

Stage 3 Maths Program

NSW K-10 Mathematics Syllabus Outcomes

Addition and Subtraction (1)

MA3-5NA – Selects and applies appropriate strategies for addition and subtraction with counting numbers of any size

- Select and apply efficient mental, written and calculator strategies for addition and subtraction of numbers of any size
- Use estimation to check answers to calculations

3D Space (1)

MA3-14MG – Identifies three-dimensional objects, including prisms and pyramids, on the basis of their properties, and visualises, sketches and constructs them given drawings of different views

- Name prisms and pyramids according to the shape of their 'base'
- Describe and compare properties of prisms and pyramids in terms of their faces, edges and vertices

Working Mathematically

- MA3-1WM - Describes and represents mathematical situations in a variety of ways using mathematical terminology and some conventions
- MA3-2WM - Selects and applies appropriate problem-solving strategies, including the use of digital technologies, in undertaking investigations
- MA3-3WM - Gives a valid reason for supporting one possible solution over another

Assessment

Pre-Test

Post - Test

Term I

Week 7

Learning Goal - Addition and Subtraction

(refer to the outcome)

Success Criteria - Addition and Subtraction (refer to the indicators)

TIB - In real life, estimation is part of our everyday experience. When you're shopping in the grocery store and trying to stay within a budget, you estimate the cost of the items you put in your trolley to keep a running total in your head. When you're purchasing tickets for a group of people or splitting the cost of dinner between 8 friends, we estimate for ease.

Learning Goal - 3D Space (refer to the outcome)

Success Criteria - 3D Space (refer to the indicators)










TIB - We need to understand the unique properties and characteristics of geometric shapes.

- **We need to recognise the relationship shapes have with our surrounding environments.**

Homework - iMaths - Mathematical skills learnt over the last 5 week cycle.

Mathematics Weekly Plan

Term – 1 2 3 4 Week – 1 2 3 4 5 6 7 8 9 10 11 Strands – Addition and Subtraction (1)/ 3D Space(1)

		Monday	Tuesday	Wednesday	Thursday	Friday																				
Key Ideas:		Whole Number			Data																					
Warm Up		Maths Game	Ninja Maths	Ninja Maths	5 Minute Frenzy	5 Minute Frenzy																				
Problem of the Day		<p>Pre-test: Addition and Subtraction: Stage 3: Addition & Subtraction</p> <p>Name: _____ Class: _____</p> <p>STAGE 3: ADDITION & SUBTRACTION</p> <p>QUESTION 1: ADDITION</p> <p>For the following questions show your working and explain your chosen strategy.</p> <p>a) Find the sum of 6587 and 329 b) Find the total of these three numbers. 589, 4026 and 3904</p> <p>QUESTION 2: SUBTRACTION</p> <p>For the following questions show your working and explain your chosen strategy.</p> <p>a) Subtract 673 from 8000</p> <p>Pre-test: 3D Space:</p> <p>a) Complete the following table identifying the name of objects and the number of faces, edges and vertices.</p> <table border="1"> <thead> <tr> <th>3D OBJECT</th> <th>NAME</th> <th>NUMBER OF FACES</th> <th>NUMBER OF EDGES</th> <th>NUMBER OF VERTICES</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	3D OBJECT	NAME	NUMBER OF FACES	NUMBER OF EDGES	NUMBER OF VERTICES																<p><i>In January, there were 371 new born dragons. In February, another 428 dragons were born. How many dragons were born altogether?</i></p>	<p><i>Jason has a collection of 263 football cards. His brother has 189. How many more football cards does Jay have?</i></p>	<p><i>Students create a word problem for the following number problems and answer them:</i></p> <p>Addition: $863 + 364$</p> <p>Subtraction: $9000 - 726$</p>	<p>Post-test: Addition and Subtraction: Open ended: Students create 2 addition and 2 subtraction number problems and solve using 2 different strategies for each. Much show working out.</p> <p>Post-test: 3D Space: Open Ended: Students draw 2 3D shapes of their choice. They write the properties for the shapes, including their names as well as sketching their nets.</p>
3D OBJECT	NAME	NUMBER OF FACES	NUMBER OF EDGES	NUMBER OF VERTICES																						
																										
																										
																										

Main Focus + Language

Review student's prior knowledge of written strategies for addition and subtraction. The strategies below are written examples to use when explicitly model with the whole class. Students will be encouraged to take notes of each of the strategies used and use them during their group activities.

