

Overview

- Continue work with base ten blocks: Shift to decimals
- Overview of student thinking interview assignment
- Getting started:
 - Video of interview
 - Analyzing and selecting tasks
- Wrap up

Base Ten Blocks

- Trading model
- Highlights geometry of number and number relationships
- Little cube, long, flat, big cube
- Micro-, mini-, big-, super-, mega- as prefixes for extending the blocks
- Unit can change
- Expensive
- Flexible across K - 8 and beyond

Ordering Decimals

Put the following strings of decimals in order however you usually do it:

a) 5.3 5.03 0.53 0.8 0.08 0.4 0.40

b) 0.4 1.4 .55 .0098 15 .4 .04 .40

What Makes Ordering Decimals Difficult

- The length of a number no longer a clue
- Some numbers “look” large
- Multiple representations for same number:
.4, .40, and 0.4
- Lack of understanding of what the numbers mean
(how we read decimals)
- Money overly supports “correct” answers with
tenths and hundredths

Ordering Decimals with Base Ten Blocks

Put the first string of decimals in order using the blocks.
Make a record in your notebook.

a) 5.3 5.03 0.53 0.8 0.08 0.4 0.40

If you finish, try the second string:

b) 0.4 1.4 .55 .0098 15 .4 .04 .40

- What did you notice about putting decimal numbers in order physically?
- What do the manipulatives show, and how do they help with the typical difficulties we discussed?

Issues to Attend To

- Choice of unit with base ten blocks
- Language of decimals, materials, and operations
- Correspondence between model and written algorithm

Modeling Computation of Decimals with Base Ten Blocks

$$\begin{array}{r} 2.46 \\ + 1.57 \\ \hline \end{array}$$

$$\begin{array}{r} 31.9 \\ + 18.47 \\ \hline \end{array}$$

$$\begin{array}{r} 33.02 \\ - 19.71 \\ \hline \end{array}$$

$$\begin{array}{r} 10 \\ - 4.63 \\ \hline \end{array}$$

Student Thinking Interview: Purpose and Goals

- Purpose: To learn about how students understand and think about place value
- Goals:
 - Learn to establish rapport with a student in working on mathematics
 - Learn to choose and use tasks to help make student thinking more visible
 - Learn to elicit, listen to, and probe students' thinking
 - Learn to make evidence-based claims about students' understanding

Overview of Assignment

Part 1:

- Make arrangements at school - choose student and date
- Study and select tasks
- Design session plan - If you would like feedback, send us your plan at least 3 days before your interview

Part 2 (due Class #9, Nov. 2):

- Conduct interview, make records (audio tape recommended)
- Analyze data and formulate two to three assertions
- Prepare an “assertion sketch” that clearly states your 2-3 draft assertions and briefly lists the supporting evidence for each
- Bring to Class #8: copies of assertion sketch, student work, notes

Part 3 (due Class #10, Nov. 9):

- Write memo to cooperating teacher
- Use feedback on memo to write a final version to give to your CT

Getting Started

- What is involved in meeting individually with a student to talk about mathematics? (Video segment)
- Selecting good tasks and using them to learn about students (Begin investigating catalog of questions for ages K - 8.)

Grade Level Groups

In your groups:

1. Do the problem yourselves
2. Uncover and describe: How is this question related to place value? What are the core mathematical ideas and dispositions, skills and fluencies?
3. Consider what a child might do; think of more than one alternative
4. Consider probes: What would you say to different things the child does?

Begin with —

K-1: question 4

2: question 6

3: question 8

4: question 9

5: question 14

6: question 18

(Do more as time allows.)

Wrap Up

- Assignments
 - Finish planning your interview
 - Read End-of-class check assignment & select date
 - Readings
 - More work with decimals
 - Midterm course comments
- Please leave your notebook --- can pick up notebook and question track forms tomorrow