Students and Teachers Navigate the Number Line Model for Fractions

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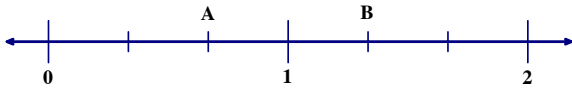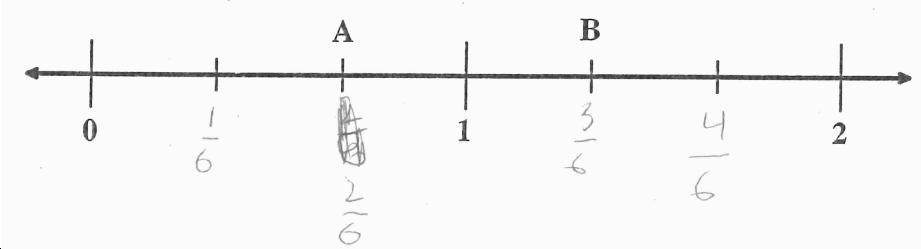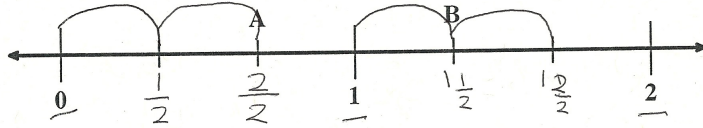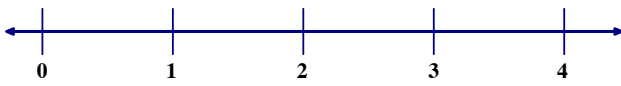University of Wisconsin-River Falls

http://www.cehd.umn.edu/ci/rationalnumberproject/
http://www.cehd.umn.edu/ci/rationalnumberproject/rnp1-09.html
http://www.cehd.umn.edu/ci/rationalnumberproject/rnp2.html
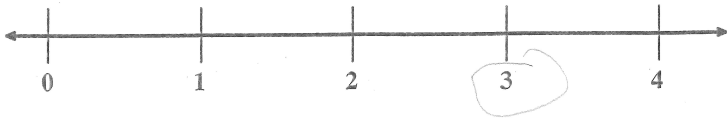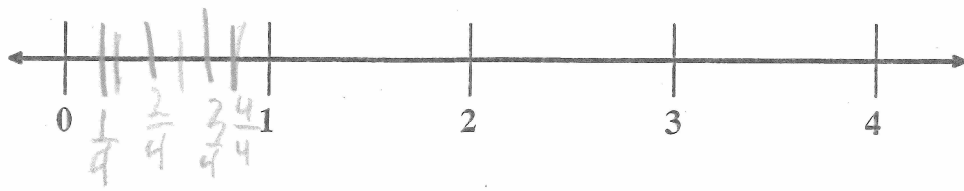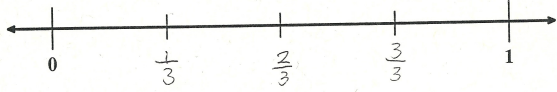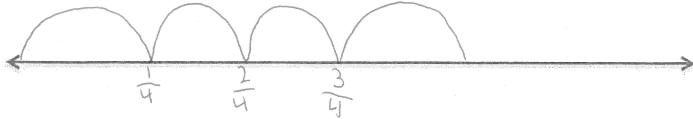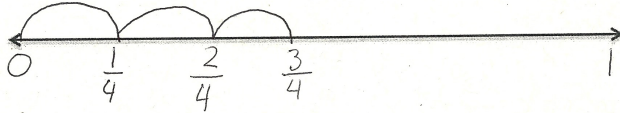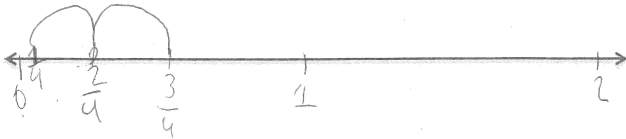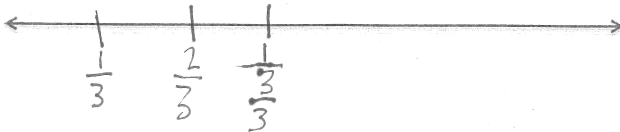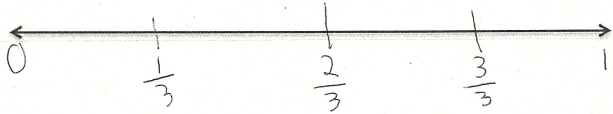
Grade 3 Number Line Tasks

As you look at the students' work, consider the following:
- What do students need to know and do to solve each task?
- What misunderstandings are revealed in student's solutions?
- How does the number line model differ from other models like fraction circles, chips and paper folding?

1.	**What number names points A and B?**
a.	
b.	
2.	**Look at this number line. Where is ¾ on the number line?**
a.	
b.	

3.	**This is a number line. What can you tell me about the tick marks?**
a.	
4.	**Look at this number line. Where is ¾ on the number line?**
a.	
b.	
c.	
5.	**Now show me 1/3, 2/3, and 3/3 on the number line.**
a.	
b.	

Sample Student Tasks – Grade 4

What do students need to know about fractions and number lines to complete these tasks?

1. Look at this number line. Where is the number $\frac{2}{3}$ on the number line? How do you know? Tell me what you are thinking. After the student answers the question, ask: What is the whole or unit on the number line?


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0          1          2          3
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2. Construct the fraction $1\frac{2}{8}$ on the number line. Explain your strategy for showing $1\frac{2}{8}$ on the number line?

3. Show where $1\frac{1}{5}$ is on the number line. Explain what you are doing.


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0              3
               ─
               5
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4. Name this point in two ways. Explain your thinking.

0   2

5. Does $\frac{2}{3} = \frac{6}{9}$? Use the number line to show if this is true or not.
   Explain your thinking.

6. Which is bigger $\frac{2}{3}$ or $\frac{11}{12}$ or are they equal? What do you picture in
   your mind as you think about these two fractions?

   Show how to use the number line to justify your decision.