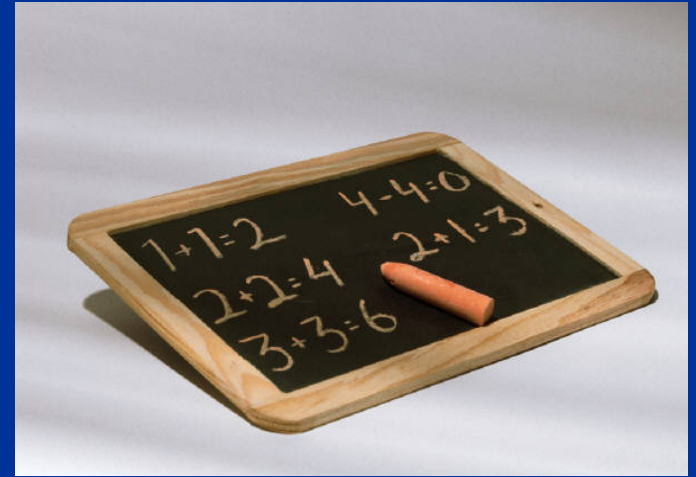


Rancho Santa Fe Elementary School District



Parent Presentation
**LET'S TALK ABOUT
MATHEMATICS**

It is about

— becoming a —

MATHEMATICAL

thinker

— NOT · A —

CALCULATOR

Paraphrased by: Mr. Crawford

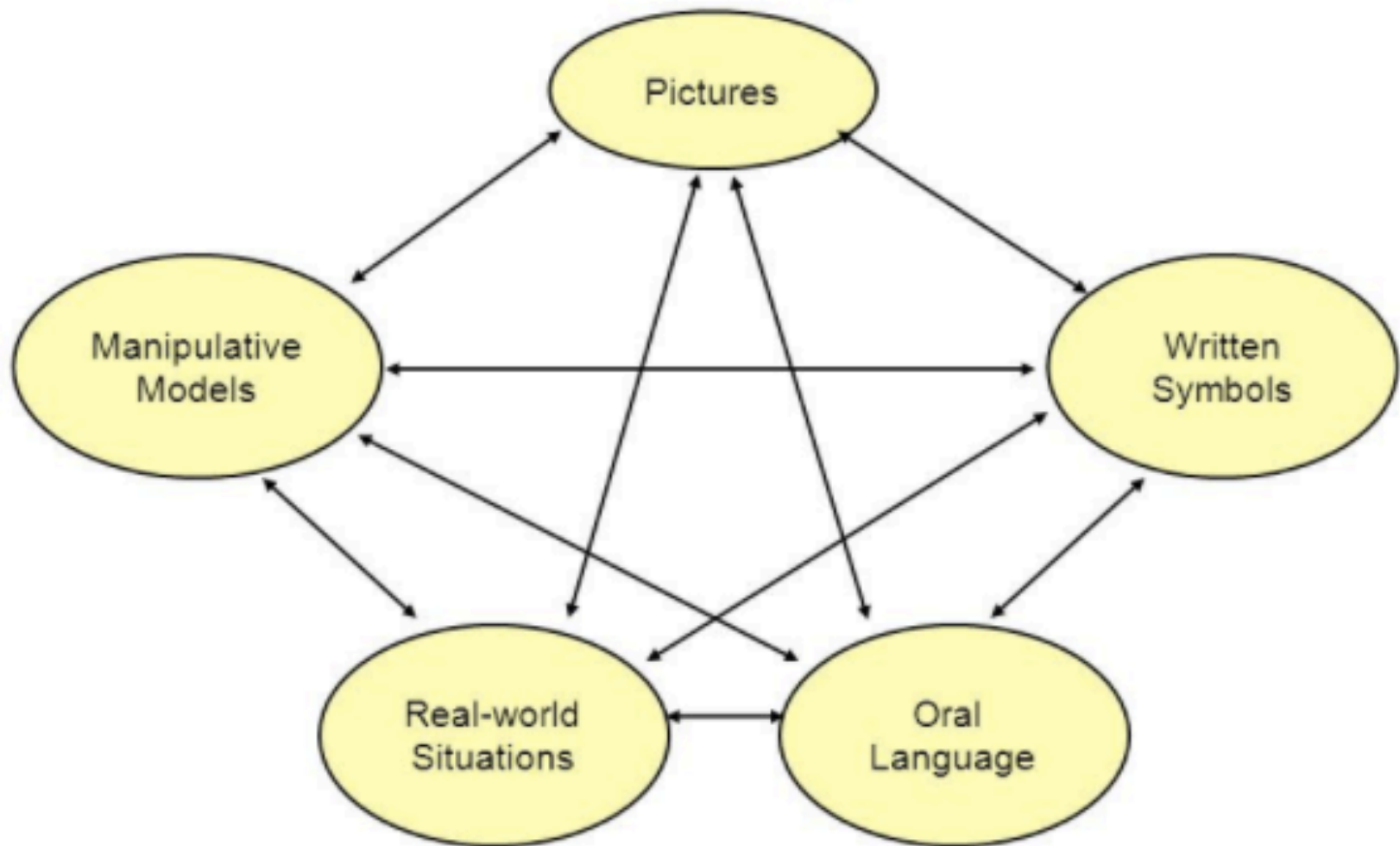
HARD
versus
COGNITIVELY DEMANDING

1. $9,452 \times 67,486 = ?$
2. Solve this problem in 3 or more different ways: 16×25
3. Write as many computation problems as you can where the answers round to 1,000.

What is a low floor, high ceiling task?

What constitutes a high cognitive demand task?

Tasks with high cognitive demand require students to make connections to underlying mathematical ideas. They show their understanding in the following way:



The Lesh Translation Model

- The Lesh translation model suggests that elementary mathematical ideas can be represented in five different modes:
 - manipulatives
 - pictures
 - real-life contexts
