

TITLE OF LESSON

Algebra 1 Unit 1 Lesson 8 – A System of Equations

TIME ESTIMATE FOR THIS LESSON

One class period

MATERIALS

These Days – Reading from *The Language of Mathematics* by Keith Devlin
CD/tape player (Computer with CD drive)

LESSON OBJECTIVES

- To show that we can build equations and systems of equations from simpler pieces
 - To associate the building of equations and systems of equations with increased complexity of modeling the world
 - To impart the sense that modeling is limited and that it is only a part of the whole
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EXPLANATION OF LESSON

We want to introduce the idea of a system of equations and the multiple ways that you can look at the same concept. We will show the students that equations are built up of smaller pieces and that there can be many different parameters involved.

Students will be focused and motivated if they see the discussion and mathematical manipulation of variables as something they already do and something that is relevant to their lives. It is important that we continually draw from the students' experiences and relate the results of the algebraic calculations back to them. The strongest deterrent from using math is usually the sense that it is irrelevant, abstract, and meaningless. Anything we can do to counter these unfounded assertions will benefit the students. Students typically learn these ideas because math is presented to them in irrelevant abstract and meaningless manners. We want algebra to be seen as part of their lives.

FOCUS AND MOTIVATE STUDENTS

- 1) Homework Check – Stamp/initial complete homework assignments. Pass back graded work and have students place in their folders.
 - 2) [Agenda](#) – Have students copy the agenda you have posted.
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ACTIVITIES – INDIVIDUAL AND GROUP

1. Homework Pairs – Have the students pair off (perhaps in the same pairs as yesterday or choose another criteria – We want this to be a way for the individual students to get to know each other.) In pairs, students should present their homework results to each other.
2. [Notetaking](#) – Have student take notes on their partners' results.
3. Present – Have the students present to the class the results from their partners' homework.
4. [Brainstorm](#) – How to create a system of equations that describes the success of each of their classes. Explain how we can look at the addition of one parameter such as the affinity for math and the affinity for English as one way of adding. In this way we might form the *total affinity function*. Ask the class to come up with ideas about alternative methods.

5. Demonstrations – We may also add all of the equations together to form the *total success function*. Have the students demonstrate using groups of students how this would work with music by having a number of instruments play at the same time or having five drums play. Do similar things with drawings or with dancing. Have the students choose to be in a group by asking who would like, for example, to demonstrate through music.
 6. Equations – Ask if anyone can come up with an equation to describe each demonstration. Have them write the equation on the board. Be sure to advise students how each equation should be in correct form.
 7. **Silent Reading** – Pass out the reading, *These Days*. Have students read it silently, underlining passages that support the idea that we all know math.
 8. Discuss – Have students share the passages they underlined. Do they agree or disagree with these ideas. Why?
 9. **Brainstorm** – Have students generate a list of ways that we know math better than previous generation. Have them be specific in their examples.
 10. Homework Review – Review the homework below. You may want to provide a list for students of the words that exist (e.g., plus, greater than).
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HOMEWORK

Look for and list at least 10 examples of math in the world and/or in literature. You can use words like plus and greater than.

GROUP ROLES

Students will be working in pairs during this class period and each will be acting as recorder for his partner's thoughts.

DOCUMENTATION FOR PORTFOLIO

The work they do today will be part of their classroom folder.