

FACTOR WORDS

Every letter is assigned a value as shown below. Words are assigned numerical values by multiplying the values of each letter in the word. For example, the value for FRED is $6 \cdot 18 \cdot 5 \cdot 4 = 2160$.

A	1	J	10	S	19
B	2	K	11	T	20
C	3	L	12	U	21
D	4	M	13	V	22
E	5	N	14	W	23
F	6	O	15	X	24
G	7	P	16	Y	25
H	8	Q	17	Z	26
I	9	R	18		

1. Find a first name with the value 858.
2. Find a first name with the value 32,292.
3. Find a first name with the value 330.
4. Find a first name with the value 100,000.
5. Find a first name with the value 152,460.
6. Find a word for a task you might work on at school. Value: 83,538
7. Find a word for something you might see in winter. Value: 43,740
8. Find a word for a good way to exercise. Value: 51,129
9. Find a word for a popular toy. Value: 140,625
10. Show or explain why no word can have a value of 5800. Then give two examples of other "impossible" values and explain your reasoning.

Hint: Use prime factorizations to build each number. Consider using *block diagrams* to help you visualize these. (See other activities in this site to learn more about block diagrams.) Find ways to separate the block diagrams into pieces (factors) that represent letters.