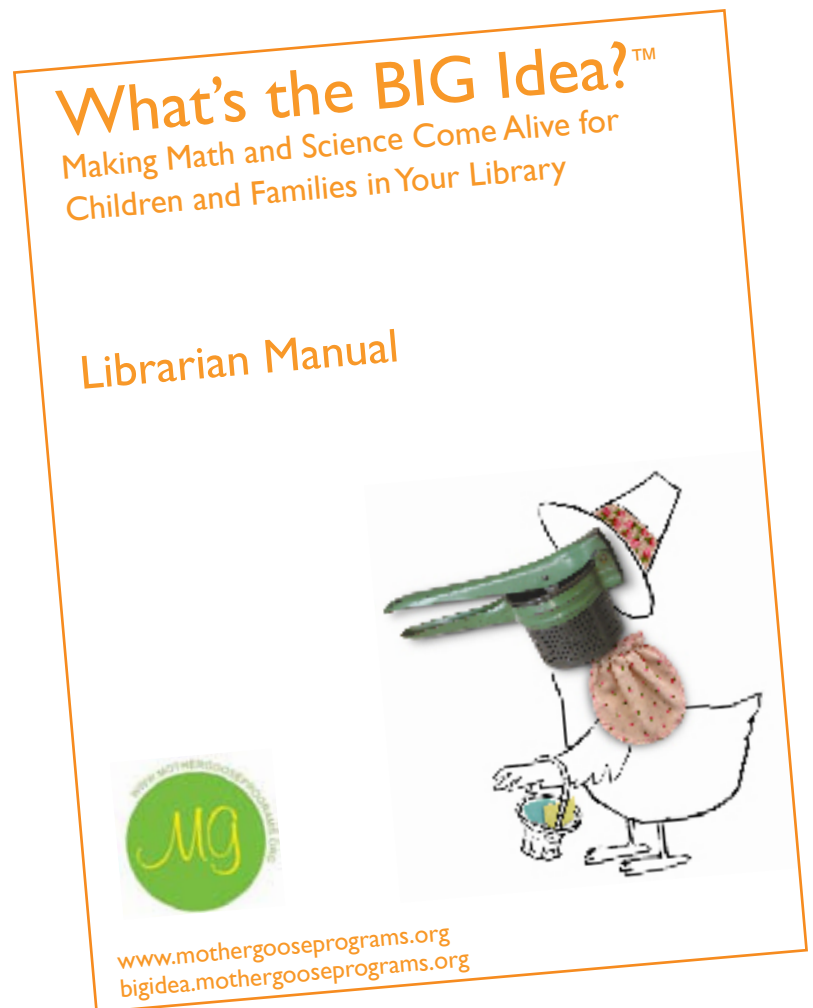


What's the BIG Idea?™

- **Get children excited about math and science**
- **Contribute to children's school readiness**
- **Use hands-on activities to make books come alive**
- **Meet national and local education standards**
- **Help children make sense of the world around them**
- **Have fun!**



**Activities and Book Suggestions
from this webinar are included in the**

***What's the BIG Idea?*
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include materials to be used
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**The Shape of Things:
Geometry for Young Children**

**More Than Counting
Numbers & Operations**

Math and Science Skills and Concepts

When children explore numbers, they:

- Count and learn the sequence of numbers.
- Learn to count an object only once, using one-to-one correspondence.
- **Develop a sense of whole numbers by composing and decomposing numbers.**
- **Count with understanding and recognize “how many” in a set of objects.**
- Recognize and name written numerals.
- Develop a sense of quantity: know that the word “three” and the symbol “3” mean a quantity of something.
- **Begin to understand addition and subtraction by counting groups of objects.**
- **Use comparative terms such as more than, less than and the same as or equal to.**
- **Begin to make number sentences (equations) with concrete objects and written numerals.**

Concepts that form the core of young children's number sense and understanding:

Use numbers to quantify sets (collections):
How many fingers do you have on one hand?

