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| **Background for Facilitator:** Option 1 and 2  
P. 120 “About This Chapter”  
**Presentation:**  
Distribute “Stop and Jot” note taker document to teachers. Say, “Stop and Jot what your thoughts are regarding these statements in the middle column.” After individuals have written their own thoughts, share out with a partner. This will be revisited at end of the presentation, as an exit ticket. | | |
| **Essential Questions**  
• What strategies can we use to enhance our instruction so students learn mathematics with understanding?  
• What does this look and sound like? | **Background for Facilitator:** Specific to Option 1  
**Presentation:** | |
| **Objectives**  
• Explore what research says about productive procedural fluency development and instruction  
• Develop an implementation plan for fact fluency instruction and assessment in your classroom. | **Background:** The purpose of this slide is to connect to prior learning from the Fall/Winter mathematics “pink” Wednesdays.  
**Presentation:** Connection to the work that was engaged in the Fall 2013. The four steps provide a structure for analyzing and planning for components of productive classroom discussion.  
Consider having participants think about the ‘talk moves’ they have been using to support the productive classroom discussion and moving student thinking and reasoning between these four steps. | |
| **Guiding Question**  
How can we use targeted and meaningful assessment for identifying students’ fact fluency instructional needs? | **Background for Facilitator:** Specific to Option 1  
**Presentation:** Here’s our guiding question for today’s work. | |
| **What is Fluency?**  
**Standards for Mathematical Practice**  
1. Make sense of problems and persevere in solving them.  
2. Reason abstractly and quantitatively.  
3. Construct viable arguments and critique the reasoning of others.  
4. Model with mathematics.  
5. Use appropriate tools strategically.  
6. Attend to precision.  
7. Look for and make use of structure.  
8. Look for and express regularity in repeated reasoning.  
**Operations & Algebraic Thinking Progression Document**  
Van de Walle defines mastery of a basic facts as, “means that a child can give a quick response (in about 3 seconds) without resorting to nonefficient means, such as counting.”  
**Background for Facilitator:** Option 1  
**Presentation:** | |
Van de Walle points out that, "When taught basic facts via rote memorization, many children with learning disabilities continue to use counting strategies because they do not independently develop thought processes or other strategies that move beyond counting. However, they can be very successful in learning their basic facts when the emphasis is on using strategies. In addition, drill can cause unnecessary anxiety and undermine children’s interested and confidence in mathematics.” Teaching Student-Centered Mathematics Volume 1 Gr. Pre-K-3, Chapter 10 pp. 154-155

Presentation:
- Read from the beginning of the paragraph to the end of the highlighted portion.
- Say, “While the progressions do state that fluent is used to mean ‘fast and accurate’ fluency, ‘involves a mixture of just knowing some answers, knowing some answers from patterns,… and knowing some answers from the use of strategies.’”
- Open up for questions and/or discussions
- Distribute Basic Facts article during discussion

Background for Facilitator:
Read the article to become familiar with the content.

Presentation:
Annotate your portion, as your triad jigsaws note some ideas from the other two areas.
Note: Have the triad share in order of the phases (Phase 1, then 2, then 3).

Link will send you to the wcsdcandi website.
The “Basic of Math Facts: A Sequence of Learning” is compiled from several sources including The National Council of Teachers of Mathematics, Van de Walle, Doug Clements, Marilyn Burns, and Kathy Fosnot.

Background for Facilitator:
p.121 in Classroom Discussions in Math

Presentation:

Background for Facilitator:
p.121 in Classroom Discussions in Math

Presentation:

Background for Facilitator:
In the event that the questions get asked regarding what is “the standard algorithm,” Jason Zimba, a leading author of the CCSS-M (NACS), was quoted as saying, “The standard algorithm is the algorithm that works for the student.” (NNMC Mini-Conference 3/8/14)

Presentation:
Strategies develop into algorithms for efficiency and generalization.
“When do we push for moving from strategies to algorithms?”: Our standards dictate when we move our instruction from strategy focus to algorithm.
**Background for Facilitator:**
Notes: For time purposes you can choose whether or not to show teachers the search tool on their app to speed up this portion of the training.

