Number Square Guidance

What Numbers are in the number square?

The numbers are normally sequential. Younger children will often use a number square with numbers from one to 20. You'll also commonly see number squares from one to 100. The numbers are typed in numerals (1, 2, 3 etc). You might also see number squares called a '100 grid' or a 'multiplication grid'; the latter specifically helps children with their times tables.

It's a really simple maths aid which helps children do addition, multiplication and subtraction.

Children can use the grid to count up or down a certain amount of numbers and also to count ahead to find the next multiplication or sequence of numbers. The squares can be shaded or coloured in which makes it more fun for children. Number squares can also be used to help children recognise patterns, such as sequencing (where the count goes up in a certain amount of numbers each time, for example, in times tables).

When are number squares used in KS1 and KS2?

A number square helps children in Key Stage 1 to count to 100 so that they were aware of the order of the numbers and what each one looks like. Children in Key Stage 1 also need to learn to count in 2s, 5s and 10s and a hundred number square is very useful for teaching them these skills. Often, children are asked to shade multiples of 2, 5 or 10 to help them see the numbers that they are counting. Once children go on to learn other times tables in Key Stage 2 the number square can again be used to shade multiples of 3, 4, 6, etc.

Number squares can be used for adding and subtracting from a number. It can be a good idea to show children how to count on ten (or add ten) from a number on a number square by counting in ones. You can then show them that a quicker way to do this is just to move down one row on the number square. This makes it clear that when ten is added to a number only the tens digit changes.

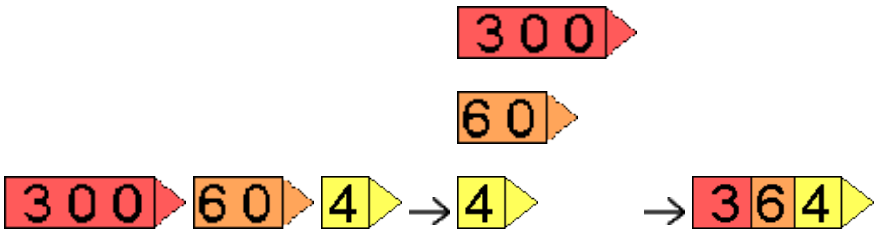
Teaching Place Value with Arrow Cards

What are arrow cards and what do you do with them?

We use place value cards in school to help build, reinforce, and extend place value concepts. Let's take a look at how to use and explore with arrow cards.

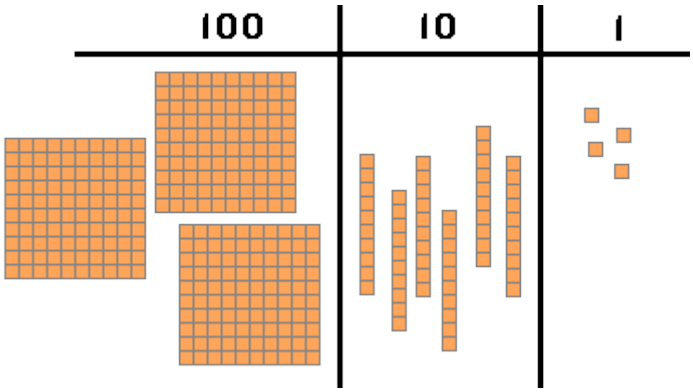
What Are Arrow Cards?

Arrow cards are a set of place value cards with an "arrow" or point on the right side. Children organise the cards horizontally or vertically to represent numbers in expanded notation. They can overlap cards and line up the arrows to form multi-digit numbers.



When arrow cards are colour-coded by place, they are easier to organize, and the colour helps reinforce the concept of place. A yellow "3" looks and feels different from an orange "30" and a red "300." Children in primary years can work with arrow cards up to the hundreds or thousands, while children in later year groups might benefit from using arrow cards up to 5, 6 and 7 digits.