Partitioning Method for Addition:
 $879 + 456 =$
 We need to partition the numbers by using **expanded notation**.
 $800 + 70 + 9$
 $400 + 50 + 6$
 Now add the numbers together:
 $800 + 400 = 1200$
 $70 + 50 = 120$
 $9 + 6 = 15$
 $1200 + 120 + 15 = 1335$

Partitioning Method for Subtraction:
 $8887 - 2341 =$
 We need to partition the numbers first by using **expanded notation**.
 $8000 + 900 + 80 + 7$
 $2000 + 300 + 40 + 1$
 Now subtract these numbers:
 $8000 - 2000 = 6000$
 $900 - 300 = 600$
 $80 - 40 = 40$
 $7 - 1 = 6$
 $6000 + 600 + 40 + 6 = 6646$

Additional examples for Partitioning Method:
 $538 + 628$
 $8269 + 4294$
 $9306 - 6293$
 $6726 - 3493$
Extension:
 $6394 + 3538 + 789$
 $93635 + 37494 + 669$

$369 - 298$
 $2539 - 1936$
 $4823 - 2794$
Extension:
 $82638 - 2737$
 $93747 - 2537 - 387$
 $78373 - 872 - 76$

Standard Written Method for addition and subtraction (algorithm):

	H	T	U
	7	4	1
+	2	3	3
	7	6	4

We start by adding the units column first: $1 + 3 = 4$
 We then add the tens: $40 + 20 = 60$ we put 6 tens in the tens column
 Lastly, we add the hundreds: $700 + 0 = 700$ we put 7 hundreds in the hundreds column.

	T	H	T	U
	3	1	1	3
+		6	9	4
	3	9	0	7

We add the units first: $3 + 4 = 7$
 We then add the tens: $10 + 90 = 100$ so we put 0 in the tens column and carry the 1 hundred to the hundreds column.
 We then add the hundreds: $200 + 600 + 100 = 900$
 Lastly, we add the thousands: $3000 + 0 = 3000$

	H	T	U
	3	3	7
-	1	2	2
	2	1	5

We start by subtracting the units column first: $7 - 2 = 5$
 We then subtract the tens: $30 - 20 = 10$ we put 1 ten in the tens column
 Lastly we subtract the hundreds: $300 - 100 = 200$ we put 2 hundreds in the hundreds column.

Decomposition Method or Trading Method for Subtraction:
 In this method we borrow a multiple of 10 from the digit to the left when the top number is smaller than the bottom number.

	T	H	T	U
		3	10	
	3	4	7	2
-	1	2	8	1
	2	1	9	1

We subtract the units first: $2 - 1 = 1$. We then subtract the tens $70 - 80$ we can't do because 70 is smaller than 80. We need to borrow from the hundreds column. We bring over 100 from the hundreds column (10 tens are 100) Now 10 tens + 7 tens = 8 tens is the same as $170 - 80 = 90$ so we put 9 in the tens column.
 Because we borrowed one hundred we need to strike out the 4 in the hundreds column and leave 3 hundreds. $300 - 200 = 100$ so we put 1 in the hundreds column.
 Lastly, we subtract the thousands column. $3000 - 1000 = 2000$

Additional examples for Standard Method: Addition:
 $345 + 45$
 $853 + 96$
Extension:
 $6353 + 373 + 4345$
 $5373 + 436 + 948$

Subtraction:
Explicitly model decomposition method for these examples: $8000 - 673$

8	0	0	0
-	6	7	3
	7	3	2

$9000 - 837 =$
Extension: $10\ 000 - 5288$
 $11\ 000 - 8253$

$536 - 63$
 $946 - 94$
Extension:
 $2679 - 836 - 87$
 $7675 - 660 - 54$

Mental Strategies for Addition:

Split Strategy
 This mental strategy is splitting both numbers into parts before adding together.
Example:
 $35 + 47$
Step 1: $30 + 40 = 70$
Step 2: $70 + 5 = 75$ (adding 5 from 35)
Step 3: $75 + 7 = 82$ (adding 7 from 47)

Additional Examples:
 $739 + 393$
 $926 + 247$
Extension:
 $93737 + 3897$
 $28903 + 73833$

Compensation Strategy:
 The Compensation Strategy requires you to add too much and then take away the difference.
Example:
 $78 + 36$
Step 1: Round 78 to the next multiple of 10 which is 80 ($78 + 2 = 80$)
Step 2: $80 + 30 = 110 + 6$ (from 36) = 116
Step 3: $116 - 2 = 114$
 (We added 2 to 78 to make 80, so now we must take the 2 away to get the correct answer.)

Additional Examples:
 $52 + 39$
 Think $52 + 40 = 92$ BUT because I added 1 to 39 to round up to 40, I need to subtract 1 from my answer.
 Therefore: $52 + (40 - 1) = 91$

$56 + 81 =$
Step 1: $56 + 4 = 60$
Step 2: $60 + 81 = 141$
Step 3: $141 - 4 = 137$

$72 + 45 =$
Step 1: $45 + 5 = 50$
Step 2: $72 + 50 = 122$
Step 3: $122 - 17 =$

Jump Strategy:
 The jump strategy is a mental strategy that adds the second number in stages. It can be used on an empty number line to count up rather than back.

$673 + 7327$

Additional Examples:
 $46 + 33 =$

Continue modelling jump strategies with larger numbers.

Mental Strategies for Subtraction:

Split Strategy:
 $76 - 34$
Step 1: $70 + 6 - 30 + 4$
Step 2: $70 - 30 = 40$
Step 3: $6 - 4 = 2$
Step 4: $40 + 2 = 42$

Additional Examples:
 $76 - 34$ (No trading required)
Step 1: $70 - 30 = 40$ (tens difference)
Step 2: $6 - 4 = 2$ (units difference)
Step 3: $40 + 2 = 42$ (adding the two answers)

$73 - 28$ (Trading required)
Step 1: $60 - 20 = 40$ (trading means 70 to 60)
Step 2: $13 - 8 = 5$ (including traded 10)
Step 3: $40 + 5 = 45$ (adding the two answers)

Extension: When trading is required, it is easier to always start with the units and work your way up to hundreds etc. In this example trading is required in the units; $7 - 9$ cannot do, borrow from the tens column (2) and now becomes 17. That 2 has now become a 10, which cannot subtract 60 (6), borrowing is again required from the 8 (800) which now makes that $10 = 110 - 60$ etc.

827 - 569
 $700 - 500 = 200$
 $110 - 60 = 50$
 $17 - 9 = 8$
 $= 258$

8374 - 6893
 $7000 - 6000 = 1000$
 $1200 - 800 = 400$
 $170 - 90 = 80$
 $4 - 3 = 1$
 $= 1481$

Compensation Strategy:
 $67 - 37$
Step 1: Round 37 to the next multiple of 10 which is 40 ($37 + 3 = 40$)
Step 2: $67 - 40 = 27$
Step 3: $27 + 3 = 30$
 (We added 3 to make 40, so we took away too much. Now we need to add the 3 to get the correct answer.)

Additional Examples:
 $92 - 67 =$
Step 1: $67 + 3 = 70$
Step 2: $92 - 70 = 22$
Step 3: $22 + 3 = 25$

$63 - 18 =$
Step 1: $18 + 2 = 20$
Step 2: $63 - 20 = 43$
Step 3: $43 + 2 = 45$

Jump Strategy:
 $87 - 34 =$

Continue modelling strategies with larger numbers.

Review student's prior knowledge of 3D shapes. Define 3 Dimensional shapes and discuss meaning with students:

3D shapes:
 3D shapes have faces (sides), edges and vertices (corners). A 3D shape is described by its edges, faces, and vertices (vertex is the singular form of vertices).
 The exception is the sphere which has no edges or vertices.
Polyhedron: A polyhedron is a 3D shape that has flat faces and straight edges. A regular polyhedron is a 3D shape with all of its faces the same size and shape.

