Professional Learning Session: Introduction to Representing Fractions

Grades J/I

MO 15 min A 35 min C/D 20 min 70 + 45 min	**Learning Goals** • A fraction can be represented in a number of ways. The representation you select/use influences the meaning/interpretation of the fraction. • One representation may have different meanings, depending on the assumptions the viewer makes. Careful wording can reduce the number of different assumptions. • It is important to be specific with students about the context and meaning of the fractions you are using.	**Materials** • A variety of manipulatives • Chart paper • Sticky notes (medium sized)
Minds On…	**Individual→ Placemat (4 min)** Participants record their understanding of fractions (what they remember from school, contexts where they use fractions, representations of fractions) in a placemat. **Small Group→ Placemat (11 min)** Groups discuss the information recorded by each person and consolidate it in a Frayer graphic in the centre of the Placemat.	

Action!	**Individual → Activity (15 min)**
	Using a variety of manipulatives, participants identify a fraction of their choosing and then represent it in as many ways as possible. A picture of each different model will be recorded on a separate sticky note.
	
	Whole Group→ Sort Activity (5 min)
	Individuals post their sticky notes on chart paper under each of the following different meanings of fractions:
	o **Linear Measure**
	  o Position (point) on a number line
	  o Segment of a number line
	o **Part - whole: continuous**
	  o area (2-D) Include discussion of strengths of rectangular representations over circular representations
	  o volume (3-D)
	o **Part - whole: discrete** sets with either identical or non-identical shape/size items
	o **Part - Part** ratio representation which shows numerator : denominator
	o **Quotient**
	o **Operator**
	
	Small Group→ Discussion (15 min)
	Each group takes a sheet and organizes it, annotating to add meaning. If any sheet has no sticky notes on it, the group creates as many different types of examples as they can and organizes these examples. The group may identify some sticky notes that they believe would be better suited to a different meaning/sheet. Inform them that they will be sharing out at the end of the activity.
		See Math for Teaching: Fractions

Consolidate Debrief	**Whole Group→ Discussion (20 min)** Have each group share their summary as well as their rationale. Discuss any sticky notes that they feel belong on a different sheet. Probe thinking with the following prompts: • Why did you believe that representation corresponded more to the meaning _____? • Does anyone have any other comments/insights they wish to share? • What questions might you ask of the author to ensure that your interpretation is correct?	
	Home Activity or Further Classroom Consolidation (45 min) **Demonstration → Exploring Existing Ministry-Developed Resources** Participants review the Gap Closing materials connected to Fractions with a view to discussing connections to earlier conversations. Demonstrate the Fractions CLIPS on-line (and explain the ePractice connections to Gap Closing). Engage them in a discussion (think/pair/share) about how they may integrate these into their program. Record these on chart paper.	