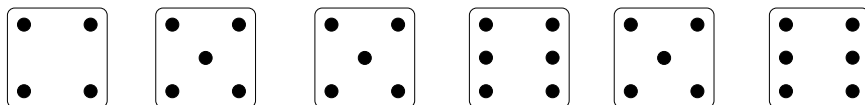




If we rolled 6 six sided dice, and got the following result:



What did you roll? A “Four”, 3 “Fives”, and 2 “Sixes”.

A mathematical statement could be: $4 + 3 \times 5 + 2 \times 6$

In explaining BEDMAS, the reason why we cannot add the $4 + 3$ is visible from the dice.

The 4 is four “Ones.” The 3 is telling us there are three “Fives”.

“Ones” and “Fives” are different things, just like Cats and Ants so we don’t count/add them together.

Likewise, the 2 is telling us there are two “Sixes”.

Before we can combine these quantities, we must first make change so that they represent the same unit.

3 groups of 5 $\rightarrow$ 15 ones

2 groups of 6 $\rightarrow$ 12 ones

Multiplication happens before addition because multiplication changes groups into individual units that can then be counted together.

$4 \text{ ones} + 15 \text{ ones} + 12 \text{ ones} = 31$ (The same sum as the dice faces)

Notice that multiplication was not performed first simply because BEDMAS says so. It was performed first because it changes unlike things into like units so that they can be added together.

Instead of seeing BEDMAS as an arbitrary rule to memorize, students can see that the order of operations follows naturally from what the numbers and operations are communicating. The mathematics itself tells us what must happen first.

Find the Counting. Find the Meaning.