M^2 = Math Mediator Lesson 1: Intro to Algebra 2

***NOTE: This lesson requires some prep and materials: See the second and last items.**

Direct Instruction (5 minutes approx.)	WELCOME! Assign a few rules, 4 or 5 seem to be a good number. My favorites are: 1) Sit in assigned seats daily; 2) Raise hand to speak when someone else is speaking; 3) Remain seated except to perform tasks with minimal disruption; 4) Keep hands, feet and objects to yourself; 5) No cursing or teasing.
Activity (15 minutes approx.)	Ice breaker: Getting to Know You -Materials needed: 3x5 index cards, one each per student Procedure: 1. 2 Truths and a lie: Have students write down 2 true things about themselves and one lie to see if the rest of the class can guess the lie. (10 min.) 2. Have students write down a phrase containing their name and a description about themselves, with words starting with the same letter as their name. Ex: I'm kooky Katherine, I like kissing kittens. (This project is fun for the students and will help you to memorize their names.) You will be collecting these later. (5 min.)
Direct Instruction (10 minutes approx.)	Talk about how the class will be organized and the routines you would like established in you class. Let students know what you expect and what is expected of them. Some items I recommend are: 1) Bring a pen/pencil and notebook to class. I collect and grade notebooks. 2) You will be learning and applying new math concepts to practical life, such as travel, construction, baking, and health issues. 3) These math concepts are listed in the National Council of Teachers of Mathematics (NCTM) as well as the California Department of Education Standards for Algebra 2, which I will post in the classroom and reference often. 4) Everything you do in class is subject to your performance assessment. I do not make up grades about you, I only report your progress. Your grade will consist of (these are my percentages, you may have your own): a) Daily participation will be recorded. Notebook notes, warm-ups and exercises will be assessed. This will count as 30% of your grade. b) There will be assignments, projects, group and individual work that will count as 30% of your grade. c) Exams and Quizzes will make up the remaining 40% of your grade.
Activity (10 minutes approx.)	Share Icebreaker: Trip Recall 1) Tell students to think about a trip that they went on and write down on the card that they have some points they remember about the trip. (3 min.) 2) Next, think about the planning that went into this trip. Did they have to leave at a certain time or be somewhere by a certain time? If they drove or flew or hiked somewhere, did they plan out the travel time and allow for meals, breaks or stopping for points of interest? (2 min.) 3) Share some of their thoughts on this. Did they have to use math for this planning? (5 min.)
Assessment	You want to confirm that each student is correctly placed in your Algebra 2

(15 minutes if tables, 20 minutes if desks, approx.) Materials: -Prepared small problem sheets. -Shoe boxes to put finished sheets into.	class. In order to do this, and have a little fun, the students will have up to 5 stations (break the class into 5 groups) with small sheets of paper with about 4 problems on them. They will have 2 minutes at each station. The groups will be: 1) **Graphing** (ex. Graph y = 3; graph y = x; plot point (1, -2); graph y = 2x + 2) 2) **Percentages/fractions**: (ex. x is 10% of 50, find x; ½ of 220 is what?; 1/5 + 2/4 = ?; 30 = x% of 90, find x.) 3) **Solve for 'x'**: (ex. 40x = 200; 25x + 30x = 110; (100/x) = 20; (12-8)(10) = x.) 4) **Exponents**, solve for 'x': (ex. $2^3 = x$; $5^2 = x^2$; $3^x = 9$; $25^{1/2} = \sqrt{x}$) 5) **Geometry**: (ex. perimeter of square with side of 2"; Area of right triangle with leg of 3", other leg 4" and hypotenuse of 5"; The name of a four sided polygon with two sets of equal length sides that are parallel to each other (rectangle or rhombus); If two triangles have corresponding sides, angles and sides that are adjacent to each other, then the triangles are what?) Print up enough small sheets of paper (if you type this in Word and copy it 3 times you can fit 4 of these per page) for each student. Put them upsidedown at each station and start the timer. They need to put their name on the paper and write down the answers. After two minutes, have them put the papers into the box at the station. Then rotate stations: 1 to2; 2to3; 3to4; 4to5; and 5to1. This is a great assessment for placement.
Wrap-up (5 minutes approx.)	Wrap up closing comments and housekeeping. Hand out a contract for them and their parents to sign with syllabus. Get parent contact information, best way/time to contact parents.