Mathematics Class Slides

Bronx Early College Academy

Chris Huson

4 November 2019

5.1 Transformations intro, dilation constructions, 4 November

5.1 Transformations intro, dilation constructions, 4 November

5.2 Dilation calculations of triangle, 6 November

5.2 Project rubric - Polygon angle sum table in Word

5.3 Unit conversions in real world situations, 7 November

GQ: How do we construct a triangle with double the side lengths?

CCSS: HSG.CO.A.1 Know precise geometric definitions 5.1 Monday 4 Nov

Do Now: Exam early finishers problems

1. Modeling geometric situations with an algebraic equation
2. Complex angle combinations
3. Constructions with a purpose

Review exam results; Test corrections due Friday
Dilation constructions
Lesson: Translation, dilation, reflection

Homework: Problem set 5-1 Khan Academy transformations (due Tuesday 10:00PM)

GQ: How do we notate transformations?

CCSS: HSG.CO.A.1 Know precise geometric definitions 5.1 Monday 4 Nov

Terminology and notation for transformations

1. A preimage is mapped to the image, $A \to A'$
2. Translation or slide: $T_{+1,-3}$ or $(x, y) \to (x + 1, y - 3)$ (or as a vector or arrow)
3. Rotation around a point by an angle measure, $R_{30^\circ,(0,0)}$
4. Reflection over a line, r_{x-axis}
5. Dilation by a factor k centered at a point, $D_{\times 2,(0,0)}$

Rigid motions or isometries are transformations that maintain lengths and angles (translation, reflection, rotation, but not dilation)

GQ: How do we calculate the lengths of △s under dilation?

CCSS: HSG.CO.A.1 Know precise geometric definitions 5.2 Wednesday 6 Nov

Do Now: Dilation of a triangle

- Dilate a given triangle with scale factor $k = 3$
- Calculate the resulting lengths of the image
- Solve for the scale factor and apply it

Portfolio binder checklist, due Wednesday (parent conferences)
Lesson: Triangle in standard position, side length notation
Modeling with $A'B' = k \times AB$

Homework: 5.2 Khan Academy dilation practice

GQ: How do we communicate patterns polygons follow?

CCSS: HSG.CO.A.1 Know precise geometric definitions 4.8 Tuesday 29 Oct

Project rubric: Polygon paper, 29 October
Use Geogebra & MS Word to write a 1-2 page paper

1. Include a polygon (20)
2. Dotted diagonals (5)
   Spicy: add color, marked angle measures (+5, +5)
3. In MS Word table (20)
4. Use the equation editor (20)
   Spicy: Caption to the table (+5)
5. Follow MLA format. (20)
   If not a single page, manage page break (-5)
6. Email pdf and MS Word .docx files
   Subject line: Polygon exploration (5)

GQ: How do we apply unit conversions in real world situations?

CCSS: HSG.CO.A.1 Know precise geometric definitions 5.2 Wednesday 6 Nov

Do Now Handout: Applied situations

- Floorplan square footage and wall surface area
- Conversions to desired requirements (cost, time, supplies, etc.)
- Volume

Portfolio binder checklist, due next Wednesday (parent conferences) Lesson: Rates of coverage, cost, weight, work

Unit conversions: $\times \frac{\text{desired unit}}{\text{given unit}}$

Homework: 5.3 Deltamath Prequiz (online Do Now quiz tomorrow)