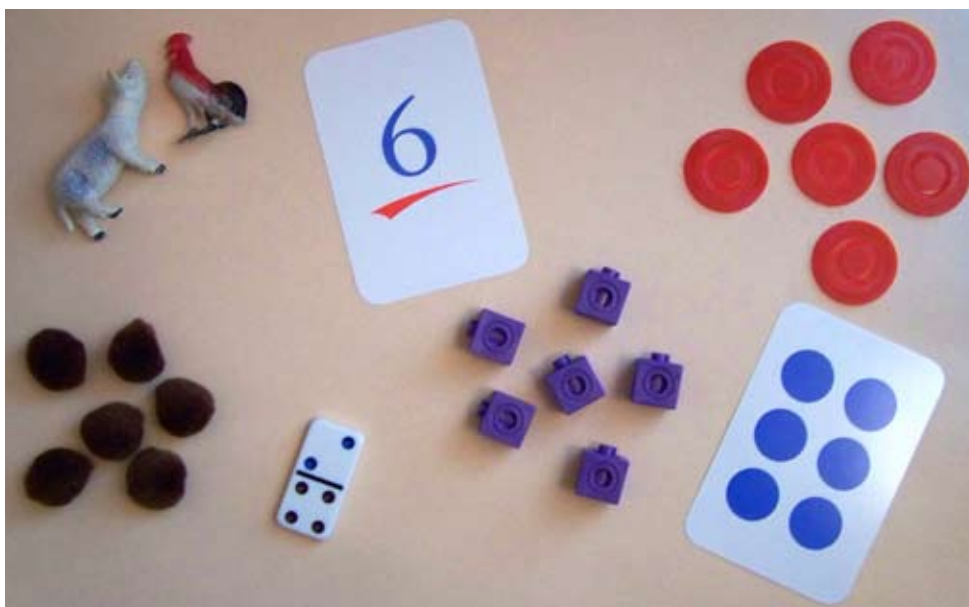
Use numbers to compare sets:
I have three books and Connor has two books.

Add and subtract single digit numbers:
I have three blocks. If I give you one block I will have two for myself.

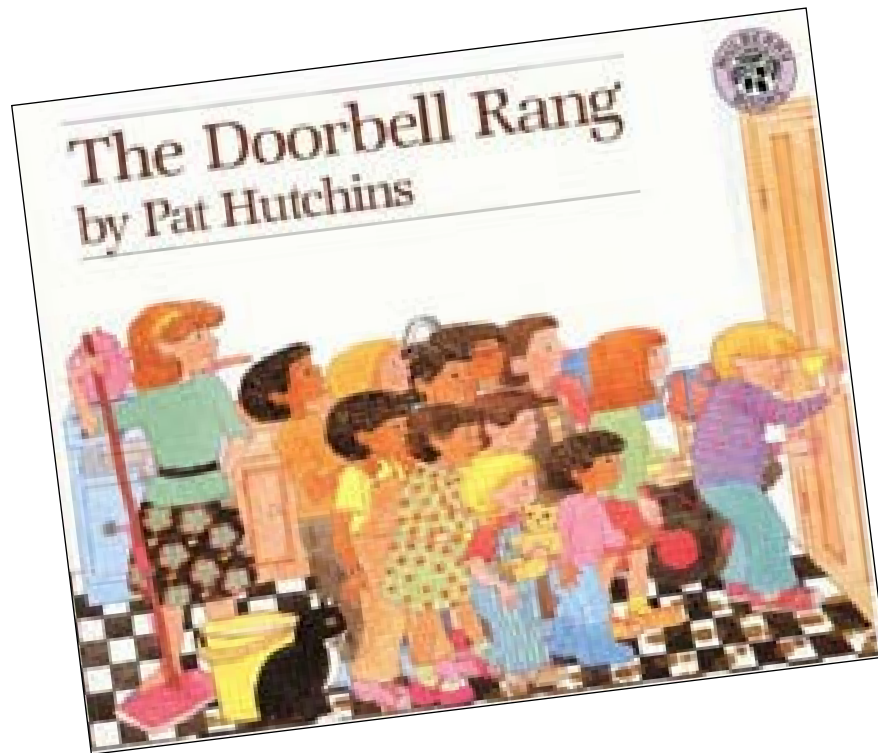
Understand part-part-whole relationships:
If we have six children and four sit at one table and two sit at another table, do we still have six children?

Understand equal partitioning or grouping:
There are four cookies. It's fair if we each have two cookies.

