## NUMBERCROSS STRATEGIES

## 1. Stay organized.

When writing the numbers, we organize them by place value. Use vertical lines to help align place values.

We cross out the numbers as we use them, so we don't use the same number twice.

2. Find unique lengths.

If only one choice in the list has a certain number of digits then there is only one column or row where it will fit.

Where can we place 503 and 50,553 ?


We place 503 in the only space that is 3 digits long, and place 50,553 in the only space that is 5 digits long.


As we cross out numbers from the list, we may find there is only one number left that has a certain number of digits. So we keep checking as we fill in clues!

## 3. Find the only number that fits.

If a row or column already has some digits filled in, there may only be one number that fits.

Which number goes in the first column?


In the first column, the only four-digit number with second digit 5 is 3,505 .


## 4. The first digit can't be 0 .

A number can't start with 0 .
What number goes in the first row?


Since each highlighted square is the first digit of a number in a column, these digits are not 0 .

> 4,004
> 4,040 24,002 24,244 40,040 40,204 222,000
> 244,020 224,420


The only 6-digit number without a 0 in those place values is 224,420 .


## 5. Check for common digits.

Sometimes there are several numbers that fit in a space, but they have the same digits in some place values. So, we can place just those digits.

What digits can we place in the first and fifth rows?


Since both 3-digit numbers have tens digit 0 and ones digit 5 , we place just those digits.


## 6. Eliminate choices with intersections.

Check the intersections. Is there only one pair of numbers that share the same digit in that square?

Which numbers go in the first row and the first column?


Only one four-digit number, 1,005, starts with the same digit as a five-digit number, 10,350.


## 7. Find the only place a number can go.

Sometimes, we can eliminate all the other choices for placing a number, leaving only one place to put it.

Where can we place 27,027 ?


If we place 27,027 in the bottom row, we can't complete the fifth column.


If we place 27,027 in the fifth column, we can't complete the bottom row.


So, we must place 27,027 in the third row.


## 8. Look for unusual digits and patterns.

Some puzzles have unusual numbers, or digits that only appear a few times or in special ways. This may be a clue to look at them first.

Where can we place 888 and 999?


There are only two places we can put 888 or 999.


In the second row, only 888 also lets us place a number in the second column, 804.

We then place 999 in the fourth row.


## 9. Stay flexible.

If we're stuck on one part of the puzzle, we can look at another part of the puzzle or re-try a strategy. Maybe enough numbers have been crossed out so that a new strategy will help.

## 10. Check every number.

Check that every number is written correctly and copied correctly onto the grid. Sometimes a simple mistake can make a puzzle impossible to solve.

