This latest whimsical work from Scieszka and Smith is bound to stretch out the old thinking cap. The day after her teacher announces, ‘You know, you can think of almost everything as a math problem,’ the narrator is afflicted with a ‘math curse’ that affects how she views every facet of her day (‘Everything seems to be a problem’). A minimum of the questions she asks herself are entirely logical (‘How many quarts are in a gallon?’); some are far-fetched extrapolations (if an M&M is about one centimeter long and the Mississippi River is about 4000 kilometers long, how many M&Ms would it take to measure the length of this river?); and a happily hefty number are sheer nonsense: ‘I undo 8 buttons plus 2 shoelaces. I subtract 2 shoes. I multiply times 2 socks and divide by 3 pillows to get 5 sheep, remainder 1, which is all I need to count before I fall asleep.’ Like the text, Smith's wonderfully wacky collage-like art will give readers ample food for thought-even if it's part junk food…”

(1995). *Publishers Weekly*. Retrieved March 21, 2009, from http://www.amazon.com/Math-Curse-Jon- Scieszka/dp/0670861944/ref=sr\_1\_1?ie=UTF8&s=books&qid=1237891008&s r=1-1.

1. This picture book is riddled with computations, measurement, and conversion. Everyday items and concepts are presented through math and show readers the usefulness of math outside of the classroom.

Tahan, M. (1993). *The man who counted: A collection of mathematical adventures*. New York: W. W. Norton & Company.

1. Published by W.W. Norton & Company in 1993 in New York.
2. No honors or awards
3. Reading level: Grades 4-8; Audience: Children, Young Adult
4. Mathematical Fiction with Nonfictional Historical backgrounds

“The adventures of Beremiz Samir, The Man Who Counted, take the reader on an exotic journey in which, time and again, he summons his extraordinary mathematical powers to settle disputes, give wise advice, overcome dangerous enemies, and win for himself fame and fortune. as we accompany him, we learn much of the history of famous mathematicians who preceded him; we undergo a series of trials at the hands of the wise men of the day; and we come to admire the warm wisdom and patience that earn him the respect and affection of those whose problems he resolves so astutely. In the grace of their telling, these stories hold unusual delights for the reader.”

W.W. Norton & Company (n.d.). The man who counted. Retrieved March 23, 2009, from http://www.wwnorton.com/catalog/backlist/030934.htm.

1. This puzzle book explores fractions, number operations through fun word problems. Number theory and algebra ideas are also included.

Tumanov, V. (2002). *Jayden's rescue*. New York: Scholastic.

1. Published by Scholastic Books in March 2002 in New York.
2. No awards or honors
3. Reading level: Grades 2-6; Audience: Children, Young Adult
4. Mathematical Fiction

“An evil sorcerer-king is holding a queen named Jayden captive in his castle, and only Alex, Vanessa and Sam can help save her ... But wait a minute! These are three real-life kids — and the queen in trouble is part of a fictional fantasy story, in a book they’ve discovered.
The book is called Jayden’s Rescue, and it soon becomes clear to Alex and his friends that in some parallel world, Jayden really is in trouble. To help her, they have to solve the puzzles posed by a menagerie of kooky monster guards. There are four hundred of them — one for each room in the castle!”

Scholastic Canada (n.d.), Jayden’s rescue. Retrieved March 23, 2009, from http://www.scholastic.ca/titles/jaydensrescue/

1. This puzzle book allows students to practice math skills through intriguing math riddles. Computation and number operations are the main modes of calculation throughout the book.

**Websites:**

*Literacy matters*. (n.d.). Retrieved March 22, 2009, from http://www.literacymatters.org

This website emphasizes the importance of literacy across all content area. Providing online research, lesson plans, adolescent literature and study strategies that support the development of literacy skills in Math, Science, Social Studies, and Language Arts classrooms, this website is an extremely useful tool for parents, teachers, and students. The “Content Literacy” section goes into further detail about the importance of reading and writing in math instruction. The need for deep understanding of the technical vocabulary involved in math is emphasized, and the role reading and writing have in this vocabulary acquisition is detailed on this website. This section also provides useful websites that further provide clarification about content literacy.

*The math forum @ Drexel University*. (n.d.). Retrieved March 22, 2009, from http://mathforum.org

This website is a great resource for math teachers, providing math problems of the week, discussion boards, and professional development. Resources for useful instructional web tools are also available. The discussion section is most pertinent to teaching reading in the math content area. The article “Reading for the Math of It: Teaching PreK-6 Math Through Literature” highlights the importance of literacy in math and techniques that allows students to express math through language and writing. This website provides educators with resources to improve teaching across all math subjects.

*Welcome to reading is fundamental*. (n.d.). Retrieved March 22, 2009, from <http://www.rif.org>

This website provides web resources, activities, books, articles, lesson plans, workshops, and expert advice for educators. Reading and content literacy are emphasized throughout the website. The “Tips and Advice” section is most beneficial to math educators, providing advice to educators on how to make students feel less intimidated by the math textbook. Strategies for guided reading, pre-reading, and post-reading are available. The “Web Resources” section also provides an abundance of websites and databases that provide further discussion concerning content area literacy.