



# Place Value - 2

## 2.2.3

**Word Wall:** hundreds, tens, ones, target, closest, nearest, highest, lowest, column, draw, digit, number,

### Introduction

Students will represent three digit numbers using a place value chart using hundreds, tens and ones.

### Resources

- Early FISH Kit
- Tiny ones, tens and hundreds
- Numeral expander
- Place Value arrows
- Mini---whiteboard
- Digits
- Numeral expander
- Show me pocket frame
- Place value dice – 100s, 10s, 1s.



### Time/Classroom Organisation

This activity may be introduced in a small or whole group format. Allow 20---30 minutes. MAGs 1.3.4 and 2.1.3 are pre-requisites to this activity. Repeat using different materials (for example bundle sticks) and allowing students to represent their understandings in a variety of ways. Increase the numbers as students are ready.

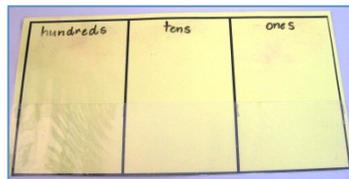
### Australian Curriculum Year Two

Group, partition and rearrange collections up to 1000 in hundreds, tens and ones to facilitate more efficient counting ([ACMNA028](#))



### Activity Process---Place Value Chart

1. Write hundreds, tens and ones (or use sticky notes) on the show---me frame place value chart.



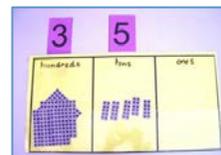
2. Each student has a turn rolling three place value dice (100s,10s, 1s).



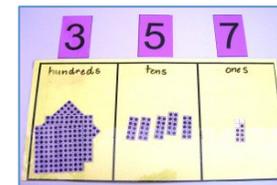
3. Ask the students: *How many hundreds do you have? 3 hundreds. Place 3 hundred frames in the hundreds pocket. Ask students to place the 3 digit on the frame. This means we have 3 hundreds – 300.*



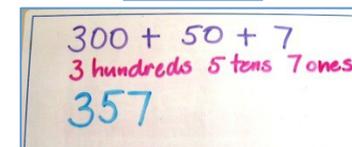
Ask the students: *How many tens on the red die? 5 tens. Place 5 ten frames in the tens pocket. Ask students to place the 5 digit above the tens pocket. This means we have 5 tens – 50.*



4. Ask the students: *How many ones on the black die? 7 ones. Place the 7 ones frame in the ones pocket. Ask students to place the 7 digit above the ones pocket. This means we have 7 ones – 7.*



6. Move the digits together to see how this number is recorded. Write all the different representations of the number on the individual whiteboards.



7. Repeat activity process using a range of resources to represent place value, for example: place value arrows, place value flip chart, hundreds boards and place value charts.

Source:: E deVries, 2008

### Variations & Extensions

#### 1. Place Value Arrows

Resources: Place value arrows, tiny hundreds, tens and ones, show---me frames. Repeat the activity process using place value arrows. Each student rolls the three place value dice. Represent the number using tiny hundreds, tens and ones frames.



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Find the hundreds using the place value arrows. Repeat with the tens and ones. Move the arrow cards up to view how the number is written.

## 2. Different Representations

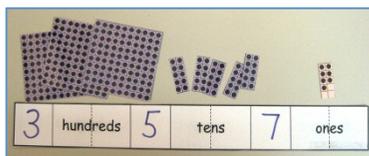
Resources: Numeral Expander and place value flip chart

Repeat the activity using the numeral expander and the place value flip chart.



## 3. Zero as a place holder

Resources: whiteboards; Place value arrows, hundreds, tens and ones, show---me frames. Repeat the above activity using numbers that contain a zero, for example: 407, 230. Discuss how the zero means there are none of that particular quantity, but the zero holds the other numbers in place. Ask students to make the smallest number they can using the digits: 3,0,8.



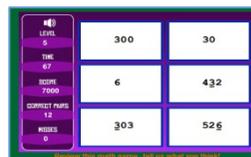
### Links to Related MAGs

- 1.3.5 Place Value – Renaming
- 2.1.2 Numbers to 1000---1
- 2.1.3 Place Value – 1
- 2.2.1 Numbers to 1000---2
- 2.3.3 Place Value---3

## Digital Resources

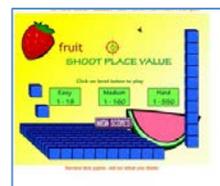
<http://www.sheppardsoftware.com/mathgames/placevalue/MatchingPV.htm>

Students select the value of the underlined digit.



[http://www.sheppardsoftware.com/mathgames/placevalue/fruit\\_shoot\\_place\\_value.htm](http://www.sheppardsoftware.com/mathgames/placevalue/fruit_shoot_place_value.htm)

Students match the numeral to a hundreds, tens and ones representation.



## Contexts for Learning

### Play:

Place Value Game:

Source: E deVries, 2008

### Investigation:

*I wrote down a number with one zero in it, but I cannot remember what it was. I know it was between 500 and 800. What might it have been? Can children find all possible answers? How do they know they have found them all?*

Source: Sullivan and Lilburn. 2010. *Open---ended maths activities*. Oxford University Press: South Melbourne. p 33

### Real life experience:

How many three---digit number plates can you make or find with 3 in the tens place? *If you have safe access to a car park you might let children use that to find any suitable number plates.*

Source: Sullivan and Lilburn. 2010. *Open-ended maths activities*. Oxford University Press: South Melbourne. p 33

### Routines and Transitions:

Use the Fruit Shoot Place Value interactive whiteboard game as a transition to other activities.

## Assessment

Say a three---digit number and ask students to represent this number using place value arrows. Students record this number using hundreds tens and ones, expanded notation and numeral.

**Achievement Standard:** count to and from 1000

## Background Reading

Place value is the key to understanding how we say, read, write and calculate with whole numbers..... Students have to understand the following important characteristics of our place---value system.

- The order of the digits makes a difference to the numbers, so 28 is different from 82.
- The position (or place) of a digit tells us the quantity it represents; for example, in 3526, the 2 indicates 2 tens or 20; but in 247, the 2 indicates 2 hundreds or 200.
- Zero is used as a place holder. It indicates there is none of a particular quantity and holds the other digits 'in place'; for example, 27 means 2 tens and 7 ones, but 207 means 2 hundreds, 0 tens and 7 ones.
- There is a constant multiplicative relationship between the places, with the values of the positions increasing in powers of ten, from right to left.
- To find the quantity that a digit represents, the value of the digit is multiplied by the value of the place; for example, in 3264, the 2 represents 200 because it is 2x100.

These characteristics are developed sequentially.

Source: *First steps in Mathematics – Number: Whole and Decimal Numbers/Fractional Numbers*, 2010. Rigby: Port Melbourne. P52.