

## Variables and Patterns Glossary

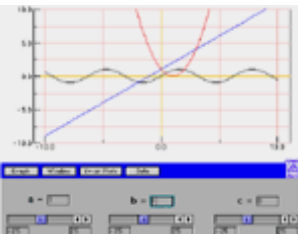
**Coordinate Graph** – A graphical representation of pairs of related numerical values that shows the relationship between two variables

**Coordinate Pair** – An ordered pair of numbers used to locate a point on a coordinate grid. The first number in the pair is the value for the *x-coordinate* and the second number is the value for the *y-coordinate*

**Dependent Variable** – One of the two variables in a relationship. For instance, the cost of a long distance phone call (dependent variable) depends on how long you talk (independent variable.)

**Scale** – A labeling scheme used on the axes on a coordinate grid.

**Variable** – A quantity that can change. Letters are often used as *symbols* to represent variables in rules or equations that describe patterns.

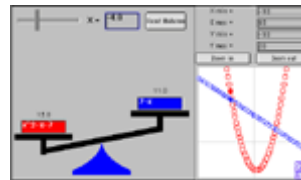


## Web Resources

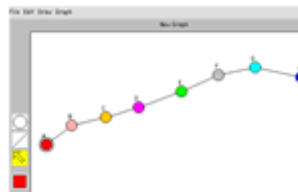
You will find web resources at:

[www.illuminations.nctm.org](http://www.illuminations.nctm.org)

## Expression Pan Balance



## Graph Creator



## Connected Mathematics Project

### Everett Public Schools Mathematics Program

## Variables and Patterns Unit Goals

- ◆ Understand variables in a situation
- ◆ Understand that patterns describe a regular or predictable change in data
- ◆ Select an appropriate range of values for the variables
- ◆ Make decisions using tables, graphs and rules

Proposed Time Frame:  
Approximately 6 weeks

## Mathematics in Investigations



### Investigation 1 Variables and Coordinate Graphs

- \* Collect data from an experiment and then make a table and a graph to organize and represent the data
- \* Search for an explanation to the patterns in the data
- \* Understand that a variable is a number that changes
- \* Interpret information given in a graph

### Investigation 2 Graphing Change

- \* Make sense of data given in the form of a table or a graph
- \* Read a narrative of a situation that changes over time and make a table and graph that represent these changes
- \* Read data given in a table and make a graph from the table

### Investigation 3 Analyzing Graphs and Tables

- \* Change data from tables to graphs and vice versa
- \* Search for patterns of change
- \* Compare forms tables, graphs and charts that represent similar sets of data

### Investigation 4 Patterns and Rules

- \* Understand the relationship between rate, time and distance
- \* Represent information regarding rates in tables and graphs and use them to compare rates

### Investigation 5 Using a Graphing Calculator

- \* Use a rule to generate a table or graph on a graphing calculator

### Tips for Helping at Home

Good questions and good listening will help children make sense of mathematics and build self-confidence. A good question opens up a problem and supports different ways of thinking about it. Here are some questions you might try, notice that none of them can be answered with a simple “yes” or “no”.

#### Getting Started

- \* What do you need to find out?
- \* What do you need to know?
- \* What terms do you understand or not understand?

#### While Working

- \* How can you organize the information?
- \* Do you see any patterns or relationships that will help solve this?
- \* What would happen if...?

#### Reflecting about the Solution

- \* How do you know your answer is reasonable?
- \* Has the question been answered?
- \* Can you explain it another way?

### At Home:

- 1 Talk with your child about what’s going on in mathematics class.
- 2 Look for ways to link mathematical learning to daily activities. Encourage your child to figure out the amounts for halving a recipe, estimating gas mileage, or figuring a restaurant tip.
- 3 Encourage your child to schedule a regular time for homework and provide a comfortable place for their study, free from distractions.
- 4 Monitor your child’s homework on a regular basis by looking at one problem or asking your child to briefly describe the focus of the homework. When your child asks for help, work with them instead of doing the problem for them.

### At School

- 1 Attend Open House, Back to School Night, and after school events.
- 2 Join the parent-teacher organization