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Primary Type: Teaching Idea

Direct Link: http://www.algebralab.org/lessons/lesson.aspx?file=Algebra_OneVariableWritingEquations.xml

Translating Word Problems into Equations

This site shows students how to translate word problems into equations. It gives seven steps, from reading the problem carefully to checking the solution, to creating equations. The lesson moves on to a few simple exercises in which a natural language sentence is translated to an algebraic equation. It then moves on to more elaborate word problems which require students to identify the important data and follows the given seven steps to create and solve the equation. The more complex questions draw on student understanding of geometric formulae. There are six questions at the end for students to test their new knowledge of how to create and solve equations.

Subject(s): Mathematics

Grade Level(s): 7, 9, 10, 11, 12

Intended Audience: [Educators](#)

Instructional Time: 50 Minute(s)

Keywords: word problems, equation, variable

Instructional Component Type(s): [Teaching Idea](#), [Virtual Manipulative](#), [Instructional Technique](#)

Resource Collection: CPALMS

Suggested Technology: Computers for Students, Internet Connection

Freely Available: Yes

SOURCE AND ACCESS INFORMATION

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Name of Author/Source: Algebra Lab

Is this Resource freely Available? Yes

Access Privileges: Public

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Related Standards

Name	Description
MAFS.7.EE.2.4:	<p>Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities.</p> <p>a. Solve word problems leading to equations of the form $px + q = r$ and $p(x + q) = r$, where p, q, and r are specific rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach. For example, the perimeter of a rectangle is 54 cm. Its length is 6 cm. What is its width?</p> <p>b. Solve word problems leading to inequalities of the form $px + q > r$ or $px + q < r$, where p, q, and r are specific rational numbers. Graph the solution set of the inequality and interpret it in the context of the problem. For example: As a salesperson, you are paid \$50 per week plus \$3 per sale. This week you want your pay to be at least \$100. Write an inequality for the number of sales you need to make, and describe the solutions.</p>
	<p>Remarks/Examples: Fluency Expectations or Examples of Culminating Standards</p>

In solving word problems leading to one-variable equations of the form $px + q = r$ and $p(x + q) = r$, students solve the equations fluently. This will require fluency with rational number arithmetic (7.NS.1.1–1.3), as well as fluency to some extent with applying properties operations to rewrite linear expressions with rational coefficients (7.EE.1.1).

Examples of Opportunities for In-Depth Focus

Work toward meeting this standard builds on the work that led to meeting 6.EE.2.7 and prepares students for the work that will lead to meeting 8.EE.3.7.

[MAFS.912.A-CED.1.1:](#)

Create equations and inequalities in one variable and use them to solve problems. Include equations arising from linear and quadratic functions, and simple rational, absolute, and exponential functions. ★