Overview of Session 5

- Narrating the construction and use of a representation
- Analyzing mathematics tasks

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Narrating the construction and use of a representation

Which fraction is larger – $\frac{3}{4}$ or $\frac{4}{3}$?

With a partner:

- One person talks through the use of a number line to solve this problem.
- The other person notes phrases or ideas that are shared during the "narration."
- When the problem is complete, discuss the narration and think about which parts seem to be important when doing this kind of work.

2

Narrating the construction and use of a representation

- Make clear the mathematical problem or context.
- Describe how a particular representation is useful for this problem.
- Construct the representation and use it to solve the task while describing and giving meaning to each step.
- Summarize what the representation has helped to do.

3

Use number lines as you describe comparisons of the following fractions

a. $\frac{1}{5}$ or $\frac{1}{8}$ b. $\frac{6}{10}$ or $\frac{7}{10}$ c. $\frac{5}{6}$ or $\frac{3}{4}$

d. $\frac{5}{6}$ or $\frac{16}{15}$ e. $\frac{3}{3}$ or $\frac{5}{5}$

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Debriefing

- Did anything arise that we didn't capture yet in our draft ideas about narration?
- What was easy or difficult about the work of narrating?
- When would it be useful to narrate the use of a representation? When might it be unproductive to narrate the use of a representation?

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Analyzing mathematics tasks

a. $\frac{1}{5}$ or $\frac{1}{8}$ b. $\frac{6}{10}$ or $\frac{7}{10}$ c. $\frac{5}{6}$ or $\frac{3}{4}$

d. $\frac{5}{6}$ or $\frac{16}{15}$ e. $\frac{3}{3}$ or $\frac{5}{5}$

- **Mathematics**: What mathematical ideas or terms are used in comparing the pairs of fractions?
- **Student thinking**: What strategies might students use to make these comparisons? What misconceptions might come up?
- **Representations**: What is challenging or useful about a number line representation when comparing these fractions?

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Summary

In this session, you engaged in two central practices of teaching mathematics:

- Narrating the construction and use of a representation
- Analyzing mathematics tasks

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