EDMC 330
Developing Fraction Concepts Station IV – Cuisenaire Rods

For this activity, you will need:

- One set of Cuisenaire rods per group member
- Tape
- Pencil or Pen
- Your brain

1. From your set of rods, select a brown rod. In this first problem, the brown rod represents one whole unit. Find all of the ways (there are four) to make one-color trains of rods that are the same length as one brown rod.

   Once you have all four of the one-color trains, consider the following questions. If the brown rod represents one whole, what is the numerical value of the purple rod? How do you know? Find the rod that is $\frac{1}{4}$ of the brown rod. How do you know? Find the rod that is $\frac{1}{8}$ of the brown rod. How do you know? Show that $\frac{1}{2} = \frac{2}{4} = \frac{4}{8}$ with the rods. Explain your reasoning.

2. Use the tape to secure an orange rod and a red rod together to create an orange-red rod. Find all of the ways (I'm not telling how many there are) to make one-color trains of rods that are the same length as the orange-red combination rod. Record your responses on a separate sheet of paper.

   Find the rod that is $\frac{1}{2}$ of the orange-red rod. How do you know? Find the rod that is $\frac{1}{4}$ of the orange-red rod. How do you know? Find the numerical value of every rod that you used in this second situation. How do you know? Show that $\frac{1}{2} = \frac{2}{4} = \frac{3}{6}$ with the rods. Explain your reasoning!

3. Compare your results when the brown rod is one to the results when the orange-red rod is one. What conclusions can you draw about fractions and fraction concepts from these two situations?

4. Using the conditions for when the brown rod is one, use the rods to demonstrate why the number sentence $\frac{1}{2}+\frac{1}{4}=\frac{3}{4}$ makes sense. Keep a written record of your thinking on a separate sheet of paper.

5. Using the conditions for when the orange-red rod is one, use the rods to demonstrate why the number sentence why the number sentence $\frac{3}{4}-\frac{1}{3}=\frac{5}{12}$ makes sense. Keep a written record of your thinking on a separate sheet of paper.