

## Year 1 Christmas Maths Homework

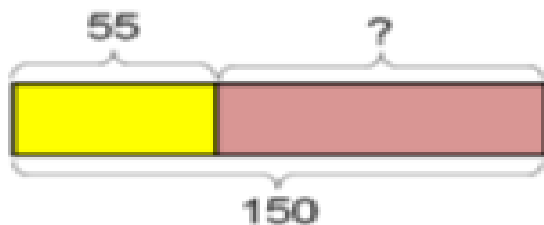
Dear Parents,

Please work with your child to reinforce some of the concepts we have covered during this Autumn term. Ensure you spend time working through these questions working out the answers and where appropriate, discussing the reasoning and strategies used. Remember sometimes there is more than one answer to a question.

### The C-P-A Approach

**Concrete** – students should have the opportunity to use concrete objects and manipulatives to help them understand what they are doing.

**Pictorial** – students should then build on this concrete approach by using pictorial representations. These representations can then be used to reason and solve problems.



An example of a bar modelling diagram used to solve problems.

**Abstract** – with the foundations firmly laid, students should be able to move to an abstract approach using numbers and key concepts with confidence.

### What are manipulatives?

Manipulatives are physical objects that are used as teaching tools to engage children in the hands-on learning of mathematical concepts. These are different resources such as cubes, counters, straws, etc, which can be used to support the children to understand better.

### Reasoning

- I am going to count on from 8. Will I say the number 6? Explain your answer.
- Spot the mistake:  
What is wrong with this sequence of numbers?  
4, 5, 7, 8, 9
- I am going to count backwards from 10. How many steps will it take until I reach 4?

### Problem Solving

- Find a number to match the criteria. Use the number cards.

A number bigger than 8  
An odd number  
A number smaller than 6



- Can you find the numbers in words in the wordsearch?  
1, 4, 5, 9, 10

f	n	r	t
o	i	e	o
u	n	v	n
r	e	s	e

- Jan has put 3 number cards in a bag. She picks the number 8 and says 'this is the biggest'. Then she picks the number 4 and says 'This is the smallest'. What number could be on the 3<sup>rd</sup> card?
- Ted is guessing what numbers could be on a number line. He knows the first number is 0 and the last number is equal to or below 10. What could the other numbers be?



### True or False?

Rosie says,



The difference between 7 and 4 is 3

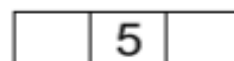
Can you show this in more than one way?

### Reasoning

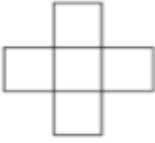
- What comes next?**  
 $6+1=7$   
 $7+1=8$   
 $8+1=9$
- True or False?**  
1 more than 7 is the same as 1 less than 9. Convince me.
- Harry says '1 more is the same as adding 1 and 1 less is the same as taking away.' Is he right? Prove it.

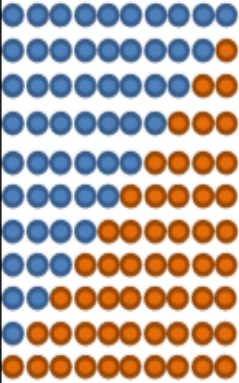









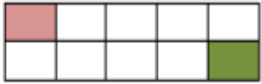
### Problem Solving



- A number line has been cut up. Can you find the missing numbers?









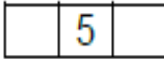
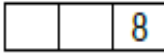

- Dan says 'I am one year older than my sister. My sister is one year older than my brother. My brother is 7. How old am I?'

Reasoning	Problem Solving
<ul style="list-style-type: none"> <li>Write a pair of numbers that add together to make 8. How many pairs can you find? Are you sure there aren't any more?</li> <li>Maryam says 'If you add 0 to a number, the number stays the same.' Do you agree? Explain why.</li> <li>Harry says 'If you add together four 0's the answer is 4' Do you agree? Explain your answer.</li> </ul>	<ul style="list-style-type: none"> <li>Write the numbers 1 to 5 in the squares so that each row and column add up to same number.</li> </ul> <div style="text-align: center;">  </div> <ul style="list-style-type: none"> <li> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; padding: 5px; background-color: #f4cccc;">1</div> <div style="border: 1px solid black; padding: 5px; background-color: #cfe2f3;">2</div> <div style="border: 1px solid black; padding: 5px; background-color: #d9ead3;">4</div> <div style="border: 1px solid black; padding: 5px; background-color: #f4cccc;">6</div> </div> </li> </ul> <p>Pick a pair of numbers. Add them together. Write the numbers and the answer. How many different totals can you make? Choose a pair of numbers and takeaway one from the other. How many totals can you make now?</p>