Introducing Sets

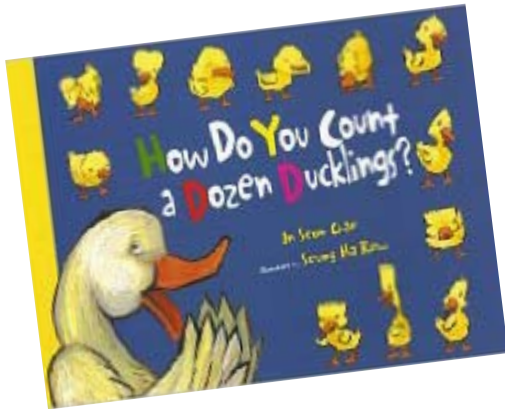


Equal Partitioning

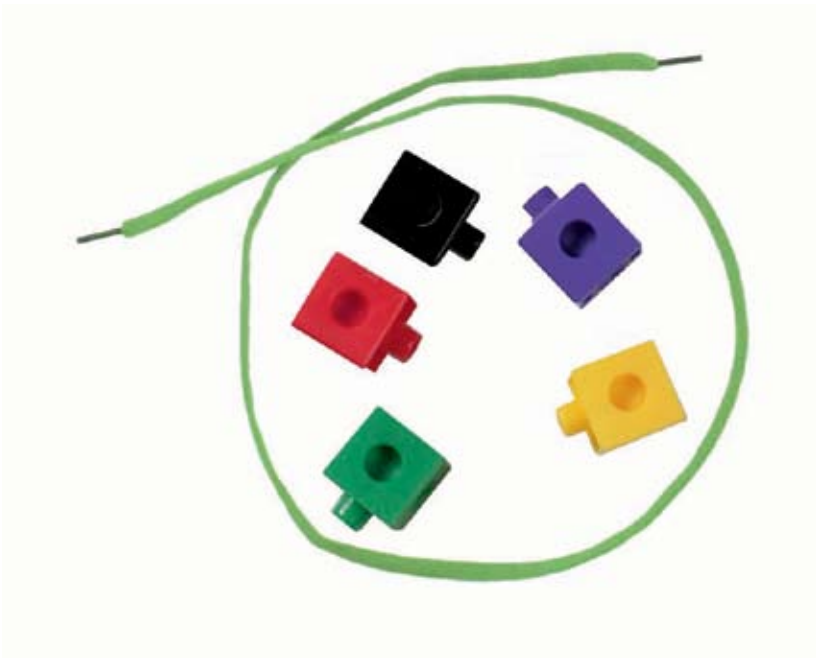
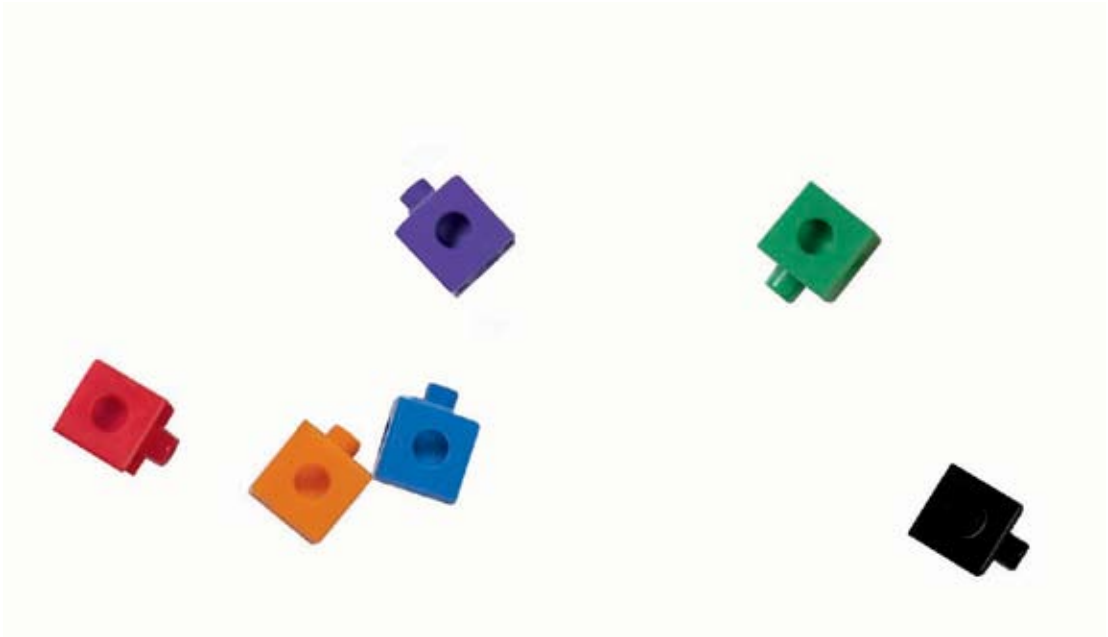


