

Chapter 8

8th Grade Self-Directed Unit 4/24-5/14

8.1 Volumes of Cylinders

8.2 Volumes of Cones

8.3 Volumes of Spheres

8.4 Surface Areas and Volumes of Similar Solids

Mrs. Kohrman's Wiki: <http://kohrman14.wikis.birmingham.k12.mi.us/>

Big Ideas Math Online Book: Make sure you know your username

For this unit you will explore multiple resources in order to achieve mastery of the Learning Targets in each section of Chapter 8. (These resources are available to you for any topics in any chapter - Learning to use these resources now, will help you in any math class in the future.) You may work alone or with a partner at any time to investigate the material and master the learning targets.

You will use your text book and on-line resources I have identified and posted on my wiki to learn the material in this unit. After accessing at least 2 of the instructional resource options (this may mean watching multiple instructional videos), you will complete and check the assignment for that chapter section.

After completing, checking and recording your score on your assignment, you must pass the "Mini-Assessment" for each section before moving on to the next chapter section. (This is like a 3-5 question "check-up." You must score 75% or above.) If necessary, you may need to utilize another one of the instructional resources I have suggested or work with me individually to achieve mastery of the content.

I am available during class and Academic Lab to clarify content once you have examined the **available resources** and you have identified areas of concern.

Besides using class-time wisely (this will be graded), completing assignments, and passing the mini-assessments, you will make a note-card summarizing each section, take 2 on-line quizzes, complete an on-line review and take an on-line practice test. The final Unit Test will be on Monday, May 14th.

Technology Use

During this unit, I will have laptops available for you to access the online materials identified in this unit. You may bring your own iPad, laptop, tablet, etc. to class if you choose. You must use your own headphones.

You may only use technology to access the material outlined in this unit. If you are accessing sites not related to the chapter, you will lose the privilege to be online for the rest of that day. (There are textbooks available in the class to use as a resource.) If you do not use technology appropriately, your tech privileges can be taken away for the duration of the unit. It would then be your responsibility to access the resources outside of school.

Expectations

This is a self-paced, self-directed unit. You are expected to use all class time responsibly. All work for the unit must be completed by 8:00 am on May 14th. Please note that during this unit, the 7th grade will be doing M-STEP testing. We will meet in class 9 times for a total of 9.5 hours. You will have an additional 6 hours of "study hall" time, and 4.5 hours of academic lab. That is a grand total of 20 hours of time in school that you have to complete this unit. You are responsible for completing all assignments, assessments, and record keeping as outlined in the unit packet regardless of the number of days you are actually in class. You may need to complete more work at home if you are scheduled to miss class. You will complete all assignments and assessments on notebook paper. ALL work will be collected - you will turn in all of your work in an organized fashion. This outline and all related work are due by the beginning of class on Monday, May 14th.

I understand the expectations for this unit and will use my time wisely and responsibly.

Student Signature _____

10 Extra Credit Points will be given for sharing this with a Parent!

Parent Signature: _____

8.1 Volumes of Cylinders

Learning Targets

- Understand Vocabulary: Volume, Circle, Radius, Diameter, Circumference, Base, Height
- Find the Volume of a Cylinder
- Formula for Volume = _____
- Find the Height of a Cylinder
- Apply Volume to Answer Real-Life Questions

What I did to Learn and Understand this Content (Pick at least 2).

<input type="checkbox"/> I read this section in my text book, looked at the examples, and understand how to do the "On your own" questions.	<input type="checkbox"/> I watched the 4 example tutorials on the Big Ideas Math website and understand the explanations. 1 2 3 4
<input type="checkbox"/> I watched the following Links to Lessons covering the topics in 8.1 (Listed on Mrs. Kahrman's Wiki.) 1 2 3 4 5 6 7 8	<input type="checkbox"/> Other: Explain.

Homework: Page 338 # 1-5, 9-12, 13, 15, 17

When I checked my Homework I had _____ out of 12 problems correct. ____%
On my Mini-Assessment I scored _____ (must be 75% or higher)

- I feel I understand this section and will be ready for the quiz and Quest.
- I have made a note-card or study guide page summarizing the learning targets for this section.

