Pre-AP Geometry Polygons and Algebra Unit

Tues-Wed, Feb 25-26

Objective: I can discover and apply polygon sum theorem.

* 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-31. Sum of the interior angles of a polygon with n sides is 180(n-2).
* Write up C-29: Sum of the interior angles of a quadrilateral is 360 degrees. AND Conj 31, listed above. There is a good sketch on p 263 of textbook.
* In class work for A day: p 264: 1-14,21. Finish for HW
* In class work for B day (shortened schedule): p 264: 1-8, p 270: 5-10. Finish for HW.
* B day also investigated and proved the Exterior Angle Sum Theorem – C-32: The sum of a set of exterior angles of a polygon is 360 degrees. We went back to a triangle problem from Chapter 4, we proved deductive and made notes, we looked at demonstration on mathopenref.
* In 1st period – Ms. Bogart did an overview of the unit. On A day, we named special quadrilaterals from sketches on the board.

Thurs-Fri, February 27-28, 2020

Objective: I can construct definitions of quadrilaterals and identify them. I can discover and apply conjectures about exterior and interior angles of polygons.

* In 0B, 1st and 2nd – Give vertices of a quadrilateral, find the slopes of the sides. What is it?
* In 1st – 3rd – Investigate the exterior angle theorem – The sum of a set of exterior angles of a polygon is always 360 degrees. (see below)
* Pp 60-61 in textbook: work with partner to construct definitions and sketches for trapezoid, kite, parallelogram, rhombus, rectangle, and square (in Geometric Truth).
* In some classes: take a grade on HW #11 – 4 pts
* In 0B add to HW 11: p 265: 9-14, 20
* Go over HW #11, warm-up, add-on to HW, and definitions. Adjust your definitions, particularly “kite” – a quadrilateral with two distinct pairs of consecutive congruent sides.
* 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?
* Investigate – properties of kites. In 0B, we did proofs with kites.
* Intro to unit. Issues with ACTM. Make-up issues. View tests in all but 3rd.
* HW #12: p 279: 1,2,5, p 270: 1-10, p 63: 2-10. Finish any work not done from previous class.

Quiz Fri-Mon, March 6-9, 2020 – 30 pts (5.1-3)

Mon-Tues, March 2-3, 2020

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

* 0B – catch up Geometric Truth
* A DAY:
* Fill-in-the-blank proofs on screen: C-34 – Non-vertex angles of a kite are congruent. C-37 – The vertex angles of a kite are bisected by a diagonal.
* Take a grade on homework (varies from class to class)
* Go over warm-up and HW, questions? How to look at sketches and connect to conjectures (What do I know vs What do I do?)
* 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-35-36The diagonals of a kite are perpendicular. The diagonal connecting the vertex angles of a kite is a perpendicular bisector of the other diagonal.
* Class questioning: trapezoid properties: C-38 – Consecutive angles between bases of a trapezoid are supplementary. Isosceles trapezoid properties – C-39 Pairs of base angles of an isosceles trapezoid are congruent. C-40 (will prove in homework) – diagonals of an isosceles trapezoid are congruent. And C-52 from p 306 – The midsegment of a trapezoid is parallel to the bases and its length is half the sum of the bases. Write up through C-40 and C-52. Also make sure you define “isosceles trapezoid” and copy a sketch showing bases and pairs of base angles for a trapezoid.
* HW #13 (14 depending on class): pp 307:6-7, p 278: 3-4,6-9, 20, p 271: 17 (mini-proof).

Quiz March 6-9 – 5.1-3 – 30 pts

Wed-Thurs, March 4-5, 2020

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

* ACTM announcements
* Warm-up: Given 4 vertices, find slopes of sides and determine type of quadrilateral.
* Grade taken next time on Geometric Truth. Handout from last block can be copied.
* Take a grade on HW– 4 pts
* Answers to warm-ups and homework. Questions.
* Sketches on back boards…. How to “read” a sketch.
* Notes 5.4 – C-42 – consecutive angles of a parallelogram are supplementary.
* Fill in proof of C-41, 42 – opposite sides and angles of a parallelogram are congruent.
* Fill-in-the-blank proof of C-44 – diagonals of a parallelogram bisect each other (share a midpoint). See notes.
* HW #14(15) – pp 284-6: 1-6, 9, 13-16. Catch up GT through C-44.
* Quiz Fri-Mon on 5.1-3. Topics on daily post on website. About 30 pts. It will contain True/false, direct quotes from conjectures, find-the-angles and sides, one algebra problem, slope formula.

