## Assignments by Skill Level

### LEVEL 4:

Variables and Terms: **Combine Like Terms** (Linear) has a Tool operating in 3 modes generating 3, 5 and 7 terms to simplify..

**Exponential Terms** operates in two modes and has an example explaining how to combine and simplify terms.

**Zevy Inventory Activity**, Students assign terms to an inventory of cars and apply one days activity, print a sheet for each student.

### LEVEL 5:

Linear Equations: has a Tool operating in three modes. The tool shows detailed step-by-step solutions for all equations.

**Examples** of the **Distributive**, **Identity** and **Equality** properties are presented and necessary to solve equations.

**Fractional Equations** is an extension of the linear equations tool with more complex equations and detailed solutions.

**Bivariate Equations** tool operates in two modes and has a graphic explaining and **Elimination Technique** and a **Substitution Technique** to solve for X and Y.

### LEVEL 6:

Quadratic Equations: Features a Tool operating in two modes when **A=1** and **A>1**. All equations may be factored and solved.

A series of **Examples** associate the **algebraic elements of equations** with **graphical elements of parabolas**.

A Drop Rock Activity adds context to the quadratics by first solving into a **perfect square**. Then discussing **transitions** of the **A, B, C, coefficients** and Completing the Square to Solve for X.

Use the **Quadratic Equation** to Solve for X when A=1 and A>1.

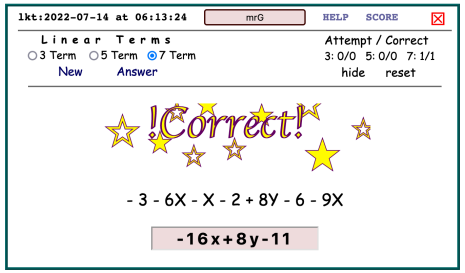


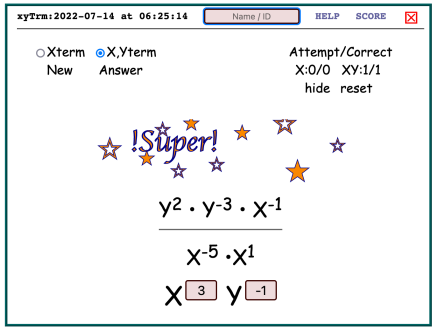
# ALGEBRA

## Section Guide

### Combine Like Terms

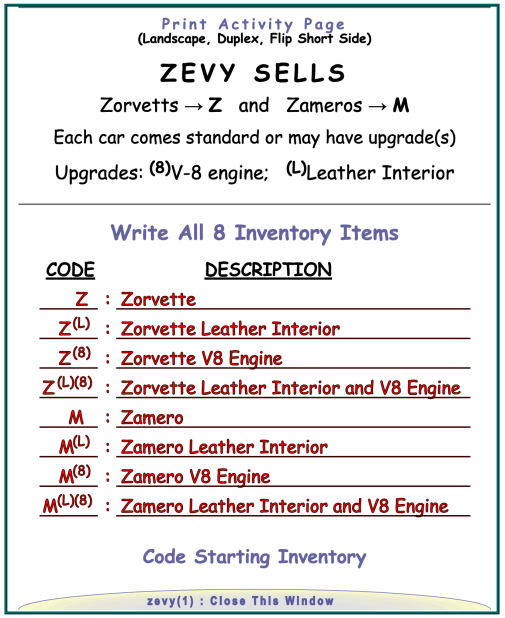
Algebra begins with combine like terms featuring a tool for linear terms and one for exponential terms, both tools increase in difficulty show solutions and keep scores. Students may begin learning about linear terms in Level/1.



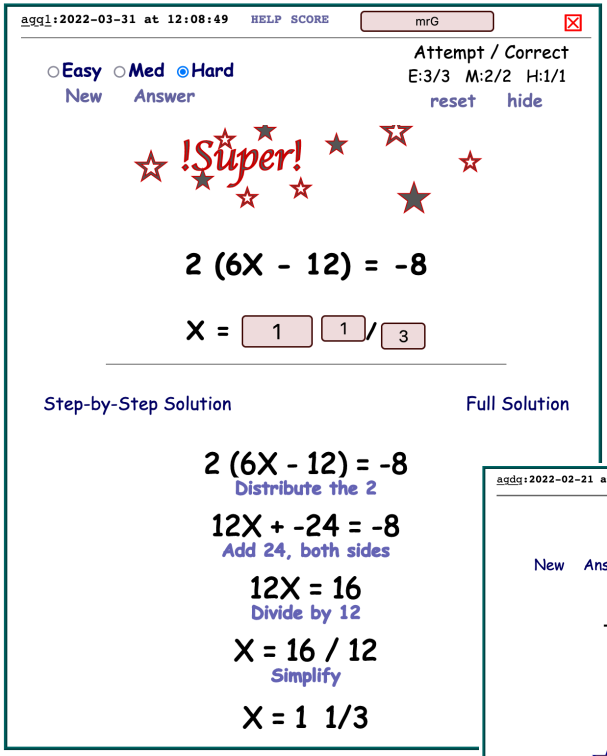




Variables and Terms contains an Invisible Math Graphic important for reading and writing algebra. An Inventory Activity uses the Ficticious Zevy Motor Company to have students assign codes to an inventory of cars then apply starting quantities and one days activity.print an activity sheet for each student, solutions animate online.

