Journalling at St Luke's

Embedding Journal Use

If we think of maths as a language then we need to be able to SPEAK it, READ it and WRITE it.

We can think of journaling as an opportunity for a child to communicate an idea or concept, often to themselves, in a way they understand.

What are the reasons behind journaling?

- Open-ended and naturally differentiated assessment tool
- Show understanding of mathematical ideas, techniques and concepts (MULTIPLE representations wherever possible)
- Explore an idea as deeply as they are able to (open task)
- Show what they are thinking/picturing/imagining
- Reveal misconceptions
- Reinforce and internally digest ideas the have been heard, seen and shared
- Be creative – show off!! ENJOY!
- Straighten and formalise thinking
- Trial and test ideas
- Can be the main lesson task in and of itself

Descriptive Journaling - Pupils describe what the methods they have used.
"Can you write a set of instructions for a friend so that they can solve this problem?"

Evaluative journaling - Pupils have to make and justify choices. "Why did you choose those methods? How were they helpful?"

Creative Journaling - Pupils are encouraged to develop their own methods/stories.

"Can you write a story to go with this problem?

Can you invent a new method?"

Investigative Journaling - Pupils record their findings after exploring a problem.

"Did you see any patterns?

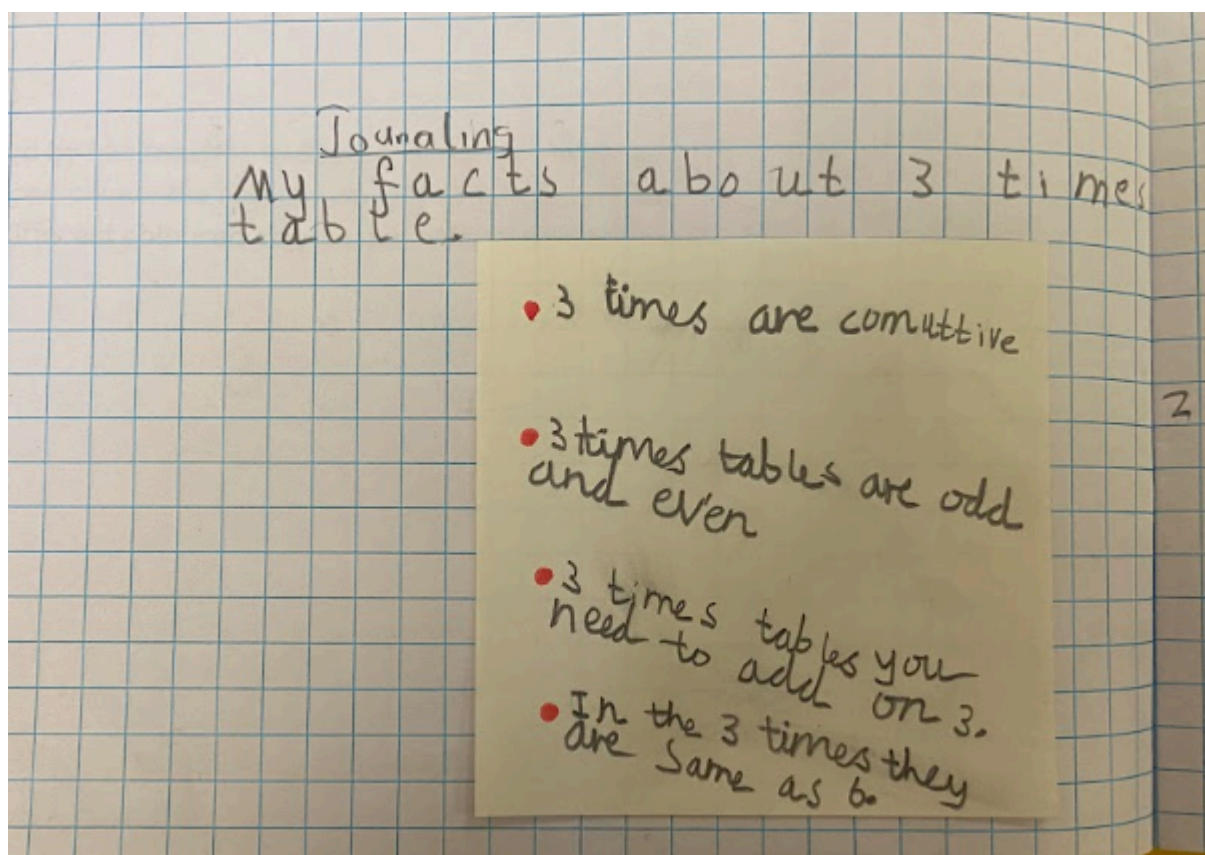What helped you in this investigation?"

