Warm Up - Day 1

1. Write the following numbers in numerals and words.

M	HTh	TTh	Th	H	T	O
●	● ●	● ● ● ●	● ●	● ● ● ● ● ●	● ●	● ● ● ●

2,345,167

3,172,081

M	HTh	TTh	Th	H	T	O
● ● ●	● ●	● ● ● ●		● ●	●	

Home Learning: Maths – Day 1 (Multiplication)

Video Link: https://vimeo.com/458926418

YR6 PROGRESSION IN MASTERY LESSON PACK - MULTIPLY UP TO 4-DIGITS BY 2-DIGITS

FLUENCY 1

Complete the stem sentences then calculate.

When we use long multiplication, we always start by multiplying by the _____ then move to by multiplying the _____.

When we multiply by the _____ number, we use _____ as a place holder.

We may still need to _____.

The final step is to find the _____.

	3	6	4	7
×			2	5

		9	6	3
	×		4	7

FLUENCY 2

Ranjit's journey to school is 1,345m.

He walks to school every week day?

How far does he walk in 5 weeks?

FLUENCY 3

A school buys 14 boxes of tennis balls. There are 125 tennis balls in each box. How many tennis balls are there altogether?

FLUENCY TASKS

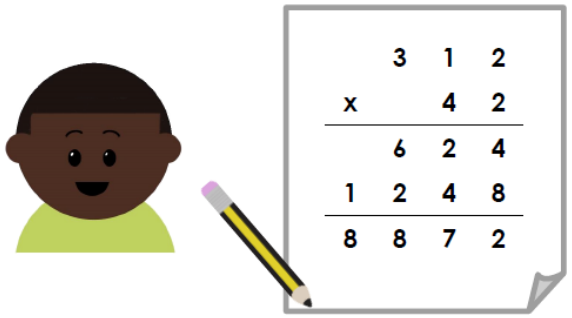
Children are expected to complete 1 or 2 of these slides… The difficulty gets harder as you move through the slides so if you are unsure, begin on the fluency section.

Home Learning: Maths – Day 1 (Multiplication)

YR6 PROGRESSION IN MASTERY LESSON PACK - MULTIPLY UP TO A 4-DIGIT BY 2-DIGIT

REASONING 1

Caleb is multiplying using long multiplication.



	3	1	2
x		4	2
	6	2	4
1	2	4	8
8	8	7	2

Can you explain his error and correct it?

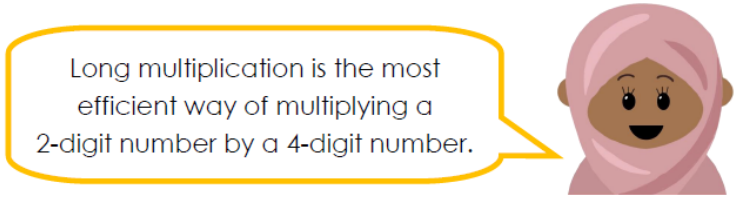
REASONING 2

Convince Me!

If 1,234 × 20 = 24,680 then
1,234 × 21 = 24,680 + 1,234

REASONING 3

Always, Sometimes or Never True?



Explain your reasoning.

REASONING 4

Fill in the missing digits.

	3	9	4
x			2
	1	9	7
	★	8	8
9	8	5	0

	2	2	★
x		★	6
	★	3	6
2	2	★	0
3	★	3	2

REASONING TASKS

Home Learning: Maths – Day 1 (Multiplication)

YR6 PROGRESSION IN MASTERY LESSON PACK - MULTIPLY UP TO A 4-DIGIT BY 2-DIGIT

PROBLEM SOLVING TASKS

PROBLEM SOLVING 1

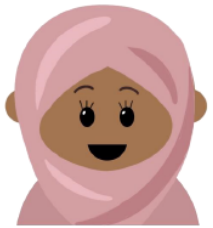
Use the digit cards below to create two 4-digit by 2-digit multiplication calculations which give an answer greater than 500,000.

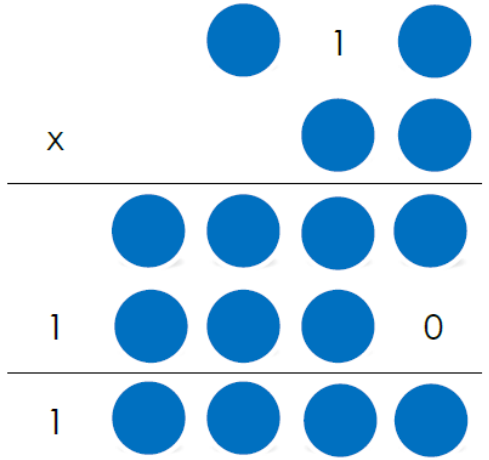
2	3	5
6	7	8

Find all possibilities.

PROBLEM SOLVING 2

All of the missing digits in the calculation below are 2, 4, 6 or 8.





Help Asha calculate the missing digits.

Answers coming up…

The next slide will contain the answers – make sure you have finished before you check the next slide. Please feel free to email any questions, queries or examples of work to your class teacher.

