



Hook Junior School

Curriculum and Assessment Maths Examples

Year 3

Number and Place Value

Selected National Curriculum Programme of Study Statements

Pupils should be taught to:

- count from 0 in multiples of 4, 8, 50 and 100
- work out if a given number is greater or less than 10 or 100
- recognise the place value of each digit in a 3-digit number (hundreds, tens, and ones)
- solve number problems and practical problems involving these ideas

The Big Ideas

The value of a digit is determined by its position in a number.

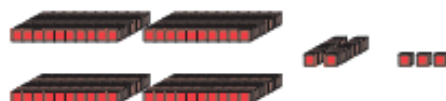
Place value is based on unitising, treating a group of things as one 'unit'. This generalises to $3 \text{ units} + 2 \text{ units} = 5 \text{ units}$ (where the units are the same size).

Mastery Check

Please note that the following columns provide indicative examples of the sorts of tasks and questions that provide evidence for mastery and mastery with greater depth of the selected programme of study statements. Pupils may be able to carry out certain procedures and answer questions like the ones outlined but the teacher will need to check that pupils really understand the idea by asking questions such as 'Why?', 'What happens if ...?', and checking that pupils can use the procedures or skills to solve a variety of problems.

Mastery

What number is represented in each set?



Mastery with Greater Depth

What is the value of the number represented by the counters in the place value grid?

100s	10s	1s

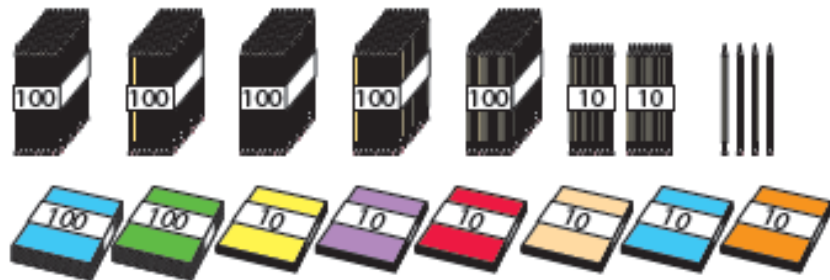
Using all of the counters, how many different numbers can you make?
Have you made all the possible numbers?

Explain how you know.

Mastery

Find the number of pencils.

Find the number of exercise books.



Guide pupils to use practical equipment to deepen their understanding of place value and apply their knowledge of place value in mental and written calculation.

- 8 hundreds, 3 tens and 6 ones together make .
- 457 is made of hundreds, tens and ones.
- 250 is made of hundreds and tens.

Mastery with Greater Depth

Captain Conjecture says 'The number in the place value grid is the largest 3-digit number you can make using all 10 counters'.

100s	10s	1s
● ● ● ● ● ● ●	●	●

Do you agree?

Explain your reasoning.



674 is made of 6 hundreds, 7 tens and 4 ones.
674 is also made of 67 tens and 4 ones.
674 is also made of 6 hundreds and 74 ones.

Find different ways of expressing:

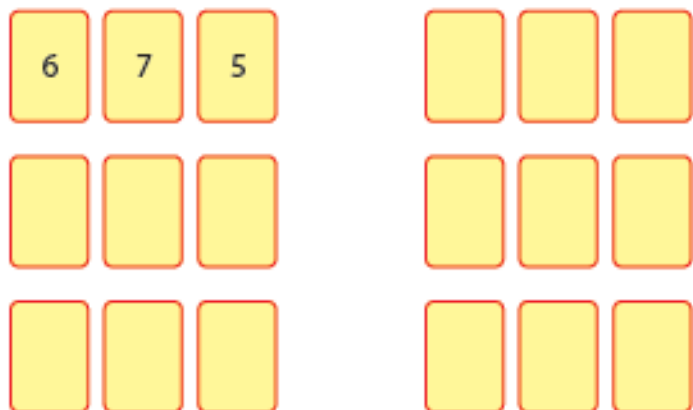
- 630
- 704
- 867

Mastery

Megan has made a 3-digit number with these cards.



What other 3-digit numbers can she make with these cards?



What is the largest number she can make?

Consider whether or not children are working systematically.

Mastery with Greater Depth

Captain Conjecture says, 'If you add 6 to a number ending in 7 you will always get a number ending in 3.' Is he correct?



Explain your answer.