Formative Journaling - Pupils show you what they have learnt/understood?

"Choose a question you feel show what you have learnt.

How did you solve question x?

Which of these questions did you find tricky and why?"
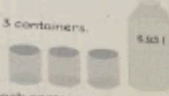
Examples of Journaling at St Luke's

0.6 / 12 / 21

Journaling Task
Dividing Decimals

In Focus

6.93 l of juice is divided into 3 containers.

5.93 l

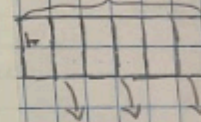Find the volume of juice in each container.

divisor
dividend
quotient
decimal point
ones
tenths
hundredths
multiple
factor

What is the same and what is different about dividing with decimals and whole numbers? Use keywords and examples in your explanation.

$6.93 l \div 3 =$

$$3 \overline{)6.93}$$ → 2.31

(2.31)

6.93 litres

2.31

2.31 litres

What is different about dividing with decimals and whole numbers?

Dividing with decimals is different because if you forget the decimal point (6.93) it becomes a totally different number. The

for eg:

$6.93 - . = 693$

$693 + . = 6.93$

6.93

6.93

What is the same about dividing with decimal and whole numbers?

The similarities between dividing with decimals and whole numbers is there that is always a decimal but you don't need to show it. You can use bus stop method.

$561.00 = 661$

29 / 11 / 21

Journalling

LQ: Can I divide decimals up to thousands?

List of instructions for
dividing 1, 2 or 3 digit
numbers by
10, 100, 1000

1. First, you draw a place value chart.

2. ~~Next~~ Next, you position the numbers in the right column →

H	T	O	t
1	0	6	

106 = 1 0 6

3. Then if you are dividing by 100 you must put 0.0___ depending on how many zeros there are?

Examples

H	T	O.	t	h	th
2	4	6			
		2.4	6		

246 ÷ 100 = 2.46

H	T	O.	t	h	th
	8	9.			
		0.8	9		

89 ÷ 10 = 0.89

Multiplying fractions

Dividing Fractions

different   different   similar   similar   different   different

$\frac{1}{3} \times 3$

$\frac{1}{3} \div 3$

proper fractions

multiplying fractions

$\frac{1}{3} \times 3 = \frac{1}{3} \times \frac{3}{1} = \frac{3}{3}$

$\times 3$

1 - 1/3

1 - 3/3

dividing fractions

$\frac{1}{3} \div 3 = \frac{1}{3} \times \frac{1}{3} = \frac{1}{9}$

1/3

$\rightarrow \frac{1}{9}$

9/9

Journaling Task

A friend of mine has opened a new pizza parlor called the rectangular Pizzas. Can you use a diagram to represent the same amount of pizzas eaten by these 3 children?

I ate $\frac{1}{3}$ of mine.

I ate $\frac{1}{2}$ of mine.

