Pre-AP Geometry Polygons and Algebra Unit

Fri-Tues, February 16,20, 2018

Objective: I can discover and apply polygon sum theorems.

* Investigation on board: put diagonals from one vertex of different polygons and count the degrees of the triangles formed, which is equal to the sum of the interior angles of the polygon. C-34: 180(n-2). Do 1-2 on p 257; figure out C 34 – each angle of equiangular
* Mathopenref – demonstration of exterior angles – what is a set of exterior angles, total degrees of exterior angles (one set) is always 360. What is one in a regular? How do you get it? What is one interior angle in a regular? Multiple ways to get it.
* How are these two different expressions the same for one interior angle in an equiangular polygon?
* Write up C- 32, 33, 34 from pp 256-7 and 261 (no sketch needed on #34)
* Take grades on HW # 13 - Unit Review – 6 pts
* 0B and 6th – view tests
* Intro to unit. Issues with ACTM. Make-up issues
* HW #14: p 257-8:3-12, p 262: 2-11. Copy charts or write equations, or show arithmetic on missing info in sketch. Start in class.

Wednesday, Feb 21 and Monday, Feb 26, 2018

Objective: I can discover, prove, and apply kite and trapezoid definitions and properties.

* Warm-up: on index card – view sketches on board and make up a definition for kite and for trapezoid.
* Warm-up in notebook: quick review of new conjectures: nonagon angle sum, exterior angle sum, equiangular single interior and exterior angle.
* Share and reach consensus definitions of kite and trapezoid. Add to Geometric Truth with good labeled sketches from pp 266 and 267. Also add: “isosceles trapezoid” – trapezoid that has congruent non-parallel sides – (with sketch from board). Discuss “new definition” of trapezoid. Vote not to use.
* Go over warm-up and HW, questions? How to look and sketches and connect to conjectures (What do I know vs What do I do?)
* Fill-in-the-blank proof of: non-vertex angles of a kite are congruent; the diagonal connecting the vertex angles of a kites is an angle bisector.
* Discussion: deductive explain with input why the diagonals of a kite are perpendicular, and that only one of the diagonals is a perpendicular bisector of the other. Tools to write up C-36-37 on p 267:
* Class questioning: trapezoid properties: C-39 – Consecutive angles between bases of a trapezoid are supplementary. Isosceles trapezoid properties – C-40 Pairs of base angles of an isosceles trapezoid are congruent. C-41 (will prove in homework) – diagonals of an isosceles trapezoid are congruent.
* HW #15: pp 269-70:1-6, 15, Write up C-35-41 on pp 267-269 in Geometric Truth.

Quiz next week on 5.1-4 – about 28 pts.

Thursday-Friday, February 22-23, 2018

Objective: I can apply midpoint and slope formulas to solve problems.

* Check previous night’s homework. Ms. Bogart will take a grade during the next block.
* Read about midpoint on p 36-37.
* Start HW #15 (add to 15 for A day) – p 37: 1-4, 8 (only do rectangle on #8)
* Read about slope and slope “steps” on p 133
* Add to HW #15 – p 134:1-5
* Check answers from screen.
* Read about parallel and perpendicular on p 165. Also read notes on left center of board.
* Add to HW #15 – p 167: 1-4, 7-11. On 7-9 you can count rise and run. On all other problems use the slope formula.
* Make-up tests need to be done during advisory on Thursday or before.

Tues-Wed, Feb 27-28 (B day, then A day)

Objective: I can discover, prove, and apply parallelogram definition and properties.

* ACTM announcements
* Warm-up: Fill in the Blank proof of C-45 and C-47 – opposite sides and angles of a parallelogram are congruent. (Get from neighbor). Also define parallelogram – a quadrilateral with opposite sides parallel.
* Take a grade on HW #14 – 5 pts and HW #15 – 5 pts (if not done already)
* Share W-U, HW answers for #15, answers to conjectures 35-41 (except in 1st).
* Discuss C-46 and why we should already know that consecutive angles in a parallelogram are supplementary.
* Discussion/argue proof of C-48 – diagonals of a parallelogram bisect each other (share a midpoint).
* HW #16 – pp 281-3: 1-6, 11, 16-18; write up C-42-45 from pp 279-80.
* Make sure you have conjectures caught up so that a grade can be taken next block on your Geometric Truth section.
* Quiz Monday-Tuesday on 5.1-4. Topics handed out next block. About 30 pts. It will contain True/false.

Test Thursday-Friday, March 15-16.

Thurs-Friday, March 1-2

Objective: I can investigate and apply trapezoid midsegment conjecture. I can prove and apply rectangle, rhombus, and square definitions and properties.

* Quiz topics on board. New seats in all but 1st.
* Define: trapezoid midsegment
* Investigation 5.4.3 – pp 274-5
* Write up C-43 (The midsegment of a trapezoid is parallel to and half the sum of its bases.)
* Answers to HW/ questions
* Practice: applying trapezoid, kite, and midsegment properties. Self-check.
* Prove: diagonals of a rectangle are congruent.
* Write up C-52 (for homework)
* HW #16c – p 276:6-7,13-15, p 283;15

Mon-Tues, March 5-6

Objective: I can demonstrate mastery over polygon sums, kite, and trapezoid properties and slope. I can prove type of quadrilateral using slope and distance. I can prove rhombus properties..

