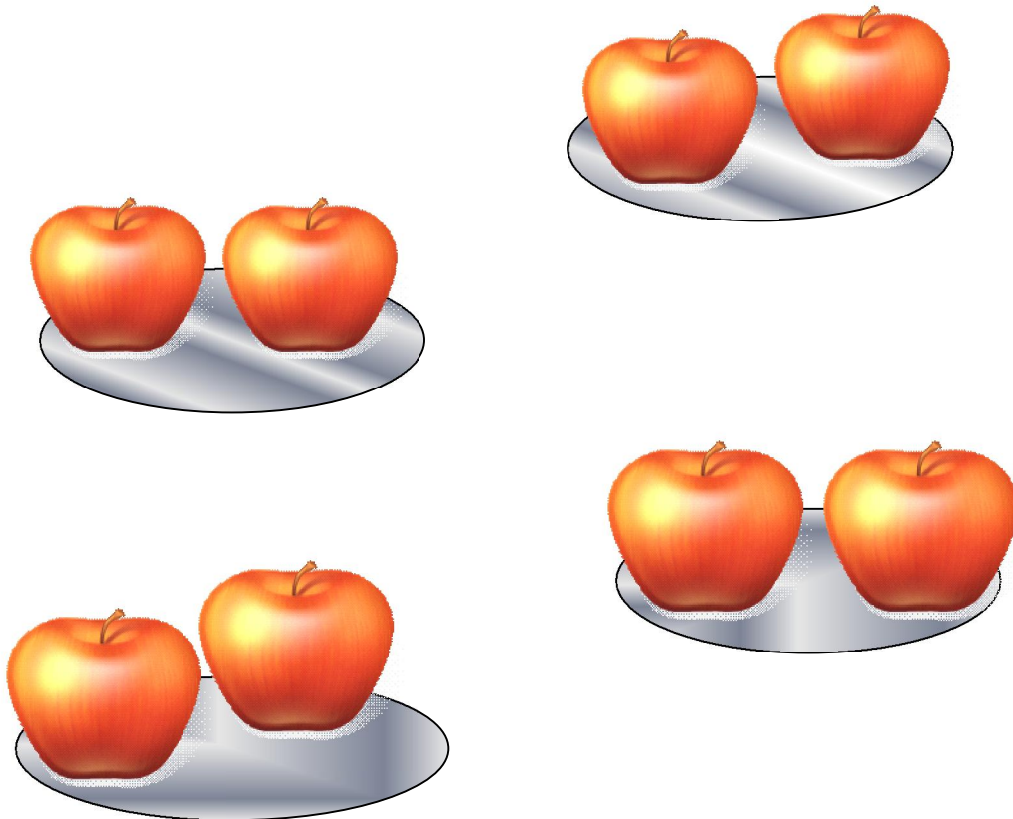


Multiplication

Stage 1. Counting objects... if there are two apples on each plate, how many have we got altogether?

