ESTABLISHING PURPOSE

1

What are the key content standards I will focus on in this lesson?

Content Standards:

2.NBT.B.9. Explain why addition and subtraction strategies work, using place value and the properties of operations.

2.NBT.B.5. Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.

2.MD.B.6. Represent whole numbers as lengths from 0 on a number line diagram with equally spaced points corresponding to the numbers 0, 1, 2, ..., and represent whole-number sums and differences within 100 on a number line diagram.

Standards for Mathematical Practice:

- Reason abstractly and quantitatively.
- Use appropriate tools strategically.

2

What are the learning intentions (the goal and *why* of learning stated in student-friendly language) I will focus on in this lesson?

- Content: I am learning to understand the inverse relationship of addition and subtraction.
- Language: I am learning to understand how the language of inverse operations can be used to explain the meaning of addition and subtraction models.
- Social: I am learning to understand the importance of learning from each other and valuing each person's expertise.

3

When will I introduce and reinforce the learning intention(s) so that students understand it, see the relevance, connect it to previous learning, and can clearly communicate it themselves?

- Essential questions
- Turn and talk
- Reflection plan and self-evaluation

SUCCESS CRITERIA

4

What evidence shows that students have mastered the learning intention(s)? What criteria will I use?

I can statements:

- I can describe representations, strategies, and contexts as both addition and subtraction situations.
- I can explain how an addition strategy can be adjusted and applied to subtraction.
- I can teach and learn efficient mathematical models to represent addition and subtraction strategies.
- I can explain the inverse relationship between addition and subtraction.

5 How will I check students' understanding (assess learning) during instruction and make accommodations?

Formative Assessment Strategies:

- Conference/observation checklist
- Student work and reflection in the mathematician's journal
- Show Me tasks
- Reflection plan and self-evaluation

Differentiation Strategies:

- Differentiate the content by situational interest: must do and may do
- Differentiate the process and product by situational interest: choice of materials and partners or alone

INSTRUCTION

6 What activities and tasks will move students forward in their learning?

- Number talk: adding up in chunks
- Must-do task: Adding to Subtract
- May-do tasks: Hidden Parts, Make 100, Magic Square, Capture the Flags on a 100 Chart, Adding Odd and Even Numbers, and More Addition and Subtraction Situations
- "Which One Doesn't Belong?"

7 What resources (materials and sentence frames) are needed?

Number talk

Anchor chart of addition strategies

Mathematician's journal

Must-do and may-do tasks

Reflection plan and self-evaluation

Base-ten blocks

Cuisenaire rods

Number charts

Number lines and whiteboard markers

Graph paper

Highlighters

Colored pencils

8 **How will I organize and facilitate the learning? What questions will I ask? How will I initiate closure?**

Instructional Strategies:

- Number talk
- Anchor chart
- Must-do and may-do tasks
- Show Me tasks

Scaffolding Questions:

- How did you revise the addition strategy for subtraction? Why?
- How is this strategy similar to the addition version?

Extending Questions:

- What would be a story for 65 - 29? How is this story represented in your work? What does the answer mean?
- Will this strategy always work? Why or why not?
- For what numbers would this strategy be inefficient?
- How does this representation show why the strategy works?

Connecting Questions:

- What did you work on?
- How did this help you work toward the learning intentions and demonstrate the success criteria?
- What does this mean you need to work on tomorrow?
- What does "inverse relationship" mean to you now?

Self-Reflection and Self-Evaluation:

- Mathematician's journal
- Self-reflection and plan