Year 4

Mastery	Mastery with Greater Depth
<p>What temperature is 20 degrees lower than 6 degrees Celsius?</p>	<div> </div> <p>Can you draw a fish at -35m?</p> <p>Can you draw a seagull at 20m above sea level?</p> <p>What would the position of your fish and the seagull be if each of the intervals on the lighthouse represented 7m?</p>
<p>Kiz has these numbers: 1330 1303 1033 1003 1030</p> <p>He writes them in order from smallest to largest. What is the fourth number he writes?</p> <p>Gemma counts on in 25s from 50. Circle the numbers that she will say:</p> <p>990 550 125 755 150</p>	<p>Here is a sequence of numbers: 20, 30, 40, 50</p> <p>What will the nineteenth number in the sequence be? What will the hundredth number in the sequence be?</p>
<p>Match 4600 to numbers with the same value.</p> <div> <p>4600</p> </div> <ul style="list-style-type: none"> 460 tens 460 hundreds 46 hundreds 4600 ones 46 tens 	<p>How many different ways can you write 5510?</p> <p><i>Pupils should suggest answers such as:</i></p> <p>551 tens 55 hundreds and 1 ten 5 thousands and 510 ones</p>

Mastery

Using these 4 digits:

1

7

3

0

What is the smallest number you can make?

What is the largest number you can make?

Mastery with Greater Depth

5000 years ago Egyptians carved number symbols on their tombs:

| = 1

n = 10

e = 100

What is the value of these Egyptian numbers?

e n n | | |

e n n | | | + e n n | | |

e e e n n | | | + e e n n n n | | | | | | | |

Mastery

Fill in the missing numbers.

$352 + \square = 480$

$70 + 99 + \square = 270$

$\square - 55 = 84$

$\square - 3000 = 600$

Mastery with Greater Depth

Fill in the missing digits.

$1\square 3 + 6\square = 200$

$1\square 5\square + 300 = 1557$

$5\square 28 - 44\square = 4788$

$\square\square\square 0 - 2468 = 5092$

What do you notice about the calculations below?
Can you find easy ways to calculate?

$5000 + 4000 =$

$5230 + 400 =$

$5023 + 28 =$

$4000 + 5000 =$

$4230 + 500 =$

$4023 + 28 =$

$3000 + 6000 =$

$3230 + 600 =$

$3023 + 28 =$

$2000 + 7000 =$

$2230 + 700 =$

$2023 + 28 =$

$1000 + 8000 =$

$1230 + 800 =$

$1023 + 48 =$

Find the missing numbers.

What do you notice?

Make 9999

$5000 + \square = 9999$

$4000 + \square = 9999$

$3000 + \square = 9999$

$2000 + \square = 9999$

$1000 + \square = 9999$

Make 9998

$5230 + \square = 9998$

$4230 + \square = 9998$

$3230 + \square = 9998$

$2230 + \square = 9998$

$1230 + \square = 9998$

Make 9990

$5023 + \square = 9990$

$4023 + \square = 9990$

$3023 + \square = 9990$

$2023 + \square = 9990$

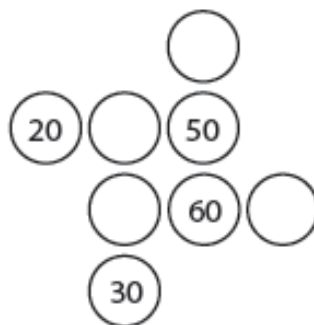
$1023 + \square = 9990$

Fill in the empty boxes to make the equations correct.

$\boxed{7} \boxed{} \boxed{1} + \boxed{} \boxed{3} \boxed{} = 999$

$\boxed{7} \boxed{} \boxed{1} + \boxed{} \boxed{3} \boxed{} = 1000$

Complete this diagram so that the three numbers in each row and column add up to 140.



Now create your own diagram with a total of 250.

Year 5

Mastery

What can we say about 48 000?

It is less than 50 000.

It is made of 40 000 and together.

It is made of thousands.

It is made of hundreds.

It is made of tens.

Mastery with Greater Depth

Using all of the digits from 0 to 9, write down a 10-digit number.

What is the largest number you can write?

What is the smallest number you can write?

Write down the number that is one less than the largest number.

Write down the number that is one more than the smallest number.

Captain Conjecture says, 'Using the digits 0 to 9 we can write any number, no matter how large or small!'

Do you agree?

Explain your reasoning.



The temperature at 6 a.m. was recorded each day for one week.

Day	Mon	Tues	Wed	Thurs	Fri	Sat	Sun
Temp (°C)	1	-1	0	3	2	-2	-3

What was the coldest morning?

What was the warmest morning?

What is the difference in temperature between Monday and Tuesday?

Place the recorded temperatures in order from smallest to largest.

The temperature at 6 a.m. was recorded each day for one week.

Day	Mon	Tues	Wed	Thurs	Fri	Sat	Sun
Temp (°C)	1	-1	0	3	2	-2	-3

What is the difference in temperature between the coldest day and the warmest day?

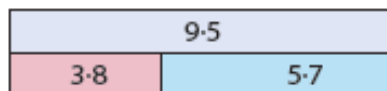
At what time of year do you think these temperatures were recorded?

Do you think it might have snowed during the week?

Explain your reasoning.