Using a 3D object from the classroom e.g. tissue box, model the following as students take notes.

Faces: Faces are the flat sides on a shape.
Edges: Are the lined where two faces meet.
Vertices: Are the corners of a 3D shape, where three or more edges meet.

Place the following image on the board and students write the names of each shape in their books (*background knowledge assessment*).

Prisms and pyramids
 Prisms have two bases that are the same shape and size. The bases of a prism may be squares, rectangles, triangles or other polygons (2D shapes).
Naming: Prisms and pyramids are named for the shape of their base.

Pyramids differ from prisms as they have only one base and all the other faces are triangular. The triangular faces meet at a common vertex (the apex). Pyramids do not have a uniform cross-section.

Spheres, cones and cylinders do not fit into the classification of prisms or pyramids as they have curved surfaces, not faces, e.g. a cylinder has two flat surfaces and one curved surface.

As a class, brainstorm real-life objects that are represented as a 3D shape, example:
 Sphere - soccer ball
 Cone - traffic cone
 Rectangular prism - bricks
 Cube - dice

Model with the students how to record the **Properties of 3D shapes:**

- number of faces
- shape of faces
- number of vertices
- number of edges

Additional support resources to model and record properties:

- <https://www.slideshare.net/jenniferichols8/properties-of-3-d-shapes-11161711>
- <http://www.swaffield.wandsworth.sch.uk/beta-site/wp-content/uploads/2014/02/Understanding-Shape-Year-6.ppt>
- <https://www.teacherspayteachers.com/Product/3D-Shape-Properties-Display-Posters-1061686>

3D shape Nets:
 A net is a two-dimensional plan or shape that can be folded to make a three-dimensional solid. For some solids, such as the cube, there are many different nets.
 Some 3D shapes, like cubes and pyramids, can be opened out and unfolded into a flat shape. The unfolded shape is called the **net** of the solid. Model some 3D shapes and their nets. Use previous PowerPoint resources to assist modelling nets of 3D shapes. Examples below:

Cube and the net of cube

Square-based pyramid and the net of square based pyramid.

Triangular prism and the net of a triangular prism.

Additional 3D nets resources:
<http://www.greatmathsteachingideas.com/wp-content/uploads/2012/03/Making-3D-Shapes.pdf>

If possible, have pre-cut 3D net shapes to model to the students. Demonstrate by folding to form the 3D shape and then unfolding.

