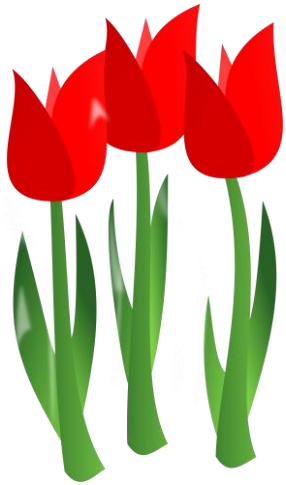


A very Warm Welcome to everyone

We 
Maths



Dig deep and Flourish with..



Courage

Compassion

Creativity



We know our tables!!

From June 2020, all pupils at the end of year 4 in England will take an online multiplication tables check - 25 questions in 4 to 5 minutes

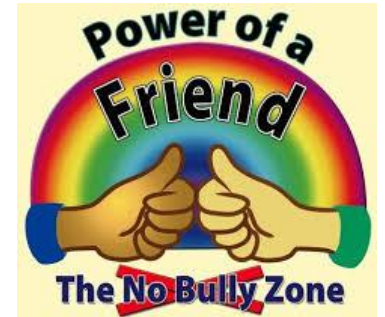
×	1	2	3	4	5	6	7	8	9	10	11	12
1	1	2	3	4	5	6	7	8	9	10	11	12
2	2	4	6	8	10	12	14	16	18	20	22	24
3	3	6	9	12	15	18	21	24	27	30	33	36
4	4	8	12	16	20	24	28	32	36	40	44	48
5	5	10	15	20	25	30	35	40	45	50	55	60
6	6	12	18	24	30	36	42	48	54	60	66	72
7	7	14	21	28	35	42	49	56	63	70	77	84
8	8	16	24	32	40	48	56	64	72	80	88	96
9	9	18	27	36	45	54	63	72	81	90	99	108
10	10	20	30	40	50	60	70	80	90	100	110	120
11	11	22	33	44	55	66	77	88	99	110	121	132
12	12	24	36	48	60	72	84	96	108	120	132	144

12 times table song

- <https://www.youtube.com/watch?v=Rer1upUIIXg>

Sparsholt is a No Bullying Zone

Unkind
Tease
Annoying



Talk to an Adult

A scuba diver is shown underwater, positioned on the left side of the frame. The diver is wearing a full scuba suit, including a mask, regulator, and fins. Bubbles are visible rising from the diver's equipment. The background is a deep blue, slightly murky underwater environment with some rocky structures visible at the bottom.

***WHAT DOES
'GREATER DEPTH'
LOOK LIKE IN
PRIMARY MATHS?***

National Curriculum



Department
for Education

Maths expectations

Age Related Expectations (ARE)
= Fluent, solve problems and
reason.

Aims

The national curriculum for mathematics aims to ensure that **all** pupils:

- become **fluent** in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.
- **reason mathematically** by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language
- can **solve problems** by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.

The National Curriculum states



Children working at Greater depth are those who **grasp concepts rapidly** and should be challenged through being offered **rich and sophisticated problems** before acceleration onto new content

It is working on current content,
but at a deeper level.



Confidently and independently be
able to deal with **complexity,**
deduction and reasoning

**They are 'not phased' by new
challenges**

Skills in reasoning

Describe

I know this because...

Explain

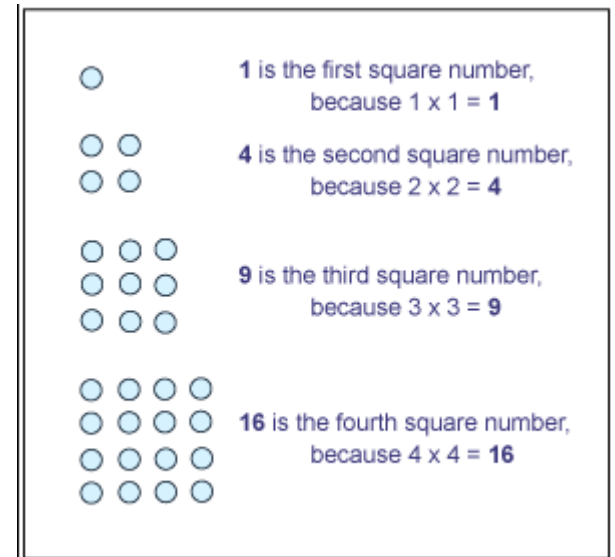
If Then.....