I ate $\frac{3}{4}$ of mine.
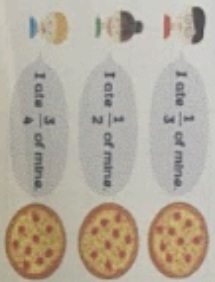
Keywords:
Fractions
Parts of a whole
Out of
Divided into
More than
Less than
Equal to
Inequalities

How to find equivalent fractions

1. Find the LCM of all the denominators.

2. Whatever you do to the denominator you do to the numerator.

$\frac{1}{3}$ — numerator
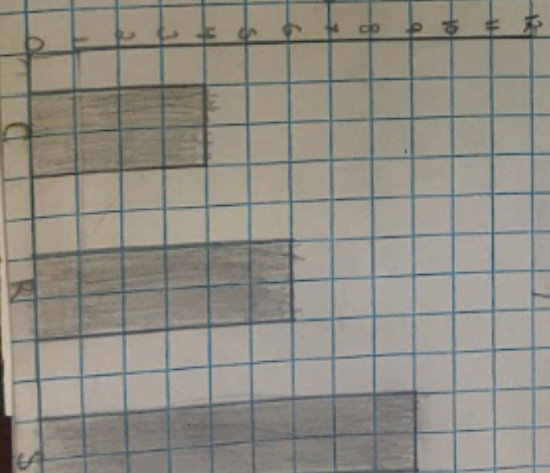— denominator

LCM - Lowest common multiple

Charles —

$\frac{1}{3} = \frac{4}{12}$ (×4) (×4)

Ruby —

$\frac{1}{2} = \frac{6}{12}$ (×6) (×6)

Sam —

$\frac{3}{4} = \frac{9}{12}$ (×3) (×3)

Look at the subtraction equation.

$$136 - 75 = 61$$

Write a word problem using the equation.

Show how you solve your word problem using a model.

I know how to...
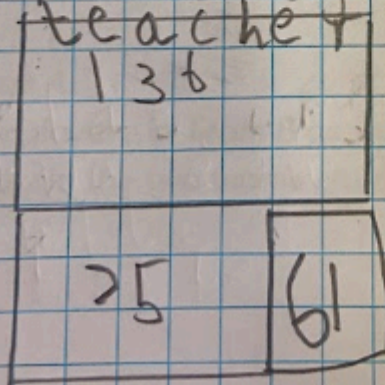
☐ add numbers without renaming.

☐ add numbers with renaming.

☐ subtract numbers without renaming.

☐ subtract numbers with renaming.

☐ solve word problems involving addition and subtraction.

Self Check

In class E there was 136
apples the teacher ate
75 so she gave the 61 to
the rest of the class so
the teacher throw up.

136

75   61

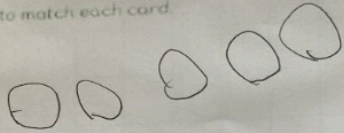Thursday 23rd September

Darlla

Draw pictures to match each card.

five apples

8 balls

two cakes

Q: Can I count in six, seven and nine?

100 Square

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

6x
7x
9x

Which is the odd one out?

JOURNALING

Journaling

I think (b)
$6 + 6 + 6 + 6 + 6 + 6$ is the odd one out because instead of using multiplication like a) and c), it shows repeated addition.
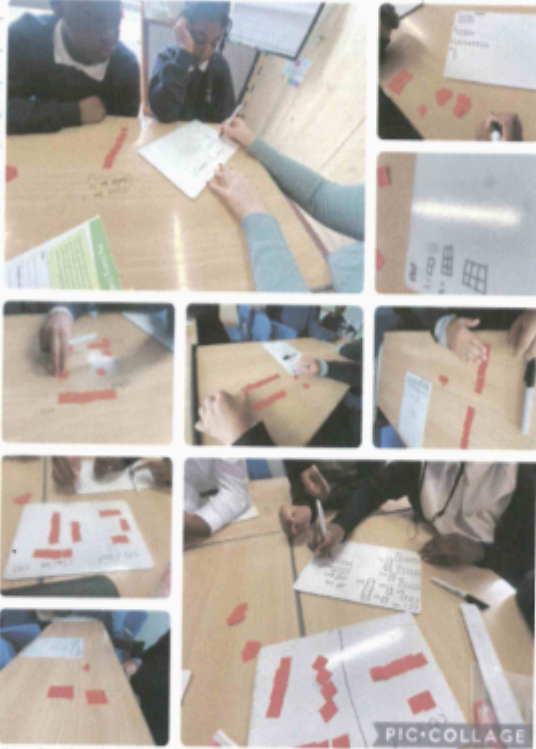
~~But there is a possibility~~

23 LQ - Can I use tiles to make rectilinear shapes to
determine if a number is prime or not?

RULE:

When you add
two prime numb
-rs together you
get a composite
number except
when you use
2.