Group Activities	<p>Revision Group - Names</p> <p>Work with these students to continue modelling written strategies viewed today. Get feedback from the students to get an understanding of what they need further assistance in. Use dice or cards to create numbers for problems (<i>extend to 2 by 3 and 3 by 3-digits</i>)</p> <p>Partition: 567 + 199</p> <div data-bbox="427 280 629 411" style="border: 1px solid black; padding: 5px;"> <p>Partitioning method</p> <p>$500 + 100 = 600$</p> <p>$60 + 90 = 150$</p> <p>$7 + 9 = 16$</p> <p>$600 + 150 + 16 = 766$</p> </div> <p>Addition Algorithm:</p> <div data-bbox="427 459 533 624" style="border: 1px solid black; padding: 5px;"> <table style="border-collapse: collapse; margin: auto;"> <tr> <td style="padding: 2px;">hundreds:</td> <td style="padding: 2px;">tens:</td> <td style="padding: 2px;">ones:</td> </tr> <tr> <td style="text-align: center;">1</td> <td style="text-align: center;">8</td> <td style="text-align: center;">9</td> </tr> <tr> <td style="text-align: center;">+</td> <td style="text-align: center;">3</td> <td style="text-align: center;">4</td> </tr> <tr> <td colspan="3" style="border-top: 1px solid black;"></td> </tr> <tr> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> <td style="text-align: center;">3</td> </tr> </table> </div> <p>Subtraction Algorithm:</p> <div data-bbox="427 667 533 810" style="border: 1px solid black; padding: 5px;"> <table style="border-collapse: collapse; margin: auto;"> <tr> <td style="padding: 2px;">5</td> <td style="padding: 2px;">1</td> <td style="padding: 2px;">2</td> </tr> <tr> <td style="padding: 2px;">6</td> <td style="padding: 2px;">2</td> <td style="padding: 2px;">7</td> </tr> <tr> <td style="padding: 2px;">-</td> <td style="padding: 2px;">1</td> <td style="padding: 2px;">3</td> </tr> <tr> <td style="padding: 2px;">-</td> <td style="padding: 2px;">3</td> <td style="padding: 2px;">5</td> </tr> <tr> <td colspan="3" style="border-top: 1px solid black;"></td> </tr> <tr> <td style="padding: 2px;">4</td> <td style="padding: 2px;">9</td> <td style="padding: 2px;">2</td> </tr> </table> </div>	hundreds:	tens:	ones:	1	8	9	+	3	4				1	2	3	5	1	2	6	2	7	-	1	3	-	3	5				4	9	2	<p><i>Get feedback from the students in this group and work through the mental strategies for addition that they need further modelling of.</i></p> <p>Example questions:</p> <p>$363 + 927$</p> <p>$263 + 482$</p> <p>$927 + 693$</p>	<p><i>Get feedback from the students in this group and work through the mental strategies for subtraction that they need further modelling of.</i></p> <p>Example questions:</p> <p>$627 - 429$</p> <p>$502 - 282$</p> <p>$890 - 628$</p>	<p>5/6M Town Groups- Based on Continuum Clusters</p> <p>In mixed ability groups, students will view a range of 3D shapes within the classroom to classify the properties of each object in their books. Students should also be provided with shapes that they should be able to unfold to view the nets of and sketch in their books. Once all the groups have viewed each shape, they will come together as a class to share what they have viewed from each shape.</p> <p>Example:</p> <p>Cube</p> <p>Faces: 6</p> <p>Vertices: 12</p> <p>Edges: 8</p>
hundreds:	tens:	ones:																																			
1	8	9																																			
+	3	4																																			
1	2	3																																			
5	1	2																																			
6	2	7																																			
-	1	3																																			
-	3	5																																			
4	9	2																																			
Group Activities	<p>Middle Group- Names</p> <p>This group will break up into 4 mini groups. Create 4 sets of task cards that contain questions to each written strategy viewed. In their groups, students will complete as many questions as they can before passing on the cards to the next group. Groups will get 6 minutes to complete their questions.</p> <p>Example of rotation:</p> <p>Group 1: Addition Partition</p> <p>Group 2: Subtraction Partition</p> <p>Group 3: Addition Algorithm</p> <p>Group 4: Subtraction Algorithm</p>	<p>Students will be provided with a range of addition questions and must demonstrate each mental strategy to answer the question. These will be answered in their maths books.</p> <p>Example: 87 + 38</p> <p>Split:</p> <p>$80 + 30 = 110$</p> <p>$7 + 8 = 15$</p> <p>$110 + 15 = 125$</p> <p>Compensation:</p> <p>Step 1: $87 + 3 = 90$</p> <p>Step 2: $90 + 38 = 128$</p> <p>Step 3: $128 - 3 = 125$</p> <p>Jump (using number line):</p> <p>$87 + 30 = 117$</p> <p>$117 + 3 = 120$</p> <p>$120 + 5 = 125$</p>	<p>Students will be provided with a range of subtraction questions and must demonstrate each mental strategy to answer the question. These will be answered in their maths books.</p> <p>Example: 92 - 48</p> <p>Split:</p> <p>$80 - 40 = 40$</p> <p>$12 - 8 = 4$</p> <p>$40 + 4 = 44$</p> <p>Compensation:</p> <p>Step 1: $48 + 2 = 50$</p> <p>Step 2: $92 - 50 = 42$</p> <p>Step 3: $42 + 2 = 44$</p> <p>Jump (using number line):</p> <p>$92 - 40 = 52$</p> <p>$52 - 2 = 50$</p> <p>$50 - 6 = 44$</p>	<p>5/6M Town Groups- Based on Continuum Clusters</p>																																	

