

ESTABLISHING PURPOSE

1

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

Content Standards:

5.MD.C. Understand concepts of volume and relate volume to multiplication and to addition.

5. Relate volume to the operations of multiplication and addition and solve real-world and mathematical problems involving volume.

c. Recognize volume as additive. Find volumes of solid figures composed of two non-overlapping right rectangular prisms by adding the volumes of the non-overlapping parts, applying this technique to solve real-world problems.

Standards for Mathematical Practice:

- *Model with mathematics.*
- *Attend to precision.*

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 how to solve a problem about packing based on what I know about volume.*
- *Language: I am learning to describe the solution precisely using the language of volume and the language of the problem situation.*
- *Social: I am learning how to share my thinking with my partner and listen to the ideas my partner has about the problem.*

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?

- *Introduce learning intentions at the beginning of class to frame the task.*
- *Reinforce learning intentions throughout the class as student groups need to refocus their attention.*

SUCCESS CRITERIA

4

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

I can statements:

- *I can tell my partner my ideas about how to solve the problem.*
- *I can find the volume of each item to be packed and use that to solve the problem.*

- *I can add volumes to find the total volume of a group of shapes.*
- *I can explain why my solution to the problem is a good one.*

5

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

Formative Assessment Strategies:

- *Observation/conference checklist with a list of anticipated strategies, success criteria, and planned questions*
- *Student work*

Differentiation Strategies:

- *Differentiate the content and product by readiness: open question*

INSTRUCTION

6

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

- *Packing Scooters and Helmets task*

7

What resources (materials and sentence frames) are needed?

Task assignment

Linking cubes for three-dimensional modeling

Rulers for creating two-dimensional models

Paper for sketching

8

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

Instructional Strategies:

- *Partner, small-group, and whole-group discussion*

Scaffolding Questions:

- *If the apostrophe were not there, what would you think about the expression?*
- *How can the diagram help you figure out the units for those values?*

Extending Questions:

- *How are you using strategies from our earlier work with volume?*
- *How are you using both multiplication and addition in this problem?*
- *Can you draw a picture to show the same information as this model?*
- *Is this the only way the boxes can be packed? Are all of these (shipping) boxes the same weight?*

Connecting Questions:

- *What do you notice is the same across the representations?*
- *Did you pack the boxes in a different way from ____ group? Why might one way of packing be better than the other?*

Self-Reflection and Self-Evaluation for Closure:

- *Student self-assessment with comments*