

Digit doom/digit delight

Activity 1

Focus of activity: Understanding place value in 4 digit numbers.

Working together: conceptual understanding

- Lay out a set of place value cards so that the 1000s, 100s, 10s and 1s are all in separate columns.
- Ask a child to pick out a 1000s card, a 100s card, a 10s card and a 1s card. Lay them out separately on the table asking the value of each number. Ask a child to make a 4-digit number by putting the cards together with the arrows lined up. Together read the number.
- *Has the value of each digit changed? We know what the number is, by looking at each digit and its place in the whole number. This is what we mean when we say 'place value' – the value of the digit, according to its place in the number. A 9 in the 1000s place is worth much more than a 9 in the 1s place.*
- Sketch a 1000s, 100s, 10s and 1s place value grid and write the number in it. Ask chn to clarify the value of each digit in the 4-digit number as you write.
- Make different sets of 4-digit numbers, from the place value cards asking chn to tell the group the value of each digit and have them write them on the grid.
- Give chn their own sets of place value cards: 1000s, 100s, 10s, 1s.
- *Now make 4602. How can you make that number with the cards? How many 10s? What do we write on the grid?*
- Say some other 4-digit numbers for chn to write on their whiteboards, checking they have 0 as a place holder in the correct place. Write into the place value grid.
- *With your own place value cards make a 4-digit number where the 5 is worth 500 and the 3 worth 30. Ensure chn have the digits in correct place and ask them to read their numbers aloud.*
- *Who has made the largest 4-digit number? Who has made the smallest 4-digit number? Which digit is most important when comparing 4-digit numbers?*

Up for a challenge?

Make a 4-digit number using only two place value cards. Read the number and write the value of each digit into the place value grid.

Now it's the children's turn:

- Chn work in pairs. They have a set of shuffled 0-9 cards between them placed face down.
- Chn pick 4 number cards each and put them together to make a 4-digit number, still placed face down. They turn the cards over one at a time from the 1s digit to the 10s, then 100s and finally 1000s digit.
- The one with the largest number wins and gets to write the number into their own place value grid. The person in the pair with the most 4 digit numbers written into their place value grid wins at the end of the session.
- Ensure chn understand that the 0 is used as a place holder. If they happen to have 0 in the 1000s place, ensure they realise that there are no thousands in this number.
- Include the language greater than and less than when discussing who has the largest number. *Ask questions such as how many hundreds in this number?*

S-t-r-e-t-c-h:

If chn cope well, they draw a long 0 to 10,000 line. They choose one of the 4-digit numbers and place it on the line. Support them in doing so. *Roughly where would this 4-digit number go on the number-line? More than half way? We know it's greater than 5000, so it will be more than half way, would it be nearer to 8000 or 9000?*

Things to remember

Remember that you need to look carefully at the place of each digit within the 4-digit number to know its value. The first digit stands for the 1000s, the second digit stands for the 100s, the third stands for the 10s and the fourth, for the 1s. Watch out for chn not understanding that 0 is used as a place holder in 4072 for example.

You may want to add something that has emerged from the activity. This may refer to misconceptions or mistakes made.

Resources	Outcomes
<ul style="list-style-type: none">• Place value cards – 1000s, 100s, 10s, 1s. Chn's sets and adult set• 0 to 9 digit cards• Place value grid (see child sheet)	<ol style="list-style-type: none">1. Chn understand the place value of each digit in a 4-digit number.2. Chn can partition 4-digit numbers and combine 1000s, 100s, 10s and 1s to make 4-digit number.3. Chn are beginning to position 4-digit numbers on a 0-10,000 number-line.

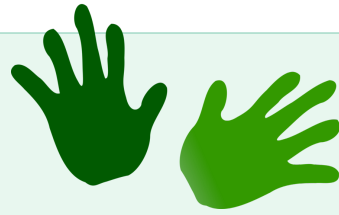
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Activity 1

Work in pairs

Things you will need:

- 0 to 9 digit cards per pair
- Place value grid each
- A pencil



What to do:

- Shuffle the 0-9 digit cards. Place them face down.
- Pick 4 number cards each and put them together to make a 4-digit number, still placed face down.
- Turn the 1s digit over first, then the 10s, then the 100s and finally the 1000s digit on the left.
- The person with the largest 4-digit number wins and gets to write the number into their own place value grid.
- The person in the pair with the most 4 digit numbers written into their place value grid wins at the end of the session.
- Remember that 0 is used as a place holder so 4607 for example would have no 10s.

1000s	100s	10s	1s
4	6	0	2

S-t-r-e-t-c-h:

Draw a long 0 to 10,000 line. Choose one of your 4-digit numbers. Roughly where would this 4-digit number go on the number line? More than half way? Mark it on where you think it belongs. Repeat with another 4-digit number.

Learning outcomes:

- I understand the place value of each digit in a 4-digit number.
- I can partition 4-digit numbers and combine 1000s, 100s, 10s and 1s to make 4-digit numbers.
- I am beginning to position 4-digit numbers on a 0-10,000 number line.

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1000s	100s	10s	1s