Mathematics Class Slides

Bronx Early College Academy

Chris Huson

9 October 2018

BECA / Dr. Huson / Geometry Unit 1

Project criteria

Notetaking criteria

2.1 Drui: Induction, pattens. Monday 15 October

2.2 Drui: Deltamath. Tuesday 16 October

2.3 Drui: Induction, logic. Wednesday 17 October

2.4 Drui: Conditional statements, logic. Thursday 18 October

2.5 Drui: Converse, contrapositive, definitions. Friday 19 October

2.6 Drui: Deductive logic, two column proofs. Monday 22 October

2.7 Drui: Deltamath. Tuesday 23 October

2.8 Drui: 2-column addition proofs. Wednesday 24 October

2.9 Drui: Review. Thursday 25 October

2.10 Drui: Test. Friday 26 October

2.11 Drui: Addition proofs, transversals. Monday 29 October

2.12 Drui: Deltamath. Tuesday 30 October

2.13 Drui: Transversals. Wednesday 31 October

2.13 Project: Triangle centers paper, Wednesday 31 October

2.14 Drui: Transversals. Monday 5 November

2.14+ Drui: Transversals. Wednesday 7 November

2.15 Drui: Trimester exam. Thursday 8 November

GQ: How do we present mathematical work?

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

Complete binder: Due Friday
Exam 1 + corrections; exam 2 (optional corrections); 5 best construction:
Equilateral triangle, Congruent segment & angles, bisected segment & angle

Criteria for construction projects

1. Complete and correct construction
2. Steps written with proper notation
3. Layout: GQ title, date on left; first & last name on right
4. Precise, elegant, mathematical aesthetic

Grading policy: full credit 20, minus 2 points for each missing

GQ: How do we organize our mathematical notes?

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

Criteria for notebook project grade (20 points)

1. Your name and "Geometry" on cover
2. Toward front: math.huson.com, husonbeca@gmail.com, 917-648-5632, Deltamath teacher ID: 546068
3. Labeled composition book out during class; GQ, date each day
4. Definitions, postulates, constructions, & theorems
5. Combination of symbols, diagrams, text (best: your own words)
6. Examples, but not practice problem sets

Grading policy: daily tracker, pop notebook checks

GQ: How do we reason logically?

CCSS: HSG.GPE.B.7 Compute areas and perimeters using the distance formula 2-1

Do Now: Area practice. Given the polygon with vertices $M(4,0), A(8,0), T(8,4), H(4,4)$

1. Sketch *MATH*. What kind of polygon is it?
2. Find the area and perimeter of *MATH*.
3. Spicy: A circle is inscribed in the polygon, centered at $C(6,2)$ and touching each side in one spot. Find the area and perimeter of circle C.

2-1 Inductive logic pp. 82-84
Classwork problems 6-30 odds p. 85

Homework: Perimeter & area practice

GQ: How do we use geometric notation?

CCSS: HSG.CO.D.12 Congruence, Make geometric constructions 2-2

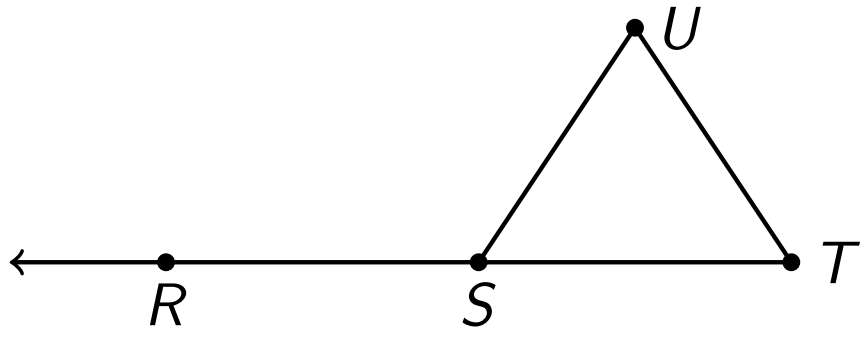
Deltamath practice

Homework: Complete deltamath (10pm deadline)

GQ: How do we apply the equilateral triangle construction?

CCSS: HSG.CO.D.12 Congruence, Make geometric constructions 2-3

Do Now:



1. Given $m\angle RSU = 115°$. Find $m\angle TSU$
2. Given S bisects $\overline{RT}$, $RS = \frac{1}{5}(x+8)$ and $ST = x$. Find RT.

Equilateral triangle construction applications, Engage workbook

Homework: Engage workbook

GQ: How do we reason logically?

