Session 4: Teaching through Mathematical Processes

Math Learning Goals

- Apply understanding of the connections between the Mathematical Processes and the curriculum expectations.
- Make connections between questioning and DI.

Rationale

Materials

- BLM 4.1, 4.2
- Cards from BLM 1.2
- Continuum and Connections packages from S.3
- Chart paper
- Sticky notes
- Math Process S4.ppt

Minds On…

Pairs → Same/Different Activity
Partners randomly select two different Mathematical Processes cards (BLM 1.2), discuss and list similarities and differences between the processes selected. Repeat 3 times.

Expert Groups → Frayer Model
Participants sit according to their Expert Groups from Session 1. Each group develops a Frayer Model for their process (BLM 4.1).

Curriculum Expectation/Observation/Mental Note: Observe participants’ understanding of the Mathematical Processes as they complete the Frayer Model.

Action!

Pairs → Question Development
Using the Continuum and Connections packages, pairs select an expectation related to their course/grade. Each pair develops up to 4 questions related to this expectation, where each question focuses on a different process or concept or procedure (BLM 4.2). Pairs discuss what it is about the question that justifies its focus on that process, concept, or procedure. Transfer questions to chart paper and post.

Differentiate product based on participant readiness in order to work in zone of proximal development.

Chart paper for questions should state grade/course, the expectation (written out), and the Mathematical Processes being demonstrated in each question.

Differentiate by choice of course/grade, product, or number of questions.

Consolidate Debrief

Whole Group → Gallery Walk
In pairs, participants walk about and reflect on the questions developed. Partners discuss what they like about the question, and how it might be improved, using sticky notes to provide feedback.

Home Activity or Further Classroom Consolidation
Reflection Journal: Do you think that by asking questions in various ways you are supporting differentiated instruction? Explain.
The most important thing about ______________________ is:

(Mathematical Process)
### BLM 4.2: Developing Proficiency

<table>
<thead>
<tr>
<th>Curriculum Expectation:</th>
<th>Grade:________________</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>