

# 10th Grade Geometry - Unit 10 Area & Volume

Bronx Early College Academy

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15 April 2019

10.1 Solids and Their Cross Sections Monday 15 April

10.2 Geogebra - Area Situations in Sports Tuesday 16 April

10.3 Review for exam Wednesday 17 April

10.4 Exam Thursday 18 April

10.5 Dilation+similarity review Monday 29 April

10.6 Deltamath Volume Practice Tuesday 30 April

10.7 Density, trig review Friday 3 May

10.8 Compound volumes, trig Monday 6 May

10.9 Deltamath Volume & Trig practice Tuesday 7 May

10.10 Cross sections, revolutions Wednesday 8 May

10.10 Cross section list

10.11 Review: areas, 3-dimensional objects, trig Thursday 9 May

10.12 Exam: areas, 3-dimensional objects, trig Friday 10 May

## GQ: How do we slice 3-dimensional objects?

CCSS: HSG.CO.D.12 Congruence, geometric constructions

10.1 Monday 15 April

### Do Now: Solids handout

1. Review the handout
2. Open your notebook to Friday's lesson
3. Write from memory the formulas for a circle's circumference and area

Lesson: Solids and cross sections of 3-dimensional figures

Homework: Practice problems handout

## GQ: How do we measure the areas of competitive sports?

CCSS: MP5 Use appropriate tools strategically: dynamic geometry software 10.2 Tuesday  
16 April

Project: Quantify the area of a playing field of your choice

1. Write a paper illustrating the area of part of a playing field.
2. Spicy: Use color & line variations for clarity (not decoration)
3. Construct in Geogebra, compile in Word: add heading & title, text, and formulas using Microsoft's equation editor
4. Email me: Last-Title.pdf, with subject line & message
5. Rubric: correct, aesthetics, MLA & email standards

Homework: Complete project (due by 10:00 pm)

## GQ: How do we slice 3-dimensional objects?

CCSS: HSG.CO.D.12 Congruence, geometric constructions 10.3 Wednesday 17 April

Do Now: Review Exercises p. 189

1. Review for exam

Lesson: Test review, areas, volumes, density; cumulative review

Homework: Study for exam tomorrow

## GQ: How do we slice 3-dimensional objects?

CCSS: HSG.CO.D.12 Congruence, geometric constructions

10.4 Thursday 18 April

Lesson: Test

Homework: Vacation packet

## GQ: How do we use similarity to calculate triangle lengths?

CCSS: HSG.CO.D.12 Congruence, geometric constructions

10.5 Monday 29 April

Do Now: Similar triangles problem

1. Use dilation approach to solve for  $x$  and  $y$
2. Alternate method:  $\text{trig } \cos \theta$

Lesson: Review exam results

Homework: Test corrections

## GQ: How do we model 3-dimensional objects?

CCSS: HSG.CO.D.12 Congruence, geometric constructions

10.6 Tuesday 30 April

Lesson: Deltamath practice

Homework: Complete Deltamath assignment (due Thursday 10pm)



## GQ: How do we model 3-dimensional objects?

CCSS: HSG.GMD.A.3 Use volume formulas to solve problems

10.7 Friday 3 May

### Do Now: Volume warmup with trig ratio review

1. Using the formula sheet & calculators
2. Rounding practice
3. Simple trigonometry situations:  $\sin$ ,  $\cos$ ,  $\tan \theta$

Lesson: Volume with density problems

Homework: Handout packet mixed volume & trig review

## GQ: How do we model 3-dimensional objects?

CCSS: HSG.GMD.A.3 Use volume formulas to solve problems

10.8 Monday 6 May

### Do Now: Volume warmup with trig ratio review

1. Simple trigonometry situations:  $\sin$ ,  $\cos$ ,  $\tan \theta$ , including inverse functions
2. Triangle areas
3. Using the formula sheet & calculators

Lesson: Compound areas and volumes, density problems  
Angle of elevation

Homework: Handout packet mixed volume & trig review

## GQ: How do we model 3-dimensional objects?

CCSS: HSG.CO.D.12 Congruence, geometric constructions

10.9 Tuesday 7 May

### Do Now: Volume warmup with trig ratio review

1. Simple trigonometry situations:  $\sin$ ,  $\cos$ ,  $\tan \theta$ , including inverse functions
2. Triangle areas
3. Using the formula sheet & calculators

Lesson: Deltamath practice

Homework: Trig & area/volume handout

## GQ: How do we model 3-dimensional objects?

CCSS: HSG.GMD.A.3 Use volume formulas to solve problems 10.10 Wednesday 8 May

### Do Now: Volume warmup with trig ratio review

1. Compound volume, density problems
2. Trigonometry identity:  $\sin \theta = \cos(90 - \theta)$
3. Angle-Angle similarity

Lesson: Cross sections of 3-D objects

Constructing 3-D objects from revolutions: June 2018 #16

Geogebra link

Homework: Pretest handout packet

## GQ: What is the cross section of a 3-dimensional object?

CCSS: HSG.GMD.A.3 Use volume formulas to solve problems

Write in your notebook: What shape is produced by each example?

1. Cube: intersection with a horizontal plane
2. Cone: intersection with a horizontal plane
3. Cone: intersection with a vertical plane through its vertex
4. Hexagonal prism: intersection with a horizontal plane
5. Hexagonal prism: intersection with a vertical plane
6. Square pyramid: intersection with a horizontal plane
7. Square pyramid: intersection with a vertical plane

## GQ: How do we model 3-dimensional objects?

CCSS: HSG.GMD.A.3 Use volume formulas to solve problems 10.11 Thursday 9 May

Do Now: Handout, volume warmup, trig ratio review

Lesson: Review pretest questions

1. Sector areas and arc lengths; compound areas
2. Volume formulas, compound shapes, density problems
3. Unit conversions, rounding
4. Trigonometric situations
5. Solving for a missing input given a formula result
6. Trigonometry identity:  $\sin \theta = \cos(90 - \theta)$
7. Cumulative content of the year so far

Homework: Study for exam

## GQ: How do we model 3-dimensional objects?

CCSS: HSG.GMD.A.3 Use volume formulas to solve problems

10.12 Friday 10 May

### Assessment: Unit 10 test

1. Sector areas and arc lengths; compound areas
2. Volume formulas, compound shapes, density problems
3. Unit conversions, rounding
4. Trigonometric situations
5. Solving for a missing input given a formula result
6. Trigonometry identity:  $\sin \theta = \cos(90 - \theta)$
7. Cumulative content of the year so far

Homework: Cumulative review weekend packet