

TITLE OF LESSON

Algebra 1 Unit 1 Lesson 22 – Closure, Associative, and Commutative
You Do Speak Math: Creation of the Individual

TIME ESTIMATE FOR THIS LESSON

One class period

ALIGNMENT WITH STANDARDS

California – Algebra 1:

1.0 Students identify and use the arithmetic properties of subsets of integers and rational, irrational, and real numbers, including closure properties for the four basic arithmetic operations where applicable:

MATERIALS

CD/tape player (Computer with CD drive)

Lesson 22 Homework – Student Page

Lesson 22 Homework Key – Teacher Page

LESSON OBJECTIVES

- To define The Closure, Associative and Commutative properties
 - To demonstrate how these properties are relevant and how they relate to everyday situations
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EXPLANATION OF LESSON

We will introduce the Closure, Associative and Commutative properties, give some examples, elicit some examples from the students and get some practice reading equations.

FOCUS AND MOTIVATE STUDENTS

- 1) Homework Check – Stamp/initial complete homework assignments. Pass back graded assignments and have students place in folders.
 - 2) [Agenda](#) – Have students copy the agenda you posted.
 - 3) Review – Divide the class into four groups. Have each group give the answer to the class of one of the four questions from the Lesson 19 homework. Have each group come present one of the examples that they came up with for additional examples of square and cubed equations. Collect homework assignments.
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ACTIVITIES – INDIVIDUAL AND GROUP

1. Discuss: Closure – Describe the concept of closure under addition. Lead a discussion on the idea of closure. Bring in music by discussing two separate notes, which are music both by themselves and when added together. Have the students look for examples in other realms. Dance steps added together are dance. Parts of a painting added together are a bigger painting.
 2. Commutative and Associative Properties – Describe the commutative principle and the associative principle. The cumulative and associative axioms can be easily described using money. \$5 plus \$10 is the same as \$10 plus \$5 and $(\$5 + \$10) + \$6$ is the same as $\$5 + (\$10 + \$6)$ Have the students bring in other ideas. It will be good to have examples that do not work. For instance some things must be done before other things can happen.
 3. Reading Equations Aloud – Have each student read an equation out loud. This will allow them to practice how to understand equations. Be sure to use examples that have parenthesis.
 4. Homework Review – Hand out **Lesson 22 Homework**. Review instructions and field questions. If there is time in class, you may wish to have students get started.
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HOMEWORK

Complete **Lesson 22 Homework**, due tomorrow

GROUP ROLES

Students will be working individually during this class period, unless a student needs help.

DOCUMENTATION FOR PORTFOLIO

None