

Line It Up!
Graphing algebraic equations and inequalities:
Correlation to the National Council of Teachers of Mathematics' *Principles and Standards for School Mathematics* Standards for Grades 9-12

The following data describe the pages of the skill book *Line It Up!* that address the National Council of Teachers of Mathematics' *Principles and Standards for School Mathematics* Number and Operations and Algebra Standards for students in grades 9-12 and the Representation Standard for students in all grades. Analysis data show the page number of the skill book that correlates with each standard.

<i>Principles and Standards for School Mathematics</i> Algebra Standard	Analysis Data
Instructional programs should enable all students to understand patterns, relations, and functions. In grades 9 through 12 all students should:	
Understand relations and functions and select, convert flexibly among, and use various representations for them.	Pages 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 15
Understand and compare the properties of classes of functions, including exponential, polynomial, rational, logarithmic, and periodic functions.	Pages 4, 11, 14, 15
Interpret representations of functions of two variables.	Pages 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15
Instructional programs should enable all students to represent and analyze mathematical situations and structures using algebraic symbols. In grades 9 through 12 all students should:	
Understand the meaning of equivalent forms of expressions, equations, inequalities, and relations.	Pages 3, 4, 5, 6, 8, 9, 10, 12, 13, 15
Write equivalent forms of equations, inequalities, and systems of equations and solve them with fluency—mentally or with paper and pencil in simple cases and using technology in all cases.	Pages 4, 5, 6, 8, 9, 10, 12, 13
Instructional programs should enable all students to use mathematical models to represent and understand quantitative relationships. In grades 9 through 12 all students should:	
Identify essential quantitative relationships in a situation and determine the class or classes of functions that might model the relationships.	Pages 4, 11
Instructional programs should enable all students to analyze change in various contexts. In grades 9 through 12 all students should:	

Approximate and interpret rates of change from graphical and numerical data.	Pages 4, 5, 14
--	----------------

<i>Principles and Standards for School Mathematics</i> Representation Standard	Analysis Data
---	----------------------

Instructional programs should enable all students to:	
Create and use representations to organize, record, and communicate mathematical ideas.	Pages 3, 4, 6, 8, 9, 10, 11, 12, 13, 14
Use representations to model and interpret physical, social, and mathematical phenomena.	Pages 4, 6, 8, 9, 10, 11, 12, 13, 14

<i>Principles and Standards for School Mathematics</i> Number and Operations Standard	Analysis Data
--	----------------------

Instructional programs should enable all students to understand numbers, ways of representing numbers, relationships among numbers, and number systems. In grades 9 through 12 all students should:	
Compare and contrast the properties of numbers and number systems, including the rational and real numbers, and understand complex numbers as solutions to quadratic equations that do not have real solutions.	Pages 4, 5, 6, 8, 9, 10, 12, 13
Instructional programs should enable all students to understand meanings of operations and how they relate to one another. In grades 9 through 12 all students should:	
Judge the effects of such operations as multiplication, division, and computing powers and roots on the magnitudes of quantities.	Pages 4, 5, 6, 8, 9, 10, 12, 13
Instructional programs should enable all students to compute fluently and make reasonable estimates. In grades 9 through 12 all students should:	
Develop fluency in operations with real numbers, vectors, and matrices, using mental computation or paper-and-pencil calculations for simple cases and technology for more-complicated cases.	Pages 4, 5, 6, 8, 9, 10, 12, 13