 - verbal symbols
 - written symbols.
- It stresses that understanding is reflected in the ability to represent mathematical ideas in multiple ways, plus the ability to make connections among the different embodiments.
- It emphasizes that translations within and between various modes of representation make ideas meaningful for students.

Modeling Math Meaningfully

I can write it with numbers!

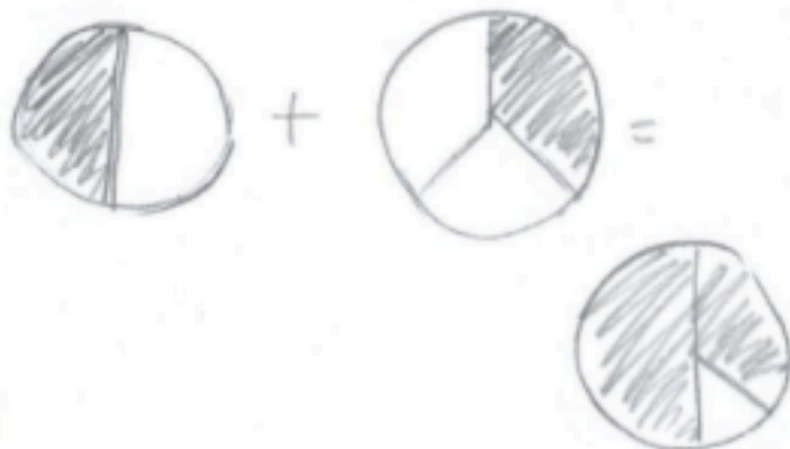
$$\frac{1}{2} + \frac{1}{3} = \frac{5}{6}$$

$\frac{1}{2}$ can be made into $\frac{3}{6}$

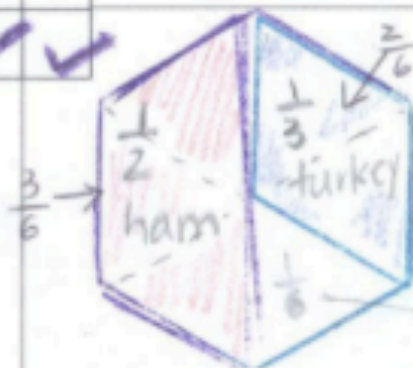
$\frac{1}{3}$ can be made into $\frac{2}{6}$



I can draw a picture of it.



My mom bought $\frac{1}{2}$ pound of ham and $\frac{1}{3}$ pound of turkey for a huge sub. How much meat did she buy?



I put the $\frac{1}{2}$ piece red trapezoid with the $\frac{1}{3}$ rhombus and saw that one green triangle would fit. That makes the rest equal $\frac{5}{6}$.

