Teaching Fractions in 4th Grade

- Notes on teaching __Block #1__ on Fractions
  - Remember not to drown the students in any practicing.
  - <u>The Key Idea</u>. The most important thing is that they understand the concept of a fraction.
    - What does 3/5 really mean?
    - We must return to this again, and again – each time using something different as a manipulative – not always a circle.
  - <u>Equivalence</u> should be taught out of experience and observation.
    - They <u>see</u> that 2/4 is the same as ½, 3/6 is the same as ½, etc.
    - Make a game of it! You give a fraction and they write down as many equivalent fractions as they can think of. Everyone writes one answer on the board!
  - <u>Reducing</u>. 10/15 → The question we ask ourselves is "What is this the same as?"
  - <u>Adding and Subtracting fractions with like denominators</u>. Pose the question: "What happens if the denominators aren't the same?" This waits until Block #2!
  - Also in this block (other than fractions): Vertical Multiplication (with 2-digit multipliers)

- Notes on teaching __Block #2__ on Fractions
  - <u>Review</u>. As always, begin by reviewing the first fraction block.
  - <u>Common Denominators</u>. Often, we want to convert two fractions into equivalent fractions that have the same denominator. Give some examples of this:
    - ¼ and 1/6
    - ½ and 3/8
    - 1/3 and 1/5
    - 2/3 and 3/5

    <u>Important</u>: Ask the students why it's this would be useful. They should answer that it's important for seeing which fraction is bigger (2/3 or 3/5) and for adding and subtracting fractions with unlike denom.
  - <u>Adding and Subtracting fractions with unlike denominators</u>.
    Give only a couple of examples. There is still two more years to get good at it.
    You can always find the common denom by multiplying the denominators. (2/3 - 1/5)
    Sometimes, it's best to use the LCM. (3/8 + 1/12)
  - Also in this block (other than fractions): Intro to LD

- Notes on teaching __Block #3__ on Fractions
  - More work with finding common denoms
  - Intro to Multiplying Fractions **Key Ideas**:
    - Don't get bogged down. Lead them to discover the shortcut, and then use the shortcut
    - Don't intro using circles. Cross-canceling waits until 5th grade.
    - Start with simple examples, and then build up. (It's OK if not everyone gets it fully.)
      - ½ x 12; 1/3 x 15; 2/3 x 15; ½ x ¼ (see below apple demo); 1/3 x 1/5;
        1/3 x 1/5; ¼ x 1/5; ¾ x 1/5; (now they see the trick); 2/3 x 4/5
    - Use something visual like an apple.
      - Take a ¼ of an apple and cut it in half,
        then ask, "What is each piece equal to?" Ans: 1/8
        then we write into our books: ½ x ¼ = 1/8
      - Do the same by cutting ½ an apple into ¼.
      - Ask them what they think it would be for 1/3 x 1/5.
  - Intro to Mixed and Improper
  - Division of Fractions can wait until 5th grade.
  - Also in this block (other than fractions): More work with Long Division