Fluency	Reasoning	Problem Solving
<ul style="list-style-type: none"> <li>Use the pattern to complete the number sentences.</li> </ul> <div style="display: flex; align-items: center;">  <div style="margin-left: 20px;"> <math>10 + 0 =</math>  <math>9 + \_ = 10</math> </div> </div> <ul style="list-style-type: none"> <li>Fill in the boxes:</li> </ul> <div style="display: flex; justify-content: space-between;"> <div style="text-align: center;"> <math>2 + \square = 10</math>  <math>5 + \square = 10</math>  <math>\square + 4 = 10</math> </div> <div style="text-align: center;"> <math>10 - \square = 3</math>  <math>10 - \square = 9</math>  <math>10 - 0 = \square</math> </div> </div> <ul style="list-style-type: none"> <li> <div style="display: flex; justify-content: center; align-items: center; gap: 10px;"> <div style="border: 1px solid black; width: 20px; height: 20px; background-color: #cfe2f3;"></div> <div style="border: 1px solid black; width: 20px; height: 20px; background-color: #f4cccc;"></div> <div style="border: 1px solid black; width: 20px; height: 20px; background-color: #d9ead3;"></div> </div> <p>Using the picture we can make 4 number sentences.</p> <math>3 + 2 = 5</math>    <math>5 - 2 = 3</math>  <math>2 + 3 = 5</math>    <math>5 - 3 = 2</math>            Can you write four number sentences using this picture?         </li> </ul> <div style="display: flex; justify-content: center; align-items: center; gap: 10px;"> <div style="border: 1px solid black; width: 20px; height: 20px; background-color: #cfe2f3;"></div> <div style="border: 1px solid black; width: 20px; height: 20px; background-color: #f4cccc;"></div> <div style="border: 1px solid black; width: 20px; height: 20px; background-color: #d9ead3;"></div> </div>	<ul style="list-style-type: none"> <li><b>Continue the pattern</b></li> </ul> $0 + 8 = 8$ $1 + 7 = 8$ $\_ + 6 = 8$ $3 + \_ = \_$ $\_ + \_ = \_$ <p>Can you make a similar pattern for 10?</p> <ul style="list-style-type: none"> <li><b>What number goes in the missing box?</b></li> </ul> $9 + \_ = 10$ $10 - \_ = 9$ <p>Can you prove this using your fingers?</p> <ul style="list-style-type: none"> <li><math>7 + 3 = 3 + 7 = 10</math> Do you agree? Use a ten frame to prove it.</li> </ul>	<ul style="list-style-type: none"> <li>I have 10p to spend. Which two items could I buy? List of all the different items I could buy together.</li> </ul> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  5p         </div> <div style="text-align: center;">  6p         </div> <div style="text-align: center;">  4p         </div> </div> <div style="display: flex; justify-content: space-around; align-items: center; margin-top: 20px;"> <div style="text-align: center;">  5p         </div> <div style="text-align: center;">  4p         </div> <div style="text-align: center;">  6p         </div> </div> <ul style="list-style-type: none"> <li>All the dots have fallen off two toad stools. How many different ways can you put them back on?</li> </ul> <div style="display: flex; justify-content: center; align-items: center; gap: 20px;">    </div> <ul style="list-style-type: none"> <li>Beth needs to colour in the boxes in two different colours. One box of each colour has been coloured. How many different ways can she colour the boxes.</li> </ul> <div style="text-align: center; margin-top: 20px;">  </div>

Fluency	Reasoning
<ul style="list-style-type: none"> <li>There are 5 people upstairs on the bus, there are 4 people downstairs. How many altogether? Write a number sentence to show this.</li> </ul>  <ul style="list-style-type: none"> <li>Ben has 5 buns. He eats 2. How many are left? Write this in a number sentence.</li> </ul>  <ul style="list-style-type: none"> <li>Rob has 5 more cubes than Tom. Tom has 11 cubes. How many cubes does Rob have? Write a number sentence to show this.</li> </ul>	<ul style="list-style-type: none"> <li>Write the missing symbols in these number sentences. +, - and =</li> </ul> <p>7 <input type="text"/> 2 <input type="text"/> 9</p> <p>8 <input type="text"/> 4 <input type="text"/> 4</p> <ul style="list-style-type: none"> <li>If you know this, <math>6 + 3 = 9</math>. What other facts do you know?</li> <li>Which four number sentences link these 3 numbers?</li> </ul> <p style="text-align: center;">3    4    7</p>

