Reasoning and Problem Solving
Step 4: 100s, 10s, 1s 2

National Curriculum Objectives:

Mathematics Year 3: (3N2a) Read and write numbers up to 1000 in numerals and in words
Mathematics Year 3: (3N3) Recognise the place value of each digit in a three-digit number (hundreds, tens, ones)
Mathematics Year 3: (3N6) Solve number problems and practical problems involving 3N1 - 3N4

Differentiation:

Questions 1, 4 and 7 (Reasoning)
Developing Using knowledge of place value, explain the odd one out by matching two different representations of 3-digit numbers, without the use of zero as a place holder.
Expected Using knowledge of place value, explain the odd one out by matching three different representations of 3-digit numbers, with some use of zero as a place holder.
Greater Depth Using knowledge of place value, explain the odd one out by matching four different representations of 3-digit numbers, with some use of zero as a place holder and unconventional partitioning.

Questions 2, 5 and 8 (Reasoning)
Developing Explain if the place value chart represents a given 3-digit number, without the use of zero as a place holder.
Expected Explain if the place value chart represents a given 3-digit number, with some use of zero as a place holder.
Greater Depth Explain if the place value chart represents a given 3 digit-number, with some use of zero as a place holder and unconventional partitioning.

Questions 3, 6 and 9 (Problem Solving)
Developing Using knowledge of place value, create numbers using up to 6 counters on a place value chart. The use of zero as a place holder is not expected.
Expected Using knowledge of place value, create numbers using up to 7 counters on a place value chart. Some use of zero as a place holder is expected.
Greater Depth Using knowledge of place value, create numbers using up to 8 counters on a place value chart. Some use of zero as a place holder is expected and unconventional partitioning.

More Year 3 Place Value resources.

Did you like this resource? Don't forget to review it on our website.

100s, 10s, 1s 2

1a. Find the odd one out by matching two pairs.

Hundreds	Tens	Ones
100 100 100 100	10 10	1

Hundreds	Tens	Ones

612

421

523

D

PS

1b. Find the odd one out by matching two pairs.

Hundreds	Tens	Ones
100 100	10 10 10 10	1 1 1 1 1

Hundreds	Tens	Ones

637

245

327

D

PS

2a. Mary says,

The number shown is 224.

Hundreds	Tens	Ones
100 100	10 10	1 1

D

Do you agree? Explain why.

PS

2b. Jack says,

The number shown is 535.

Hundreds	Tens	Ones
100 100 100 100	10 10 10	1 1 1 1 1

D

Do you agree? Explain why.

PS

3a. Create 5 different 3-digit numbers using 5 counters.

Hundreds	Tens	Ones

D

Put the numbers in order from largest to smallest.

R

3b. Create 5 different 3-digit numbers using 6 counters.

Hundreds	Tens	Ones

D

Put the numbers in order from smallest to largest.

R

100s, 10s, 1s 2

4a. Find the odd one out by matching three pairs.

Hundreds	Tens	Ones
100 100 100	10 10 10 10 10	1 1 1

One hundred and fifty-two.

Hundreds	Tens	Ones
● ●	● ● ● ● ● ●	●

261

152

353

162

PS

100s, 10s, 1s 2

4b. Find the odd one out by matching three pairs.

Hundreds	Tens	Ones
100 100 100	10 10	1

Four hundred and ninety-six.

Hundreds	Tens	Ones
● ● ● ● ● ●	● ● ● ● ● ●	● ● ● ● ● ● ●

496

669

802

321

PS

5a. Tom says,

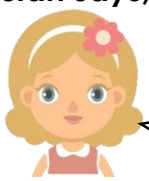
The number shown is 450.

Hundreds	Tens	Ones
100 100 100 100		1 1 1 1 1

Do you agree? Explain why.

PS

5b. Sian says,



The number shown is 302.

Hundreds	Tens	Ones
100 100 100		1 1

Do you agree? Explain why.

PS

6a. Create 3-digit numbers using 7 counters.

● ● ● ● ● ● ●

Hundreds	Tens	Ones

Your numbers must have a 0 in the ones column.

R

6b. Create 3-digit numbers using 6 counters.

● ● ● ● ● ●

Hundreds	Tens	Ones

Your numbers must have a 0 in the tens column.

R

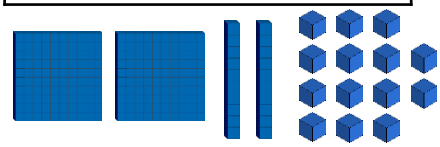
100s, 10s, 1s 2

100s, 10s, 1s 2

7a. Find the odd one out by matching four pairs.

Hundreds	Tens	Ones
100 100 100	10 10	1 1 1 1

five hundred and seven



Hundreds	Tens	Ones
● ● ● ●	● ●	● ●

507 | 251 | 234 | 324 | 423

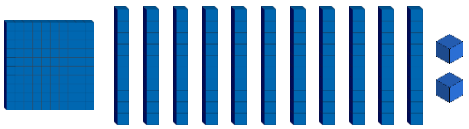
GD

PS

7b. Find the odd one out by matching four pairs.

Hundreds	Tens	Ones
100 100 100	10	1 1 1

eight hundred and thirteen



Hundreds	Tens	Ones
● ● ● ● ●		● ●

212 | 313 | 813 | 602 | 483

GD

PS

8a. Zahatu says,

The number shown is 604.

Hundreds	Tens	Ones
100 100 100 100 100 100	10	1 1 1 1

Do you agree? Explain why.

GD

PS

8b. Ben says,

The number shown is 805.

Hundreds	Tens	Ones
100 100 100 100 100 100 100	10 10 10 10 10 10 10 10 10 10	1 1 1 1 1

Do you agree? Explain why.

GD

PS

9a. Create 3-digit numbers using 6 counters.

Hundreds	Tens	Ones

Your numbers must have a 0 in the tens column.

GD

R

9b. Create 3-digit numbers using 8 counters.

Hundreds	Tens	Ones

Your numbers must have a 0 in the ones column.

GD

R

Reasoning and Problem Solving
100s, 10s, 1s 2

Developing

1a. 523

2a. Mary is incorrect because there are 2 ones in the ones column, not 4. The number shown is 222.

3a. Various answers, for example: 311, 221, 212, 122, 113.

Expected

4a. 162

5a. Tom is incorrect because there are 5 ones in the ones column. The number shown is 405.

6a. 700, 610, 520, 430, 340, 250, 160 have a 0 in the ones column.

Greater Depth

7a. 251

8a. Zahatu is incorrect because there is 1 ten in the tens column. The number shown is 614.

9a. 600, 501, 402, 303, 204, 105 have a zero in the tens column.

Reasoning and Problem Solving
100s, 10s, 1s 2

Developing

1b. 637

2b. Jack is incorrect because there are 4 hundreds in the hundreds column. The number shown is 435.

3b. Various answers, for example: 132, 141, 213, 222, 231.

Expected

4b. 802

5b. Sian is correct because there are 3 hundreds in the hundreds column and 2 ones in the ones column. The number shown is 302.

6b. 600, 501, 402, 303, 204 and 105 have a zero in the tens column.

Greater Depth

7b. 483

8b. Ben is incorrect because there are 7 hundreds in the hundreds column, 11 tens in the tens column and 5 ones in the ones column. The number shown is 815.

9b. 800, 710, 620, 530, 440, 350, 260, 170 have a zero in the ones column.