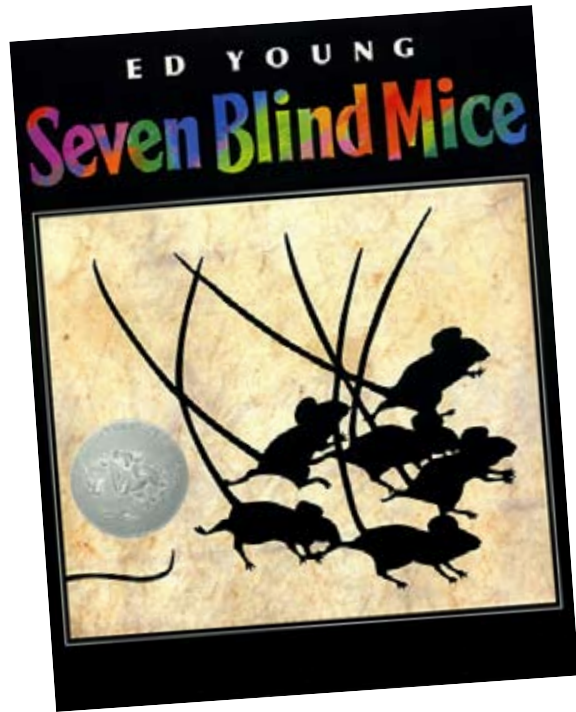
Even a three-year-old can divide a group of objects into smaller groups, or sets.