**Extension:** If you need it to take longer, (depending on how familiar teachers are with standards) have teachers include the boundaries: (ie: 1st grade addition strategies are “within 100, using concrete models or drawings and strategies based on place value; relate this strategy to written method and explain the reasoning used”.)

**Presentation:** Ask teachers to look at the standards for their grade. After, review the grades below and above to complete this chart. KINDER differentiation- After they've looked at 1st grade standards, ask kinder teachers to identify standards that support the work in first grade.

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**Background for Facilitator:**
Familiarize yourself with the standards and whether you’re relating the strategy to written form, concrete models, drawing or if strategies are to be based on place value.
Kinder only has “strategies” for comparing numbers by using matching and counting strategies.

**Notes:** For time purposes you can choose whether or not to show teachers the search tool on their app to speed up this portion of the training.

**Extension:** If you need it to take longer, (depending on how familiar teachers are with standards) have teachers include the boundaries: (ie: 1st grade addition strategies are “within 100, using concrete models or drawings and strategies based on place value; relate this strategy to written method and explain the reasoning used”.)

**KINDER differentiation:** Consider asking Kinder teachers to share out the standards they found that support the work of first grade.

**Presentation:**
Teachers should also be familiar with standards and whether they should relate the strategy to written form, concrete models, drawing or if strategies are to be based on place value.
Ask: “What are you noticing or What do you notice?”, “In what grade level do you see a strategy for rational numbers and an algorithm for whole numbers?”

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**Background for Facilitator: Option 1 and 2**
-Hide this slide if you are doing this option after already presenting Option 2.
-If unfamiliar with Partial Product login into www.everydaymathonline.com
  -Click on “Algorithms” tab on far right side of page
  -Open “Algorithms Library of Animations”
  -Open “Multiplication”
  -Choose any of the “Partial Products” videos

**Presentation:**
Explain that the information in this visual refers to the computational expectations found in the CCSS-M (NACS) for grades K-6.
Say, “You still need to look closely at your standards as under a heading you may have some standards that are working on conceptual understanding, while others are procedural.”
This visual shows Whole Number Multiplication in grade 4 and Whole Number Division in grade 5 as a Standard Algorithm because of the phrase “relate to a written method” in the standards. However, this can be the writing out of the strategy, i.e. partial products.
**Background For Facilitator:**
Note 3-6: For 3rd grade teachers who are tempted to look at addition and subtraction: Tier 1 instruction should be focused on grade level standards, therefore they are looking at multiplication and division phases. If addition and subtraction is still a concern, then they should be addressed during intervention/remediation instructional blocks.

*These articles are lengthy and it’s unlikely that grade levels will finish all of the planning activities during this time. Consider formulating a plan with admin., following up in PLCs, etc. for completion and implementation.

Teachers may consider looking at eSuite “Assessment Differentiation Activities” to support these phases.

**Presentation:**
Decide as a grade level who will read and share out the individual “Phases” articles for operations in your grade level.

**K-2:** addition and subtraction

**3-6:** multiplication and division

Fill out the note taker with your grade level team.

**Presentation:**
“Stop and Jot any changes in thinking or evidence that strengthened your prior thinking in the final column.”
You may want to consider collecting this document to assess for future coaching needs.

**Consider:**
Invite participants to leave a comment on the bottom of document indicating whether they want additional support in computational procedures, classroom discussion, etc.

**Additional Notes:**

**School Level Essential Question:**
What strategies can we use to enhance our instruction so students learn mathematics with understanding? What does this look and sound like?

**Talk Moves & Strategies**

Turn & Talk
Think, Pair, Share & Revoice
Who can add on?
Revoice/Restate
Stop & Jot (then revise)

**Additional Notes & Support: Chapter 4: Talking About Computational Procedures**

Videos to support:
4A Adding Three Numbers (3:19)
4B Subtracting on the Number Line (4:37)
4C Comparing Subtraction Strategies (4:44)
4D Fraction Number Line (6:59)