The background is a collage of various math-related sticky notes on a lined paper background. The notes contain handwritten mathematical expressions in different colors: green, yellow, orange, and purple. Some notes show simple arithmetic like addition and subtraction, while others show division or multiplication. The central text is overlaid on this collage.

S1 Workshop
St Ninian's Maths Department

Welcome!

Maths Pathways

- Pupils are taught in Alpha classes initially to allow them to settle in and adjust
- Classes will be broad-banded after Christmas
- Pupils will work in the class which is most suited to their ability and pace of learning
- Classes are set using teacher judgement, Primary transition information, class work, homework and Block Tests

Maths Pathway	S1/2	S3/4	S5	S6
1	Complete 4 th level	National 5	Higher	Advanced Higher
2	Complete 4 th level	National 5	Higher	Advanced Higher or end point
3	Complete 3 rd level	National 4	National 5	Higher or end point
4	Individual targets (1 st /2 nd level)	National 3 and National 4 Applications	National 4 Maths or end point	National 5 or end point

Period Starter

★ Every maths lesson begins with a period starter

1. $123 + 149$

2. $453 - 164$

3. 26×8

4. $324 \div 4$

A quick video to set the scene . . .

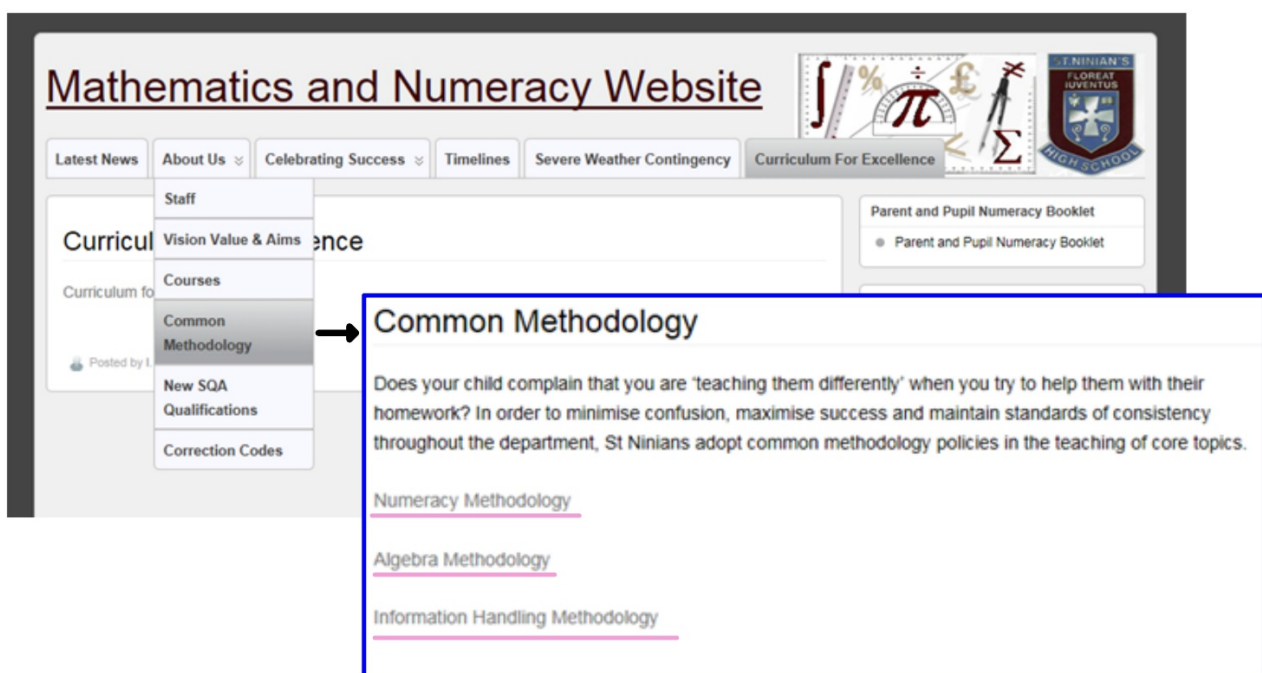


[click here](#)

Common Language and Methodology

All of the schools within the cluster follow the same methods in our teaching of Maths and Numeracy.

The CLM documents can be found on the school website.



The screenshot displays the 'Mathematics and Numeracy Website' for St Ninian's High School. The page features a navigation menu with options like 'Latest News', 'About Us', 'Celebrating Success', 'Timelines', 'Severe Weather Contingency', and 'Curriculum For Excellence'. A dropdown menu is open under 'Curriculum For Excellence', listing 'Staff', 'Vision Value & Aims', 'Courses', 'Common Methodology', 'New SQA Qualifications', and 'Correction Codes'. An arrow points from 'Common Methodology' to a highlighted content box. This box contains the title 'Common Methodology' and a paragraph explaining the school's approach to consistency in teaching. Below the paragraph are three underlined links: 'Numeracy Methodology', 'Algebra Methodology', and 'Information Handling Methodology'.

Mathematics and Numeracy Website

Latest News | About Us | Celebrating Success | Timelines | Severe Weather Contingency | Curriculum For Excellence

Curriculum For Excellence

- Staff
- Vision Value & Aims
- Courses
- Common Methodology**
- New SQA Qualifications
- Correction Codes

Common Methodology

Does your child complain that you are 'teaching them differently' when you try to help them with their homework? In order to minimise confusion, maximise success and maintain standards of consistency throughout the department, St Ninians adopt common methodology policies in the teaching of core topics.

[Numeracy Methodology](#)

[Algebra Methodology](#)

[Information Handling Methodology](#)

EQUATIONS:-

How would YOU do this question?

SOLVE $2x + 7 = 15$

Why do we need a consistent method?

$$2x + 7 = 15$$

$$2x + 7 - 7 = 15 - 7$$

$$2x = 8$$

$$2x \div 2 = 8 \div 2$$

$$x = 4$$

$$2x + 7 = 15$$

$$2x = 15 - 7$$

$$2x = 8$$

$$x = 8 \div 2$$

$$x = 4$$

$$2x + 7 = 15$$

$$(-7) \quad 2x + 7 = 15 \quad (-7)$$

$$2x = 8$$

$$(\div 2) \quad 2x = 8 \quad (\div 2)$$

$$x = 4$$

	<u>Method</u>
$2x + 7 = 15$	-7
$2x = 8$	$\div 2$
$x = 4$	

There are a number of ways in which we can solve equations.

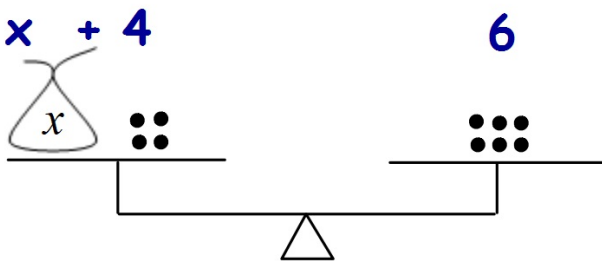
We need to take a standardised approach across all schools and classes in the Cluster.

This will help eliminate difficulties when changing teachers and will make the transition to Secondary smoother and easier.

Solving Linear Equations

Example 1

Write down an equation that represents the picture on the scales, then solve it.



			Method
$x + 4 = 6$			$- 4$
$x = 2$			

We start the topic by using scales to reinforce the idea of balance and doing the same to both sides

Examples

YOU TRY!!

$$x + 3 = 5$$

$$x = 2$$

$$\left| \begin{array}{l} - 3 \\ \end{array} \right.$$

Think about what you would need to do to leave x on it's

$$k - 2 = 6$$

$$k = 8$$

$$\left| \begin{array}{l} + 2 \\ \end{array} \right.$$

It is a **BALANCE** so whatever you do to one side you do to the other

Examples

YOU TRY!!

$$\begin{array}{l} 3 \times p \\ 3p = 9 \\ p = 3 \end{array} \quad \Bigg| \quad \div 3$$

We have already taught simplifying expressions at this point so please understand that letters and numbers next to each other are multiplied.

$$\begin{array}{l} 7 \times g \\ 7g = 21 \\ g = 3 \end{array} \quad \Bigg| \quad \div 7$$