Main Group – Names

Extension

Model skill to group before they begin the activity. Students use dice to make 3 sets of numbers to add using the Lattice Method.
The Lattice Method: Students in this group will be extended with advance addition strategies (written): Stack the numbers you're adding in a column, keeping all of the digits in the right places. Example: add 346, 4,567, and 23 together. First, we would stack them in a vertical column.

$$\begin{array}{r} 345 \\ 4567 \\ 23 \\ \hline \end{array}$$

First, add each column, but instead of writing the 1's digit of the result and carrying the 10's digit, we're just going to write the sums down, in a stack below the line. Walking through the process with the 1's column of numbers, we see:

$$\begin{array}{r} 345 \\ 4567 \\ 23 \\ \hline 15 \end{array}$$

Adding numbers: $5+7+3 = 15$

We want to use a 'lattice'--a structure--to put those numbers where they belong. We'll draw a little box, with a diagonal line through it, and put our total in the box, with the 10's digit in the upper left and the 1's digit in the lower right:

$$\begin{array}{r} 345 \\ 4567 \\ 23 \\ \hline \begin{array}{|c|} \hline 1 \\ \hline 5 \\ \hline \end{array} \end{array}$$

Now we'll do the same thing in the 10's place, and will put the result in a box next to the 1's box:

$$\begin{array}{r} 345 \\ 4567 \\ 23 \\ \hline \begin{array}{|c|} \hline 1 \\ \hline 5 \\ \hline \end{array} \begin{array}{|c|} \hline 1 \\ \hline 2 \\ \hline \end{array} \end{array}$$

Adding the 10s digits, we get 12 ($4 + 6 + 2 = 12$), which we put in a lattice box next to the 1s. Then the 100's:

$$\begin{array}{r} 345 \\ 4567 \\ 23 \\ \hline \begin{array}{|c|} \hline 1 \\ \hline 5 \\ \hline \end{array} \begin{array}{|c|} \hline 1 \\ \hline 2 \\ \hline \end{array} \begin{array}{|c|} \hline 0 \\ \hline 8 \\ \hline \end{array} \end{array}$$

Adding the 100s digits we get a total of 8 hundred (no 10s of hundreds), so we put the 8 in the lower right and a 0 in the upper left part of the lattice box. Time to pull in the 1000's digits--we have only the 4 thousands--in the 4567 number--so we don't have to add anything, we just pull him down into his own lattice box:

$$\begin{array}{r} 345 \\ 4567 \\ 23 \\ \hline \begin{array}{|c|} \hline 0 \\ \hline 4 \\ \hline \end{array} \begin{array}{|c|} \hline 0 \\ \hline 8 \\ \hline \end{array} \begin{array}{|c|} \hline 1 \\ \hline 2 \\ \hline \end{array} \begin{array}{|c|} \hline 1 \\ \hline 5 \\ \hline \end{array} \end{array}$$

Add along the diagonal lines, the sum of the numbers will appear.

$$\begin{array}{r} 345 \\ 4567 \\ 23 \\ \hline \begin{array}{|c|} \hline 0 \\ \hline 4 \\ \hline \end{array} \begin{array}{|c|} \hline 0 \\ \hline 8 \\ \hline \end{array} \begin{array}{|c|} \hline 1 \\ \hline 2 \\ \hline \end{array} \begin{array}{|c|} \hline 1 \\ \hline 5 \\ \hline \end{array} \\ \hline 5 \end{array}$$

There was nothing more to add along the 1s diagonal, so we just moved the 5 down to this position.

$$\begin{array}{r} 345 \\ 4567 \\ 23 \\ \hline \begin{array}{|c|} \hline 0 \\ \hline 4 \\ \hline \end{array} \begin{array}{|c|} \hline 0 \\ \hline 8 \\ \hline \end{array} \begin{array}{|c|} \hline 1 \\ \hline 2 \\ \hline \end{array} \begin{array}{|c|} \hline 1 \\ \hline 5 \\ \hline \end{array} \\ \hline 4 \quad 0 \quad 8 \quad 2 \quad 1 \quad 5 \end{array}$$

Adding along the diagonals produces a sum of 4935.