Test Wed-Thurs, March 18-19, 2020.

Fri-Mon, March 6-9, 2020

Objective: I can prove and apply rectangle, rhombus, and square properties. I can demonstrate mastery over Polygon Sum Theorems and Kite and Trapezoid definitions and properties.

* Warm-up: given name of polygon: number sides, interior angle sum, one angle if equiangular. Also another 4 vertices of a quad to find slopes & midpts of diagonals.
* Practice worksheet: applying trapezoid, kite, and midsegment properties. Self-check.
* Take a grade on HW #14(15) – 4 pts and GT (4 pts) (in some classes)
* Questions over warm-up and HW
* Explain why: diagonals of a rectangle are congruent. Diagonals of a rhombus bisect the angles of the rhombus. Diagonals of a rhombus are perpendicular bisectors of each other.
* Quiz 5.1-3 – 31 pts
* HW #15(16) – pp 292-3: 1-16, 23. On 14-16, use counted slopes to justify your answer. On 1-10: answers always, sometimes, or never true, sketch or explain your answer.

Unit Test – Wed-Thurs, March 18-19, 2020

Tues-Wed, March 10-11, 2020

Objective: I can prove type of quadrilateral using slope and distance and midpoint. I can prove rectangle and rhombus properties.

* Warm-up: Given 4 vertices, find slopes of sides and determine type of quadrilateral (2 big problems).
* Warm-up: T/F based on A/S/N. Self-check.
* Take a grade on HW #15 – 4 pts Grade Geometric Truth – 4 pts.
* Fill in the blank proof on board: Rectangle diagonals and rhombus diagonals.
* Go over HW and warm-ups.
* Worksheet – algebra of angles, self check
* HW #16 – B day – p 308:9-10 (show work), 20-21. P 311-2: 2, 8-13, 16

Test on Wed-Thurs next week. Test will be about 80 pts.

Monday, March 11, 2019 – B day (thurs-Fri, March 12-13)

Objective: I can properties and definitions of quadrilaterals to solve a problem or establish a proof.

* Warm-up on board: algebra/properties/solve equations
* Answers/questions to HW #18a
* Algebra: writing equations of lines in point/slope form.
* Algebra proof: slope/distance/midpoint
* View quizzes/make-up issues
* HW #18b: p 310:10-11, pp 311-313: 2, 8-14, 16 PLUS Fill-in-the-blank proof of rhombus diagonals perpendicular bisect each other.
* Take grades (5 pts) on Geometric Truth

Unit Test Thurs-Fri – about 90 pts

Study Session at 8 am on Thursday.

Mon-Tues, March 16-17, 2020

Objective: I can apply properties and definitions of quadrilaterals to prove and solve.

* Warm-up: Multiple Choice/ T/F practice
* Self-check warm-up
* 2nd warm-up on screen: Always/Sometimes/Never and What Must it Be, What Could it Be?
* Take a grade over HW #18 – 6 pts
* Take grades over Geometric Truth – 5 pts
* Go over warm-up and HW #18. KNOW YOUR CONJECTURES AND DEFINITIONS!! Make lots of sketches!!
* Algebra Practice – proof with slope/distance/midpoint. (On B day includes equations of lines).
* Pass out Study Guide – have someone read the first paragraph aloud!
* Return Quizzes
* Pass out worksheet HW #19 with textbook problems also noted on the sheet.

Test Thurs-Fri, March 14-15.

Wed-Thurs, March 18-19, 2020

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

* Go over HW #19, questions.
* Unit Test – 90 pts