

MATH THROUGH BOOKS

Adults mathematize when they bring out the math in what children are doing. As children engage in daily classroom activities and routines, adults can help them relate their experiences to the mathematical knowledge and skills that are part of those activities and routines. Reading books is a common preschool activity that offers children varied opportunities to practice and explore mathematical concepts.

CHOOSING BOOKS

Many children's books lend themselves to teaching mathematical concepts. There are two main types of books to consider when selecting books to support mathematical learning. Some books focus directly on mathematical concepts such as counting or shapes. Other books have mathematical concepts embedded within the story or illustrations. When choosing picture books, use both types of books. Look for pictures and stories that offer opportunities for children to practice early mathematical skills such as counting, recognizing shapes and patterns, measuring, and comparing. Be sure to use books that represent a variety of languages and cultures.

Here is a list of children's books with suggestions of Mathematical Knowledge & Skills domain elements addressed in the book.



Title/author	Story	Number Concepts & Quantities	Number Relationships & Operations	Geometry & Spatial Sense	Patterns	Measurement & Comparison
<i>A Triangle for Adaora</i> by I. Onyefulu	Two girls explore shapes of objects in their village.			✓		
<i>Anno's Counting</i> by M. Anno	Landscapes change through various times of day and seasons.	✓	✓	✓	✓	✓
<i>Cubes, Cones, Cylinders & Spheres</i> by T. Hoban	Photographs show shapes in everyday life.			✓		
<i>Five Creatures</i> by E. Jenkins	Three people and two cats form a family.	✓	✓			

Title/author	Story	Number Concepts & Quantities	Number Relationships & Operations	Geometry & Spatial Sense	Patterns	Measurement & Comparison
<i>Goodnight Moon</i> (<i>Buenas noches, luna</i>) by M. W. Brown	A bear goes to sleep.	✓		✓	✓	
<i>Inch by Inch</i> by L. Lionni	An inchworm measures things.					✓
<i>Quack and Count</i> by K. Baker	Ducklings have fun.	✓	✓			
<i>Rosie's Walk</i> (<i>El paseo de Rosie</i>) by P. Hutchins	Rosie the hen goes for a walk around the farm.			✓		
<i>The Carrot Seed</i> (<i>La semilla de zanahoria</i>) by R. Krauss & C. Johnson	A boy plants a carrot seed and watches it grow.				✓	✓
<i>The Doorbell Rang</i> (<i>Llaman a la puerta</i>) by P. Hutchins	People come to Ma's to share her wonderful cookies.	✓	✓		✓	
<i>The First Day of Winter</i> by D. Fleming	A boy decorates a snowman.	✓		✓	✓	
<i>The Secret Birthday Message</i> (<i>El mensaje secreto de cumpleaños</i>) by E. Carle	A boy follows a map to find a birthday surprise.			✓		
<i>The Three Bears</i> (<i>Tres osos</i>) by various authors	A girl visits a house of bears.	✓		✓		✓
<i>We're Going on a Picnic</i> by P. Hutchins	Animals go on a picnic.	✓	✓			



USING BOOKS TO TEACH MATH

For more suggestions on how to use books to promote math learning, take a look at the following resources from Erickson Institute's Early Math Collaborative:

A Triangle for Adaora by Ifeoma Onyefulu

<http://earlymath.erikson.edu/a-triangle-for-adaora/>

Anno's Counting Book by Mitsumo

<http://earlymath.erikson.edu/numbers-and-fun-with-annos-counting-book/>

The First Day of Winter by Denise Fleming

<http://earlymath.erikson.edu/the-first-day-of-winter/>

The Secret Birthday Message by Eric Carle

<http://earlymath.erikson.edu/exploring-geometry-with-the-secret-birthday-message/>

The Three Bears (various authors)

<http://earlymath.erikson.edu/three-bears-sort-in-a-dual-language-classroom/>

We're Going on a Picnic by Pat Hutchins

<http://earlymath.erikson.edu/its-picnic-time-dont-forget-to-pack-the-math/>

RESOURCES

These materials provide suggestions for math-related children's books and ways to use books to create games.

Cutler, K. M., Gilkerson, D., Parrott, S., & Bowne, M. T. (2003). Developing math games based on children's literature.

Beyond the Journal Young Children on the Web. Retrieved from <http://journal.naeyc.org/btj/200301/MathGames.pdf>

This article illustrates how to create simple board games to support exploration of math concepts based on popular children books.

Dickinson, P. (2003). Choosing books you can count on. *Beyond the Journal Young Children on the Web*. Retrieved from

<http://journal.naeyc.org/btj/200301/ChildrensBooks.pdf>

This is an annotated list of picture books that introduce children to number concepts and operations.



PLANNING FORM: MATHEMATIZING CHILDREN'S BOOKS

Use this form to plan for small group or circle time story book reading. Copy examples of comments and questions onto sticky notes and place on corresponding book pages as reminders.

Book title
Storyline or main idea
Stopping points and key comments and questions Page number: <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Extension activities

Adapted from: Hintz, A., & Smith, A. (2013). Mathematizing read-alouds in three easy steps. *The Reading Teacher*, 67(2), 103–108. Retrieved from <http://onlinelibrary.wiley.com/doi/10.1002/TRTR.1182/pdf>



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