Triangle Unit Daily Lessons

Pre-AP Geometry 2019

Fri-Mon, November 8,11, 2019

Objective: I can investigate inductively or explain deductively why triangle sum, isosceles triangle theorem and converse, third angle, and triangle exterior angle theorems are true, apply them to solve problems.

* Partner discuss – given a sketch with a line parallel to a side of a triangle, why do the angles of the triangle have to add up to 180 degrees? Share.
* Class proof in 2 columns – Triangle Sum Theorem (make sure investigation with yellow triangle is pasted in above this and marked as inductive reasoning)
* Investigations 4.2 – 1 and 2 on patty paper for Isosceles Triangle Theorem and Converse (pp 210-11)
* Take a grade on HW #6 – 4 pts – add problem 9 in class and share answers
* Go over HW #6 noticing about the exterior angle and remote interiors.
* Discussion – then why is Third Angle Theorem true (so proved by deductive explanation) (Write-up is #16 on p 208, sketch from activity)
* Notes, partner discuss, share – an exterior angle of a triangle has a measure that is the sum of its remote interior angles.
* Write up five conjectures from notes attached to blog post
* HW #7 – pp 214: 1-10, 14-15, p 224: 10-11

Quiz Thurs-Fri, Nov 14-15, 24 pts on 4.1-3

Tues-Wed, Nov 12-13, 2019

Objective: I can discover and apply the Triangle Inequality conjectures. I can prove that an exterior angle of a triangle is equal to the sum of its two remote interior angles. I can discover the SSS and SAS congruence shortcuts for triangles.

* Warm-up: FITB proof of exterior angle theorem. In OB: third angle theorem.
* Take a grade on HW #7 – 4 pts
* Go over HW/ questions
* Triangle inequality investigation: Make up 3 sides for a triangle. Will it make a triangle? May use colored paper to make sticks and see. View some that did not work. Develop a rule (C-21)… the two short sides added together must be longer than the longest side. Do p 175:1 - describe the location of the largest angle in terms of side lengths; then the smallest angle. Develop a rule (C-22) In a triangle, the largest angle is always opposite the longest side; the smallest angle is opposite the shortest side.
* Write up conjectures 21-22.
* Use p 175: 1 to go to SSS congruence shortcut. What about #2 on p 176?
* HW #8: 208: 10-11, p 223: 1-9, 16-17, 19-20.
* Cool down: review worksheet quick work for quiz.
* View tests in 3rd and 0B. Make-up, re-test issues.

Quiz Thurs-Fri, 4.1-3 – 22 pts (over C-17-23… HW 6-8)

Thurs-Fri, November 14-15, 2019

Objective: I can demonstrate mastery over C-17-23. I can discover and apply triangle congruence shortcuts SSS, SAS, ASA, SAA.

* Warm-up: worksheet practice over 4.1-3
* Take a grade on HW #8 – 4 pts
* Go over HW#8 and warm-up; know for quiz.
* Warm-up: p 169: 2-3 old textbook
* Use #2 on p 169 to discover that SAS is a congruence shortcut. (Pass around templates; we all got the same triangles.)
* Use #3 on p 169 to discover that ASA is a congruence shortcut. Then reason by third angle that it does not matter where the congruent side is, so SAA also works.
* Discuss why AAA does not work (zoom on your device). Use #5 on p 170 to show why SSA does not guarantee congruent triangles.
* Pre-view homework. Remember homework is not on the quiz. Cannot be determined.
* HW #9: p 230-1: 1-2, 4-10, 12-20. Write Δ\_\_\_\_≅Δ\_\_\_\_\_ by \_\_\_\_\_\_. Or write CBD if the vertices don’t correspond or there is no evidence of SSS or SAS shortcut.
* Also write up C 24-25 for homework from pp 228-9, using sketches from p 227.
* Quiz 4.1-3 – 22 pts

Test Fri-Mon, Nov 30 and Dec 3, 66 pts

Mon-Tues, Nov 18-19, 2019

Objective: I can prove base angles of an isosceles triangle congruent. I can write simple proofs based on triangle congruence shortcuts. I can apply shortcuts to determine if triangles are congruent, naming them in corresponding order.

