

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.

a. Find the volume of a right rectangular prism with whole-number side lengths by packing it with unit cubes and show that the volume is the same as would be found by multiplying the edge lengths, equivalently by multiplying the height by the area of the base. Represent threefold whole number products as volumes, e.g., to represent the associative property of multiplication.

b. Apply the formula $V = l \times w \times h$ and $V = b \times h$ for rectangular prisms to find volumes of right rectangular prisms with whole number edge lengths in the context of solving real-world and mathematical problems.

Standards for Mathematical Practice:

- 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 how to compute the volume of right rectangular prisms based on edge lengths and the area of one face.*
- Language: I am learning the connection between the vocabulary of solid figures (edge, face) to the formats for the volume formula ($l \times w \times h$ or $b \times h$)*
- Social: I am learning how to explain my thinking clearly to my partners.*

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 it at the beginning of the lesson so students have a clear map for their progress today.*

SUCCESS CRITERIA

4

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

I can statements:

- I can compute the volume of a right rectangular prism using the formula $l \times w \times h$.*

- *I can compute the volume of a right rectangular prism using the formula $b \times h$.*
- *I can explain why each formula always works for right rectangular prisms.*
- *I can use the measurement of side lengths to help me compute the volume of a figure efficiently.*

5

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

Formative Assessment Strategies:

- *Conference/observation notes*
- *Show Me*
- *Student work*

Differentiation Strategies:

- *Content by readiness: dice used for rolling prism sides—mix of four-, six-, and eight-sided dice depending on the fact fluency of the students.*

INSTRUCTION

6

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

- *Building Prisms activity*
- *Search for a Pattern*

7

What resources (materials and sentence frames) are needed?

- *Four-, six-, and eight-sided dice*
- *Unit cubes (in centimeters)*
- *Recording sheet*

8

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

Instructional Strategies:

- *Partner work*
- *Modeling with cubes*
- *Dice to determine dimensions of solid figures*

Scaffolding Questions:

- *What are the dimensions of your prism?*
- *Show me each dimension in your model.*
- *Where is the base of your prism?*

Extending Questions:

- *Does it matter which face is the base of the prism?*
- *Would your answer change if you built your prism with a different base?*
- *Can you predict the volume before you build the shape?*
- *Is there a way to find the volume without counting?*

Self-Reflection and Self-Evaluation Questions:

- *How did this lesson help you work toward the learning intentions and demonstrate the success criteria?*
- *What do you need to practice more or understand better?*