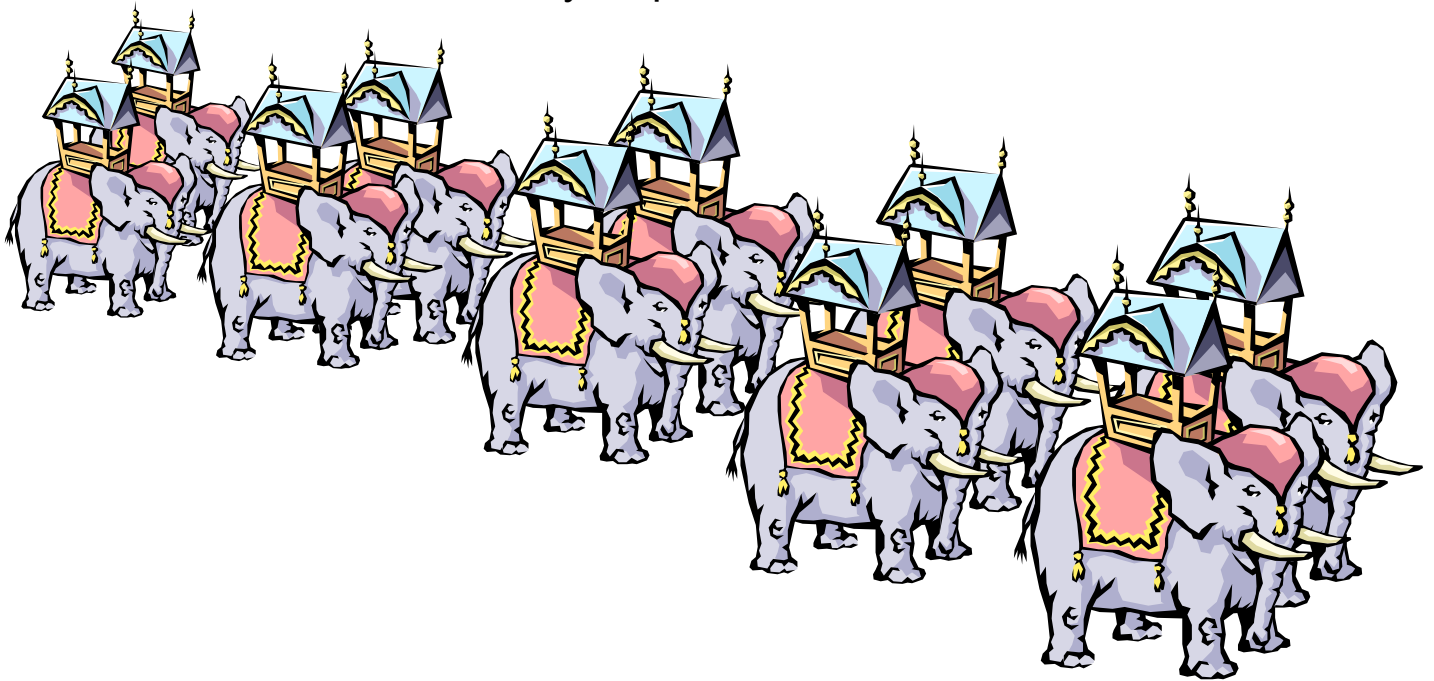


We use real objects we have in the classroom that the children may handle. Children can also draw their representations of the objects. They can then write the total number next to their drawings.
In terms of language, we talk about 'groups of' apples.

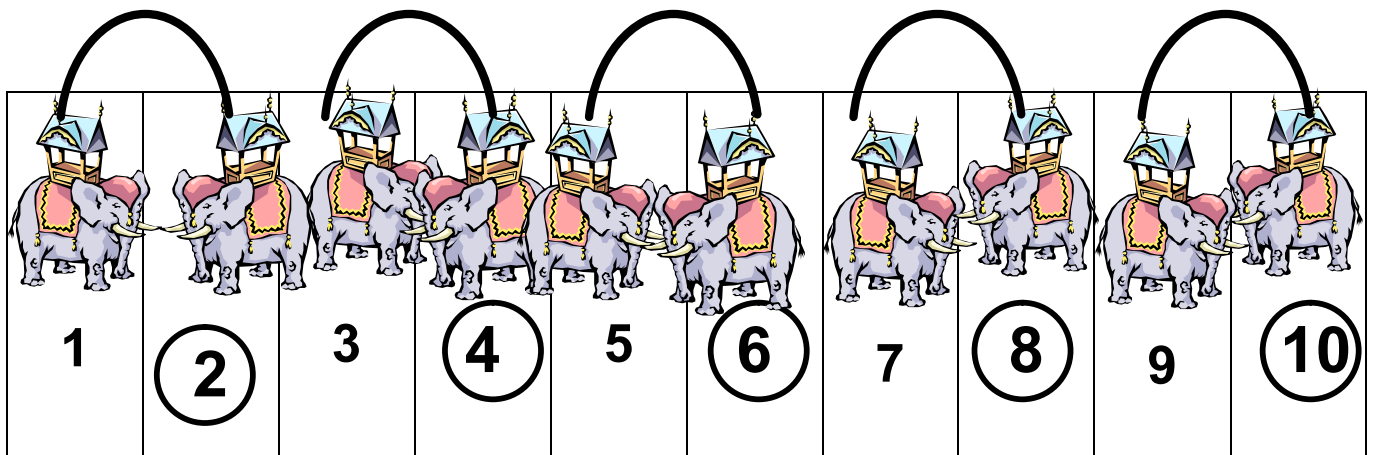
Multiplication

Stage 2. Repeated addition - Counting in groups of...

If the elephants came in two by two, if there were 5 groups of 2, how many elephants were there?



Still using the objects, we can place them on a number line and count the pairs, beginning to link to tables facts:



Children start to count up in 2s from this stage.

We can start to record this as $2 + 2 + 2 + 2 + 2 = 10$

Multiplication

Stage 3. Arrays

Children arrange items in groups:



3 rows of 5 cakes



$5 + 5 + 5$

$5 \times 3 = 15$ cakes



And explore other ways of arranging them:



5 rows of 3 cakes

$3 + 3 + 3 + 3 + 3$

$3 \times 5 = 15$ cakes

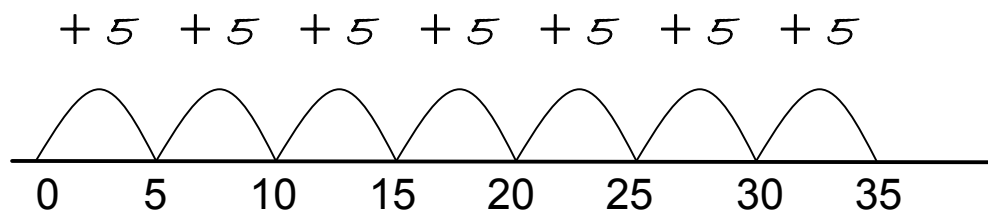
Multiplication

Stage 4. Using a Number Line



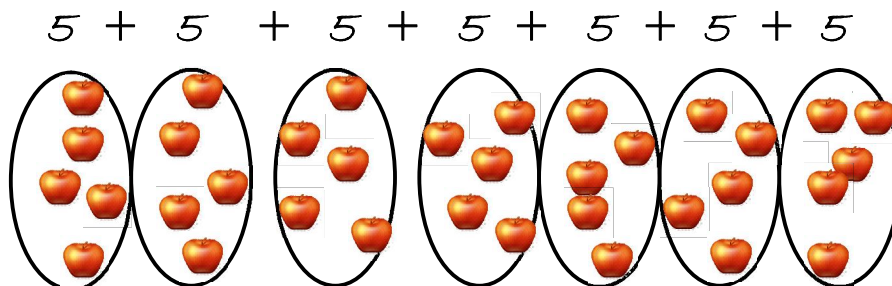
If Snow White gave the 7 dwarfs a bag of 5 apples each, how many apples would they have altogether?

Using a structured number line (with the numbers already on) we can draw jumps of 5:



Then, children can record their work on their own number lines

e.g. 5×7



$$5 \times 7 = 35 \text{ apples}$$

Multiplication

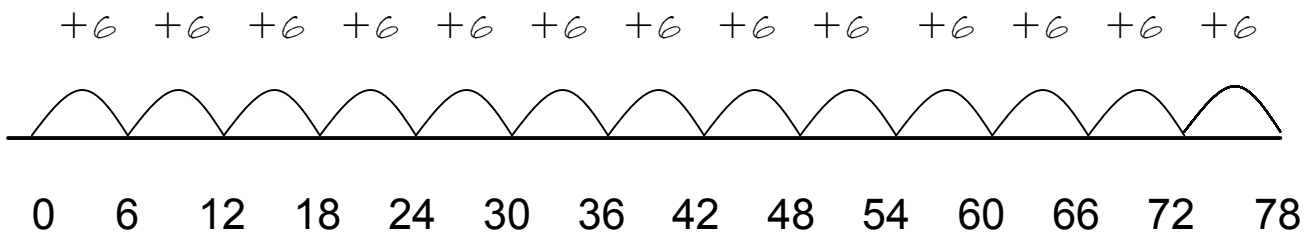
Stage 5. Unstructured Number Lines

For larger amounts, we may wish to consider applying multiplication facts we know. For example, if there are six apples in a bag, how many would there be in 13 bags?



Children draw their own number lines:

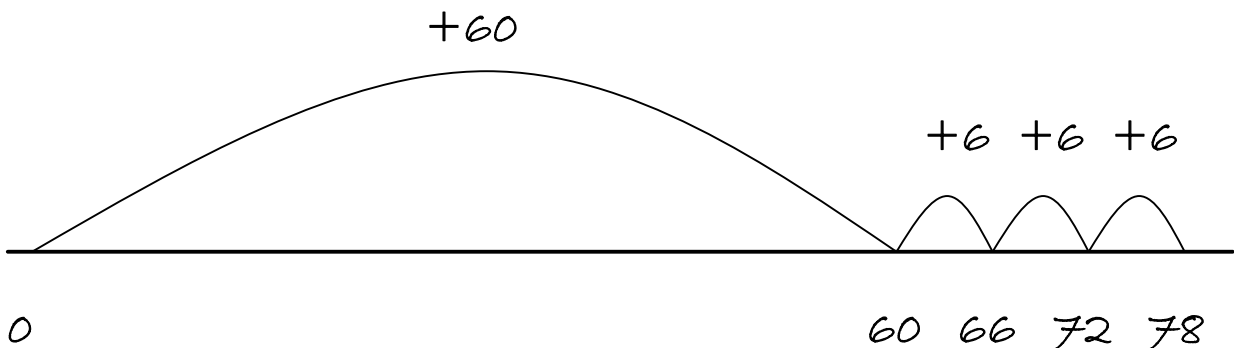
e.g. 6×13 Well, we could count 13 jumps of 6



Or we could say, 'I know that 10 lots of 6 is 60.'

10 bags = $6 \times 10 = 60$ apples

then 3 bags of 6 each



$6 \times 13 = 78$ apples

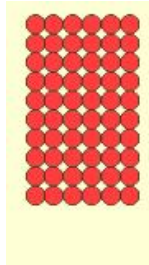
Multiplication

We could use jottings to explain our thinking, so

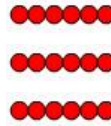
10 bags of apples

+ 3 extra bags of apples

6×10



6×3



$6 \times 10 = 60$

$6 \times 3 = 18$

So there must be 78 apples altogether.

Children may still need to **see** that 10 lots of 6 are 60...

Eventually, with practice, this will lead on to...

Stage 6. Grid Method

The grid is a good way to organise the partitioning of numbers for multiplication.

If we stayed with Snow White's apples:

$6 \times 13 =$

Draw a grid. Let's partition the 13 up into 10 and 3:

