

Maths Spring 1 week 4: Multiplication X

For each new teaching point in the weekly maths unit, we will upload an input video to watch. Due to the file size, these are located on our Year 2 channel on YouTube - you can only access the videos using the links provided.

Other links will take you clips, games and sites which will further support your learning.

Everybody should be able to complete the starter questions, and have a go at the practise questions.



Then, when you are confident give the mastery questions a go.



Finally, for some steps, there are some challenge questions - Greater Depth questions; give these a go so you can really put your skills to the test!



If you are working at home or in school, we will all be doing the same work. Tackle a 'step' each day, and it's ok to go back and repeat things which you find challenging.

*Remember if you make an error when finding an answer, you need to go back and try again; just like we would do in school.

*Use the questions in this document to work through, but you don't need to print them out - you can view them on screen and then work on paper or in an exercise book. The part whole models are easy to draw - we have had practise drawing them before in our maths books.

This week will see us thinking about multiplication. We will start by warming up our thinking and jogging our memory about the multiplication work you completed in Year 1...looking back at the idea of multiplication being the repeated adding of the same value; and being able to count accurately in multiples.

Then we will move onto solving calculations using multiplication symbol.

*Remember, we'd love to see how you are getting on, so please send a photo of some of your work to your class email address. 😊

woodpeckers.class@glenfieldschool.co.uk

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Step 1: Monday

*Take a look at the video clip to jog your memory about multiplication:

<https://www.bbc.co.uk/teach/class-clips-video/maths-ks1--ks2-what-is-multiplication/z68fbdm>



*We are going to spend the rest of today's session practising counting in 2's, 10's and 5's, as these are the multiples, we focus on in Year 2...join multiplication boy and divider girl, as they count in 2s 5s and 10s and find out about the knowledge and patterns that can help you count in these multiples efficiently.



<https://www.bbc.co.uk/teach/class-clips-video/maths-ks1--ks2-multiples-of-two-five-and-ten/z769wty>

*Let's get counting, use the video links to help you. Watch and practise as many times as you need to, so counting in multiples sticks in your head!

Counting in 2s

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



Counting in 10s

https://www.youtube.com/watch?v=Ftati8iGQcs&list=PLM95cb_Szq3am4n6jJw127QbBIDivZgIc



Counting in 5s

<https://www.youtube.com/watch?v=EemjeA2Djjw&t=74s>



Count in 2's 10 and 5s'

<https://www.youtube.com/watch?v=O-cARYvdtB4&t=51s>



*Now you've practised counting in multiples, apply what you know to tackle today's tasks...



Complete each multiples number strip:

0	2	4										
---	---	---	--	--	--	--	--	--	--	--	--	--

0	10	20										
---	----	----	--	--	--	--	--	--	--	--	--	--

0	5	10										
---	---	----	--	--	--	--	--	--	--	--	--	--



Fill in the missing multiples in each strip.

0	2			8	10			16			22	
---	---	--	--	---	----	--	--	----	--	--	----	--

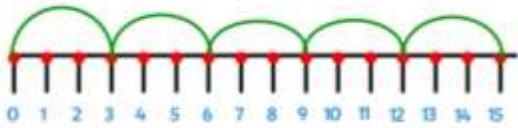
	10	20				60	70				110	120
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0	5		15			30		40		50		
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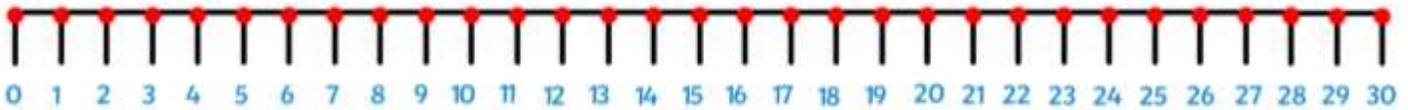


Can you jump in multiples along the number lines?

Start at 0 each time and draw a jump to join each multiple to the next one, here's how it would work if I was thinking about multiples of 3:



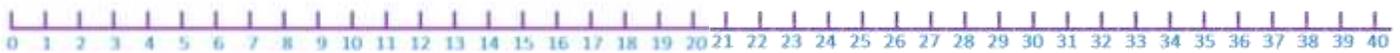
***Multiples of 2 (count in 2s) x2**



***Multiples of 10 (count in 10s) x10**



***Multiples of 5 (count in 5s) x5**





*Make it through the multiple mazes: Start at the green for 'go' and make your way to the red 'finish'.

