

Lesson Plan

Learning Segment Focus: Volume of compound and irregular shapes

Lesson 2 of 3

Course & topic addressed: Geometric measurement

Date: 4/14/2020

Grade: 5

Student Outcomes

Specific learning objectives for this lesson.	At the end of this lesson and after watching the videos, students should be able to calculate the volume of the six given shapes with 90 percent accuracy.
Justify how learning tasks are appropriate using examples of students' prior academic learning .	Students will use their prior knowledge of the volume formula of a rectangular prism to calculate the volumes of the given figures.
Justify how learning tasks are appropriate using examples of students' personal, cultural, linguistic, or community assets .	In my class there are two students who are English learners, three students who are IEP/504. With the diversity of students in mind, I will allow for accommodations, modifications, and differential instructions. I will allow easy access and organize the lesson materials and assignments using Padlet to facilitate learning. I will use videos and educational games to keep students engaged in learning. I will use audio to read word problems to receive content in various ways. There is an activity to provide hands on experience and use spreadsheets to record data.

State Academic Content Standards

List the state academic content standards with which this lesson is aligned. Include abbreviation, number & text of the standard(s).	AR. Math.Content.5.MD.C.5 Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume Apply the formulas $V = l \times w \times h$ and $V = B \times h$ for rectangular prisms to find volumes of right rectangular prisms Recognize volume as additive
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Key Vocabulary

What vocabulary terms/content specific terminology must be addressed for students to master the content?	Volume area	length rectangular prism	width	base	height
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Academic Language Support

What are the Academic Language Function(s) (the content and language focus of the learning task represented by the active verbs within the learning objectives/outcomes) and explain how they are utilized in the lesson plan? What planned Academic Language Supports will you use to assist students in their understanding of key academic language to express and develop their content learning and to provide varying supports for students at different levels of Academic Language development? How do these supports address all three Academic Language Demands (vocabulary, syntax, and discourse) ?	Students will calculate the volume of the given figure. Students will have access to Padlet board that includes all the assignments for this lesson. Students will watch the regular/irregular shapes video on the projector. After which, I do scaffolding by solving the first question in the interactive practice "Find the volume" and allow students to complete the activity. Then students will watch Brain POP video and answer the practice quiz to test their knowledge. Padlet has extra practice questions and a hands on activity to be performed at home and turn in the spreadsheet before due date. Students could use the formulas in Padlet to help them remember how to
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	calculate volume using the base and the height. At the end of the lessons students will add their comments on the board to discuss what they have learned today.
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Materials

Materials needed by teacher for this lesson. (such as books, writing materials, computers, models, colored paper, etc.)	Computer, Projector, Internet access, Brain POP, and Padlet.
Materials needed by students for this lesson. (computers, journals, textbook, etc.)	Computer, Internet access, Brain POP, QR Code Reader, Excel, and Padlet.

Lesson Timeline with Instructional Strategies & Learning Tasks

Amount of Time	Teaching & Learning Activities (This should be a BULLETED LIST)	Describe what YOU (teacher) will be doing and/or what STUDENTS will be doing during this part of the lesson. (This should be VERY DETAILED)
5 Minutes	<u>Introduction:</u>	<p>Good afternoon class, in the past lessons we have been talking about volume formulas and how we need to find the area of the shape and multiply it by the height to find the volume.</p> <p>Today we will learn more about how to calculate the volume for compound shapes. This means we need to divide the given shape into smaller shapes that we can calculate their volumes, then add them together to find the total volume of the shape. For irregular shapes we will use water displacement.</p> <p>This will help us in the future to calculate the volume of any given shape and understand more about geometry.</p>
30 Minutes	<u>Instruction:</u>	<p>Please look at the projector and let us watch this video together. You have this video and all the lesson materials in the Padlet board for future references. Please scan this QR code to get access to the board.</p>