CCSS: HSG.CO.C.9 Prove geometric theorems 2-4

Do Now: Euclidean constructions

1. Construct a perpendicular to a line through a given point
2. Duplicate a given line segment
3. Bisect a given angle

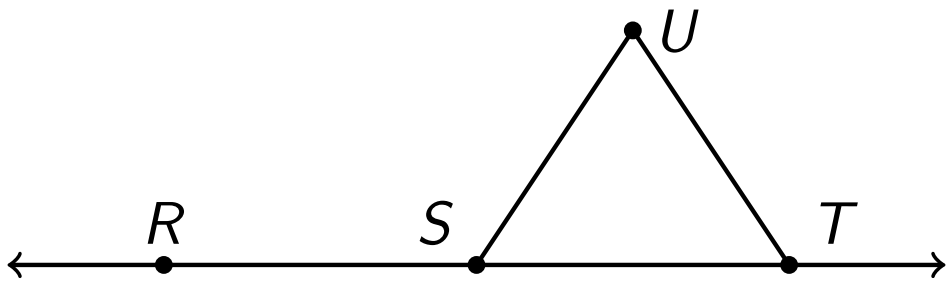
New construction: Duplicate an angle
2-2 Conditional statements, logic pp. 89-92
Classwork problems 5-24 odds p. 93

Homework: Engage workbook Lesson 3 Problem Set p. S.17.
Spicy: Engage workbook Lesson 2 Challenge 1, 2 p. S.8, S.9

GQ: How do we reason logically?

CCSS: HSG.CO.C.9 Prove geometric theorems 2-5

Do Now: Sketch and label the figure shown



1. Name two opposite rays
2. Given $m\angle TSU = 55°$. Find $m\angle RSU$
3. S bisects $\overline{RT}$, $RT = \frac{1}{2}(3x + 15)$ and $ST = x + 3$. Find RS.

2-2 Conditional statements, logic pp. 89-92
Classwork problems 5-24 odds p. 93
Homework: Engage workbook Lesson 4 Problem Set p. S.22-23
Spicy: #3 p. S.24

GQ: How do we use deductive logic?

CCSS: HSG.CO.C.9 Prove geometric theorems 2-6

Do Now: Area practice.

1. Find the area of rectangle with length 3.5 and width 7.1.
2. Find the width of rectangle with length 17.5 and area 84.
3. Spicy: Find the dimensions of a rectangle with area 84 having length five greater than its width.
4. Given an example of the distributive property.

2-5 Congruence, addition proofs pp. 113-116
Classwork problems 5-13 p. 117

Homework: Engage workbook Lesson 5 Problem Set p. S.29-30

GQ: How do we calculate area and perimeter?

CCSS: HSG.CO.D.12 Congruence, Make geometric constructions 2.7

Deltamath practice

Homework: Complete deltamath (10pm deadline)
Engage workbook Lesson 6 Problem Set p. S.37

GQ: How do we use deductive logic?

CCSS: HSG.CO.C.9 Prove geometric theorems 2-8

Do Now: Handout review and practice.

Lesson: 2-6 Congruence, addition proofs pp. 120
Classwork problems 5-24 odds p. 124

Homework: Pre-test review packet

GQ: How do we apply the properties of angle pairs?

CCSS: HSG.CO.D.12 Congruence, Make geometric constructions 2-9

Do Now: Handout angle calculation problems review and practice.

Lesson: Pretest review of constructions, angle properties, logic terminology, algebraic methods (textbook through p. 105)
Students work packet problems on board

Homework: Study for exam tomorrow

GQ: How do we use the tools of geometry?

CCSS: HSG.CO.A.1 Know precise geometric definitions 2-10

Do Now: (Test)

Test

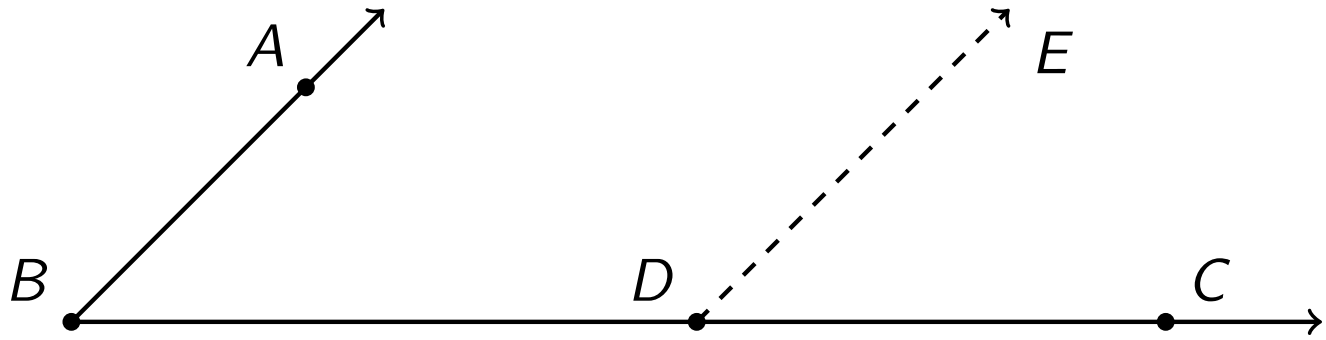
Homework: Angle measure algebra problems

GQ: How do we name the angles of a transversal?

