

Connecting Math and Literature

NCTEP Standard III

Presentation by CCS Elementary
Curriculum Specialists:

Lora Drum
Mia Johnson
Alycen Wilson



NC TEP Standard III

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Teachers Know the Content They Teach

- Teachers align their instruction with the North Carolina Standard Course of Study
- Teachers know the content appropriate to their teaching speciality
- Teachers recognize the interconnectedness of content areas/disciplines
- Teachers make instruction relevant to students

For many of us, the storybook shelf isn't the first place we go to when we start to plan a math lesson. But children's books can be a great math teaching tool.

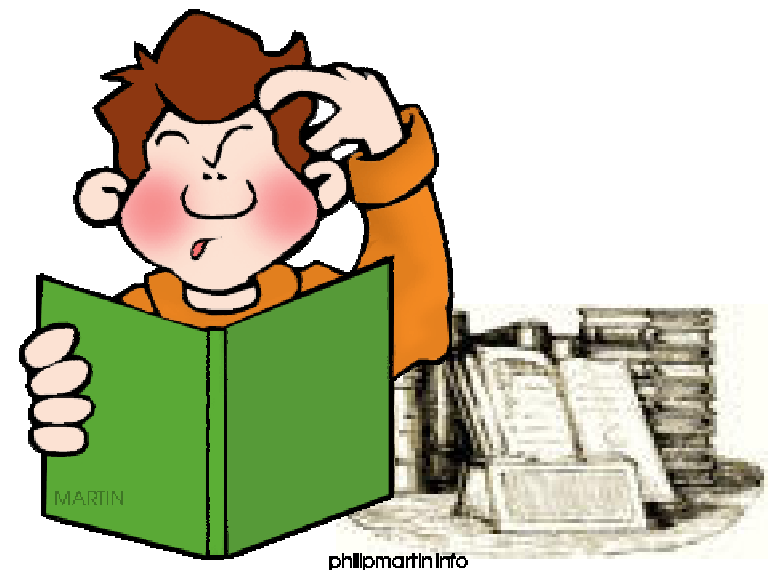
-Marilyn Burns



Literature adds some staying power to classroom Math!

- Marilyn Burns

Children's books spark students' imaginations in ways that exercises in textbooks or workbooks often don't. Connecting math to literature can boost the confidence of those who love books but are “math-wary.” And students who love the abstraction of math can learn to appreciate stories in a whole new way.



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Why Use Children's Books to Teach Math?

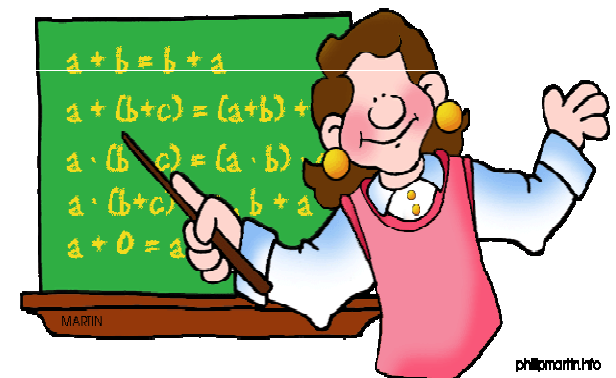
- teaching students important and basic mathematics concepts and skills
- motivating them to think and reason mathematically

(Usnick & McCarthy, 1998)

- engaging them in problem-solving experiences

(Jacobs & Rak, 1997; Melsner & Leitze, 1999)

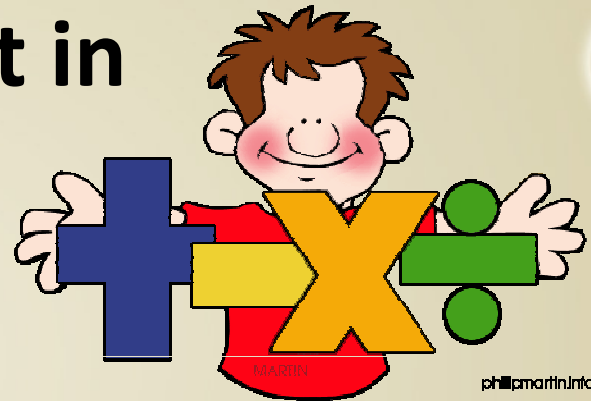
- provokes interest (Welchman-Tischler, 1992)
- building their appreciation for both mathematics and literature
- helps students connect mathematical ideas to their personal experiences (Murphy, 2000)
- promotes critical thinking (Murphy, 2000)



-Marilyn Burns

Linking math instruction to children's literature can:

Spark children's interest in learning mathematics.



