

Powers of Ten

5th Grade

Why multiplying by 100 moves the digits two places, every time.

The exponent counts how many places the digits move.

Power	Means	Value	Digits move
10^1	10	10	1 place left
10^2	10×10	100	2 places left
10^3	$10 \times 10 \times 10$	1,000	3 places left
10^4	$10 \times 10 \times 10 \times 10$	10,000	4 places left
10^0	one, by definition	1	no move

Dividing by a power of ten moves the digits the same number of places to the right.