

The Revised Program of Studies, Mathematics, 2007 challenges us to teach for understanding.

Teachers need to reconsider what evidence demonstrates that children do indeed understand mathematics. What should we see them do, say, record, explain, represent?

What are students doing if they are doing mathematics?

“As part of the study of mathematics, students look for relationships among numbers, sets, shapes, object and concepts.

The search for possible relationship involves collecting and analyzing data and describing relationships visually, symbolically, orally or in written form. P. 11)

“Reasoning skills allow students to use a logical process to analyze a problem, reach a conclusion and justify or defend that conclusion” (p. 9)

“Students can explore and record results, analyze observations, make and test generalizations from patterns, and reach new conclusions by building upon what is already known or assumed to be true.” (p. 9)

“Students must feel comfortable taking intellectual risks, asking questions and posing conjectures (p.2)”

Visualization, mental imagery and spatial reasoning are central to the understanding of mathematics!!!

The test of an activity or assessment:

It engages students in the process skills:

Communicating

Connecting

Reasoning

Problem Solving

Visualizing

Mental Math and Estimation

Technology

to build and examine mathematical relationships.

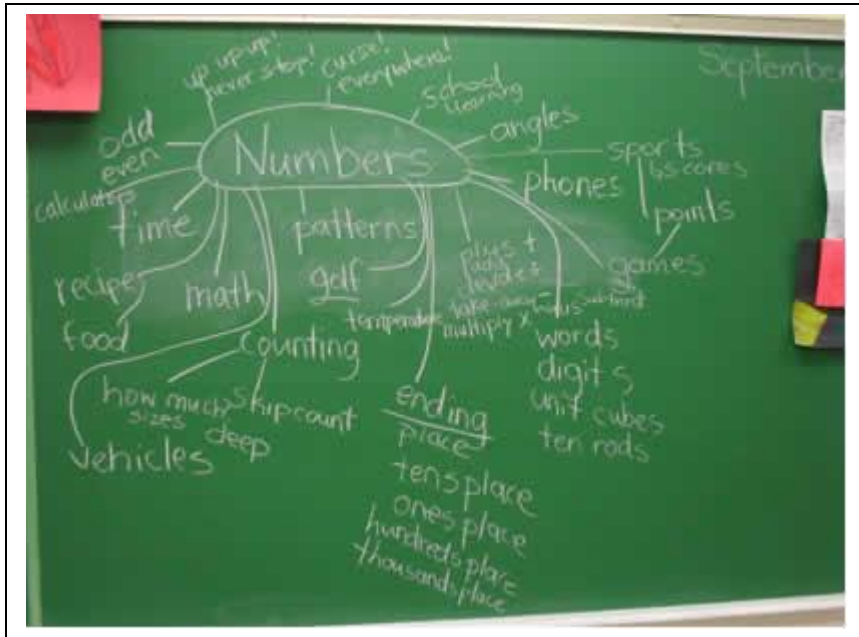
In order to build understanding students must be expected to



Build
Explain
Represent
Compare
Synthesize

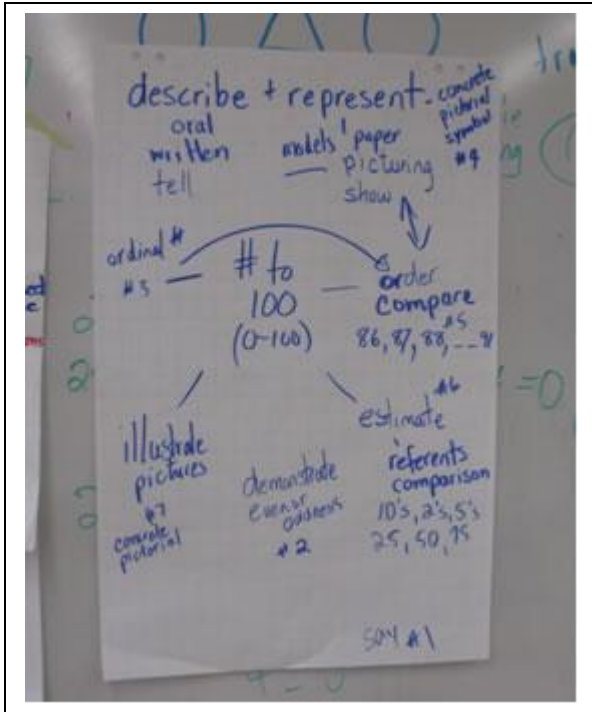
Students can explain what they have learned and how they can apply it.

What is Grade Three Math?



What Grade 3 Students Said





We looked at the verbs for the number outcomes and built a placemat.

- Concrete, pictorial representations
- Standard form
- Expanded notation
- Represent multiple ways by decomposing into equations.
- Represent with multiple place value strategies
- Compare to other numbers
- Put in some kind of sequence or order
- Skip count by tens, hundreds
- Estimate quantities
- Compare to referents and benchmarks
- Work flexibly with two digit numbers