Multiples of 2 $\times 2$ *count in 2s*

0	2	4	5	3
10	9	6	7	6
1	10	8	11	8
14	12	21	23	20
16	18	20	22	24

Multiples of 10 $\times 10$ *count in 10s*

0	50	60	70	5
10	40	11	80	20
20	30	9	90	52
21	45	18	100	91
100	60	99	110	120

Multiples of 5 $\times 5$ *count in 5s*

0	5	10	15	16
1	6	11	20	21
2	35	30	25	90
8	40	100	56	91
10	45	50	55	60



Harpritt has filled in the blanks on this number track.

2	3	6	8	10	11	14	16	17	20
---	---	---	---	----	----	----	----	----	----



What mistake has Harpritt made?
Explain your answer.

What should he have written?



Do you agree with Alice?

Explain your reason...can you prove it?



Alice

All the multiples of 5 have 0 or 5 ones.



When you count in 10s, all the multiples end in zero. That's because they are not multiples of anything else...you only say them when you count in 10s.

Do you agree with Emily? Explain your reason...can you prove it?

Step 2&3: Tuesday & Wednesday

*Let's focus on the idea of multiplication being repeated addition, and how this links to the multiplication symbol \times

Watch the **input video**: *Multiplication 1: repeated addition*

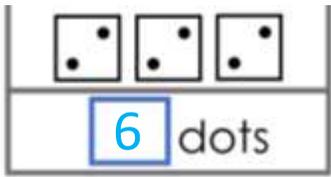
https://youtu.be/rvIt7w_BSCU



*Now give the tasks a go...remember these tasks are to last 2 days, so you can really get to grips with repeated addition and how it links to multiplication number sentences using the \times symbol.



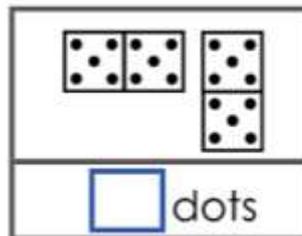
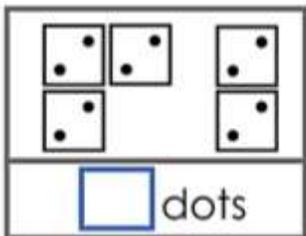
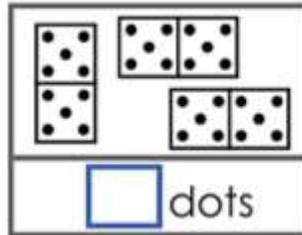
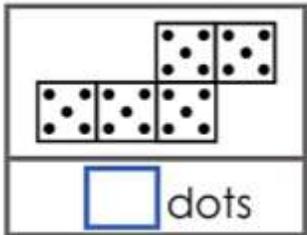
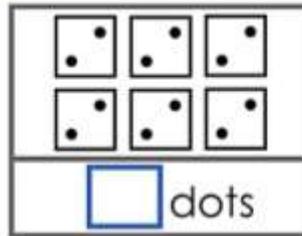
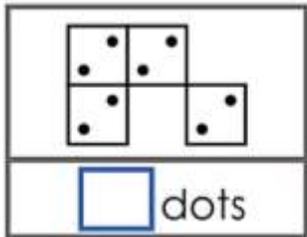
For each set, use counting in multiples to help you find the total, then write the repeated addition number sentence. E.g



$$2 + 2 + 2 = 6$$



* For each set, use counting in 2s, 10s or 5's to help you find the total, then write the repeated addition number sentence.



* For each set show the total, repeated addition number sentences, and the multiplication number sentence they represent.

dots

dots

dots

dots

dots

dots



Match the repeated addition to the correct image.

There is 1 picture and 1 number sentence which will need completing,

$5 + 5 + 5 + 5 = \square$

$4 + 4 + 4 + 4 + 4 = \square$

$4 + 4 + 4 + 4 = \square$

$5 + 5 + 5 + 5 + 5 = \square$

Missing number sentence:

$5 + 5 + 5 = \square$

Missing picture:



The same... different...

--	--

Explain your thinking...

This reminded me of...
I already know...
Using the numbers I found a pattern...
This is true/false because...
The didn't work so I tried...
Talking about what you have done, and sharing what you found out.



Odd one out

--	--	--

Explain your thinking...

This reminded me of...
I already know...
Using the numbers I found a pattern...
This is true/false because...
The didn't work so I tried...
Talking about what you have done, and sharing what you found out.