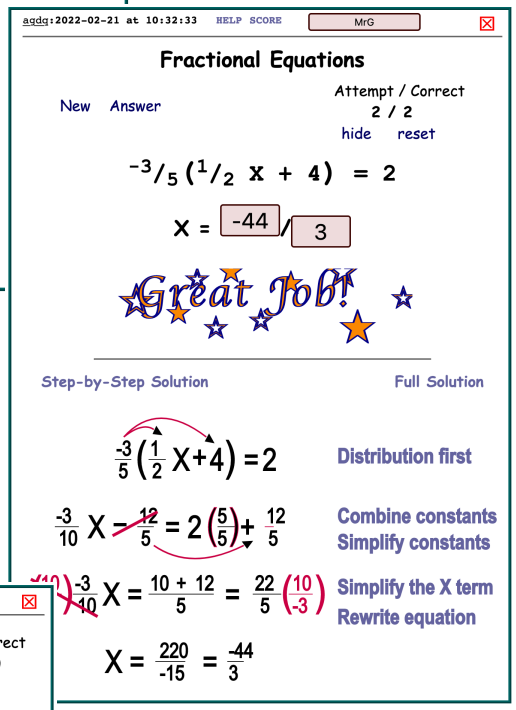
### Zevy Inventory Activity



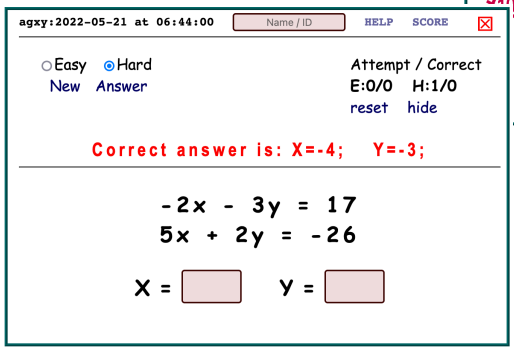
## *Linear Equations*




The Linear equations tool operates in Easy Medium and Hard modes generating more complex equations as shown Step by Step solutions animate for all equations showing individual operations great for practice, study and learning.



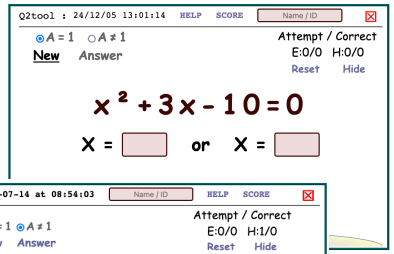

A Fractional Equations tool generates more complex equations. showing detailed step-by-step solutions it is great for assessing student skills.



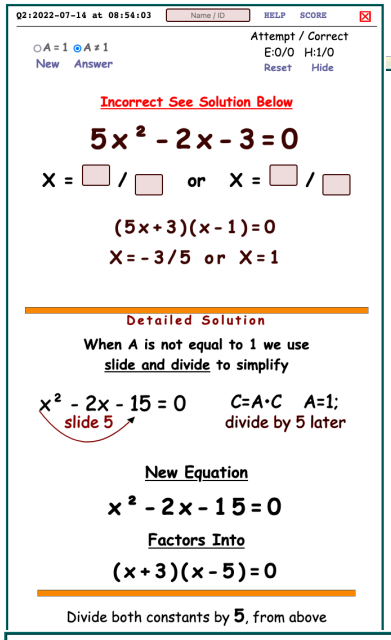

A Bivariate equations tool operates in two modes generating equations with X and Y variables. A help graphic shows an elimination technique to first solve for one variable then a substitution technique to solve for the other.

## *Quadratic Equations*

The Quadratic Equation Section has its own Overview Video and Booklet. Below are some of the highlights of this section.

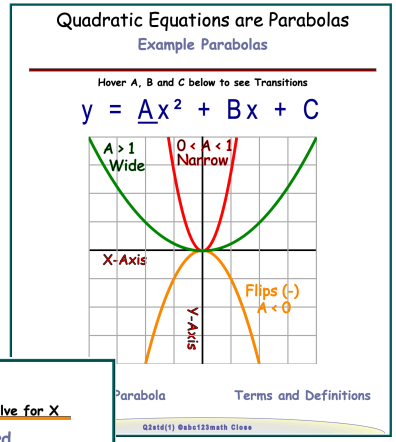



A tool generates quadratic equations with A = 1 in Easy mode and A > 1 in Hard Mode.

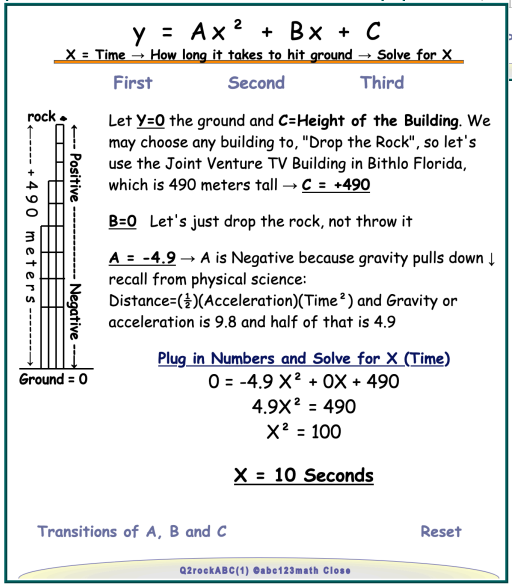



An Example details the F.O.I.L. method of factoring when A=1 and another details the Slide and Divide technique when A>1. The tool generates detailed solutions for all equations.

Graphical examples show many parts of parabolas including:




- Points
- Vertex
- Roots
- Axis of Symmetry
- Standard Equations




A Drop Rock Activity is a series of examples resulting in Perfect Square Equations, and then discusses the effects of transitioning the A, B and C coefficients requiring completing the square and the quadratic equation to solve. Please see the Quadratic Equations Overviews of full details