

Due Date: Monday, Nov. 16

Do this assignment on graph paper.

1. *Number line pictures: Must be on graph paper.*

- Draw a number line down the length of a piece of graph paper 36 units long. Place a zero at the left end of your number line and a 1 at the right endpoint. Locate each of these fractions in the appropriate place on your number line: $\frac{5}{6}$, $\frac{13}{18}$, $\frac{5}{12}$, $\frac{2}{9}$, $\frac{6}{7}$. Show how you decided where to put each value.
- Draw a second number line down the length of your graph paper which covers 20 units on the paper. Now place zero at the left endpoint and 4 at the right endpoint. Locate the following numbers in the appropriate position on your line: 0.3, 1.4, 2.65, 3.455. Explain your thinking.

2. *Modeling addition and subtraction of fractions using the Fractions Book:*

- Draw a cake for a party with three or four guests. See parts 25, 26. Show all the math for that cake.
- Using rectangular cakes, show how to carry out each of these calculations with explanation.

$$\frac{3}{4} + \frac{1}{6} = ?$$

$$\frac{2}{3} - \frac{5}{8} = ?$$

- Use a number line to do the above calculations. Be precise and explain clearly.

- On the back, there is an article about the legislators determining whether $\frac{3}{5}$ is greater than $\frac{2}{3}$. Demonstrate in at least **four different ways or models** a comparison of these two fractions.

4. *Thinking about teaching (Type these responses.)*

- The question below was on a national assessment progress test in 1982. Approximately an equal number of 13-year olds taking the test chose each of the four answers. Of the 17-year olds, only 37% got the correct answer. Answer the question yourself. Then determine if your answer was correct and describe what might have been the student thinking in each one of the incorrect choices. State what you think this shows about their concept of adding fractions.

Question: Estimate the answer:

$$\frac{12}{13} + \frac{7}{8} = ?$$

a) 1

b) 2

c) 19

d) 21

- Here are four statements by children. Decide if each one is true. If it is, explain why. If not, give a counter example. Then modify the statement to make it correct.

- “The bigger the denominator, the smaller the fraction.”
- “The bigger the numerator, the bigger the fraction.”
- “When you multiply two numbers together, you always get a bigger number.”
- “When you divide you always get a smaller number.”