

# Mathematics Class Slides

## Bronx Early College Academy

Chris Huson

18 October 2018

4.1 Transversals & parallel lines, 18 October

4.2 Triangle internal angle measures sum to 180, 21 October

4.3 Laptops - Revision of angle bisector, 22 October

4.4 Sum of a polygon's internal angle measures, 23 October

4.5 Triangle, polygon external angle measures, radicals, 24 October

4.6 Laptops - Deltamath setup and Exit quiz, 25 October

4.7 Triangle and polygon external angle measures, 28 October

Classwork self-assessment

4.8 Laptop Project - Polygon angle sum table in Word, 29 October

4.9 Isosceles triangle base theorem, angle duplication 30 October

## GQ: How do we work with parallel lines?

CCSS: HSG.CO.A.1 Know precise geometric definitions

4.1 Friday 18 Oct

On scrap paper, practice constructions

1. A perpendicular through a point on a lines
2. Bisect an obtuse angle
3. Spicy: a hexagon (six adjacent equilateral triangles)

Review Khan Academy homework (worksheet homework makeup)

Lesson: Parallel lines crossed by a transverse line

Corresponding angles, alternate and same-side relationships

Axiom: corresponding angles are congruent when a transverse line intersects two parallels

Homework: Problem set 4-1 online Khan Academy

## GQ: How do we calculate the sum of a $\triangle$ 's internal angle measures?

CCSS: HSG.CO.A.1 Know precise geometric definitions

4.2 Monday 21 Oct

### Exam followup

1.  $B$  bisects  $\overline{AC}$  with  $AB = 3x$ ,  $AC = 24$ . Diagram & solve.
2. A ray's end point is  $T$ . It extends through point  $P$ . Diagram & name using proper notation.
3. Dr. Huson commutes from 80th Street. At what street is he half way to BECA?
4. Exam early finishers problems

Review exam results; Test corrections due Friday

Peer review of angle bisector papers

Lesson: Sum of a triangle's internal angle measures is  $180^\circ$

Homework: Problem set 4-2 Khan Academy complex angle situations

## GQ: How do we construct an angle bisector?

CCSS: HSG.CO.A.1 Know precise geometric definitions

4.3 Tuesday 22 Oct

### Laptops: Construct an angle bisector

1. Use Geogebra to construct an angle bisector
2. Write a short (one page) paper presenting your work
  - ▶ Use MS Word and follow MLA standards. (save as a template to the cloud)
  - ▶ What is the first step in your construction? What is its center?
  - ▶ How does Geogebra adjust the circles and rays as you move things around?

Early finishers: Khan Academy practice with parallel lines and triangles

Homework: Pretest problem set 4-3

## GQ: How do we calculate the sum of a polygon's internal angle measures?

CCSS: HSG.CO.A.1 Know precise geometric definitions

4.4 Wednesday 23 Oct

### Do Now: Area and perimeter, volume

- ▶ Area of a rectangle, parallelogram, and triangle
- ▶ Volume of a rectangular prism
- ▶ Solving for a missing dimension given the area or volume

Lesson: Polygons, the volume formula for a pyramid

Sum of a polygon's internal angle measures is  $(n - 2) \times 180^\circ$

Homework: Problem set 4-4 Khan Academy polygon internal angles

## GQ: How do we work with square roots?

CCSS: HSG.CO.A.1 Know precise geometric definitions

4.5 Thursday 24 Oct

Do Now: angle measures in parallelogram and polygon situations

1. Triangle external angles
2. Consecutive internal angles of a parallelogram
3. Polygon external angles

Types of quadrilaterals, area of a trapezoid

Triangle inequality theorem

Lesson: simplifying radicals, rounding

Test corrections due tomorrow

Homework: 4-5 Khan Academy Triangle side length rules

## GQ: How do we communicate patterns polygons follow?

CCSS: HSG.CO.A.1 Know precise geometric definitions

4.6 Friday Oct

### Online Deltamath practice: Khan Academy assignment

1. Complete assignments in order (1-5 problems each standard)
2. Show work on lined paper, to be handed in
3. Early finishers: make up Khan Academy assignments, projects

www.Deltamath.com Teacher ID 546068

Exit Pop Quiz: Deltamath (10 minutes)

Homework: Problem set 4-6 Khan Academy review problems



## GQ: How do we construct parallel lines?

CCSS: HSG.CO.A.1 Know precise geometric definitions

4.7 Monday 28 Oct

Do Now: angle measures in parallelograms & polygons

1. Triangle external angles
2. Consecutive internal angles of a parallelogram
3. Polygon internal angles

Lesson: Construction handout: duplicate a segment, angle

Construction of a parallel line through a point

Inserting a table in Microsoft Word

Homework: 4-7 handout, Triangle angle sum situations

## Proportion and scale factors ( $k$ )

CCSS: HSG.CO.A.1 Know precise geometric definitions

4.7 Monday 28 Oct

Classwork: Work these problems in your notebook using algebraic notation

1. Dr. Huson's commute is 84 blocks. How long is 75% of his ride?
2. An ivy plant is 3 inches long. If it triples in length over the month of November, how long will it be?
3. A water tank in the shape of a prism is 20 cm long, 10 cm deep, & 15 cm tall. How much water does it hold if it is 80% full? (1 milliliter = 1 cubic centimeter)
4. The segment  $\overline{AB}$  is doubled in length to make  $\overline{ABC}$ . If  $AC = 6.4$ , find  $AB$ .

## GQ: How do we work productively?

CCSS: IB Trait - Reflection

4.7 Monday 28 Oct

### Classwork engagement assessment criteria

1. Respectful - Quietly and attentively listen to speaker. Speak loudly and clearly when called on.
2. Notes - Take out paper & notebook. Show work as algebra equations. Write definitions, formulas, theorems, and examples in your notebook.
3. Work - Independently and quietly apply yourself to assignments. Start quickly, be ready to leave on time.
4. Get help - Show grit, don't give up easily. Check your notes, then click for hint. Ask your partner. Raise your hand, but if the teacher is not immediately free, keep working.

Rate yourself 0-10 for each criterion

Write it on the top right of your paper before you turn it in.

## GQ: How do we communicate patterns polygons follow?

CCSS: HSG.CO.A.1 Know precise geometric definitions

4.8 Tuesday 29 Oct

### Project: Exploration of a polygon's internal angles measures

1. Use Geogebra & MS Word to write a 1-2 page paper
2. Include a polygon with dotted diagonals.  
Spicy: add color, marked angle measures
3. In MS Word add a table and use the equation editor.  
Spicy: put equations in the table, add a caption to the table
4. Follow MLA format. If not a single page, manage page break
5. Email pdf and MS Word .docx files  
Subject line: Polygon exploration

Homework: Complete exploration paper (10:00 deadline)

## GQ: How do we construct parallel lines?

CCSS: HSG.CO.A.1 Know precise geometric definitions

4.9 Wednesday 30 Oct

### Do Now: Constructions

1. Segment bisector
2. Perpendicular through a point
3. Triangle circumcenter

Lesson: Construction handout: duplicate a segment, angle

Construction of a parallel line through a point

Isosceles triangle base theorem

Homework: Problem set 4-9 (study and review for test Friday)