Mastery

Write four number facts that this bar diagram shows.



$$\square + \square = \square$$

$$\square + \square = \square$$

$$\square - \square = \square$$

$$\square - \square = \square$$

Mastery with Greater Depth

Use this number sentence to write down three more pairs of decimal numbers that sum to 3:

$$1.6 + 1.4 = 3$$

Captain Conjecture says, 'When working with whole numbers, if you add two 2-digit numbers together the answer cannot be a 4-digit number.'

Do you agree?
Explain your reasoning.



Captain Conjecture says, 'If you keep subtracting 3 from 397 you will eventually reach 0.'

Do you agree?
Explain your reasoning.



Mastery

The table shows the cost of train tickets from different cities.

What is the total cost for a return journey to York for one adult and two children?
How much more does it cost for two adults to make a single journey to Hull than to Leeds?

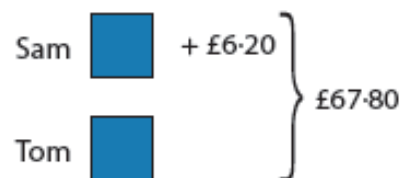
		York	Hull	Leeds
Adult	Single	£13.50	£16.60	£11.00
	Return	£24.50	£30.00	£20.00
Child	Single	£9.75	£11.00	£8.00
	Return	£15.00	£18.50	£13.50

Mastery with Greater Depth

Sam and Tom have £67.80 between them.

If Sam has £6.20 more than Tom, how much does Tom have?

The bar model can help children solve these type of problems, please visit ncetm.org for further information on how to build understanding.



$$£67.80 - £6.20 = £61.60$$

$$£61.60 \div 2 = £30.80$$

Tom has £30.80

Year 6

Mastery	Mastery with Greater Depth
<p>Put these numbers in order, from smallest to largest.</p> <ul style="list-style-type: none">■ 3·3, 3·03, 3·33, 3·303, 3·033■ 5834, 61·8 multiplied by 100, one tenth of 45813■ 0·034, 3·6 divided by 100, ten times 0·0033■ -4·4, -4·44, -4·04, -4·404	<p>Eduardo says, 'The the population of Mexico City is 11 million (to the nearest million) and the population of New York is 11·2 million (to the nearest hundred thousand).'</p> <p>He says, 'The population of New York must be bigger than the population of Mexico City because 11·2 million is bigger than 11 million.'</p> <p>Do you agree with him?</p>
<p>Estimate the answer to $4243 + 1734$ by rounding the numbers to:</p> <ul style="list-style-type: none">■ the nearest 1000■ the nearest 100■ the nearest 50■ the nearest 10.	<p>Three pupils are asked to estimate the answer to the sum $4243 + 1734$.</p> <p>Andrew says, 'To the nearest 100, the answer will be 5900.'</p> <p>Bilal says, 'To the nearest 50, the answer will be 6000.'</p> <p>Cheng says, 'To the nearest 10, the answer will be 5970.'</p> <p>Do you agree with Andrew, Bilal or Cheng?</p> <p>Can you explain their reasoning?</p>
<p>The population of Shanghai is 21 million, to the nearest million. Each person weighs on average 70 kg.</p> <p>Estimate the total weight of all the people in Shanghai.</p> <p>Do you think your answer is more or less than the actual answer you'd get if you weighed everyone in Shanghai accurately?</p>	<p>The total population of Shanghai is 21 million, to the nearest million.</p> <p>If at lunchtime everyone in Shanghai eats a bowl of rice, how many grains of rice do you estimate are eaten each lunchtime?</p>

Mastery

A scientist measures the depth of some objects below the surface of the sea. She records her measurements using negative numbers.

Object	Depth
Coral reef	-2 m
Shipwreck	-11 m
Pirate treasure	four times as deep as the coral reef
Sleeping shark	3 metres above the shipwreck

Which object is deepest? Explain your choice.

Is the sleeping shark deeper than the pirate treasure? Explain your reasoning.

A seagull is hovering 1 m above the surface of the sea. How far apart are the seagull and the coral reef?

Mastery with Greater Depth

A scientist measured the temperature each day for one week at 06:00.

On Sunday the temperature was 1.6°C .

On Monday the temperature had fallen by 3°C .

On Tuesday the temperature had fallen by 2.1°C .

On Wednesday the temperature had risen by 1.6°C .

On Thursday the temperature had risen by 4.2°C .

On Friday the temperature had fallen by 0.9°C .

On Saturday the temperature had risen by 0.2°C .

What was the temperature on Saturday?

Test examples for the End of Key Stage Two:

Paper 1:

2

$$1\frac{1}{7} - \frac{3}{7} =$$

1 mark

3

$$120 - 15 \times 5 =$$

1 mark

4

$$\begin{array}{r} 2376 \\ \times \quad 15 \\ \hline \end{array}$$

Show
your
method

5

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Paper 2 and 3: applied and contextualised

7

Complete this sentence.

Every number with a factor of **10** must also have factors of



and and

1 mark

