

Math Talk:

Teaching Concepts & Skills
Through Stories & Illustrations

PreK - 2
NCTM 2014 Annual Conference & Exposition
New Orleans, LA

Friday, April 11, 2014
3:30 – 4:30 pm
Hilton – Grand Salon, Rooms 21-24

Presenter, Char Forsten
Staff Development for Educators
www.sde.com

1. Introduction: Differentiating between “covering” and “conceptualizing”

- Recognition
- Modeling
- Independent

2. Math Talk: Teaching Concepts & Skills Through Illustrations and Stories

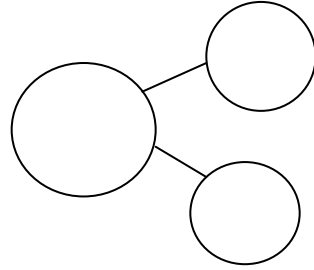
➤ Developing number sense through purposeful practice with how numbers are used:

- Rote counting
- Rational counting
- Cardinal numbers
- Subitizing
- Ordinal numbers
- Measurement
- Nominal numbers

➤ Math Talk Example:

➤ Have You Seen Any Good Math Lately?

3. Number Bond Stories – Singapore’s approach to building understanding of part-part-whole relationships and developing understanding through use of language and visuals.

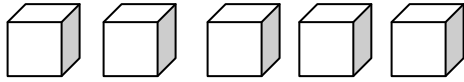


4. Using language with manipulatives and visuals to help students conceptualize addition and subtraction.

➤ Ten Frames:

Early Model Drawing – developing understanding through language and visual approach.

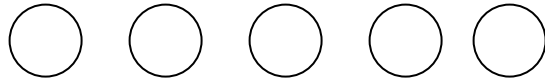
- a. There were 2 blocks in a toy box. Emily added 3 more. How many blocks are now in the toy box?



$$2 + 3 = \underline{\hspace{2cm}}$$

There are blocks in the toy box now.

- b. Max had 5 cookies. He gave 2 of them to Fred. How many cookies did Max have left?



Max had cookies left.

- c. Terra had some money. She earned \$7 more doing chores. Now Terra has \$15. How much did she have at first?

- d. There are 85 boys and 73 girls in the second grade. How many more boys than girls are in the second grade?

REFERENCES & RECOMMENDED RESOURCES

1. American Institutes for Research (Alan Ginsburg, Steven Leinwand, Terry Anstrom, and Elizabeth Pollock). *What the United States Can Learn from Singapore's World-Class Mathematics System (and What Singapore Can Learn from the United States): An Exploratory Study*. Washington, DC: US Department of Education Policy and Program Studies, January 28, 2005. Also available online at <http://www.air.org/news/documents/singapore.htm>.
2. Chapin, Suzanne H. and Art Johnson. (2000) *Math Matters Understanding the Math You Teach*. Math Solutions Publications.
3. Forsten, Char. (2005) *Math Strategies You Can Count On!* Crystal Springs Books.
4. Forsten, Char & Torri Richards. (2009) *Math Talk*. Crystal Springs Books.
5. Forsten, Char. (2010) *Step-by-Step Model Drawing: Solving Word Problems the Singapore Way*. Crystal Springs Books.
6. Kuhns, Catherine. (2009) *Building Number Sense*. Crystal Springs Books.

WEBSITES

1. Crystal Springs Books - www.crystalsprings.com (Practice Problems for Model Drawing - Grades 1 & 2)
2. Staff Development For Educators www.sde.com
3. Interactive model drawing: www.thinkingblocks.com
4. Singapore Math - www.singaporemath.com www.greatsource.com
5. National Council of Teachers of Mathematics - www.nctm.org