Students will also complete a range of subtraction questions using decomposition method e.g.
 9020 – 368 – 89
 30800 – 2639 – 98

Extension: Students in main group may already retained sufficient mental strategies and may not require the revision. In this case, students can be extended further to use these skills.

ABC Addition

Stage: 3 Short

<https://nrich.maths.org/13140>

In this addition problem, a , b and c each represent a single digit. What number does abc represent?

$$\begin{array}{r} a \ b \ c \\ + a \ c \ b \\ \hline c \ 4 \ a \end{array}$$

Solution:

<https://nrich.maths.org/13140/solution>

Note: If this is too advanced, then students will complete mental strategies for addition using 5 by 5-digits.

Extension:

Reverse Subtraction

Stage: 3 Short

<https://nrich.maths.org/4951>

In the subtraction sum on the right a , b and c are digits, and a is less than b .

What is the value of c ?

$$\begin{array}{r} b \ a \\ - a \ b \\ \hline c \ 6 \end{array}$$

Solution:

<https://nrich.maths.org/4951/solution>

5/6M Town Groups- Based on Continuum Clusters

Extend these students to view nets of more advanced 3D shapes and label the properties e.g. dodecahedron, tetrahedron etc.

Feedback/ Exit Slip	<p>Feedback – Use the thumb method after explicit modelling to determine students understanding and where they will be placed for group activities.</p> <p>Marking Exit Slips – Next to each students Exit Slip, the teacher will check students answers and will either write an: A = Achieved N/Y = Not Yet</p> <p>N/Y students will become your target group.</p>	<p>Students answer questions using a written strategy viewed today:</p> <p>Revision: 78 + 25 98 – 28</p> <p>Middle: 639 + 392 902 – 379</p> <p>Main: 36402 + 7393 9200 – 3694</p>	<p>Students answer questions using a mental strategy viewed today:</p> <p>Revision: 34 + 53 73 + 52</p> <p>Middle: 364 + 833 324 + 830</p> <p>Main: 6383 + 389 + 38 9374 + 930 + 26</p>	<p>Students answer questions using a mental strategy viewed today:</p> <p>Revision: 145 – 89 645 – 68</p> <p>Middle: 867 – 789 936 – 537</p> <p>Main: 9000 – 527 – 27 8300 – 324 – 53</p>	<p>Students will write what they have learnt about 3D shapes in terms of the differences between prisms and pyramids e.g. <i>a prism has two bases, while the pyramid only has one. Pyramids also meet at an apex (point).</i></p>	<p>Each student will choose a 3D shape that they viewed today and describe its properties (<i>no. faces, edges and vertices</i>) as well as draw its net.</p> <p>Note: cube or rectangular prism should not be allowed as an exit slip answer.</p>
Early Finishes/ Extension	<ul style="list-style-type: none"> • Roll the dice game: Roll the dice and add up the numbers on the two coloured dice (same coloured e.g. RED) and then subtract the number on another colour e.g. GREEN. So, if one RED is 4 and the other RED is 5 and the GREEN is 3 we should add together 4 and 5 to make 9 and then subtract the 3 so that gives us a final answer of 6. This can be extended by making the first two coloured dice either a thousand, hundred etc. and the third dice a lower place value number. • Play Noggle: Select 12 random numbers and a target number that students need to create using these numbers only. Students can only use addition and subtraction only to make challenge more challenging. Simple example: Target number is 8 = 6 + 2, 22–14 etc. • Students work through a range of challenging problems: <i>Open-Ended Maths Problem Solving Cards - Upper Primary – Teach Starter.</i> <ul style="list-style-type: none"> • Provide students with toothpicks and playdough/glue tack to create a range of 3D shapes in pairs. Students can do this with colored cardboard as well. • Students create a range of 3D nets and form 3D shapes and place string on them to create a class 3D mobile. • Students view nets of advanced 3D shapes and create the shape e.g. tetrahedron. 					
Reflection/ Registration						