

## ESTABLISHING PURPOSE

1

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

Content Standards:

2.NBT.B.7. Add and subtract within 1,000, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method. Understand that in adding or subtracting three-digit numbers, one adds or subtracts hundreds and hundreds, tens and tens, ones and ones; and sometimes it is necessary to compose or decompose tens or hundreds.

2.NBT.B.8. Mentally add 10 or 100 to a given number 100-900, and mentally subtract 10 or 100 from a given number 100-900.

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

Standards for Mathematical Practice:

- Construct viable arguments and critique the reasoning of others.
- Look for and make use of structure.

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 how strategies for adding and subtracting small numbers can be transferred and revised to add and subtract large numbers.
- Language: I am learning to understand how mathematical properties can be used to describe and defend addition and subtraction strategies.
- Social: I am learning to understand that collaborating as a team means mathematical disagreement and debate are valued and resolved respectfully.

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
- Worked-example group evaluation
- Conferences
- Sharing: group Gems and Opportunities chart
- Reflection plan and Gems and Opportunities chart

## SUCCESS CRITERIA

4

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

I can statements:

- I can make sense of the magnitude of large numbers by noticing, wondering, and representing their values.
- I can decompose and compose quantities to efficiently add and subtract.
- I can apply the commutative and associative properties to addition of large numbers.
- I can transfer and revise efficient strategies for addition and subtraction of large numbers.

5

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

Formative Assessment Strategies:

- Conference/observation chart
- Student work and reflection in the mathematician's journal
- Reflection plan and Gems and Opportunities chart

Differentiation Strategies:

- Differentiate the process by readiness: alternate rank grouping
- Differentiate the process by situational interest: choice of materials, strategies
- Differentiate the product by situational interest: create contextualized problem

## INSTRUCTION

6

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

- Worked-example analysis: Earth's Fastest Animals
- Life Spans task
- Gems and Opportunities chart sharing
- Gems and Opportunities chart reflection and plan

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What resources (materials and sentence frames) are needed?

Mathematician's journal

Mathematical Toolbox

Life Spans task

Earth's Fastest Animal task and worked example

Gems and Opportunities chart reflection and plan

Sticky notes

Base-ten blocks

Cuisenaire rods  
Number charts  
Number lines and whiteboard markers  
Graph paper  
Highlighters  
Colored pencils  
Language frames

## 8

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

Instructional Strategies:

- Worked example
- Open task
- Peer feedback
- Gems and Opportunities chart

Scaffolding Questions:

- What do you notice about life spans?
- What do you wonder about life spans? How could this become an addition or subtraction strategy?
- How could you use your Mathematical Toolbox to select a representation?
- How could you use the anchor charts for addition and subtraction strategies to select a strategy?

Extending Questions:

- How is this story represented in your work? What does the answer mean?
- How could you use addition and subtraction to solve this problem?
- 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:

- Compare your problem context to the sharing team's context. How is the action of your context similar or different to the sharing team's context? Where do you see this action in your representations?
- Compare your strategy to the sharing team's strategy. How did operating with three-digit numbers affect your strategies in similar ways? Where do you see place value being used?
- Compare your representation to the sharing team's representation. How does the efficiency of the representation change with three-digit numbers?

Self-Reflection and Self-Evaluation Questions:

- Gems and Opportunities chart