

Ten frames

Section 5: How many without counting

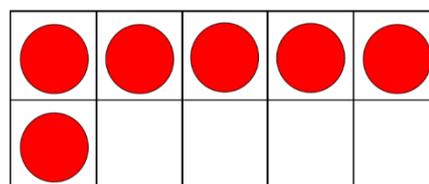
In this pack there are a series of flash cards. Laminate and trim before use or copy the images onto electronic whiteboard pages.

It is important to draw your children's attention to the structure and patterns created by the ten frame.



The horizontal orientation has strong links to the 5 red, 5 white, 5 red 5 white bead-string, so when presented with this flash card, if the child understands the pattern, they would know the number is more than 5 due to the first row having already been completed and a single dot on the second row indicates one more than 5 which is 6.

Carefully constructed questions when introducing these flash cards helps the children understand and see the patterns.



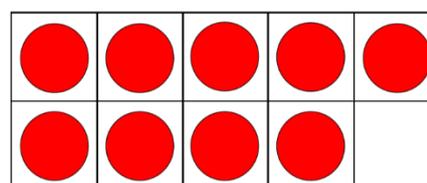
Questions could include:

How many do you see?

Children could just count the spots to find the answer to this question, so you need to ask more probing questions.

How do you know?

Now you are asking the children to explain how they know that this card shows 6 spots. Children will see things differently, so explore their thinking with the class, some other children may find this useful, e.g. a child may see a pair of spots and say that makes 2 and



I have 4 in a line, I know 2 + 4 make 6. For example 9 could be double 4 then add 1, or 10 - 1 or 5 + 4.

How many empty spaces?

Now you are linking this experience to understanding that 6 and 4 make 10, as there are 4 empty spaces. This helps the children to see the links between 6, 4 and 10 which is one of the building blocks to the four addition/subtraction sentences: $6 + 4 = 10$, $4 + 6 = 10$, $10 - 6 = 4$ and $10 - 4 = 6$ and an understanding of inverses.

Can you give me another number greater than 5?

Checking for understanding of numbers and the number system and frame structure.

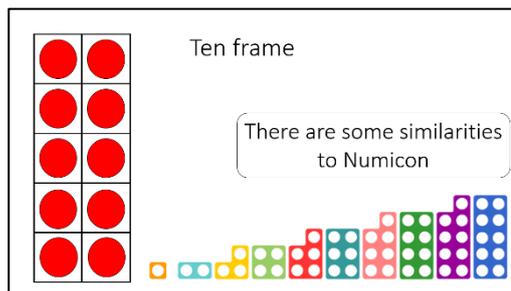
How do you know your number is more than 5?

Invite the children to explain, show and move counters on an electronic or magnetic board. Also have two ten frame flash cards side by side and use $< >$ signs.

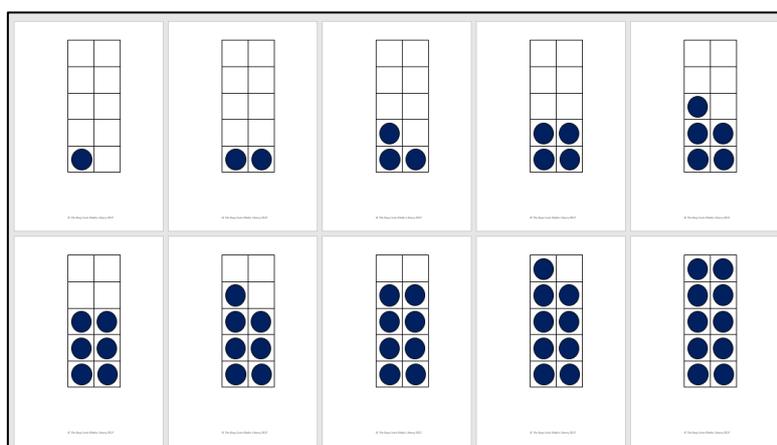
How many fewer than 10?

Use of the word fewer rather than always using the word less.

The ten frame can also be used by orienting it into a vertical position. There are some similarities to Numicon, however the spots are added from left to right.



By using a ten frame you are encouraging your children to automatically think of numbers less than ten in terms of their relationship to ten.



This helps the children build a sound knowledge of the basic addition and subtraction facts for ten, which are an essential part of mental calculation.

When you feel your children are ready, this activity can be extended to the 20 frame structure, which is two tens frames placed close together but without touching.

The vertical tens frames are useful for introducing place value. Below you will see the number 15 presented by using a completed ten frame and a part filled ten frame of 5 blue spots. 1 ten and 5 makes 15 spots altogether.

