

# Effective Instruction for Young Children

*Deborah Stipek  
Stanford University*

Social-  
Emotional  
Skills



Relationships



Learning



Executive  
Functions

### 3<sup>rd</sup> Grade

School Entry	Reading	Math	General
Reading	.18***	.05***	
Math	<b>.27***</b>	<b>.10***</b>	

### 2<sup>nd</sup> Grade

Reading	.14***	.12**	.11**
Math	<b>.23***</b>	<b>.23***</b>	<b>.27***</b>

**Math**

## Problem Solving

### Number & Operations

- Numbers can be used to tell us how many, describe order, and measure; they involve numerous relations, and can be represented in various ways.
- Operations with numbers can be used to model a variety of real-world situations and to solve problems; they can be carried out in various ways.

### Algebra

- Patterns can be used to recognize relationships and can be extended to make generalizations.

### Geometry

- Geometry can be used to understand and to represent the objects, directions, locations in our world, and the relationships between them.
- Geometric shapes can be described, analyzed, transformed, and composed and decomposed into other shapes.

### Data Analysis

- Data analysis can be used to classify, represent, and use information to ask and answer questions.

### Measurement

- Comparing and measuring can be used to specify "how much" of an attribute (e.g., length) objects possess.
- Measures can be determined by repeating a unit or using a tool.

Communication

Connections

Representation

Reasoning

i

c

f

a

d

b

so

h

c

## Number & Operations

- Numbers can be used to tell us how many, describe order, and measure; they involve numerous relations, and can be represented in various ways.
- Operations with numbers can be used to model a variety of real-world situations and to solve problems; they can be carried out in various ways.

### Counting

Counting can be used to find out how many in a collection.

### Adding To/Taking Away

A collection can be made larger by adding items to it and made smaller by taking some away from it.

### Comparing and Ordering

Quantities can be compared or ordered, and numbers are one useful tool for doing so.

### Composing and Decomposing

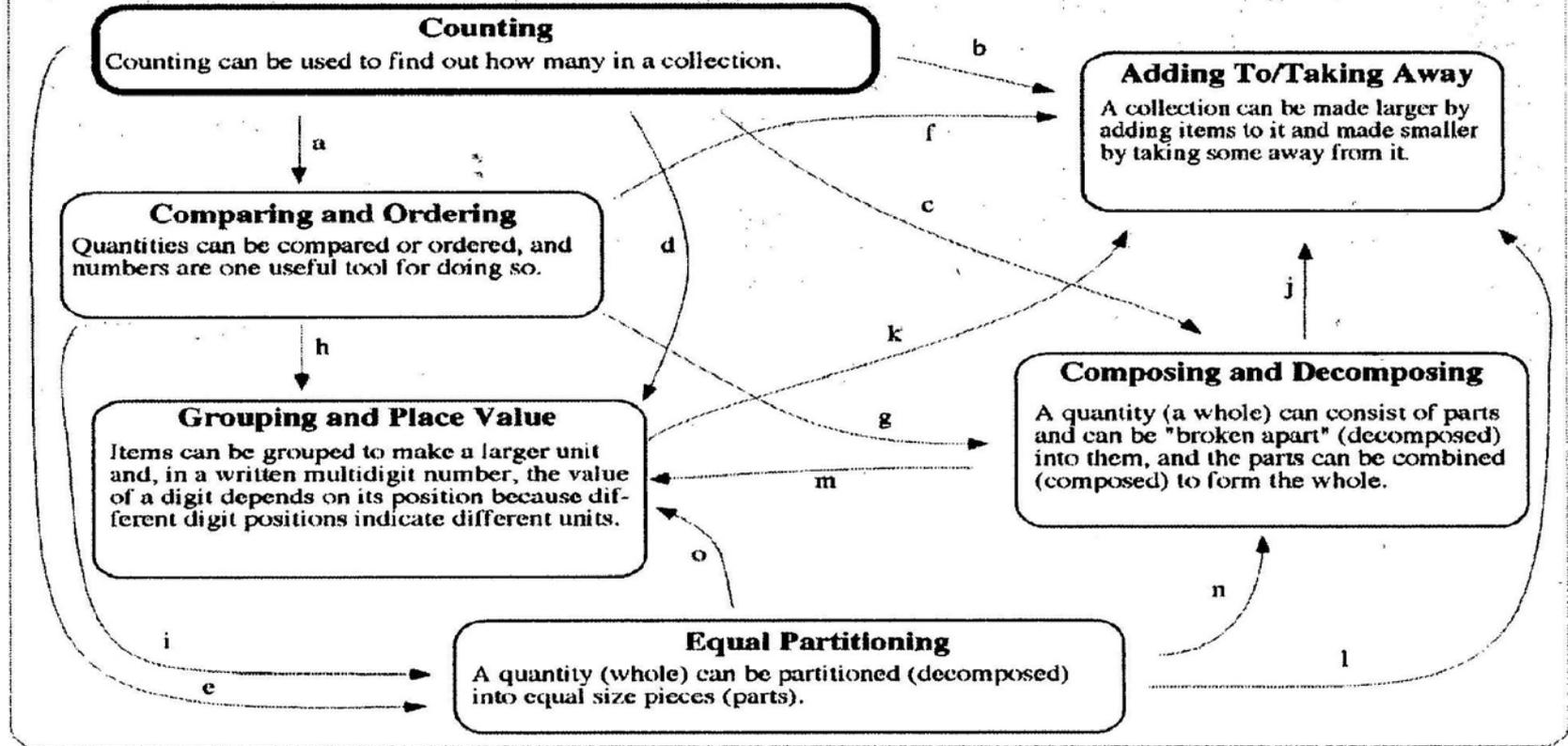
A quantity (a whole) can consist of parts and can be "broken apart" (decomposed) into them, and the parts can be combined (composed) to form the whole.

