## Wheel of Fortune

In the game Wheel of Fortune, contestants guess letters to solve puzzles much like a game of hangman. In the final puzzle the letters E, L, N, R, S, T are given. What three consonants and one vowel would you guess next? Why?

The table below shows the most frequently used letters in a one sample of 1000 letters. After looking at the table, would you still pick the same 3 consonant and vowel?

| A | $\mathbf{B}$ | $\mathbf{C}$ | $\mathbf{D}$ | $\mathbf{E}$ | $\mathbf{F}$ | $\mathbf{G}$ | $\mathbf{H}$ | $\mathbf{I}$ | $\mathbf{J}$ | $\mathbf{K}$ | $\mathbf{L}$ | M |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 73 | $\mathbf{9}$ | 30 | 44 | 130 | 28 | 16 | 35 | 74 | 2 | 3 | 35 | 25 |
| $\mathbf{N}$ | $\mathbf{O}$ | $\mathbf{P}$ | $\mathbf{Q}$ | $\mathbf{R}$ | $\mathbf{S}$ | $\mathbf{T}$ | $\mathbf{U}$ | $\mathbf{V}$ | $\mathbf{W}$ | $\mathbf{X}$ | $\mathbf{Y}$ | $\mathbf{Z}$ |
| 78 | 74 | 27 | 3 | 77 | 63 | 93 | 27 | 13 | 16 | 5 | 19 | 1 |

Source: Sinkov, A. Elementary Cryptanalysis. Washington, DC: Mathematical Association of America, 1968.

Write a short story of 5-10 sentences. Create a table like the one above indicating the number of times each letter appeared in your story. How do your most frequently appearing letters compare with the table above?

Create your own wheel of fortune! Be creative with materials around your house. When dividing up your wheel how will you ensure each segment is the same size? Place various dollar amounts on each segment and don't forget Bankrupt!

Test out your wheel with a puzzle of your own.

Favorite Website of the Week
http://www.xpmath.com/forums/arcade.ph p?do=play\&gameid=67

Using the digits 1-9 at most one time each, place a digit in each box so that the expression is simplified to a different odd answer. (Taken from openmiddle.com)

$$
\begin{gathered}
\square \div(\square-\square) \\
\square+\square \mathrm{x} \square \\
\square-\square \div \square \mathrm{x} \square
\end{gathered}
$$