8.2 Volume of a Cone

Learning Targets

- Understand Vocabulary: Volume, Base, Radius, Diameter, Height, Square Root
- Find the Volume of a Cone
- Formula for Volume of a Cone _____
- Find the Height of a Cone
- Apply Volume to Answer Real-Life Questions

What I did to Learn and Understand this Content (Pick at least 2).

<input type="checkbox"/> I read this section in my text book, looked at the examples, and understand how to do the "On your own" questions.	<input type="checkbox"/> I watched the 3 example tutorials on the Big Ideas Math website and understand the explanations. 1 2 3
<input type="checkbox"/> I watched the following Links to Lessons covering the topics in 8.1 (Listed on Mrs. Kohrman's Wiki.) 1 2 3 4 5 6 7	<input type="checkbox"/> Other: Explain.

Homework: Page 344 #1-17 odd, 18

When I checked my Homework I had _____ out of 11 problems correct. _____%
On my Mini-Assessment _____ (must be 75% or higher)

- I feel I understand this section and will be ready for the quiz and test.
- I have made a note-card or study guide page summarizing the learning targets for this section.
- 8.1 and 8.2 On-Line Quiz: Score _____

8.3 Volume of a Sphere

Learning Targets

- Understand Vocabulary: Sphere, Hemisphere, Volume, Center, Radius, Cube Root, Composite Solid
- Formula Volume of a Sphere _____
- Find the Volume of a Sphere
- Find the Volume of a Composite Solid

What I did to Learn and Understand this Content (Pick at least 2).

<input type="checkbox"/> I read this section in my text book, looked at the examples, and understand how to do the "On your own" questions.	<input type="checkbox"/> I watched the 3 example tutorials on the Big Ideas Math website and understand the explanations. 1 2 3
<input type="checkbox"/> I watched the following Links to Lessons covering the topics in 8.1 (Listed on Mrs. Kohrman's Wiki.) 1 2 3 4 5 6 7	<input type="checkbox"/> Other: Explain.

Homework: Page 352 #1-6, 9-13, 14, 15, 18

When I checked my Homework I had _____ out of 14 problems correct. ____%
On my Mini-Assessment I scored _____ (must be 75% or higher)

- I feel I understand this section and will be ready for the quiz and test.
- I have made a note-card or study guide page summarizing the learning targets for this section.

8.4 Surface Areas and Volumes of Similar Solids

Learning Targets (This is a LOT of Content!)

- Understand Vocabulary: Similar Solids, Corresponding Dimensions, Proportional, Slant Height, Prism,
- Identify Similar Solids
- Find Missing Measures in Similar Solids
- Understand Ratio of Areas = Ratio of dimensions SQUARED
- Find the Surface Areas of Similar Solids
- Understand Ratio of Volumes = Ratio of dimensions CUBED
- Find Volumes of Similar Solids

What I did to Learn and Understand this Content (Pick **at least 3!**)

<input type="checkbox"/> I read this section in my text book, looked at the examples, and understand how to do the "On your own" questions.	<input type="checkbox"/> I watched the 4 example tutorials on the Big Ideas Math website and understand the explanations. <p style="text-align: right;">1 2 3 4</p>
<input type="checkbox"/> I watched the 4 Links to Lessons covering the topics in 8.1 (Listed on Mrs. Kohrman's Wiki.) <p style="text-align: center;">1 2 3 4</p>	<input type="checkbox"/> Other: Explain.

Homework: Page 359 #3-15

When I checked my Homework I had _____ out of 13 problems correct. ____%

On my Mini-Assessment I scored _____ (must be 75% or higher)

- I feel I understand this section and will be ready for the quiz and Quest.
- I have made a note-card or study guide page summarizing the learning targets for this section.