CCSS: HSG.CO.C.9 Prove geometric theorems 2-11

Do Now: Vertical angle proof applications

1. Lesson check #1, 6, 12 p. 124 from textbook
2. Spicy: #33, 34 p. 127
3. Spicy: Given $\angle ABC$, construct duplicate $\angle CDE$



Transversal and corresponding angles pp. 140-142
Classwork problems 17-23 p. 144

Homework: Handout transversal practice and median construction

GQ: How do we construct the centroid?

CCSS: HSG.CO.D.12 Congruence, Make geometric constructions 2.12

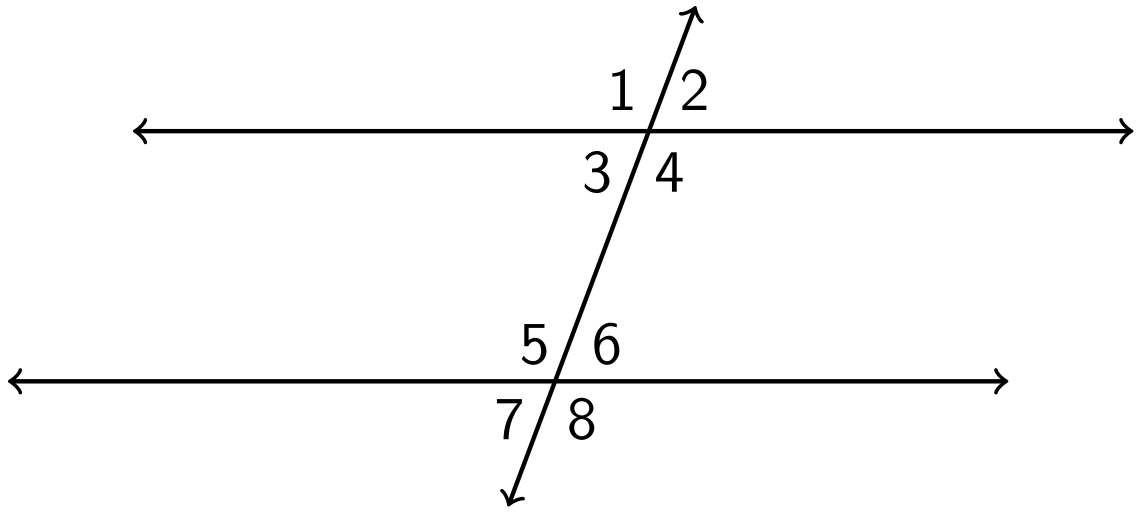
Deltamath practice: triangle centers, transversal practice

Homework: Complete deltamath (10pm deadline)
Graph midpoint practice

GQ: How do we compare the angles of a transversal?

CCSS: HSG.CO.C.9 Prove geometric theorems 2-13

Do Now: Given two parallel lines shown, $m\angle 5 = 110$. Find all other angle measures.



Transversal angle theorems pp. 148-152
Classwork problems 7-9, 12-17 p. 153

Homework: Triangle center project
Engage workbook lesson 7 classwork p. S38-39 mild, spicy p. S40

GQ: How do we construct the centroid, circumcenter, incenter, and orthocenter?

CCSS: HSG.CO.C.9 Prove geometric theorems 2-13

Construction project: Triangle centers

1. Circumcenter: perpendicular bisectors
2. Incenter: angle bisectors
3. Orthocenter: altitudes (perpendiculars through vertices)
4. Centroid: medians (midpoint to opposite vertices)

We will have time at Kipps Bay Center. Due Monday

GQ: How do we set up a geometry problem?

CCSS: HSG.CO.C.9 Prove geometric theorems 2-14 Monday Nov 5

Do Now: Formulating geometric situations, handout

1. When are two angles congruent? Two line segments?
2. When are angles supplementary or complementary?
3. What theorems justify the answers?

Triangle center project due today (math.huson.com list)
Exam review

Homework: test corrections due Wednesday
Trimester final exam Thursday

GQ: How do we construct triangle centers?

CCSS: HSG.CO.C.9 Prove geometric theorems 2-14

Triangle center project time
Exam review
Kipps Bay youth center

GQ: How do we set up a geometry problem?

CCSS: HSG.CO.C.9 Prove geometric theorems 2-15 Thursday Nov 8

Trimester final exam

GQ: How do we quantify slope?

CCSS: HSG.CO.C.9 Prove geometric theorems 2-16 Friday Nov 9

Do Now: Justify the congruence statements

iff means "if and only if," i.e. both statement and converse

Theorems:
The sum of a triangle internal angle measures is 180°
Different lines have equal slopes *iff* they are parallel
Lines are $\perp$ *iff* the product of their slopes is -1

Homework: Triangle and slope practice, handout