Read the pictures

hands fingers

legs toes

people toes

eyes fingers

What is the total of each body part?
Create repeated addition number sentences and matching multiplication number sentences to prove each total.



True or false? ✓ x

$4 \times 5 = 20$ ✓

$20 \times 4 = 5$

$20 = 4 \times 5$

20			
5	5	5	5



Write these addition sentences as multiplication sentences. The first one has been completed.

$$5 + 5 + 5 + 5 + 5 = 5 \times 5$$

$$2 + 2 + 2 + 2 + 2 =$$

$$2 + 2 + 2 =$$

$$10 + 10 + 10 + 10 =$$



Find the odd one out.

$$5 + 5 + 5 + 5$$

two 10s

$$10 \times 2$$

ten 2s

$$2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2$$

$$4 + 4 + 4$$

$$5 \times 4$$

$$2 \times 10$$

four 5s

$$10 + 10$$



Find 3 possible solutions to each of these calculations.

$$\square \times \square = 10$$

$$\square \times \square = 10 + 10 + 10$$

$$\square \times \square < 2 + 2 + 2 + 2$$



Which has the most biscuits:

4 packets of biscuits with 5 in each packet, or
3 packets of biscuits with 10 in each packet?

Explain your reasoning.



True or false? ✓ x

$4 + 4 + 4$ is the same as 3×4

$3 + 3 + 3 + 3$ is the same as 5×3

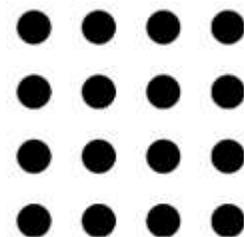
$5 + 5 + 10$ is the same as 5×4

$3 + 4 + 4 + 5$ is the same as 4×4



Agree or disagree?

**I think I can use this total number of dots, to create a set which counts in 2s, a set which counts in 10s and a set which counts in 5s.*



****Which totals would this idea work for?**

(Show the repeated addition and multiplication number sentences for your sets)

Step 4 & 5: Thursday & Friday

*Let's move our thinking on, so we are working with multiplications written using the x symbol, and using a jottings method to help us solve these...take a look at the **input video: Multiplication 2: using hoops and dots**

<https://youtu.be/J2qKCKTWoDQ>



This 'quick reference sheet' will also help you, if you need to check how to use the hoops and dots method when you are working on the tasks:

X Multiplication X

multiply times groups of sets of lots of
product array repeated addition

Hoops and dots (groups)

how many hoops (groups) how many are in each group

$3 \times 2 = 6$

'Three groups of 2'
3 times 2

Now draw out the number of hoops you need,
and then put in each hoop dots to show how
many are in each group.



To find the answer count up all the dots:
1, 2, 3, 4, 5, 6

To be **efficient** you could count in multiples:
2, 4, 6

how many hoops (groups) how many are in each group

$7 \times 5 = 35$



Seven groups of 5 7 times 5
5, 10, 15, 20, 25, 30, 35

$4 \times 10 = 40$



four groups of ten 4 times 10
10, 20, 30, 40

When you multiply the answer is always larger than the number you started with!

You can multiply the numbers in any order, so 3×2 is the same as 2×3 because it is commutative.

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*Now give the tasks a go...use hoops and dots to help you solve them. If you know the answers mentally (as you have learnt your times tables) still use hoops and dots to check your thinking and then place an 'm' in a circle next to your answer. Remember these tasks are to last 2 days, so work carefully, and show your thinking and reasoning for each question. Some questions need you to find more than one solution or may need you to use other maths than just multiplication.



Draw the hoops and dots to help you solve these multiplication number sentences:

$$3 \times 2 =$$

$$2 \times 10 =$$

$$4 \times 5 =$$

$$8 \times 2 =$$

$$5 \times 5 =$$

$$6 \times 10 =$$



Count in twos to complete the sentences.



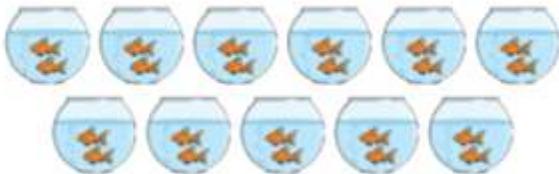
$2 \times \underline{\quad} = \underline{\quad}$ and $\underline{\quad} \times 2 = \underline{\quad}$

There are socks in total.



$2 \times \underline{\quad} = \underline{\quad}$ and $\underline{\quad} \times 2 = \underline{\quad}$

There are footballs in total.