* Warm-up: writing – what is the difference between SAS and SSA, between ASA & SAA? In 0B, why SSA and AAA do not work. Review of what works and what doesn’t
* Go over HW #9; questions; go over C-24-27 and how they should be written up (why 27 works)
* Warm-up: In class section – old textbook 4.5: 1-4, 7-9 (how is 4 different from 8?)
* Warm-up: worksheet practice – what triangles are congruent? What shortcut? OR CBD
* Self-check worksheet. Share book answers from 4.5
* Partner discuss and share – argument for Isosceles Triangle Theorem from sketches on board.
* Fill-in-the-blank proof of Isosceles triangle Theorem
* Fill in the blank proof on the screen: converse of isosceles triangle theorem
* View quizzes. 0B – return them.
* HW #10 – HW #10 is to finish writing up Conjectures 17-19, 21-27 and do p 235: 1-2, 5, 9, 13-18.

Test Dec 4-5 – Triangle Properties and Congruence – 70 pts

Wed-Thurs, November 20-21

Objective: I can use triangle congruence shortcuts to prove corresponding parts of congruent triangles are congruent.

* Warm-up: review practice ∆\_\_\_\_\_≅ ∆\_\_\_\_\_\_ by which shortcut
* Finish proof from end of class last time (C-19)
* Prove with a partner: diagonals of a rectangle are congruent (on white board)
* Model: mini-proof
* Do now: p 240: 1-9 – mini-proofs – 6 pts,
* HW Quiz – 4 pts (HW 9-10)
* Will check Geometric Truth next time.

Test Wed-Thurs, December 4-5, Triangles – 70 pts

Fri-Mon, November 22, Dec 2

Objective: I can use triangle congruence shortcuts to prove parts of triangles are congruent. I can apply congruence shortcuts to determine whether or not two triangles are congruent.

* Worksheet Practice Congruence, Triangle Inequalities (last one is 0B only)
* Return Homework 9-10 quizzes.
* Share warm-up answers/ questions.
* Pass out review hints list. (0B only).
* Check Geometric Truth (A day only)
* What is a mini-proof. How is it like what we did yesterday. Model one.
* Work on p 231:1-9 in class. 6 pt grade when finished.
* Review Assignment (0B only) (due next block) – pp 256-7: 9-11, 12-23, 26-29, 32, p 224:20. On p 257: 31 is a mini-proof. On p 256, there are 5 “cannot be determined” in 9-11,12-23.

Test Wed-Thurs, Dec 4-5, Triangle Unit and proofs – 66 pts

Tuesday, Dec 3, 2019

Objective: I can apply skills related to the triangle unit and Conjectures 17-19, 21-27 to find unknowns and explain why something is true.

* Finish p 231:1-9. Check later in class. 6 pt grade needs to be taken.
* Warm-up: Triangle Inequality worksheet
* Warm-up: triangle congruence practice and worksheet
* Fill in the blank proof of Perpendicular Bisector Theorem
* Pass out test topics. Read to self. Hit the high points. What mistakes will you make?
* Check answers to everything listed above.
* Check Geometric Truth if not done already – 5 pts
* Work on unit review HW #11 (new textbook) – p 224: 12,21, p 241; 19 (no need to copy); p 247:8, p 256: 9-11, 13-23, 26-29, 31 (31 is a mini-proof). On 9-23, there are 5 CBD.

Test Wed-Thurs, Triangle Unit Test – 68 pts

Wed-Thurs, Dec 4-5, 2019

Objective: I can demonstrate mastery over triangle congruence and basic triangle properties.

* Go over all review problems.
* Fill-in-the-blank proof of Perpendicular Bisector Theorem
* Multiple Choice Practice
* Re-visit SSS in a right triangle when only two sides are given.
* Hints for success on test.
* Unit Test – Triangles – 68 pts
* No homework

Dec 6, 9 – dilation, pass out final review materials

Dec 10-11, Dilation

Dec 12-13, final review

Dec 15-16, final review