Lesson Plan - Math

Grade: 9

Subject: Mathematics

Materials: Whiteboards, markers

Technology Needed:

Instructional Strategies:

- X Direct instruction
- X Guided practice
- ☐ Socratic Seminar
- ☐ Learning Centers
- ☐ Lecture
- Technology integration
- ☐ Other (list)
- X Peer teaching/collaboration/ cooperative learning
- ☐ Visuals/Graphic organizers
- ☐ PBL
- ☐ Discussion/Debate
- ☐ Modeling

Guided Practices and Concrete Application:

- ☐ Large group activity
- X Independent activity
- X Pairing/collaboration
- ☐ Simulations/Scenarios
- ☐ Other (list)
- ☐ Hands-on
- Technology integration
- ☐ Imitation/Repeat/Mimic

Explain:

Standard(s)

HS.AREI.1 Explain each step in solving a simple equation as following from the equality of numbers asserted at the previous step, starting from the assumption that the original equation has a solution. Construct a viable argument to justify a solution method.

HS.AREI.3 Solve linear equations and inequalities in one variable.

Objective(s)

Students will practice and demonstrate appropriate use of the properties of real numbers to solve and rewrite equations.

Bloom's Taxonomy Cognitive Level:

Comprehension

Differentiation

Below Proficiency:

Review old cards

Above Proficiency:

Assist classmates with comprehension

Approaching/Emerging Proficiency:

Participate in whiteboard activity

Modalities/Learning Preferences:

Visual/Spatial, Logical/Mathematical, Interpersonal

Classroom Management- (grouping(s), movement/transitions, etc.)

Standard classroom procedures for using computers: single-file line, sign computer out, log in to school account, other websites are blocked

Behavior Expectations- (systems, strategies, procedures specific to the lesson, rules and expectations, etc.)

Students should not be doing anything on the computer but their homework unless they're done, at which point they are expected not to be disruptive with what they do or they lose their computer privileges.

Minutes	Procedures
5	**Set-up/Prep:** Entrance ticket: Group C cards from yesterday – Always, Sometimes, Never – get your stacks ready
5	**Engage: (opening activity/ anticipatory Set – access prior learning / stimulate interest /generate questions, etc.)** Leave stacks and come back to individual seats. Go over answers – if they got it wrong, why? Why are some rules sometimes true? Why are some rules sometimes not true?
10	**Explain: (concepts, procedures, vocabulary, etc.)** Remember your volume formulas you were working with last week? What was the formula for a rectangular prism? A = lwh, where l = length, w = width, and h = height. Now, what if we knew the volume was 280 cubic yards and that the length was 8 yards and the height was 7 yards, but we didn't know the width? How could we find it? What if we used properties of real numbers to rearrange the equation to find the width? How would we do that? Multiply both sides by the multiplicative inverses of the length and the height to get A/(lh) = w. Then we can solve for w to find that it equals 5.
25	**Explore: (independent, concreate practice/application with relevant learning task -connections from content to real-life experiences, reflective questions- probing or clarifying questions)** Pass out whiteboards and markers. Students work in groups of three – one marker per group of three. I will give a problem. Each problem consists of two parts: rearranging the formula and plugging in the numbers and simplifying. Provide feedback and work through potentially difficult problems. Use various book examples and problems.
5	**Review (wrap up and transition to next activity):** See Summative Assessment.

Formative Assessment: (linked to objectives)

Progress monitoring throughout lesson - clarifying questions, check-in strategies – "Can someone repeat back to me what I just said?" Gradual progress through whiteboard activity.

Consideration for Back-up Plan:

Summative Assessment (linked back to objectives)

End of lesson:

Last whiteboard question – 1. How confident are you in your ability to do this? 2. How confident are you in your notes to remember these ideas? Scaled 1 to 10. Average the scores – that's how ready you are to move on.

If applicable- overall unit, chapter, concept, etc.:

There will be a test on equations and real number properties within the current unit.

Reflection (What went well? What did the students learn? How do you know? What changes would you make?):