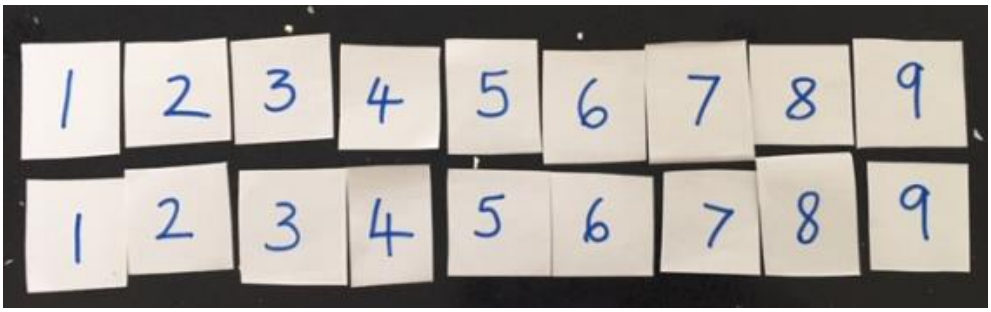
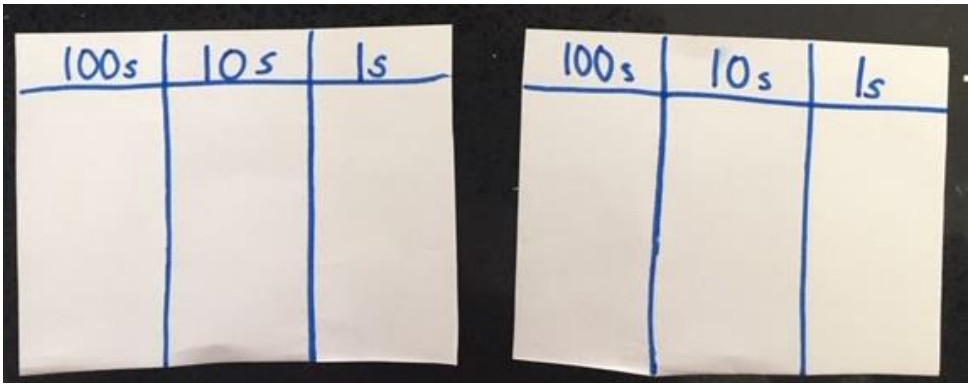
Nice and Nasty Week – Place Value Y3/4

You will need:

- Someone to play the games with each day; this could be a toy person (such as Tintin or a Lego worker) or an imaginary character (such as Harry Potter). Choose someone you know won't cheat!
- A piece of paper cut into eighteen pieces to make two sets of numbers from 1 to 9 (or use playing cards ace to nine from two suits).



- A piece of A4 paper cut in half and made into two place value game boards (see below).



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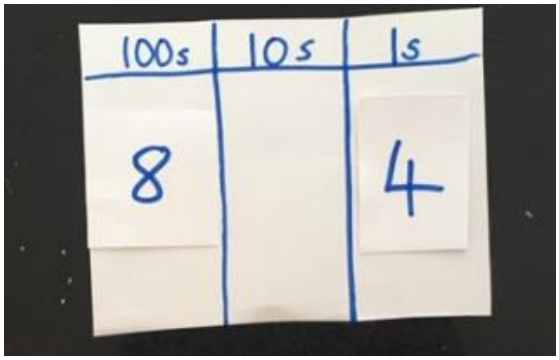
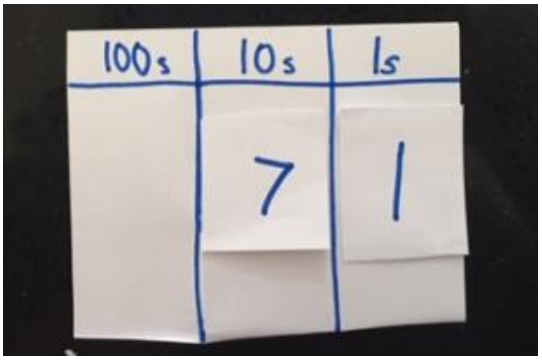
Day 1

Aim of the game: To make the **largest** three-digit number

- Each player needs a set of digit cards 1 to 9 and a place value game board.
- Each player shuffles their set of cards and places them face down in a pile in front of them. Players take it in turns to turn over their top card and decide where to place it on their game board (if you are playing against a character you must play for them as well). For example:
    - Stefanie turns over a four and puts it her ones column.
    - David then turns over a seven and puts it in his tens column.
    - Stefanie turns over an eight and puts it in her hundreds column.
    - David turns over a one and puts it in his ones column.





