

### Overview of Session 3

- Connecting representations of fractions
- Developing a working definition of a fraction

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
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a) 

b) 

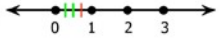
c) 

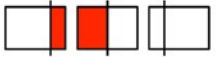
d) How many 4's are there in 3?

e) 18 crayons out of a box of 24

f) .75

g) I want to share 3 bottles of soda equally among 4 people. How much will each person get?

h) 

i) 

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### Connecting representations task

- Make connections between two of the representations from the  $\frac{3}{4}$  activity
- Articulate connection between the pair of representations as if talking to a student and connect the pair back to the idea of  $\frac{3}{4}$

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### Making connections with representations

- Between student(s) thinking and a representation
  - Explanation related to a particular aspect of a diagram
- Within representations of the same type
  - Rectangular area models
- Across representations of the same type
  - Rectangular area and circular area
- Across representations of different types
  - Measurement model and area model
- Between representation and the problem statement
  - Checking on the correspondence of what a problem asks and features of a representation
- Connecting mathematical language and ideas to representations
  - Using subject matter terminology and ideas to name and describe aspects of representations

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### A working definition of a fraction

- Identify the whole
- Make  $d$  equal parts
- Write  $\frac{1}{d}$  to show one of the equal parts
- If you have  $d$  of  $\frac{1}{d}$ , then you have the whole
- If you have  $n$  of  $\frac{1}{d}$ , then you have  $\frac{n}{d}$
- $n$  and  $d$  are whole numbers
- $d \neq 0$

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### Summary

In this session, you continued to work on:

- The mathematics used in elementary teaching
  - Articulating key ideas about fractions
  - Formulating and analyzing definitions
- Teaching practices used to help elementary students learn mathematics
  - Making connections across representations in order to further understanding
- Considering the benefits of using multiple representations in the classroom

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