Arrow cards form a useful transition between base ten blocks and written numerals. Base ten blocks are very concrete. They look exactly like their value. Using base ten blocks, 300 is represented with 3 hundred squares; each hundred square is the size of 10 tens or 100 ones.



Using Arrow Cards - Getting Started

Your child should sort the cards into groups according to place -- ones, tens, hundreds.

Work through a series of "show me" activities, in which your child at first holds up single arrow cards and then hold up numbers they've built.

"Show me 8. Show me 40...60.... How many tens are in 60? Show me 700..."

Build a few two-digit numbers. "Show me 11, 12... 46, 47..."

Remind your child that when they build 46, the 40 is still there. It's 40 + 6. Forty is 4 tens; 46 is 4 tens plus 6.

Increase to 3 digit numbers and increase complexity by asking for a number between two numbers.

Number Pairs

"Show me 35 and 53." Both numbers use a 3 and a 5. Discuss the difference in the value of 5 as it is used in each number. Break the numbers apart to look at their components.

Extend the idea. "Show me all the 3-digit numbers you can make with a 3, 5, and 7 in any place."

"Show me all the 2-digit and 3-digit numbers you can make using 3, 5, or 7 in any place."

Zero

After students show a few 3-digit numbers, ask them to show a number with a zero.
"Show me 104. Show me 608."
In the number 104, the 0 means an absence of tens. We don't need a "zero tens" card to show this. We can show 104 with 100 + 4; when we put them together, we will see a zero in the tens place, from the 100 card.

Add and Subtract

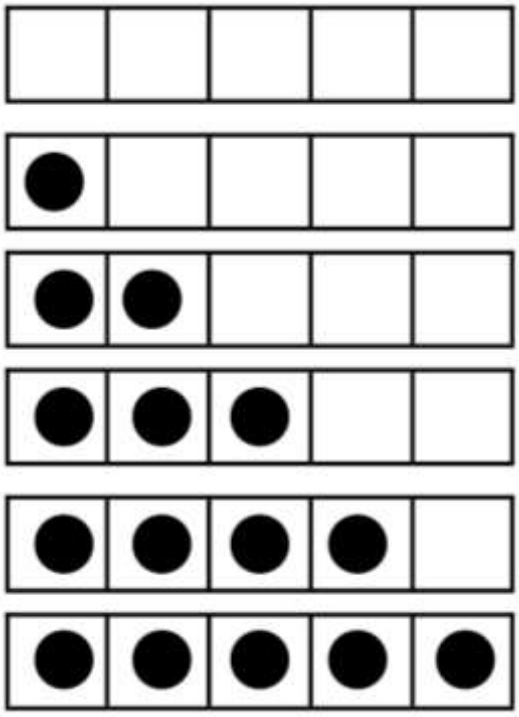
"Show me 10 more than 13...20 more than 13." If your child arranges the tens cards in sequence, they can pull away each ten to reveal the next, while the 3 remains stable in the ones place.

"Show me 10 less than 97...20 less...."
"Show me 100 more than...100 less than..."
You can transition to the language, "Build a number that is...."

"Build a number that is 40 more than 39....Build a number that is 300 less than 415...."

Teaching with Ten Frames

Pupils will begin with a 5 frame in EYFS. This helps them to know what five looks like.



This helps them to see how quantities increase in size. They should eventually recognise that a full five frame is '5' without counting, they just know it.