* Warm-up: Given 4 vertices, find slopes of sides and determine type of quadrilateral (2 big problems).
* Take a grade on HW #16 – a-c (6 pts) (in some classes). Finish grading Geometric Truth – 5 pts.
* Fill in the blank proof on board: Define rhombus. Prove: rhombus diagonals bisect its angles. (C-51)
* Check HW and warm-up. Time for questions. Are all of your conjectures correct?
* Argument: Are diagonals of a rhombus perpendicular bisectors of each other? (C-50). And a square is a parallelogram, a rhombus, and a rectangle, so all of Conjectures 45-52 are true for squares.
* HW #17 – pp 290-292:1-16, 25. And write up C-50-53 from pp 288-290.
* Quiz 5.1-4 – 31 pts

Test on Thurs-Fri next week. Test will be about 90 pts.

Wed-Thurs, March 7, 2018, A day

Objective: I can apply definitions and properties of quadrilaterals (with algebra) to find information and type of quadrilateral. I can graph lines and write equations of lines. I can prove rhombus diagonals are perpendicular bisectors of each other.

* Warm-up: given 4 pts, type of quadrilateral. Graph these lines (1st only).
* Take a grade on HW #17 – 4 pts; also take grades on Geometric Truth – 5 pts if not already taken.
* Go over homework and warm-up. (did not go over HW in 1st period)
* FITB proof of rhombus diagonals are perpendicular bisectors of each other.
* Copy Venn Diagram from board and use to do A/S/N
* Notes and Practice over writing equations of lines, different forms of equations of lines, changing pt/slope to slope/intercept.
* HW #18 – p 212: 1-2,4, 6-11, 13. Write in point/slope, you can change to Slope/Intercept form.

Thursday, March 8, 2018 – B day

Objective: I can apply concepts and skills from this unit to prove types of quadrilaterals algebraically, to prove properties deductively, and to graph lines.

* Copy Venn Diagram from board about types of quadrilaterals.
* Fill-in-the-blank proof: rhombus diagonals perpendicular bisect each other.
* Graph 6 lines and check for accuracy (2nd and 3rd only, 1st went over HW #17)
* Given 4 vertices, prove type of quadrilateral (2 different quadrilaterals, answers provided in class, attached on blog).
* In-class practice: use properties to solve for x (8 problems)
* HW #18 handout – (attached on blog) (This is only for B day.) Find perimeter and area and describe quadrilateral. A/S/N, properties MC.
* No grading because Ms. Bogart was at Math Task Force.

Unit Test next Thurs-Fri, March 15-16, 90 pts

Fri-Mon, March 9, 12, 2018

Objective: B-day: I can write equations of lines in point/slope for a variety of situations. Both days: I can determine type of quad based on vertices; I can prove opposite sides of a parallelogram congruent. I can apply quadrilateral properties to solve problems.

A day

* Fill-in-the-blank proof of Opposite sides of a parallelogram are congruent.”
* Slope, midpoint, and length of diagonals to prove type of quadrilateral (1 problem).
* Check answers to HW #18 (algebra from Wednesday). Substitute initialed for completion. Will be graded by Ms. Bogart next time.
* 2nd and 3rd period – graph 6 lines and check for accuracy.
* HW #19, due next block but work in class – review worksheet for unit test.

B day

* Same proof and proving type of quad from vertices as A day.
* Take a 4 pt grade on HW #17 and a 4 pt grade on HW #18. Grade GT if not already graded.
* Students checked their answers to HW #18 (the area and perimeter worksheet) and asked questions.
* Notes and Practice – writing equations of lines in point/slope and changing to Slope/Intercept Form.
* HW #19 - 6 pts due next block, same worksheet as A day and also: p 212:4, 6-7, 10-11, 13.

Test Thurs-Fri, 90 pts

Tues-Wed, March 13-14, 2018

Objective: I can apply skills and concepts related to polygon sum, quadrilateral properties, proof, and equations of lines.

* Pass out study guide and go over for suggestions for studying, note problems from pp 300-302 and p 263 due next time (listed on study guide, attached on blog).
* Fill-in-the-blank proof of Isosceles trapezoid base angles are congruent.
* Take a grade on HW #19 – 4 pts on A day, 6 pts on B day.
* Always/Sometimes/Never practice and Must be/could be practice.
* Check answers to review, warm-ups, and p 212.
* Some classes – naming polygons, summing angles, etc. practice.
* HW #20 – half-page algebra review plus textbook work listed on study guide (start working in class).
* Return quizzes/ questions.

Thurs-Fri, March 15-16, 2018

Objective: I can demonstrate mastery over polygon sums, quadrilateral properties, slope, distance, midpoint, equations of lines, and quadrilateral proofs.

* Go over HW #20, questions.
* Unit Test – 90 pts