Most odd
numbers are
prime numbers

Prime numbers

1 isn't a prime
number, its a
special number

Factors are 1
and itself

2 is the only
prime number

Composite numbers

2 is the only
even number
that isn't
composite

Mostly

Any number

L.O: Can I use knowledge of addition and subtraction to solve problems?

My Maths Journal

Explain how to find the sum of 4528 and 3975 using as many different methods as possible.

Now, find the difference of these two numbers.

Which method(s) do you prefer?

55 Possible Strategies to add 4,528 and 3,975

$$
\begin{array}{r}
4,528 \\
+\ 3\,9\,7\,5 \\
\hline
8,5\,0\,3
\end{array}
$$

4,528	3,725
8,503	

8,503

4,328　3,975

4000　500　20　8

400
100 100
100 100
+3000

+70　+5

7000 + 1400 + 90 + 13 = 8,503

... can I identify the value of digits in a number?

037 592.814

million and thirty seven thousand five hundred and ninety two point eight one four.

The value of the 4 is 0.004. The value of the one is 0.01. The value of the 8 is 0.8. The value of the 2 is 2. The value of the 9 is 90. The value of the 5 is 500. The value of the 7 is 7000. The value of the 3 is 30,000. The value of the 0 is 0. The value of the 6 is 6,000,000.

Journalling Task

Prove it!
When calculating decimals, will I always end up with an answer that is a decimal as well?

Can you prove it?

JOURNALING

AGREE   SOMETIMES   DISAGREE

When calculating decimals, due to the fact there are four operations there are billions of possibilities with your number sentences.

0.5 + 0.5 = 1 ← whole number

0.84 + 0.06 = 0.90 ← decimals   → still a decimal number

decimals

0.2 × 0.4 = 0.8 ← a different operation

0.39 - 0.2 = 0.19

It all depends on the numbers, which you are using. There is no guarantee!

0.9 + 0.1 = 0.10 ? THIS IS WRONG.
0.9 + 0.1 = 1 THIS IS RIGHT.

0.8
0.2
1.00 ← Once a number reaches two digits in the tenths column it becomes a whole number unless there are numbers in other columns.

(JOURNALING)

★ Units of measure ★

cm to mm / mm to cm   to convert divide or multiply
÷10   ×10   by ten depending on
            - books lengh- the question

cm to m / m to cm
                     divide/multiply by 100 to convert
×100   ÷100   - wall length

km to m / m to km   convert with different
                           methods depending on
÷100   × 100   - pathway lengh the question

miles to km / km to miles
     ÷0.62   ×0.62   - roads / distance -

Unlike the other units of measure you divide/
multiply by a decimal number 0.62.

examples: 10mm = 0.1cm, 90m = 9000cm.

column method   *(extra fact - 12 inch =
      compare   1ft)
82km ∠ 48miles
         ¹62
       × 62
       124   ▲ work your way through
      3720
      3844 ÷ 100 = 38.44 miles now we know
                                which is greatest
      38.44 miles

Q: Can I solve probleaasms using a variety of strategies?

Journal task

Ruby has 3 hats and 2 scarves.
How many different ways can
she wear them?

How could you 'act out' this
problem to solve it?

Rut Ruby can wear lhat
and 2 different scarves
another hat and the 2
other scarves and
the 1 other hat and
2 other scarves.

1 green hatt
1 blue scarf
1 green hatt
1 yellow
scarf
1 purple hatt
1 blue scarf
1 purple hatt
1 yellow
scarf
1 orange habt
1 blue scarf
1 orange hatt
1 yellow scarf