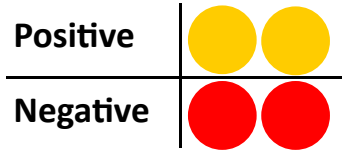
Maths, Y7 - Negative Numbers

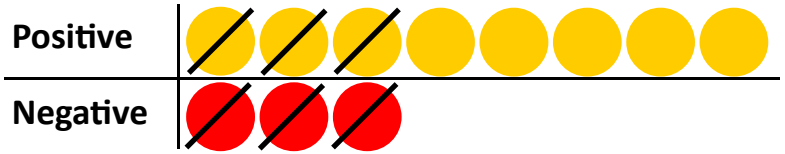
1. Zero-sum Pairs



This is a representation of zero

2. Addition

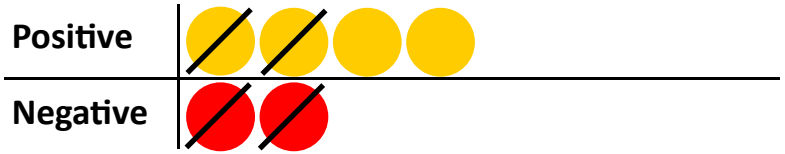
What is –3 + 8? 3 negative counters and 8 positive counters.



Collect and remove the zero-sum pairs.

There are 5 positive counters remaining. So, **-3 + 8 = 5**

What is 4 + (-2)? 4 positive counters and 2 negative counters.



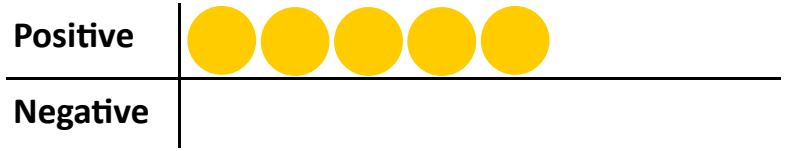
Collect and remove the zero-sum pairs.

There are 2 positive counters remaining. So, **4 + (-2) = 2**

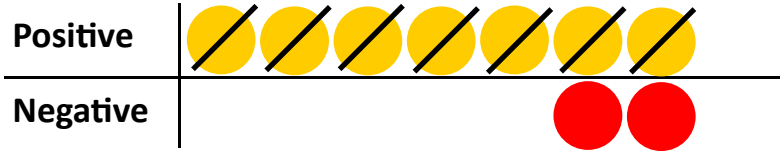
3. Subtraction

What is 5—7?

Starting point



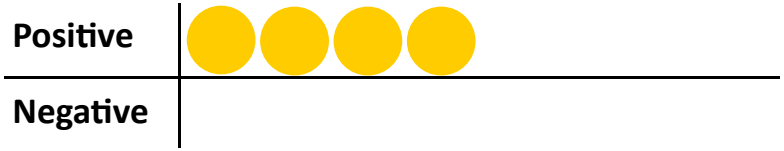
Start with 5 positive counters. We need to take away 7 positive counters, but we only have 5, so we must add in 2 zero sum pairs.



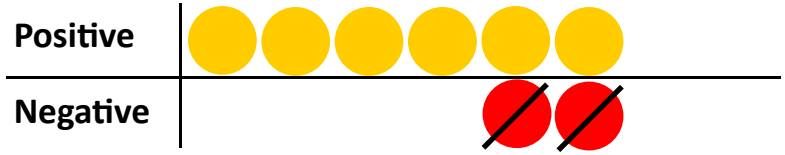
Take away 7 positive counters, we are left with 2 negative counters. So, **5 - 7 = -2**

What is 4 - (-2)?

Starting point



Start with 4 positive counters. We need to take away 2 negative counters, but we do not have any, so we must add in 2 zero sum pairs.



Take away 2 negative counters, we are left with 6 positive counters. So, **4 - (-2) = 6**

4. Multiplication

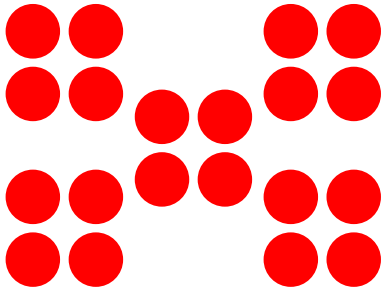
What is 4 x (-2)?

(-2) + (-2) + (-2) + (-2) **= -8**

Make 4 groups of 2 negative counters

What is 5 x (-4)?

Make 5 groups of negative 4



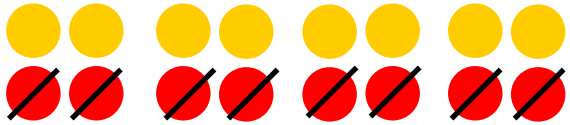
There are 20 negative counters

5 x (-4) = -20

What is (-4) x (-2)?

Remove 4 groups of -2

As we have no counters to remove we must add in some zero-sum pairs



Now we can remove 4 groups of negative 2

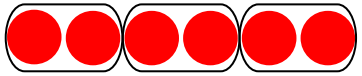
There are 8 positive counters

(-4) x (-2) = 8

5. Division

What is (-6) ÷ 3?

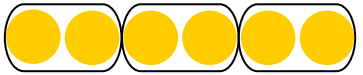
Start with 6 negative counters share them into 3 groups.



Each group has 2 negative counters, so **(-6) ÷ 3 = -2**

What is 6 ÷ 3?

Start with 6 positive counters share them into 3 groups.



Each group has 2 positive counters, so **6 ÷ 3 = 2**

(-6) ÷ 3 = -2

6 ÷ 3 = 2

6 ÷ (-3) = -2

(-6) ÷ (-3) = 2