



Year 3 Activities and Problems

[Class Planning Y3 >>](#)

Number and place value

Unit 1: Three digit numbers

Unit 12: Partitioning numbers

Teaching ideas

Make a number

Organisation: groups

Pupils choose five pieces of base 10 apparatus and make a three-digit number. They choose another five pieces and make a different number. Repeat this five times. They record their numbers in order, such as 122, 212, 221, or 203, 230, 302, ...

Make a hundred

Organisation: groups

Pupils roll two dice, add the scores and make the score in base 10 apparatus. They change units for tens until they reach a hundred. The first to reach a hundred wins.

Break a hundred can be played with the same apparatus as **Make a hundred**. Here pupils remove their score from a hundred, exchanging tens for ones. The first to reach zero wins.

Make five hundred, **Break five hundred**, **Make a thousand** and **Break a thousand** can be played in the same way.

My number is ...

Organisation: groups

A pupil thinks of a number. The others take turns to ask a question about it which can only be answered yes or no.

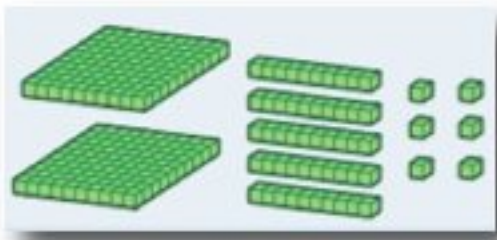
Is your number between 200 and 500? Yes.
Is your number between 200 and 300? No.
Is your number between 300 and 400? Yes.
Is it odd? Yes.

This continues until someone guesses the number then that pupil ‘thinks of a number’.

Place value game

Organisation: pairs

Pairs use base 10 apparatus, shuffled Digit cards 0-9 placed face down and strips of 10 squares. They each take three cards, make the largest number and show it with the apparatus. The pupil with the larger number colours a square on their strip. The first to colour ten squares wins. The activity can be repeated for making the smallest number.



Ordering numbers

Organisation: groups, pairs, individuals

Using a shuffled pack of Digit cards 0-9, pupils take the top three cards and make the largest number they can, then return cards to the pack and re-shuffle. They repeat this for five turns then order their numbers. This can be repeated for making the smallest number they can.

Problem solving

Count in steps

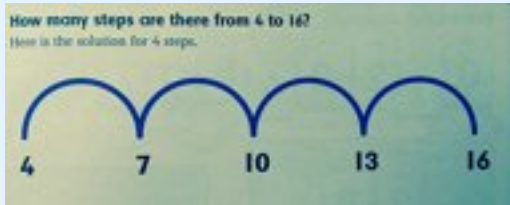
These steps are the **same** size, they are all steps of 3.

Find different solutions for different numbers of steps:

Make steps the same size

Make each step a different size

What if the rule is, you must not step on odd numbers?



Choose your own start and finish numbers.

Five counters

Draw a 3-prong abacus and place 5 counters on it.

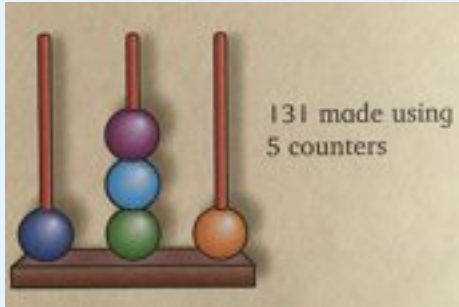
Move your counters to make different numbers. Write them in a list.

Look at the numbers in your list.

Can you find pairs of numbers that have a difference of 9?

Which pair of numbers has the largest difference?

Which pair of numbers has the smallest difference?



What if...
... you used 6 counters each time?
... the abacus had 4 spikes?

Zap the digit

Try this with a partner, you will each need a calculator.

Each of you enter a different hundreds number (256)

Take turns to zap a digit from your partner's display (- 6 = 250)

Digits can be zapped in any order and keep going until you get to zero.

Reverse the digits

Organisation: pairs

Pupils take turns to enter a two-digit number on their calculator. The other decides what to enter in order to reverse the digits, such as changing 35 to 53.

Calculator numbers

Organisation: pairs

Pupils take turns to enter a two-digit number on their calculator. The other decides what to add or subtract to round this to the nearest ten, then records the key presses.

3 6 + 4 = 4 0

This activity can be repeated for hundreds such as changing 337 to 340 or to the next hundred.

Digits game

Organisation: whole class

Shuffle one set of digit cards 0-9, or place them in a small bucket and shake them thoroughly.

Each pupil will need to draw three boxes next to each other to write digits in.

Choose a card at random and show it to the pupils. They choose in which of the three boxes to write the digit. Continue choosing digit cards at random. The aim is for pupils to place digits in the boxes to try to match a given number, such as:

- Make the largest number.
- Make the smallest number.
- Make the number nearest to 500.

Discuss which positions would have been the best for the selected digits.

Get in order

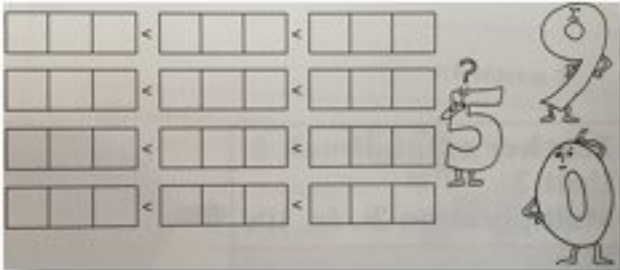
Organisation: whole class

Use ten pieces of card, about playing card size, on which are written the digits 0-9. Each pupil will need a game sheet like the one below.

Shuffle the digit cards, or place them in a small bucket and shake them thoroughly. Choose a card at random and show it to the pupils.

They choose in which of the nine boxes to write the digit. Continue choosing digits cards at random.

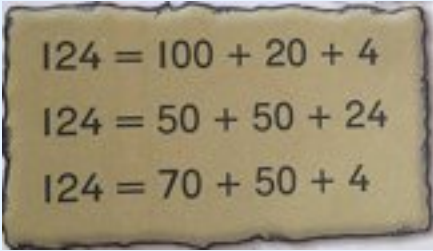
The aim is for pupils to place digits in the boxes so that the number sentence is true. For each game, decide whether to return the selected digit card so that it has the chance of being picked again. This should change the strategy which pupils might employ.



Start with larger numbers. Can you zap numbers by adding?

Breaking up

You can break up 124 in different ways.



Find more ways to break up 124.

Can you sort them in different ways?

Try starting with a different 3-digit number or 4-digit number.

What's my number?

I am thinking of a 2-digit number.

- It is a multiple of 3.
- The difference between the two digits is 1.
- The sum of its digits is one-fifth of the number.

What number am I thinking of?

Make up more problems like this.

Answer: 45



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