Convince

Different representations
to show the same thing

Justify

Prove



Key performance indicators Y2

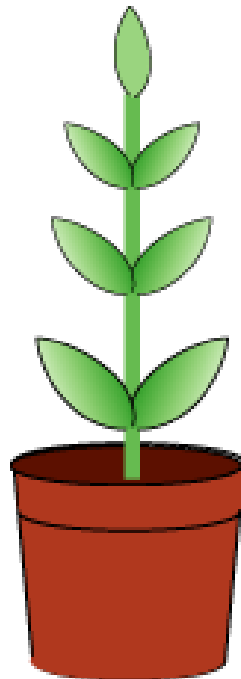
Strand	Learning objective	Working towards	Meeting Expectations ARE	Working at Greater Depth
Calculation	Use addition and subtraction facts to 20 – and derive facts up to 100	Pupil correctly answers $6 + 12 = 18$	Pupil can deduce $6 + 3 = 9$ So $60 + 30 = 90$ and $26 + 43 = 69$	Pupil can solve problems such as – I am thinking of 2 numbers their sum is 90 and their difference is 30. What are the numbers?
	Calculate mentally using multiplication and division facts for the 2, 5, 10 x tables	Pupil is learning their 2, 5 and 10 times tables off by heart	Pupil can correctly answer multiplication of 2, 5 and 10 questions and knows the inverse.	Pupil can solve problems – Using 2, 2, 5 and 10 make as many numbers from 1 – 20 as you can

On Friday at 9 am the magic plant was only 2 cm tall

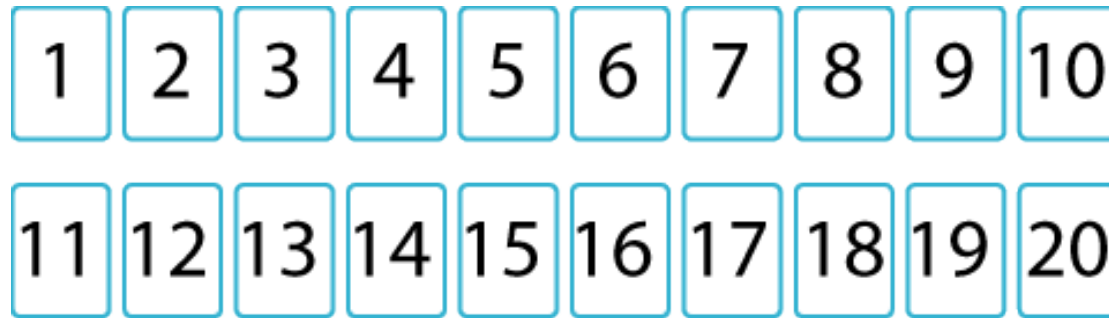
Every 24 hours it doubled its height

How tall was it by Monday at 9 am?

What about a week later?



Y2 NRICH problem



Katie had a pack of 20 cards numbered 1 – 20

She arranged the cards into six piles.

The numbers on the cards in each pile added to the same total.

What was the total and how could this be done?

Are you curious enough to find out?

Key performance indicator Y4

Strand	Learning Objective	Working towards	Meeting expectations ARE	Working at Greater Depth
Number and place value	Order and compare numbers beyond 1000	Pupil can choose the smaller number out of 300 and 1300	Pupil can place correct sign $<$, $>$, $=$ In statements 3004 and 3040 4500 and 4050+450	Pupil can solve problems in context of measurement – order heights of mountains.
	Round whole numbers up to 10,000 to nearest 10, 100 and 1000	Pupil can round 678 to nearest 10	Pupil can round 8076 to nearest 100	A number rounded to the nearest 10 is 650 – what is the smallest number it can be? explain



Roll 3 dice – two red and one green

Add up the two red numbers and take away the green number

$$5 + 4 - 3 = 6$$

What numbers can you make by doing this addition and subtraction?

