

# Algebra Applies to the Real World? No Way!

## Summary

This activity helps students to apply two-step equations to the real world.

## Main Core Tie

Mathematics Grade 6

[Strand: EXPRESSIONS AND EQUATIONS \(6.EE\) Standard 6.EE.2](#)

## Additional Core Ties

Mathematics Grade 6

[Strand: EXPRESSIONS AND EQUATIONS \(6.EE\) Standard 6.EE.6](#)

## Materials

- [Algepairs Cards](#) (pdf)
  - [Situation Cards](#) (pdf)
  - [Situation Cards \(Key\)](#) (pdf)
- Math journals  
Basic calculators (optional)

## Additional Resources

### Books

*Divide and Ride*, by Stuart Murphy; ISBN 0064467104

## Background for Teachers

This is a follow-up activity designed to extend your students' knowledge of solving two-step equations through a review and real life situations. Students should have an understanding of equality and solving equations before attempting this lesson.

This lesson employs the skills of Bloom's Taxonomy, which include three overlapping domains: the cognitive, psychomotor, and affective. Bloom's Taxonomy aids these domains through steps of educational objectives: knowledge, understanding, application, analysis, synthesis, and evaluation, all of which are used in the situation cards portion of this lesson. Bloom's is recommended for all curriculum areas to enhance the thinking abilities of your students.

## Instructional Procedures

### Invitation to Learn

Post this question on the board: Does algebra relate to "real life?" Instruct students to jot down their responses in their math journals. This question will be discussed at the end of the lesson.

### Instructional Procedures

Have all students stand and pass out one *Algepairs Card* to each. Starting anywhere in the room, have a student read his/her card. The student who can complete that card should read their card, and so on. Students should sit down when finished and try to complete the problems as the cards are read to stay engaged in the game.

Redistribute cards and play again, or collect cards.

Put students into groups of three and pass out one *Situation Card* and calculator (optional) to each group. Cards are on different colors to indicate whether they are easy (red), midlevel (green), or challenging (blue). You may use these to vary difficulty or to help specific students. Students must still show all of their work if they use a calculator.

Have students work cooperatively to understand the problem, write an equation, and find the solution. They should each be able to explain the solution to someone in another group. For example, if a student has *Situation Card 7*, she should understand that since baby-sitting pays \$7.50 an hour and she baby-sat for 4 hours that means she made \$7.50 each of those hours. The unknown is how much she made.  $7.50 \times 4 = \$30$  on Saturday night.

If students finish early, ask them questions to extend their thinking, or pass out another situation card not being solved by another group.

When all groups are finished, regroup students in threes with each person from a different original group. Have them take turns sharing their situation and equation then allowing the other students in the group to solve the problem using the equation. Allow enough time for all students to share and solve.

Again regroup students into threes and instruct them to create a situation of their own. They must have a variable and their equation must be two steps.

Use the finished situations and equations for sharing and/or assessment.

Discuss the Invitation to Learn using ideas from the situation cards and earlier discussion. Have students share any new ideas in their math journals.

### Strategies for Diverse Learners

Pass out more than one *Algepairs Card* to your advanced learners.

Vary the levels of *Situation Cards* for advanced and special needs students.

### Extensions

Have students write an essay to convince their peers that algebra relates to real life.

Read *Divide and Ride*, by Stuart Murphy, and have the students create equations for the situations described.

Go to [futureschannel.com](http://futureschannel.com) and click on Algebra in the Real World to download videos displaying algebra in real world situations. Could use this as a kick-off or follow-up to the activity.

#### Family Connections

Decide on a travel spot for a real or imaginary family vacation. Determine at least 5 expenses (i.e. airline tickets, rental car, food, activity prices, etc.), create equations for each, and solve. Based on your data, how much will the trip cost?

Create a student edition of *Algepairs Cards* to play at home.

### Assessment Plan

Students should create their own algebraic situation, then write an equation and solve.

Informal assessment during *Algepairs* game and math journaling.

### Bibliography

Martinie, S. (2003, October). Families ask: cooperative groups. *Mathematics Teaching in the Middle School*, 9, 106-107.

More than 900 studies endorse the use of cooperative learning, which improves student achievement, social skills, and motivation and enthusiasm for math. Students learn and retain information better in cooperative groups. Students are held responsible for their own learning and build confidence and value in their own thinking.

Panitz, T. (2000). Using cooperative learning 100% of the time in mathematics classes establishes a student-centered, interactive learning environment. ERIC Source (ERIC ED448063). Retrieved December 3, 2006, from <http://www.eric.ed.gov>

Cooperative learning activities help to identify student misconceptions and enable the teacher to focus on specific concepts. Verbal, visual, and kinesthetic student learning styles are addressed. The

benefits of cooperative learning are indicated, including enhanced critical thinking skills, better student-teacher relationships, and an enjoyment of math classes.

Authors

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