

Teaching Through a Story to Bring Meaning and Joy to Mathematics

Power of Math Summit 2022

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Essential Question: How might teaching through a story context deepen students' math understanding as well as their curiosity, confidence, identity, and math joy?

Literature Examples from the Session

Math Skill	Children's Literature	Math Lesson Idea
Counting concepts	<i>Grandma's Purse</i> by Vanessa Brantley-Newton	Students count collections of items that might be in Grandma's purse.
Understanding the operation of subtraction	<i>10 Gulab Jamuns: Counting with an Indian Sweet Treat</i> by Sandhya Acharya	Explore what happens as the children eat some gulab jamuns.
Exploring +10	<i>Thanking the Moon: Celebrating the Mid-Autumn Moon Festival</i> by Grace Lin	Investigate what happens when 10 more mooncakes are added to a plate.
Adding a single-digit number to a 2-digit number	<i>Miss Nelson Has a Field Day</i> by James Marshall	Calculate the score when the football team scores 3 or 7 points.
Problem solving with addition and subtraction	<i>Common Threads: Adam's Day at the Market</i> by Huda Essa	Pose addition and subtraction problems about the market.
Understanding one more	<i>Ten Pigs: An Epic Math Adventure</i> by Derek Anderson	Model as each pig enters the tub to explore the concept of one more.
Exploring the using-ten strategy for addition math facts	<i>Dinner at the Panda Palace</i> by Stephanie Calmenson	Model what happens when 2 groups of animals want to sit together. How many would be seated at the table?
Adding two-digit numbers without regrouping	<i>Jingle Dancer</i> by Cynthia Leitich Smith	Calculate to find out how many total jingles Jenna collected from the 4 women.
Two-digit subtraction without regrouping	<i>Too Many Toys</i> by Michael Shannon	Calculate how many toys are left after Spencer gives some away.
Subtraction with regrouping	<i>A Bike Like Sergios</i> by Maribeth Boelts	Calculate what would be left of your money after various purchases.

*All lesson examples come from the *Math by the Book* series (Heinemann, 2022). Full lessons, problems, writing prompts, and practice games are available for each book.

What are the benefits of teaching math through literature?

- Engages students
- Provides a purpose to learn: "When are we ever going to use this?"
- Supports problem-solving skills by exploring story situations
- Encourages talk and collaboration
- Helps students make sense of skills and concepts
- Shared context allows for equitable practice
- Makes math memorable
- Energizes the classroom

"Books can be mirrors in which children see and savor images and representations similar to their own lives and experiences. They can also be windows that enable young readers to gain new cultural perspectives by peering into others' worlds."

Dr. Rudine Sims Bishop

For More Literature + Math Connections:

K-2 Math + Literature:

<https://padlet.com/sueoc46/j3uevoy154m1fuhb>

Grades 3-5 Math + Literature:

<https://padlet.com/sueoc46/who7w8089bm6r6k2>

Culturally Relevant Math + Literature:

<https://padlet.com/georginarivera123/2ygfo12jusaomm7s>

To download 120 book titles paired with K-5 math topics, go to:

www.mathbytheBook.com

To interact with colleagues or gather more ideas:

Join our Facebook community focusing on teaching K-5 math

- Join the *Math in Practice/Math by the Book* Facebook Group

Explore Sue's website: www.qualityteacherdevelopment.com

Teacher Resource Books by Sue O'Connell
Published by Heinemann (www.heinemann.com)

Math by the Book (Heinemann, 2021)

This k-5 series shows ways to teach mathematics through the context of children's literature. It is filled with lessons that show the power of teaching mathematics through models and math talk. It includes games to practice the math skills, word problems, and lots of talk/writing prompts, along with online resources and video coaching. To learn more, or to download a list of children's literature, visit the website at www.mathbythebook.com.

Math in Practice (www.mathinpractice.com)

This series is filled with lesson ideas, instructional strategies, practice tasks, and many online printable resources to make teaching K-5 math more meaningful and more fun. There is a book for each grade level K-5 that contains a wealth of grade-specific activities, as well as a *Guide for Teachers* filled with instructional strategies to support greater understanding of math concepts. A *Guide for Administrators* offers tips and strategies for math coaches/administrators. Visit the website at www.mathinpractice.com to view samplers, see videos, and learn more about the series.

Putting the Practices into Action - Implementing the Common Core Standards for Mathematical Practice K-8 with John SanGiovanni

The Standards for Math Practice are the heart and soul of the Common Core State Standards. This book explains each standard in teacher-friendly terms and highlights practical activities to make the standards come alive in classrooms. It contains PLC study group questions and online resources.

***Mastering the Basic Math Facts for Addition and Subtraction*
Mastering the Basic Math Facts for Multiplication and Division
with John SanGiovanni**

Through investigations, discussions, visual models, children's literature, and hands-on explorations, students explore the math operations, and through engaging, interactive practice achieve fluency with basic facts. The books include online resources with customizable activities, templates, recording sheets, and teacher tools simplifies your planning and preparation. Over 450 pages of reproducible forms are included in English and Spanish translation in the online resources.

The Math Process Standards Series

Each book in this series is a practical guide for helping students refine their skills in the highlighted math process (problem solving, communication, reasoning, representations, connections). You will find specific teaching strategies and tips to help all students strengthen their skills. Each book includes teacher tools and customizable student activities to allow you to change names, data, or spacing for a quick way to differentiate instruction within your classroom.

***Introduction to Problem Solving* *Introduction to Communication*
Introduction to Representation *Introduction to Reasoning and Proof*
*Introduction to Connections***

All books in this series are available for Grades PK-2, Grades 3-5, and Grades 6-8.

For more ideas:

Follow Sue on Twitter @SueOConnellMath

Or visit Sue's website at: www.qualityteacherdevelopment.com