Literature can motivate children by stimulating their imaginations in ways that textbook exercises and worksheets often don't. Connecting math to literature can also build on the confidence of students who love books but are wary when it comes to math.

Provide contexts that bring meaning to mathematical ideas.

Significant shifts in mathematics instruction are occurring to help students develop understanding of math ideas and make sense of the math they use. Well-chosen children's books provide a setting for children to see mathematics in ways that can *provide real meaning and personal connections.*



Tie mathematics to another area of the curriculum.

Aspects of literacy and mathematics require development of many of the same processes: *classifying*, *recognizing patterns*, *analyzing relationships*, *organizing thoughts*, *solving problems*, and *justifying opinions* and *perspectives*. Finding and using natural mathematical connections in quality children's literature provide opportunities to develop and link the processes in these two content areas.



Support student understanding through communication.

- Investigation of mathematics through literature offers a *natural way* for students to *connect the abstract ideas, language, and symbols* of mathematics to a context they understand.
- As students listen, read, write, and talk about mathematics from these stories, teachers take opportunities to connect math terminology and symbols to the context.
- Teachers also support communication by asking students to explain their thinking and encouraging them to listen and respond to one another's ideas.

Connecting Math and Literature

Make Connections

I can make connections to this problem by thinking about others like it that I have solved before. I can make connections to the problem from what I have learned about everyday life.

Make Connections

I can make connections to what I am reading by thinking about other books, my own personal experiences, and what I know about the world.

Determining Importance

I can determine what information is relevant and irrelevant in the problem. I can determine what I need to figure or find out to solve the problem. I can determine which problem solving strategy will help me the most.

Determining Importance

I can determine important words or events from the text. I can distinguish between important and unimportant information. I can prioritize and summarize the text.

Questioning

I can ask questions about data, or to determine what the problem is about, and to decide if answers and solutions make sense.

Questioning

I can ask questions to clarify meaning and to understand the text.

Monitoring for Meaning (Fix Up)

Does the problem make sense? Do I need to reread or restate the problem? Do I know all the math terms/vocabulary?

Monitoring for Meaning (Fix Up)

Do I understand what I am reading? Do I need to reread or restate the reading in my own words? Do I understand the way the author uses certain words?

Infer

I can infer what will come next using the data presented. I can make an informed guess about additional information needed. I can infer or estimate a solution.

Infer

I can draw conclusions about the characters, setting, or solution to the main character's problem. I can infer the meaning of words used in context. I can infer the author's intent or theme of the story.

Visualizing

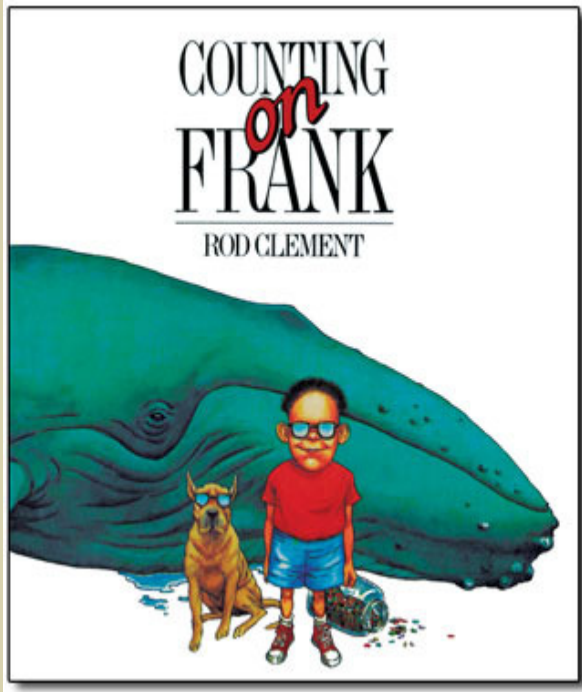
I can make pictures in my mind or I can draw what I think the problem is about. I can represent the different parts of the problem by drawing the problem.