I can model it using pattern blocks math tools and explain my thinking

pattern blocks

Instead of:

$$\begin{array}{r} 4 \overset{9}{\cancel{0}} \overset{9}{\cancel{0}} \overset{10}{\cancel{0}} \\ 5, \cancel{000} \\ - 2,384 \\ \hline \end{array}$$



Subtract
one from
both #'s

$$\begin{array}{r} 5,000^{-1} \\ - 2,384^{-1} \\ \hline 2,616 \end{array}$$



$$\begin{array}{r} 4,999 \\ - 2,383 \\ \hline 2,616 \end{array}$$

No regrouping!!

Everyday Mathematics

Focus:

Rigorous, cognitively demanding math instruction.

What is mathematical rigor?

Students engage in mathematics in the same way that mathematicians engage in mathematics:

- Students use mathematical language to communicate effectively and to describe their work with clarity and precision.
- Students demonstrate that what they have done works, when it works, and why the procedure they selected is appropriate.
- Students answer the question, “How do we know?”
- Rigor refers to a deep, authentic command of mathematical concepts
- Rigor depends on students having solid conceptual understanding and procedural fluency.
- Rigor does not refer to making math harder or introducing topics at earlier grades

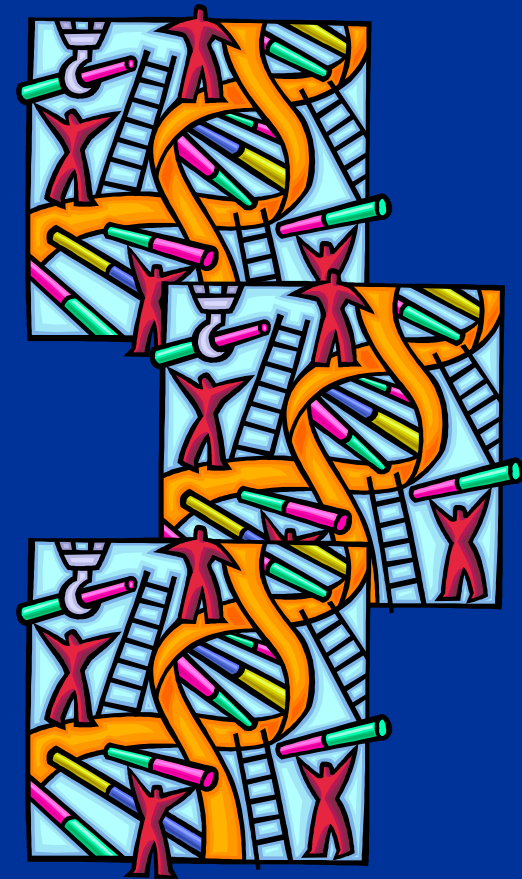
Everyday Math uses a spiraling instructional model



- Learning goals link from the past to the future.
- Students show beginning, developing, and secure skills on math concepts.
- The spiral may take two to three years for mastery to be achieved*.
- Concepts are consistently reviewed throughout the model.
- **NOTE***: Mastery of algorithms is not expected until the 4th grade. In grades, K, 1, 3, and 3 students explore multiple algorithmic strategies.

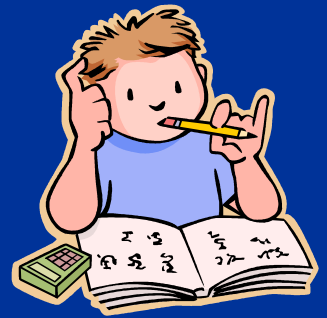
Learning goals are based on six math strands of knowledge

- Operations & Computation
- Numeration
- Patterns, Functions & Algebra
- Data & Probability
- Measurement
- Geometry



Homework

Homework



- The work in Everyday Math may seem very different than the math we did when we were in school.
- If you and/or your child do not understand the homework, write a note to the teacher and the teacher will re-teach.
- Keep in mind, homework is an opportunity for your child to practice what he or she already understands.
- You are not a “sub-contractor.” Please, do not “teach” your child “your way” of doing the math. It is not about getting the homework done. It is about mathematical understanding.

How can you help at home?

- Have your child teach you the strategies he or she is learning in school.
- Reinforce your child for persevering, for not giving up, for working hard.
- Help your child memorize math facts
- Play Math Games.
- Ask questions to both your child and your child's teacher.
- Keep in mind that “math tests” are PROGRESS CHECKS. Learning is not a race nor is it linear. There are different expectations at different points in the year.

QUESTIONS?