8.3 and 8.4 On-Line Quiz: Score _____



On-Line Review Assignment: Score _____

Practice On-Line Test: Score _____

Chapter 8 Unit Summary

8.1

	#of instructional resources You used
	Assignment score %
	Best Mini-Assessment score %

8.2

	#of instructional resources You used
	Assignment score %
	Best Mini-Assessment score %
	8.1 and 8.2 On-line Quiz Score %

8.3

	#of instructional resources You used
	Assignment score %
	Best Mini-Assessment score %

8.4

	#of instructional resources You used
	Assignment score %
	Best Mini-Assessment score %
	8.3 and 8.4 On-line Quiz Score %

Other Unit Scores

	Use of Class time (5 points each day, Total of 45 points)
	On-line Review Score %
	Practice Test Score %

Additional/Optional Review Work

- From The Text Book (answer keys are provided in class)









8.1-8.2 Quiz Review Pg 347 #1-10

8.3-8.4 Quiz Review Pg 362 #1-11





8.1-8.4 Chapter Review Pg. 366 #1-10

8.1-8.2 Quiz

Find the volume of the solid. Round your answer to the nearest tenth. (Section 8.1 and Section 8.2)

-  1. 
-  2. 
-  3. 
-  4. 

Find the missing dimension of the solid. Round your answer to the nearest tenth. (Section 8.1 and Section 8.2)

-  5. 
-  6. 

7. PAPER CONES The paper cone can hold 67.78 cubic centimeters of water. What is the height of the cone? (Section 8.2)

8. GEOMETRY Eight-inch diameters of the cylinder. How many times greater is the volume of the new cylinder than the volume of the original cylinder? (Section 8.2)





9. SAND ART There are 12.38 cubic inches of sand and 38.26 cubic inches of sand in the cylindrical container. How many cubic inches of sand are in the container? (Section 8.2)

10. ANICE CANS You are buying two cylindrical cans of juice. Each can holds the same amount of juice. What is the height of Can B? (Section 8.2)


Section 8.1-8.2 Quiz 347

8.3-8.4 Quiz

Find the volume of the sphere. Round your answer to the nearest tenth. (Section 8.3)

-  1. 
-  2. 

Find the radius of the sphere with the given volume. (Section 8.3)

- Volume = 4302π yd³ 3. 
- Volume = $\frac{4}{3}\pi r^3$ 4. Determine whether the solids are similar. (Section 8.4)

5. Find the radius of the composite solid. Round your answer to the nearest tenth. (Section 8.2)

6. Determine whether the solids are similar. (Section 8.4)

7. The prisms are similar. Find the missing width and height. (Section 8.4)

8. The solids are similar. Find the surface area of the red solid. (Section 8.4)

9. HAMSTER A hamster is in the shape of a sphere. What is the volume of the rat? Round your answer to the nearest whole number. (Section 8.3)









10. SIMILAR FIGURES The ratio of the corresponding linear dimensions of the similar pyramids is 2:3. The larger has a volume of 100 cubic inches. Find the volume of the smaller pyramid. (Section 8.4)

11. JACARIS The ratio is 3:4 when playing an arcade game. What is the volume of the gold pig? Round your answer to the nearest tenth. (Section 8.4)

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8 Chapter Test

Find the volume of the solid. Round your answer to the nearest tenth. (Section 8.1 and Section 8.2)

-  1. 
-  2. 
-  3. 
-  4. 

5. The pyramids are similar.

- Find the missing dimension.
- Find the surface area of the red pyramid.

6. SIMILAR The two solids are similar. You will not notice the cone-shaped glass or the cylindrical glass. Which glass holds more? Show how much more!

7. WAFFLE CONES The ratio of the corresponding linear measures of two similar waffle cones is 2:3. The smaller cone has a volume of about 28 cubic inches. Find the volume of the larger cone. Round your answer to the nearest tenth.

8. OPEN ENDED Draw two different composite solids that have the same volume but different surface areas. Explain your reasoning.

9. ANICE CANS Cans A has a diameter of 3 inches and a height of 4 inches. Can B has a radius of 2 inches and a height of 5 inches. Which can holds more waffle?

10. REASONING Which solid has the greater volume? Explain your reasoning.

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