

Reasoning and Problem Solving

Step 3: 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 2 and Year 3 Place Value](#) resources.

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

Hundreds	Tens	Ones
100 100 100	10 10	1

612

421

523

Hundreds	Tens	Ones
● ● ● ● ● ●	●	● ●

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

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

637

245

327

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



3 PS



3 PS

2a. Mary says,



The number shown is 224.

Hundreds	Tens	Ones
100 100	10 10	1 1



Do you agree? Explain why.

3 PS

2b. Jack says,



The number shown is 535.

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



Do you agree? Explain why.

3 PS

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



Hundreds	Tens	Ones



Put the numbers in order from largest to smallest.

3 R

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



Hundreds	Tens	Ones



Put the numbers in order from smallest to largest.

3 R

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

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

261

152

353

162

One hundred and fifty-two.

Hundreds	Tens	Ones
● ●	● ● ● ● ● ●	●



3 PS

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

Hundreds	Tens	Ones
100 100 100	10 10	1

496

669

802

321

Four hundred and ninety-six.

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



3 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.

3 PS

5b. Sian says,



The number shown is 302.

Hundreds	Tens	Ones
100 100 100		1 1



Do you agree? Explain why.

3 PS

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



Hundreds	Tens	Ones

Your numbers must have a 0 in the ones column.



3 R

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



Hundreds	Tens	Ones

Your numbers must have a 0 in the tens column.

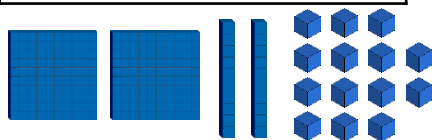


3 R

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

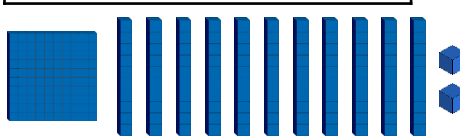


3 PS

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

Hundreds	Tens	Ones
100 100 100	10	1 1 1 1

eight hundred and thirteen



Hundreds	Tens	Ones
● ● ● ● ● ●		● ●

- 212
- 313
- 813
- 602
- 483



3 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.

3 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 10	1 1 1 1 1



Do you agree? Explain why.

3 PS

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



Hundreds	Tens	Ones

Your numbers must have a 0 in the tens column.



3 R

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



Hundreds	Tens	Ones

Your numbers must have a 0 in the ones column.



3 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.