An Apple a Day

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The Task

Have you ever heard someone say, "An apple a day keeps the doctor away"? At a local grocery store, you can buy a bag of 8 apples for $5.00. If everyone in your family ate one apple every day, how much money would your family spend in one year on apples?

Big Ideas

- Multiplicative/Proportional reasoning involved with scaling up quantities
- Estimating results of multiplication with large numbers
- Recording and representing relations with tables, charts, graphs, equations, and words

Standards of Learning for Grades 3-4-5

4.4 b,d multiply and divide whole numbers; solve multistep multiplication problems

5.4 single-step and multistep practical problems involving whole numbers.

Standards of Learning for Grades 6-7-8

6.1 describe/compare data using ratios

7.4 single and multistep practical problems with proportional reasoning

7.12 The student will represent relationships with tables, graphs, rules, and words.

8.3a solve practical problems involving rational numbers, percent, ratios and proportion

8.14 The student will make connections between any two representations (tables, graphs, words, and rules) of a given relationship.

Process Goals

- Problem Solving and Reasoning – Students will apply their sense of number to consider the reasonableness of results of the year-long problem. Students will also have to find ways to approach a problem where they do not have a prescribed solution pathway. Then, students will justify their methods to other classmates who may have approached the problem differently.
- Connections and Representations – Students may make use of a variety of representations to keep track of the coordinated quantities in order to reach a solution. 7th and 8th graders may make connections between proportions and real world problems.
- Communication – Students may use words, pictures, tables, or equations to communicate their thinking and solution pathways to others.

Related Task – World's Largest Cookie

The world's largest chocolate chip cookie was created using 40,000 pounds of cookie dough! (The recipe is listed below.) A school wants to make a smaller version of this cookie to feed all 800 students in their school. They decide that each pound of dough will feed 4 students. How many pounds of chocolate chips will they need? (recipe included on blackline master)

Related Task – Solar Powered City

Solar panels collect energy from the sun so people can use that energy to power things in their homes. Is it possible to power an entire city by using only solar energy? New York City uses about 164,380 kilowatt hours of electricity each day. Usually, it takes 25 solar panels to produce about 5 kilowatt hours of electricity. How many solar panels would it take to power all of New York City for one day?