Examples

$$\begin{array}{r|l} 2x + 1 = 9 & - 1 \\ 2x = 8 & \div 2 \\ x = 4 & \end{array}$$

This is a 2 step equation.
Time would be spent discussing
the order in which we deal with
terms

$$\begin{array}{r|l} 5w - 2 = 8 & + 2 \\ 5w = 10 & \div 5 \\ w = 2 & \end{array}$$

Trickier Examples

$$\begin{array}{r|l} 2x - 6 = x & - x \\ x - 6 = 0 & + 6 \\ x = 6 & \end{array}$$

$$\begin{array}{r|l} 5w - 6 = 3w & - 3w \\ 2w - 6 = 0 & + 6 \\ 2w = 6 & \div 2 \\ w = 3 & \end{array}$$

Letters on both sides of an equation prevents us from solving until we are rid of one of the unknowns.

- identify the smallest letter
- subtract from both sides
- solve as shown previously

Trickier Examples

Letters and numbers on both sides
Deal with the letters first!!

$$\begin{array}{r|l} 2x + 5 = x + 10 & - x \\ x + 5 = 10 & - 5 \\ x = 5 & \end{array}$$

$$\begin{array}{r|l} 4b - 1 = 2b + 9 & - 2b \\ 2b - 1 = 9 & + 1 \\ 2b = 10 & \div 2 \\ b = 5 & \end{array}$$

What about negative letters?

We deal with negative letters by **ADDING THEM IN**

$$\begin{array}{r} 10 - x = 2 \\ 10 = 2 + x \\ 8 = x \\ x = 8 \end{array} \left| \begin{array}{l} + x \\ -2 \\ \\ \end{array} \right.$$

$$\begin{array}{r} 8 - 2t = 2 \\ 8 = 2 + 2t \\ 6 = 2t \\ 3 = t \\ t = 3 \end{array} \left| \begin{array}{l} + 2t \\ -2 \\ \div 2 \\ \\ \end{array} \right.$$

How **WOULD YOU DO** this percentage calculation

TRY

50% of £130

25% of 360kg

Finding Percentages

- ★ Pupils are encouraged to remember the fractional equivalent of common percentages:

$$10\% = \frac{1}{10}$$

$$20\% = \frac{1}{5}$$

$$25\% = \frac{1}{4}$$

$$50\% = \frac{1}{2}$$

$$75\% = \frac{3}{4}$$

More difficult ones to remember

$$33\frac{1}{3}\% = \frac{1}{3}$$

$$66\frac{2}{3}\% = \frac{2}{3}$$

Again **HOW WOULD YOU** carry out this calculation?

Find 80 % of £32

Multiples of 10

- ★ Pupils are taught to calculate percentages by breaking them down into easier, more manageable parts.

Use 10% as an easy starting point!

Find 80 % of £32

Step 1

Find 10 % of £32

Find $\frac{1}{10}$ of £32

= £3.20

Step 2

Multiply the answer by 8

£3.20

X8

Divide by ten by moving numbers one place to the RIGHT

A quick way of finding 15% . . .

Calculate 15% of 260

We would encourage pupils to break this percentage down into 10% and 5%.

Pupils find 10% of 260 by dividing by 10.

Once they know the value of 10% they can half it to get 5%.

Add the answers together and they now have 15%

Please complete the evaluation at the end of Workshop 2

EVALUATION

Please complete an evaluation by scanning the QR Code with your camera or use the link

Alternatively, you can use a Chromebook outside to complete this short evaluation

Scan with your phone's camera



<http://bit.ly/S1Evening>



Please follow us on Twitter @StNiniansMaths



Useful Websites:

Perth Academy Maths:

<https://perthacademymaths.wikispaces.com/>

Knightswood Maths:

http://www.knightswoodsecondary.org.uk/personal/Resources/Hillhead/Resources_hillhead.htm

Maths Box:

<http://www.mathsbox.org.uk/>

Maths 4 Scotland (Revision):

<http://www.int2.maths4scotland.co.uk/>

Starter of the Day:

http://www.transum.org/Software/SW/Starter_of_the_day/starter_March29.ASP