Amount of Time	Teaching & Learning Activities (This should be a BULLETED LIST)	Describe what YOU (teacher) will be doing and/or what STUDENTS will be doing during this part of the lesson. (This should be VERY DETAILED)
		<p>Now, after we watched the video do you understand how we calculate the volume of compound shapes and irregular shapes? Any questions? Give me thumbs up if you understood everything in the video. Now, we will solve questions using the interactive “find the volume post on the Padlet board. How do you think we will solve this first one? Yes, that is right. Base x height. How about this second one? Yes, we will divide it into two rectangular prisms find their volumes separately and then add them together. I want you to work on the rest of the questions by yourself as I pass by to check your work. If you have any questions let me know.</p> <p>Please, log in to Brain POP watch the video about volume and answer the quiz. For homework you could get extra practice from the assignment on Padlet.</p> <p>Now, answer the questions in the work sheet provided and turn it in at the end when you are done.</p> <p>When you are done, I want you to add a comment on Padlet to the post that you thought was more helpful and summarize what you learned today.</p> <p>There is an activity that I want you to do. It is just as in the video we watched together. You will use water displacement and your formulas to calculate volumes of any four plastic toys you have at home. Make sure you ask your parents that it is okay to immerse these toys in water before you do the activity. I want you to</p>

Amount of Time	Teaching & Learning Activities (This should be a BULLETED LIST)	Describe what YOU (teacher) will be doing and/or what STUDENTS will be doing during this part of the lesson. (This should be VERY DETAILED)
		record your answers on the provided spreadsheet and turn it in before the due date.
10 minutes	Closure:	Today we have learned how to calculate the volume of compound and irregular shapes. This will help us in the future to calculate any shape and learn more about geometry. Now please clean your desk, get your lunch bags and coats, and get ready to go home. Please sit quietly at your desk and wait till they call for car riders and bus riders.

Accommodations/Modifications

<p>How might I modify instruction for: <i>Remediation?</i> <i>Intervention?</i> <i>IEP/504?</i> <i>LEP/ESL?</i> (All students who have plans mandated by federal and state law.)</p>	<p>I will use Padlet to allow easy access and organize lesson materials to facilitate learning.</p> <p>I will use video and interactive questions to engage students in the lesson and enhance learning.</p> <p>Students will use Excel (spreadsheets) to tabulate and graph results which will allow visual display of the results and facilitate learning.</p> <p>I will allow the ESL students to use a dictionary while doing any assignment, and pre teach key words.</p> <p>I will send home a study guide, and allow extended time for the IEP/504 students. I will also do close monitoring.</p> <p>I will give one student preferential seating to allow him to focus more on his work.</p>
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Differentiation

<p>How might you provide a variety of techniques (enhanced scaffolding, explicit instruction, contextualized materials, highlighters/color coding, etc.) to ensure all student needs are met? (All students who are not on specific plans mandated by federal and state law.)</p>	<p>I will use Padlet to allow easy access and organize lesson materials to facilitate learning.</p> <p>I will use video and interactive questions to engage students in the lesson and enhance learning.</p>
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	<p>Students will use Excel (spreadsheets) to tabulate and graph results which will allow visual display of the results and facilitate learning.</p> <p>I will use smaller groups for differentiated instructions for those that need more help.</p> <p>I will read the quiz out loud in order to help struggling readers.</p> <p>I will use color coding when needed.</p>
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Assessments: Formative and/or Summative

Describe the tools/procedures that will be used in this lesson to monitor students' learning of the lesson objective(s) (include type of assessment & what is assessed).	<input checked="" type="checkbox"/> Formative / <input type="checkbox"/> Summative	Show thumbs up and raise their hands if there are any questions.
	<input checked="" type="checkbox"/> Formative / <input type="checkbox"/> Summative	Checking the answers of the interactive questions on Padlet and BrainPOP
	<input type="checkbox"/> Formative / <input checked="" type="checkbox"/> Summative	Checking the answers of the worksheet.

Research/Theory

Explain connections to theories and/or research (as well as experts in the field or national organization positions) that support the approach you chose and justify your choices using principles of the connected theories and/or research .	<p>Non-linguistic representation was used in the videos to summarize the lesson because it follows Marzano's instructional strategies.</p> <p>Scaffolding was used because it follows Vygotsky's social-interaction theory and the zone of proximal development.</p>
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Lesson Reflection/Evaluation

<p>What went well?</p> <p>What changes should be made?</p> <p>How will I use assessment data for next steps?</p>	<i>TO BE FILLED IN AFTER TEACHING</i>
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Include supporting material such as slides, pictures, copy of textbook, and handouts for any activities students will be using as part of your lesson.

