

Place Value

2.50

By Mike Ollerton

Page 1 of 5

06 May 2014

INTRODUCTION

Here are a set of ideas for use in KS2 and KS3 classrooms about 'Place Value', or as I prefer, 'the value of the place'

MATHEMATICAL CONTENT

- Numeracy

APPLICABILITY

KS2 – KS3

Exploring place value (or the value of the place)

The following problem can be used with various grids according to the complexity of the work a teacher may wish to offer pupils.

The idea is to give pairs of pupils a copy of one of the grids below

Ask them to place cards with the numbers

2

 and

5

somewhere on the grid and carry out an addition calculation.
One challenge is to find how many different answers can be made.

This task will open up opportunities to discuss which zeros are unnecessary or redundant - an important aspect of place value, particularly when working with decimal values.

- a) Younger children could be offered a Tens and Units grid, initially working with two (or even three) numbers whose total is less than 10
- b) For each grid pupils can order their answers from smallest to largest. When appropriate pupils can be asked to find the differences between adjacent pairs of values.
- c) Asking pupils to try to explain how they know they have found all the possible answers is aimed at causing them to work systematically and to explain their reasoning.
- d) An extension to this task could be to offer pupils two numbers that 'bridge' a ten e.g. 5 and 8.
- e) A further extension would be to offer pupils three numbers.
This will clearly create more answers than with two numbers.
Using three numbers will require the grids to have the extra row

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Page 2 of 5

06 May 2014

Grid 1a

100	10	1
Hundreds	Tens	Ones
H	T	U
0	0	0
0	0	0

Grid 1b

100	10	1
Hundreds	Tens	Ones
H	T	U
0	0	0
0	0	0
0	0	0

Place Value

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Page 3 of 5

06 May 2014

Grid 2a

10	1	●	1/10
Tens	Ones	●	tenths
T	U	●	t
0	0	●	0
0	0	●	0

Grid 2b

10	1	●	1/10
Tens	Ones	●	tenths
T	U	●	t
0	0	●	0
0	0	●	0
0	0	●	0

Place Value

2.50

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Page 4 of 5

06 May 2014

Grid 3a

10	1	●	1/10	1/100
Tens	Ones	●	tenths	hundredths
T	U	●	t	h
0	0	●	0	0
0	0	●	0	0

Grid 3b

10	1	●	1/10	1/100
Tens	Ones	●	tenths	hundredths
T	U	●	t	h
0	0	●	0	0
0	0	●	0	0
0	0	●	0	0

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Page 5 of 5

06 May 2014

1	1	1	1	1
2	2	2	2	2
3	3	3	3	3
4	4	4	4	4
5	5	5	5	5
6	6	6	6	6
7	7	7	7	7
8	8	8	8	8
9	9	9	9	9