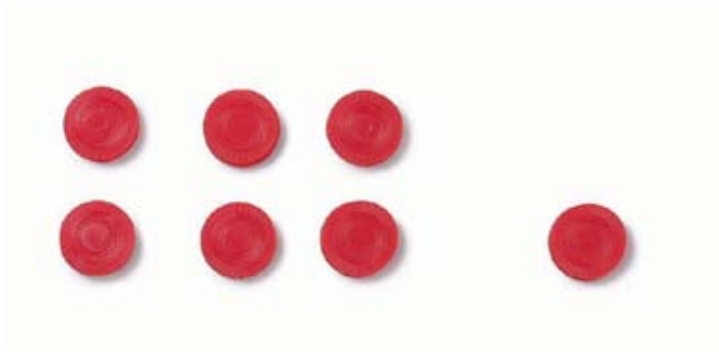
Composing and Decomposing Numbers



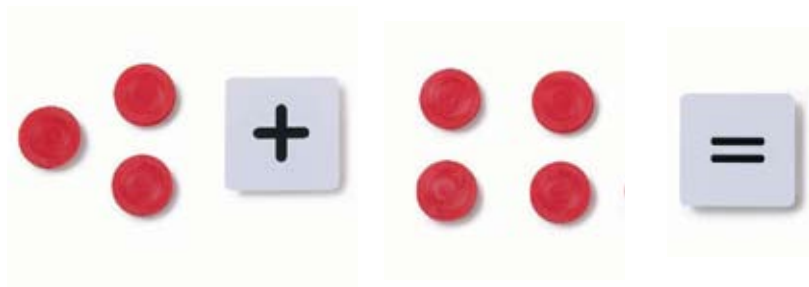




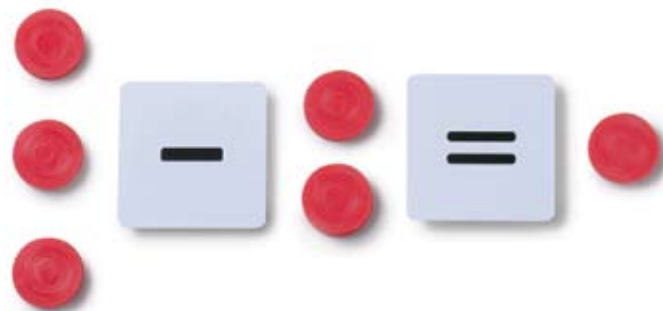


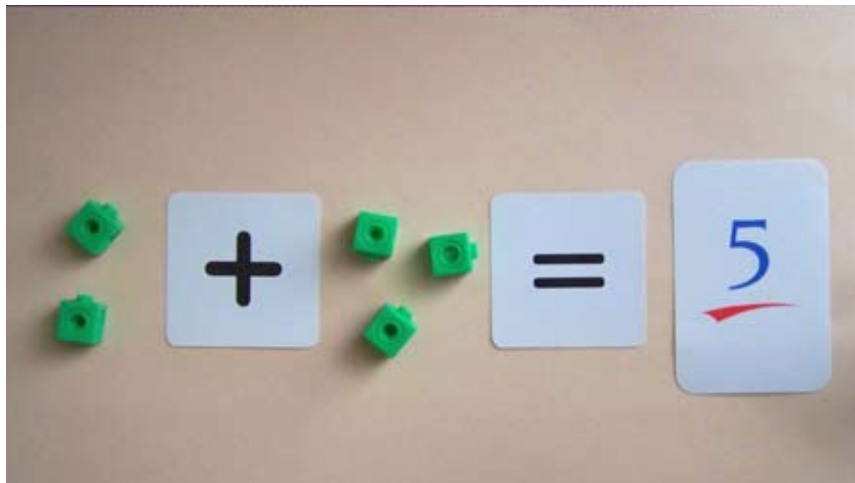


Addition

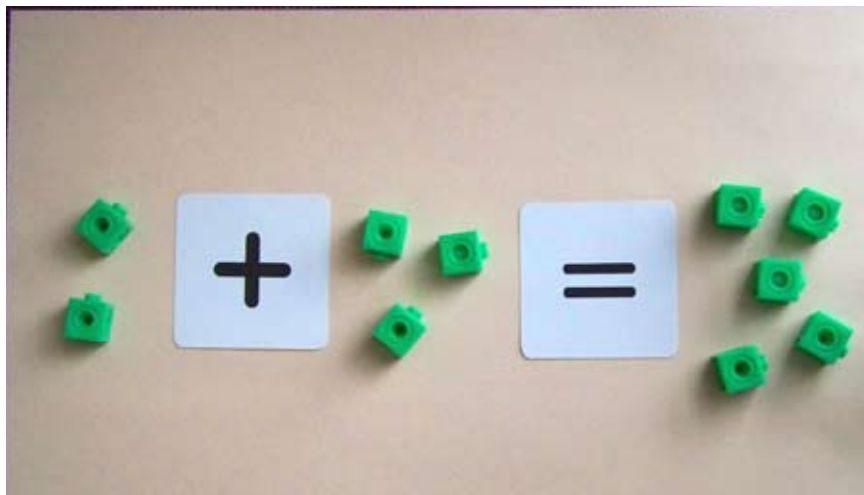


Subtraction

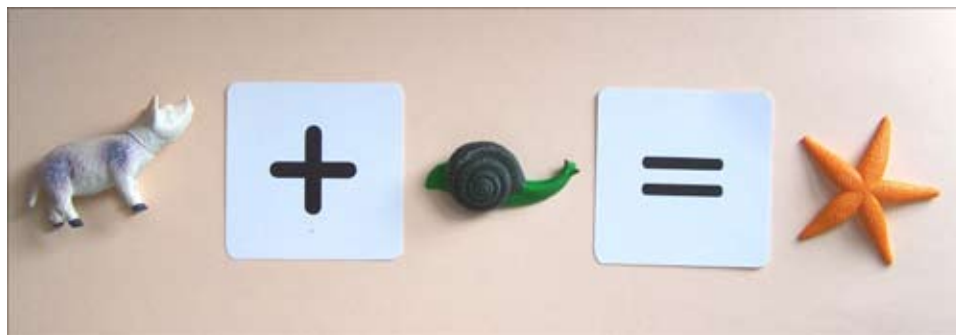




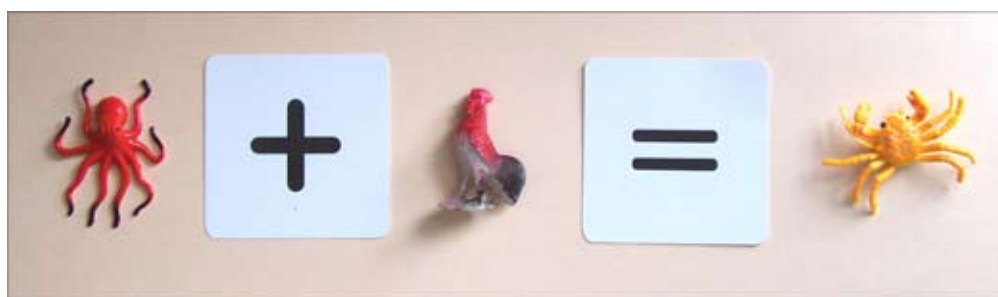
$$2 + 3 = 5$$



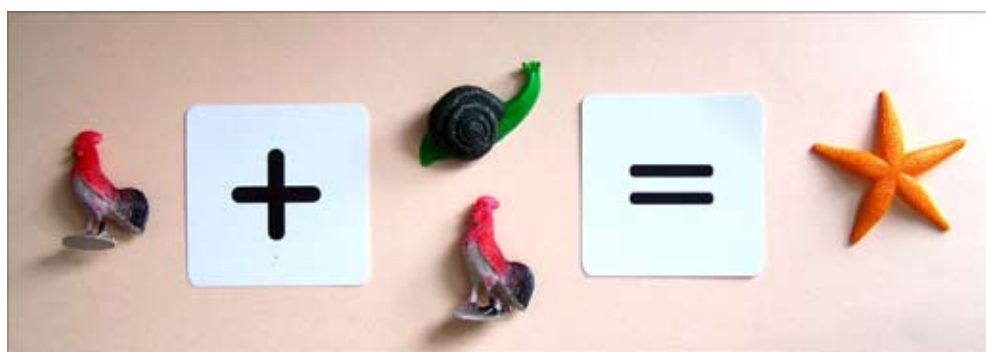
$$2 + 3 = 5$$



$$4 + 1 = 5$$

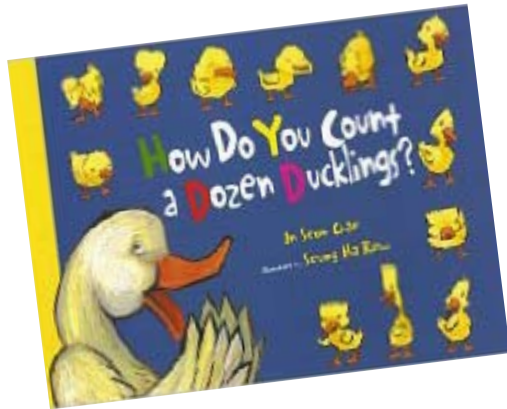


$$8 + 2 = 10$$



$$2 + 3 = 5$$

Composing and Decomposing Numbers



Vocabulary

One-to-one correspondence: Verbal-object counting skill (counting an object only once). Most children develop this skill at age three or four.

Cardinal number: Identifies “how many” in a group or set.

Ordinal number: Indicates the place or position of an object (first, second, third, etc.).

Part-part-whole: Recognizing part-part whole relationships (**composing and decomposing numbers**) is a basic in developing number sense.

Set: A collection of items.

Numeral: The written symbol referring to a number. Most children develop an understanding of numerals between the ages of three and six.

What the Research Says

Children's basic understanding of mathematics is gained long before they enter school.

Development of oral counting skills may begin as early as age two.

Children as young as age two or three may begin to use number words when they count their fingers or other groups of objects, even though they may count "1, 2, 6" for three objects and so on.

Children first begin to memorize the sequence of number words, often missing portions of the sequence.

Children begin to recognize numerals between the ages of four and five.

Kindergartners typically can count out sets (collections) of at least five items accurately.

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