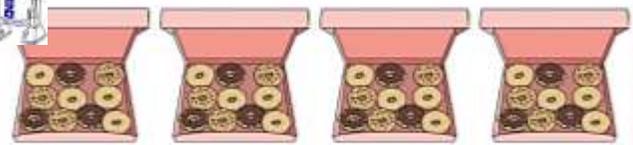


$2 \times \underline{\quad} = \underline{\quad}$ and $\underline{\quad} \times 2 = \underline{\quad}$

There are fish in total.



Complete the statements.



$10 \times \underline{\quad} = \underline{\quad}$

There are doughnuts altogether.



$\underline{\quad} = 10 \times \underline{\quad}$

There are candles in total.



$\underline{\quad} \times \text{£}10 = \text{£} \underline{\quad}$

There is £ altogether.



How many marshmallows are on the 7 cakes?



Write the multiplication calculation:

How much money is shown here in total?



Write the multiplication calculation:



Tackle the word problems...

The robot carried the Bluebird in his heart for 4 days. Every day they travelled 10 miles. How many miles did they travel in total?



There are 8 trees in the Bluebird's garden in the South. There are 2 birds in each tree. How many birds are in the garden altogether?



Snack time apples come in bags of 5. If the fruit man delivers 12 bags of apples, how many apples are there altogether?



Miss Carrie has 7 children for 'Head teachers special time'. If they need 5 strawberries each, how many does she need to buy altogether?



Alice has 50p. How many 5ps is that? Use the calculation to help.

$$50p = \underline{\hspace{2cm}} \times 5p$$



When I say the multiples of 2, I won't say any odd numbers.



Harriet

Do you agree with Harriet? Prove it.

Aman

$0 \times 5 = 5$

Jin

$5 \times 3 = 15$ is the same as $15 = 5 \times 3$.

Do you agree with the children? Explain your answer.

True or false?		
a) 2×10	>	5×10
b) 10×3	=	$10 + 10 + 10$
c) $10 + 10$	=	10×1
d) 100	<	10×10
e) 10×0	<	10×8

Choose from the numbers 1 to 9 to make these statements correct.

$10 \times \underline{\hspace{2cm}}$	>	$10 \times \underline{\hspace{2cm}}$
$10 \times \underline{\hspace{2cm}}$	=	$10 + 10$
$10 \times \underline{\hspace{2cm}}$	<	10×9
10×7	=	$\underline{\hspace{2cm}} \times 10$

Solve these problems.

- a) There are 10 sweets in a packet.
I buy 8 packets. How many sweets do I have?



- b) Football cards come in packs of 10.
Luisa collected 5 packs. James collected 8 packs.
Who had the most cards?
How many cards did they have?



- c) Pavel had 10 children at his birthday party. He wanted to put 6 toys in each party bag.
How many toys did he have to buy?



- d) Lucas and Moses have 30 marbles altogether. They can put 10 in a pot. How many pots will they need?



At the café, all hot chocolate toppings are 5p.



Alice chose cream, a flake and strawberry sauce.
Aman asked for marshmallows, fudge, cream and nuts.
Jin had all the toppings.

Write a calculation for each child to show how much each of them spent.

Alice's mum spent 25p on toppings.

Aman's dad spent 30p on toppings.

Jin's Grandma spent 10p on toppings.



How many toppings did they each have?
Write a calculation for each adult.

What toppings would you have?
Work out the cost.

*There are 7 tables in the dinner hall. Each table can seat 10 children. If each table needs 2 jugs of water. How many jugs are needed?

**How many cups are need so all the children can have a drink?



*Kat buys 3 raffle tickets costing £5 each. If she paid with a £20 note, how much change will she get?



*At snack time we are having strawberries. Each child will have 2 strawberries. There are 11 boys and 13 girls. How many strawberries will Mrs Goodman need to put in the fruit box ?



*There are 7 tables in the dinner hall. Each table can seat 10 children. If each table needs 2 jugs of water. How many jugs are needed?

**How many cups are need so all the children can have a drink?



Digit cards game

You need digit cards 0 to 5

Use four of the cards.

Complete the number sentence.



$$\square \times \square = \square \square$$

How many ways can you find?



Explain

1 jug fills 3 bottles.

1 bottle fills 2 cups.



A jug fills cups.



Find all the possible calculations using the clues.

$$2 \times \bigcirc = \square$$

The number in the circle is greater than 3.

The number in the square is less than 24.

Both numbers are even.

The number in the square is a 2-digit number.