Reasoning	Problem Solving																																																												
<ul style="list-style-type: none"> <li><b>True or False?</b> The car is eleven cubes long.</li> </ul>   <ul style="list-style-type: none"> <li>Dan says 'I can make all the numbers from eleven to twenty using the numbers 1-9'. Do you agree? Explain your reasoning.</li> <li><b>Spot the mistake:</b> Circle the odd one out and explain what has gone wrong 11, 12, 13, 14, 51, 16, 17</li> </ul>	<ul style="list-style-type: none"> <li>Match each number to a sentence that describes it.</li> </ul> <p>A number bigger than 10. An even number. A number smaller than 15.</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="background-color: #4285f4; color: white; padding: 5px 10px; border-radius: 5px;">16</div> <div style="background-color: #9c27b0; color: white; padding: 5px 10px; border-radius: 5px;">17</div> <div style="background-color: #ff9800; color: white; padding: 5px 10px; border-radius: 5px;">fourteen</div> </div> <ul style="list-style-type: none"> <li>Can you find the numbers in the wordsearch?</li> </ul> <table border="1" style="border-collapse: collapse; text-align: center; font-family: monospace;"> <tr><td>s</td><td>e</td><td>v</td><td>e</td><td>n</td><td>t</td><td>e</td><td>e</td><td>n</td></tr> <tr><td>t</td><td>h</td><td>r</td><td>e</td><td>e</td><td>w</td><td>l</td><td>e</td><td>i</td></tr> <tr><td>f</td><td>o</td><td>u</td><td>r</td><td>t</td><td>e</td><td>e</td><td>n</td><td>n</td></tr> <tr><td>e</td><td>i</td><td>g</td><td>h</td><td>t</td><td>n</td><td>v</td><td>o</td><td>e</td></tr> <tr><td>e</td><td>n</td><td>s</td><td>i</td><td>x</td><td>t</td><td>e</td><td>e</td><td>n</td></tr> <tr><td>t</td><td>h</td><td>i</td><td>r</td><td>t</td><td>y</td><td>n</td><td>t</td><td>o</td></tr> </table> <ul style="list-style-type: none"> <li>Play a game of bingo. The bingo card has numbers from 1-20 in words. The teacher then shows a number in numerals and the children must find that number in words on their grid.</li> </ul> <table border="1" style="border-collapse: collapse; text-align: center; font-family: monospace;"> <tr><td>thirteen</td><td>eight</td><td>eleven</td></tr> <tr><td>twenty</td><td>sixteen</td><td>twelve</td></tr> </table>	s	e	v	e	n	t	e	e	n	t	h	r	e	e	w	l	e	i	f	o	u	r	t	e	e	n	n	e	i	g	h	t	n	v	o	e	e	n	s	i	x	t	e	e	n	t	h	i	r	t	y	n	t	o	thirteen	eight	eleven	twenty	sixteen	twelve
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<ul style="list-style-type: none"> <li>Fill in the missing numbers.</li> </ul> <p>9 <math>\xrightarrow{\quad}</math>  Is 1 less than</p> <p>2 <math>\xrightarrow{\quad}</math>  Is 1 more than</p> <ul style="list-style-type: none"> <li>How many fingers if I put one down?</li> </ul>  <ul style="list-style-type: none"> <li>I roll the number that is one more. What number do I roll?</li> </ul> 	<ul style="list-style-type: none"> <li>What comes next?  <math>6+1=7</math>  <math>7+1=8</math>  <math>8+1=9</math></li> <li>True or False?            1 more than 7 is the same as 1 less than 9. Convince me.</li> <li>Harry says '1 more is the same as adding 1 and 1 less is the same as taking away.' Is he right? Prove it.</li> </ul>	<ul style="list-style-type: none"> <li>A number line has been cut up. Can you find the missing numbers?</li> </ul>    <ul style="list-style-type: none"> <li>Dan says 'I am one year older than my sister. My sister is one year older than my brother. My brother is 7. How old am I?'</li> <li>Roll a dice. If your number is even, write down the number one more than your number. If your number is odd, write down the number one less. How many numbers can you get?</li> </ul>

### Shapes:

Go on a shape hunt around your house. What 2D or 3D shapes can you find?

E.g. dinner table – rectangle/ circle/ square.

Can you write these in a list?

You could extend this by looking for shapes outside if you go for a walk.

Put a selection of 3-D shapes in a feely bag.

Choose a shape. What do you think it is?



Explain how you know.

How many ways can you sort the shapes into groups?