- Continue to take turns until there are three cards on each game board, making two three-digit numbers.
- Whoever has made the largest three-digit number wins 10 points.
- Play again and again until someone reaches 50 points.
- How are you deciding where to put each number?
- Where's the best place to put a 5?
- What's the largest number you can make? Explain why.
- Would it make a difference if you were to write the number in the column and put the card back into the pack each time and re-shuffle? Explain why.

Notes for adults working with groups of children

- To support children in deciding where to put their cards Base 10 could be available.
- Encourage the children to read the three-digit numbers aloud – do **NOT** accept children reading them as single digits (for example three four six for three hundred and forty-six).

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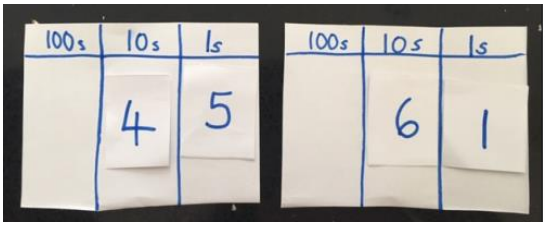
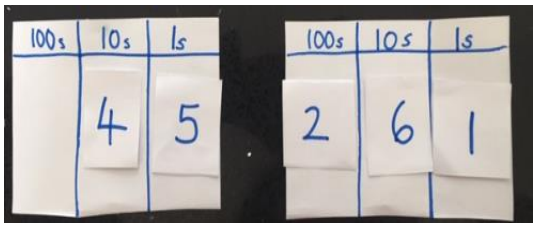
Day 2

- Today you are going to play the nasty version of the game you played yesterday.
- Take it in turns in the same way but this time when you turn over a card you can choose to put it on your opponent's board. For example
    - Stefanie and David have turned over two cards each so far. Stefanie has placed her cards so her number is 45. David's number is 61.



Stefanie David

    - On Stefanie's third go she turns over a 2 and chooses to put it on David's board instead of her own board, so that he has two hundred and sixty-one.



    - On David's next turn he has no choice but to put the number he gets on Stefanie's board. What number do you think he'd like to turn over so that he wins?
    - Luckily for Stefanie he turns over a seven and so she wins!

- You score 10 points for a win. The first player to get to 50 points is the overall winner.
- Play again but this time shuffle the two sets of 1 to 9 cards together and play from one pile. How does this change the game?

Notes for adults working with groups of children

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Day 3

- Today choose whether you want to play the nice or nasty version of the game; this time the aim is to make the **smallest** number.
- How are you deciding where to put each number?
- Where's the best place to put a 5?
- What's the smallest number you can make? Explain why.
- Would it make a difference if you were to write the number in the column and put the card back into the pack each time and re-shuffle? Explain why.

Notes for adults working with groups of children

- To support children in deciding where to put their cards Base 10 could be available.
- Encourage the children to read the three-digit numbers aloud – do **NOT** accept children reading them as single digits (for example three four six for three hundred and forty-six).

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Day 4

- Today choose whether you want to play the nice or nasty version of the game; this time the aim is to be the **closest to the target number 500**. For example:
    - Stefanie makes the number 375 and David makes 612.
    - David wins because he is 112 away from 500 and Stefanie is 125 away from 500.
    - David is the closest to 500.
- How are you deciding where to put each number?
- What's the closest you can get to 500? Explain why.

Notes for adults working with groups of children

- To support children in deciding where to put their cards Base 10 could be available.
- Encourage the children to read the three-digit numbers aloud – do **NOT** accept children reading them as single digits (for example three four six for three hundred and forty-six).
- Children might need support with working out the difference between their number and the target number 500. They might also assume that numbers under 500 aren't as close as numbers over 500. A 0 to 1000 number line marked in one hundreds might be a useful image to support visualising the relative distances between the numbers and 500.

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Day 5

- Today you can choose to play a nice or nasty game and can choose the aim of the game. This could be making:
    - the biggest number
    - the smallest number
    - the target number 500
    - a target number of your choice
- Is there a winning strategy for each of these games?

Notes for adults working with groups of children

- To support children in deciding where to put their cards Base 10 could be available.
- Encourage the children to read the three-digit numbers aloud – do **NOT** accept children reading them as single digits (for example three four six for three hundred and forty-six).
- Children might need support with working out the difference between their number and the target number 500. They might also assume that numbers under 500 aren't as close as numbers over 500. A 0 to 1000 number line marked in one hundreds might be a useful image to support visualising the relative distances between the numbers and 500.
- Encourage the children to think of their own variations of the game and try these out, reflecting on how the thinking is different when the rules or the aim change.

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