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Fluency 1

When we use long multiplication, we always start by multiplying by the **ones** then move to by multiplying the **tens**.

When we multiply by the **tens** number, we use **zero** as a place holder.

We may still need to **exchange**.

The final step is to find the **total**.

3,647 x 25 = 91,175 963 X 47 = 45,261

Fluency 2

1,345m x 25 = 33,625m (Ranjit only walks 5 days out of 7)

Fluency 3

There are 1,750 tennis balls all together.

Reasoning 1

Pupils spot that Caleb has not used zero as a place holder when multiplying by 40

Modelled DAB Reasoning Responses

D – Caleb has made an error

A – Caleb has not used zero as a place holder when multiplying by 40

B – Caleb has multiplied accurately by 2 but the number he is multiplying by is 42 therefore in the 2nd row he should multiply his numbers by 40. The answer should be 10 x bigger

Reasoning 2

Pupil responses should why the statement is correct.

Modelled DAB Reasoning Response

D – The statement is correct.

A –1,234 x 21 is the same as 1,234 x 20 + 1,234.

B – 21 is one more than 20 so all that is needed is one more lot of 1,234

Reasoning 3

Pupil responses should show that Asha's statement is sometimes true.

Modelled DAB Reasoning Response

D – It is sometimes true.

A – Long multiplication can be the most efficient way of multiplying 2 digits by 4 digits but it depends on the numbers involved.

B – For example, 1,100 x 15 can be calculated mentally (1,100 x 10 + 1,100 x 5) whereas for 3,573 x 76, it would be more efficient to use a written method.

Reasoning 4

		3	9	4
x			2	5
	1	9	7	0
	7	8	8	0
	9	8	5	0

		2	2	7
x			1	6
	1	3	6	2
	2	2	7	0
	3	6	3	2

Warm Up - Day 2

2. Draw counters in the place value charts to represent the numbers.

3,784,573

M	HTh	TTh	Th	H	T	O

1,004,385

M	HTh	TTh	Th	H	T	O

3,105,990

M	HTh	TTh	Th	H	T	O

7,436,300

M	HTh	TTh	Th	H	T	O

Home Learning: Maths – Day 2 (Known Facts)

Video Link: https://vimeo.com/466189554

YR6 PROGRESSION IN MASTERY LESSON PACK - REASON FROM KNOW FACTS

FLUENCY 1

Complete the stem sentences.

_____ is the inverse of _____.

_____ is the inverse of _____.

Now, use the inverse to complete these calculations.

706 - 125 = 581	15 x 35 = 525	153 ÷ 9 = 17
581 + __ = 706	525 ÷ 15 = __	17 x __ = 153

FLUENCY 2

Complete these calculations.

104 ÷ 4 = 26 104 ÷ ___ = 13

1,040 ÷ ___ = 26 1,040 ÷ 80 =

26 x 6 = 156 26 x 3 = ___

2.6 x 6 = ___ 260 x ___ = 1,560

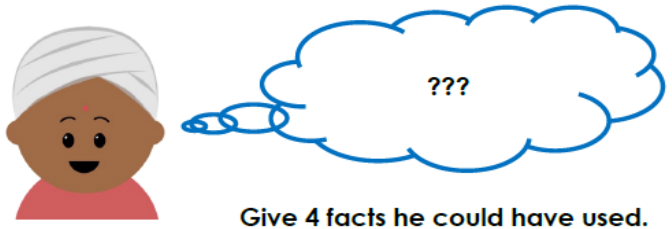
FLUENCY 3

Use this fact - 45 x 7 = 315- to work out:

45 x 8 =	45 x 6 =
315 ÷ 14 =	315 ÷ 3.5 =
22.5 x 7 =	22.5 x 14 =
450 x 3.5 =	450 x 0.7 =

FLUENCY 4

Ranjit worked out the solution to 5,600 ÷ 8 by using a known fact.



Give 4 facts he could have used.

FLUENCY TASKS

Children are expected to complete 1 or 2 of these slides… The difficulty gets harder as you move through the slides so if you are unsure, begin on the fluency section.

Home Learning: Maths – Day 2 (Known Facts)

YR6 PROGRESSION IN MASTERY LESSON PACK - REASON FROM KNOW FACTS

REASONING 1

Spot Millie's mistake.

If I know 144 ÷ 36 = 4, then 144 ÷ 18 must equal 2 because 18 is half of 36!

REASONING 2

True or False?

2 x 67 x 5 = 67 x 10

Explain how you know.

REASONING 3

Convince Me

I can use the calculation 6 x 7 = 42 to work out the answers to these calculations.

0.6 x 0.7	0.007 x 6	42 x 0.7

REASONING 4

Which of these calculations is the Odd One Out?

67 x 8 =	670 ÷ 8 =	0.8 x 6.7 =

REASONING TASKS

Home Learning: Maths – Day 2 (Known Facts)

YR6 PROGRESSION IN MASTERY LESSON PACK - REASON FROM KNOW FACTS

PROBLEM SOLVING 1

Write as many facts as you can using the digit cards only once in each calculation.