Visualizing

I can create pictures in my mind of the setting and the characters. I can picture the problem the characters are facing. I can use sensory images to immerse myself in the rich details as I read.

Counting on Frank

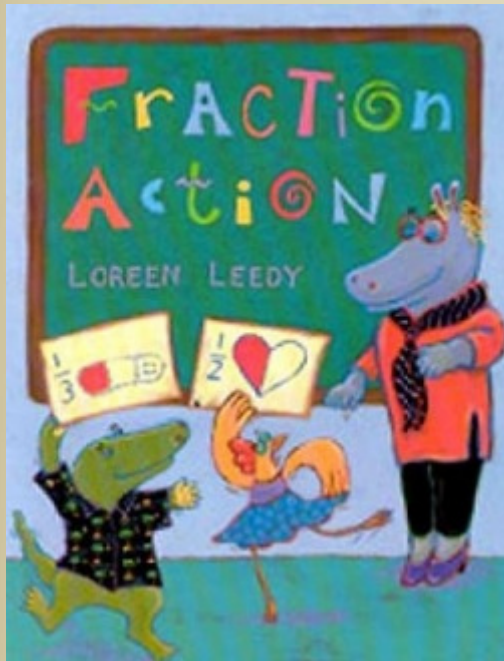
by Rod Clement



- Jelly Bean Estimation
- Word Problems
- Whale Estimation

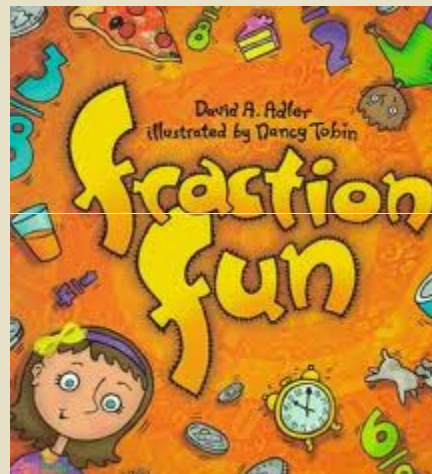
<http://mathequity.terc.edu/gw/html/FrankPics.html>

Fraction Action by Loreen Leedy



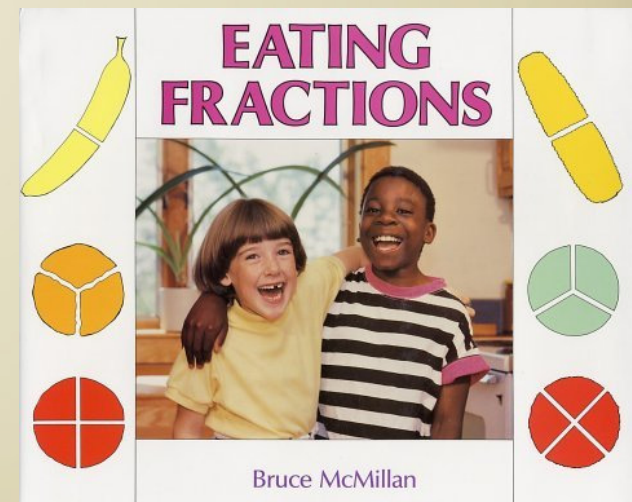
- Foldable Mini Book
- Fraction Plates
- Fraction Five Each Daily
- Fractional Portions of Words
- Fraction Game Mat

Fraction Fun by David A. Adler



Eating Fractions

by Bruce McMillan



Thank you for attending this session!

Any questions/comments?????

Contact information:

Lora_Drum@catawbaschools.net

Mia_Johnson@catawbaschools.net

Alycen_Wilson@catawbaschools.net