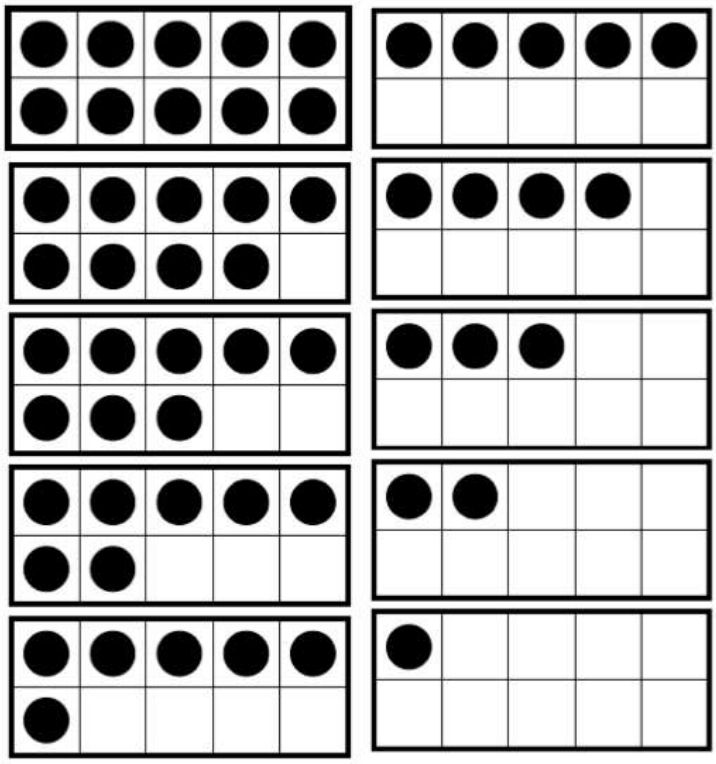
They could also recognise that the spaces represent missing counters/dots.

If there are 3 dots then they could begin to talk about needing 2 more to make 5 or to fill it up.

Eventually they will know all the facts of numbers to 5. For example:

4 can be made up of 4 and 0, 3 and 1, 2 and 2 and so on.

During Reception, when ready, they will be introduced to a ten frame.



In year 1, this knowledge of number facts is extended to all the numbers to 10.

Again they should see the empty squares as the missing part which makes 10.

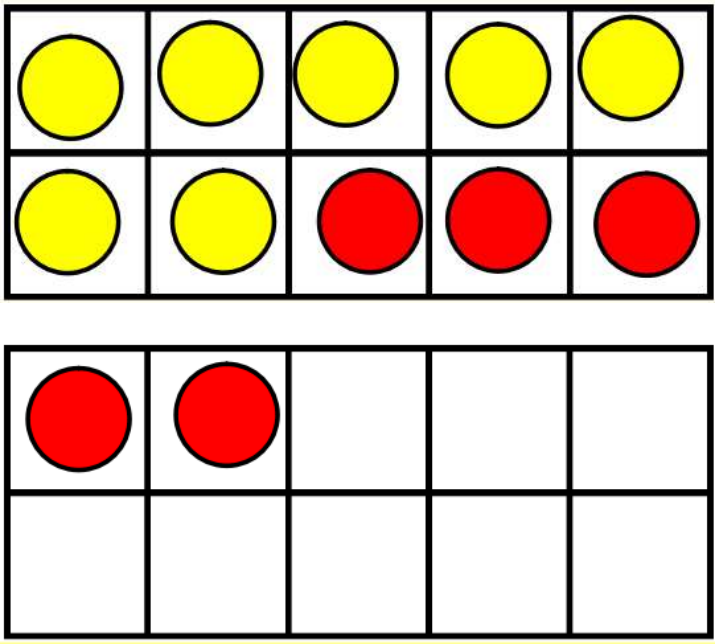
The arrangement of the dots is important to show the facts of numbers between five and ten.

For example:

7 can be seen as one row of 5 and a second row of 2 or a square of 4 and 3 more. Ask your child what they 'see'.

Addition with Ten Frames – Bridging 10

Here's why being fluent in the facts of all numbers to 20 is so important!



7 + 5 =

The 5 is partitioned into 3 + 2

7 + 3 + 2=

By putting the 3 into the first ten frame to fill it, the child can clearly see this is now

10 + 2 = 12

This skill is also crucial when mental methods are developed in year 2, especially when regrouping is required.

For example:

37 + 25 =

Pupils are expected to partition numbers in their head to solve mental calculations

30 + 20 = 50 and 7 + 5 = 12.

So: 50 + 10 + 2 = 62