I wonder what would happen if... instead I?

Consecutive number investigation

Use + and -

You need to choose any four consecutive numbers and place them in a row with a bit of a space between them, like this:

4 5 6 7

Use + and - between the numbers

Explore what different totals can you make?

What is the biggest? Explain how you know this?

Now try 4 different consecutive numbers. What do you notice?

Now try 5 numbers.....

NRICH – Rich and sophisticated problems

Working at Greater Depth would be to work at at least step 4 – Justifying and Proving

<https://nrich.maths.org/1177>

How I solved *Sealed Solution*

24-1-13

Firstly, we got some 0-9 digit cards (0-9) and found the different totals which added up to 7, 8, 13, 14 and 3.

<u>7</u>	<u>8</u>	<u>13</u>	<u>14</u>	<u>3</u>
$7 + 0$	$0 + 8$	$9 + 4$	$8 + 6$	$2 + 1$
$4 + 3$	$6 + 2$	$7 + 6$	$9 + 5$	$3 + 0$
$5 + 2$	$7 + 1$	$5 + 8$		
$6 + 1$	$5 + 3$			

I started with 3 because it only has two possibilities and went up to the 7 and 8 because they had more possibilities.

After that we tried to see what totalled them again and I knew we couldn't use the same number twice. The first time I tried I got it wrong but the second time I realised I had got it right because I hadn't used a number twice.

This was my solution:

$$7 + 0 = 7, \quad 5 + 3 = 8, \quad 9 + 4 = 13, \quad 8 + 6 = 14, \quad 2 + 1 = 3$$

My teacher gave me a challenge, which was to see if I could find the easiest possible solution and my answers were...

1	17	5	9	13
↓	↓	↓	↓	↓
$0 + 1$	$9 + 8$	$3 + 2$	$4 + 5$	$7 + 6$

I started with $0+1$ because I knew this was the lowest possible total. And then I did $9+8$ because that was the largest possible total. Next was $3+2$, because that was the only way to make 5 with the digits that I had left. I used the rest of the cards to make 9 ($4+5$) and 13 ($7+6$).

I gave my puzzle to a friend in my class and he solved it in just over a minute, so I think it is an easy solution!

Deduction

(and asking mathematical questions)

Similar to **making inferences** when reading



about

- looking for clues
 - Patterns

relationships in mathematics.



Children need to ask their own questions

I wonder if?

There may not be one answer.

Year 3 Greater Depth challenge



Greater Depth Challenge:

Sarah is given two calculations to work out:

$$101-9$$

$$410-9$$

Sarah says that:

"It's easier to do $101-9$ than $410-9$ because 1 is smaller in value than 4."

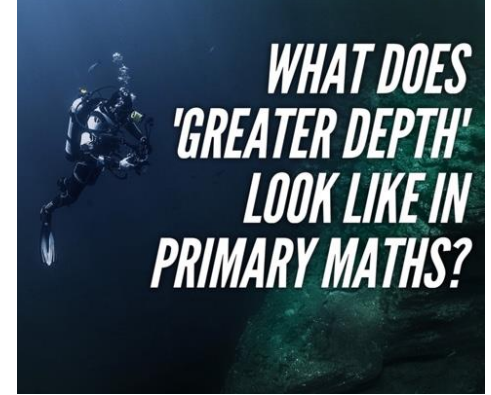
Do you agree with her?

Greater Depth Challenge:

Can you fill in the gaps?

	75		125		175		
--	----	--	-----	--	-----	--	--

Children confidently and independently



- Access problems in a wide range of contexts
- Justify and prove their ideas
- Ask mathematical questions.
- Follow their own lines of enquiry
- Be confident and resilient enough to do the above.

Shallow Learning

- Surface learning,
- Temporary, often lost

Meeting Expectations

- With support being able to meet the objectives outlined in the National Curriculum

Mastery

- Obtaining greater level of understanding and being able to apply learning in different context

Working at Greater Depth

Learning be transferred and applied in different contexts
Pupils can explain their understanding to others

Thank you

Any
questions