### Grouping and Place Value

Items can be grouped to make a larger unit and, in a written multidigit number, the value of a digit depends on its position because different digit positions indicate different units.

### Equal Partitioning

A quantity (whole) can be partitioned (decomposed) into equal size pieces (parts).



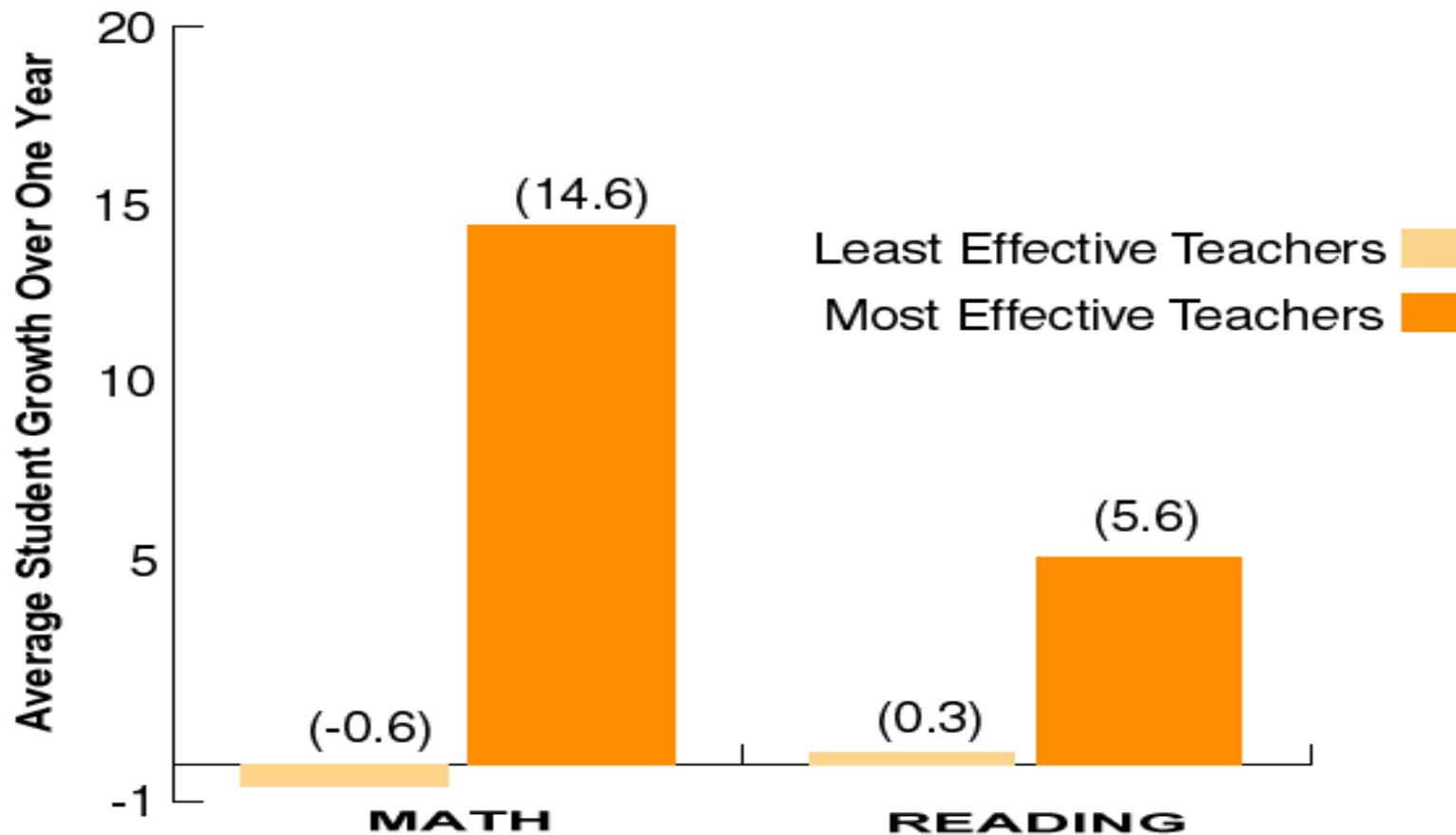


**To learn is to be engaged**

- Appropriately challenging
- Connected to child's previous understanding/skills and language skills
- Connected to real-life experience
- Involves active thinking/problem solving, opportunities to explore, use resources
- Focus is on understanding, not getting the right answer
- Often involves manipulation of objects

**What does effective instruction look like?**

## Boston Students with Effective Teachers Showed Greater Gains in Reading and



Source: Boston Public Schools, "High School Restructuring," March 9, 1998.

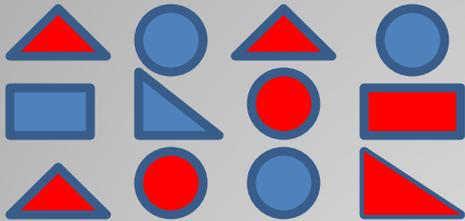
- Management/organizational strategies
- Child development (culture and language)
- Subject matter
- How to teach subject matter
- What each child understands



**What do teachers need to know?**

$$11 + 41 = 151$$

$$87 - 6 = 27$$

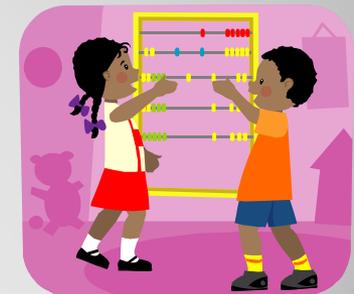


How many red triangles? 3

Write a number  
that has 8 ones,  
and 3 tens.

83

- Curriculum
- Materials for children to manipulate
- Technology
- Formative assessments
- Classroom observation protocols



**What are the tools?**

- **capacity building** and accountability
  - Training and professional development
    - embedded in practice
    - relevant to practice
    - ongoing support/coaching
    - culture of learning and continuous improvement for adults
    - planning, reviewing student progress, revising
    - using student assessment and teacher observation tools
  - Time
- Reduce teacher turnover



**How do we get there?**

- Evaluations of effective teaching practices for English language learners
- Development and evaluation of formative assessment tools for children *and teachers*
- Assessment of different strategies for teacher development (pre- and in-service)
- Examinations of different SES and language combinations of children in classrooms

**What research is needed?**