PROBLEM SOLVING 2

If the answer is ....

564

What could the question be?

?

Find at least 8 facts.

PROBLEM SOLVING TASKS

Try to aim for around 10 calculations for Problem Solving 2.

Answers coming up…

The next slide will contain the answers – make sure you have finished before you check the next slide. Please feel free to email any questions, queries or examples of work to your class teacher.

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Fluency 1

Addition is the inverse of subtraction.

Multiplication is the inverse of division.

(stem sentences can be completed in any order)

581 + 125 = 706 525 ÷ 15 = 35 17 x 9 = 153

Fluency 2

104 ÷ 4 = 26	**104 ÷ 8 = 13**
1,040 ÷ 40 = 26	**1,040 ÷ 80 = 13**

26 x 6 = 156	**26 x 3 = 78**
2.6 x 6 = 15.6	**260 x 6 = 1,560**

Fluency 3

45 x 8 = 360	45 x 6 = 270
315 ÷ 14 = 22.5	315 ÷ 3.5 = 90
22.5 x 7 = 157.5	22.5 x 14 = 315
450 x 3.5 =1,575	450 x 0.7 =315

Fluency 4

Various answers including 8 x 7 = 56 56 ÷ 8 = 7 etc

Reasoning 1

Modelled DAB Reasoning Responses

D – Millie has made a mistake

A – 144 ÷ 18 = 8

B – Millie has not remembered that if you half the divisor, you must double the answer to make the calculation correct.

Reasoning 2

Modelled DAB Reasoning Response

D – The answer is true

A – Both calculation = 670

B – If the 1st calculation was reordered then 2 x 5 = 10 x 67

Reasoning 3

Modelled DAB Reasoning Response

D – Jane is partly correct

A – She can use 6 x 7 = 42 to calculate 0.6 x 0.7 and 0.007 x 6

B – 42 x 0.7 = 29.4 so does not use the known fact.

Reasoning 4

Any of these could be the odd one out if pupils have justified why.

E.g 0.8 x 6.7 is the only calculation with decimals.

670 ÷ 8 is the only division

67 x 8 does not have a zero

Problem Solving 1

Calculations built around the following facts

8 x 12 = 96 so 12 x 8 = 96 96 ÷ 8 = 12 96 ÷ 12 = 8 etc

2 x 9 = 18 so 9 x 2 = 18 18 ÷ 9 = 2 18 ÷ 2 = 9 etc

2 + 8 = 10 and linked facts

1 + 2 + 6 = 9 and linked facts

6 + 2 = 8

And any facts that use each digit only once

Problem Solving 2

Answers could be any facts that equal 564 including

94 x 6 = 564 5640 ÷ 10 = 564 etc

Warm Up - Day 3

$1{,}025{,}000 = 1{,}000{,}000 + \_\_\_\_\_ + \_\_\_\_\_$

$2{,}090{,}020 = 2 \text{ million} + \_\_\_\_\_ + \_\_\_\_\_$

4. Rashid's number is 306,227
   He adds one million to the number.
   What is his new number?

5. Emma's number is 2,465,297
   She adds 500 to the number.
   What is her new number?

6. Simon thinks of a number.
   He adds 4,000 to the number.
   His answer is 1,087,235
   What was his number?

Home Learning: Maths – Day 3 (Long Division)

- ..\September 2020\Maths\Spring\Wk 1 Recap\Long Division Prog.docx

- Follow the link (will be available from the school website) to access today's work on Long Division.

- If you don't feel confident using long division, then have a go at the short division questions on the next slide.

Video Link: https://vimeo.com/461800078 (Video 1)

Video Link: https://vimeo.com/463003643 (Video 2)

$6\overline{)341}$	$2\overline{)113}$	$4\overline{)195}$	$6\overline{)371}$
$7\overline{)106}$	$3\overline{)164}$	$7\overline{)603}$	$4\overline{)137}$
$4\overline{)350}$	$3\overline{)296}$	$5\overline{)102}$	$8\overline{)308}$
$8\overline{)139}$	$9\overline{)506}$	$7\overline{)603}$	$8\overline{)220}$

The answers are shown on the next slide, so make sure you have finished before you move on.

$7\overline{)106}$ = 15 r 1	$3\overline{)164}$ = 54 r 2	$7\overline{)603}$ = 86 r 1	$4\overline{)137}$ = 34 r 1
$4\overline{)350}$ = 87 r 2	$3\overline{)296}$ = 98 r 2	$5\overline{)102}$ = 20 r 2	$8\overline{)308}$ = 38 r 4
$8\overline{)139}$ = 17 r 3	$9\overline{)506}$ = 56 r 2	$7\overline{)603}$ = 86 r 1	$8\overline{)220}$ = 27 r 4
$9\overline{)385}$ = 42 r 7	$6\overline{)213}$ = 35 r 3	$5\overline{)289}$ = 57 r 4	$2\overline{)45}$ = 22 r 1