Daily Lessons – Rigid Transformations

Tues-Wed, October 22-23, 2019

Objective: I can discover and apply properties of rigid transformations, understanding the connection to congruence.

* Intro to unit/ test make-up issues
* Create a graphic organizer about transformations, reading from pp 79-81 in textbook.
* Share good work and ideas.
* Reflection investigation on pp 81-82. One of the choices on Step 5 is false, which is it.
* Share results. Add to notes
* Translation investigation on pp 82-83. Ms. Bogart does the patty paper, you do step 5 on p 83. (BTW, All are true.)
* Add to notes about translations. Since all will be done on graph paper, look at the rule: (x,y) → (x+2, y-3) means move the figure 2 to the right and 3 down on a coordinate grid. In vector notation, this is written <2,-3>
* Patty paper: use patty paper to rotate about a point by creating a polygon on graph paper, tracing, and rotating. Model what this would look like for a triangle centered at the origin.
* HW #1 – pp 85-86: 1-14, 21-23. Use graph paper. Use patty paper for the rotation.

Next quiz: End of class on Tues-Wed, 18 pts; basics of reflect, rotate, translate

Thurs-Mon, October 24, 28, 2019

Objective: I can interpret and apply the concepts of rigid transformation using appropriate tools and preferred strategies, understanding multiple representations and approaches.

* Graph paper investigation from pp 114-115.
* Take a grade on HW #2 – 4 pts
* Share investigation, class questioning to get what each does (FITB on p 373)
* Use switching x and y to preview inverse in Algebra II.
* Rotation in coordinate plane: using negative reciprocal slopes instead of memorizing algebraic rule.
* Understanding how to use algebraic rules to do coordinate transformations.
* Rotate a segment 90 degrees CC and Cl by the method of your choice.
* HW #2 – p 115-118: 1-2,4-6, 9, 11-17,20,22,27
* Go over HW #1, questions.
* View tests/finish tests

Quiz over basics of transformations – Tues-Wed, Oct 29-30, 18 pts

Tues-Wed, October 29-30, 2019

Objective: I can use tools and favored strategies to transform figure in the coordinate plane, including composition of transformations.

* Warm-up: preview: Big ideas – There is more than one way to get there. Use good math words to describe your thinking. Can I describe congruent figures by a series of rigid transformations (a composition of transformations)?
* Investigations: 1)translations, vocabulary and terminology, different approaches
* Investigation #2: translate to find pre-image: what does an “undo” rule look like in translation as opposed to reflection (last problem on HW)
* Take a grade on HW #2 – 4 pt
* Investigation #3: multiple transformations of the same figure: A → A’ → A”. Vocabulary: congruent figures, composition of transformations.
* Geometric figures are congruent if one can be mapped exactly onto the other through a sequence of rigid transformations. Define in GT. EX) Translate 4 up and reflect across y-axis.
* Composition: two or more transformations: A → A’ → A” etc./ sometimes written with one rule (we will do this for two translations). (define in GT)
* Go over HW, share investigations as we go; what did you learn?
* Investigation #4 – practice describing a sequence of rigid transformations and sketches to prove (or disprove) congruence. OR Practice rotation OR Both
* HW #3 – worksheet 1-5, 7-9 and textbook p 13); 1a-f, 2a-e, 4a-e.
* Quiz hints: first part is FITB from first day notes, 3 multiple choice, one open response (basics of rigid transformations). HW worksheet is good help.
* OB – did the rotation activity (Aussie), 1-5 on the worksheet, and the quiz. So 0B HW has an additional worksheet on rotation.

Quiz Tues-Wed, 18 pts (see description above)

Thurs-Fri, Oct 31 – Nov 1, 2019

Objective: I can interpret and apply the concepts of compositions of rigid transformations and rotations around a point including a point that is not the origin.

* Warm-up: graph horizontal and vertical lines, y=x, and y=-x. Translation investigation #4 (a composition with a translation followed by a reflection). Multiple ways to do this.
* Take a grade on HW #3 – 4 pts
* Rotation Activity (Aussie)
* Share warm-ups, answers to HW #3 (carefully), questions. Use problem 9 on worksheet to practice reflecting across a horizontal or vertical non-axis.
* Use problem 10 on HW #4 worksheet to apply the idea of congruence in terms of rigid motion. Can you see a way to get from ABC to A”B”C”? (0B only), other classes, homework.
* Quiz over transformations (18 pts)
* HW #4 – performance task with triangles, due next class; rotation worksheet, #10 on previous night’s worksheet.
* NEXT TIME: 8 PT MULTIPLE CHOICE FORMATIVE ON CHROMEBOOK.
* Wed-Thurs, Nov 6-7, Unit Test – 60 pts

Test Wed-Thurs, Nov 6-7, 2019 – Transformations – 60 pts. Topic list and review next block. Test will be Multiple Choice (quite a bit), short answer, and extended response with multiple parts.

Mon-Tues, Nov 4-5, 2019

Objective: I can determine lines of symmetry and rotational symmetry (in degrees) in geometric figures. I can explain why or why not figures are congruent in terms of a sequence of rigid transformations.

* Warm-up: Read pp 318-320 in textbook with partner carefully. Pay attention to highlighted words. What is point symmetry and what does it have to do with rotations? What is line symmetry and what does it have to do with reflections? What is a glide reflection? Is it a composition?
* Do investigation on p 319, adding a line for 360/# of sides of regular polygon to find degrees of rotational symmetry for each figure. Rule: n sided regular polygon has n lines of symmetry, n rotational symmetries around point of symmetry, and 360/n degrees of rotational symmetry.
* Take a grade on HW #4 – 4 pts
* Go over HW/ questions.. use to transition to “are these congruent?” 3 problems to describe a sequence of rigid transformations to map one figure onto another.
* Share student ideas.
* Multiple Choice Formative
* Pass out test topics and review worksheet (HW #5).

Test Wed-Thurs, Nov 6-7: 60 pts – Rigid Transformations

Wed-Thurs, November 6-7, 2019

Objective: I can demonstrate mastery over rigid transformations.

* Check/question review. Use to hit important topics.
* More practice from problems assigned by Ms. B and Ms. B.
* Investigation 4.1 – Triangle Sum is 180 degrees (draw triangle, tear into 3 pieces, fit angles on a line). Glue into in class section.
* Transformation Test – 56 pts
* HW #6 – p 207: 2-9