Mini-Project C: Project Euler Problem 42 - Coded Triangle Numbers

The nth term of the sequence of triangle numbers is given by, t_n = ½n(n+1); so the first ten triangle numbers are:

$$1, 3, 6, 10, 15, 21, 28, 36, 45, 55, ...$$

By converting each letter in a word to a number corresponding to its alphabetical position and adding these values we form a word value. For example, the word value for SKY is 19 + 11 + 25 = 55 = t_{10}. If the word value is a triangle number then we shall call the word a triangle word.

Using words.txt (right click and 'Save Link/Target As...'), a 16K text file containing nearly two-thousand common English words, how many are triangle words?

Support: Students will need to learn/know: if statements, for loops, and how to read data from a file.

Standard addressed: A-REI 4. Solve quadratic equations in one variable.