Tables, Equations, and Graphs, Oh My!

Let's explore some equations from real-world situations.

18.1 Card Sort: Equations and Tables

Your teacher will give you a set of cards. Take turns with your partner to match an equation with a table.

1. For each match that you find, explain to your partner how you know it's a match.
2. For each match that your partner finds, listen carefully to their explanation. If you disagree, discuss your thinking and work to reach an agreement.

18.2 Getting to Know an Equation

The equations in an earlier activity represent situations.

- $S - 2 = T$

  S is the number of sides on a polygon.

  T is the number of triangles you can draw inside the polygon (from one vertex to the others, without overlapping).

- $G = J + 13$

  J is a day in the Julian calendar.

  G is the same day in the Gregorian calendar.

- $P = I - 47.50$

  I is the amount of sales, in dollars.

  P is the profit, in dollars, after $47.50 in expenses.

- $C + 273.15 = K$

  C is a temperature in degrees Celsius.

  K is the same temperature in the Kelvin scale.

- $E = 6s$

  s is the length of one edge of a regular tetrahedron.

  E is the total edge length of the tetrahedron.

- $m = 8.96V$

  V is the volume of a piece of copper in cubic centimeters.

  m is its mass in grams.

- $y = \frac{1}{12}x$

  x is the number of eggs.

  y is how many dozens of eggs.

- $g = 28.35z$

  g is the mass of an object in grams.

  z is the same measurement in ounces.

You will work with one of these equations more closely.

1. Rewrite your equation using words from the context. Also use words like “product,” “sum,” “difference,” “quotient,” and “term.”

2. In an earlier activity, you matched equations and tables.

   Copy the values from the table that matched your assigned equation into the first three rows of this table.

   Make sure to label what each column represents.

independent variable: _____	dependent variable: _____
60	
	300

3. Select one of the first three rows of the table and explain what those values mean in this situation.

4. Use your equation to find the values that complete the last two rows of the table. Explain your reasoning.

5. On graph paper, create a graph that represents this relationship. Make sure to label your axes.

18.3 Sharing Your Equation with Others

Create a visual display of your assigned relationship that includes:

- Your equation
- An explanation of each variable
- A verbal description of the relationship
- Your table
- Your graph

Be prepared to explain:

- What the variables in your equation represent.
- How the dependent variable and independent variable are related.
- What you notice about the relationship in each representation: equation, table, and graph.

If you have time, research more about your relationship and add more details or illustrations to help explain the situation.