

Division day 3:

Today we are going to continue to build on our knowledge of multiplication and division. Today we are going to use our knowledge on the 8 timestables to help us. Once again it may be useful to draw pictures or use objects around your house to help you work out the answers. (All the answers are at the end of the booklet.)

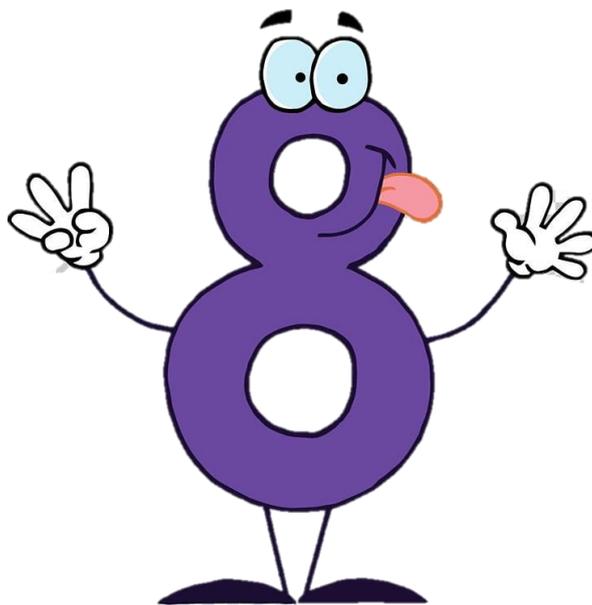
Before we start...

Spend 10-15 minutes revising your 8 timestables. If you haven't started learning your 8 timestables yet don't worry, just have a go! Try writing them in order first, then mix it up.

Here are some catchy songs for you to watch to get you started:

https://www.youtube.com/watch?v=z_BJjR9rdwA

<https://www.youtube.com/watch?v=kN3RQ5iLKpo>



Challenge 1: Multiplying by 8

Helpful hint- your other times tables will really help you with this challenge!

1.

8	16		32	40		56		72		96
---	----	--	----	----	--	----	--	----	--	----



How many legs are there on four spiders?

There are ___ legs on each spider.

If there are ___ spiders, there will be ___ legs altogether.

3.

$$8 \times 3 = \underline{\quad}$$
$$2 \times 4 \times 3 = \underline{\quad}$$
$$2 \times 2 \times 2 \times 3 = \underline{\quad}$$

What do you notice?

Why do you think this has happened?

4.

Max calculates 8×6 by doing
 5×6 and 3×6 and adding them.

$$\underline{\quad} + \underline{\quad} = \underline{\quad}$$

Paddy calculates 8×6 by doing

$$4 \times 6 \times 2$$

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

Whose method do you prefer?

Explain why.

Challenge 2: Dividing by 8

Now we are going to look at dividing by 8. Use your knowledge on inverse, times tables and different methods to help you.

- There are 32 children in a PE lesson.
They are split into 8 equal teams for a relay race.
How many children are in each team?
Use counters or multi-link to represent each child.

There are ___ teams and ___ children in each team.

- Pens are sold in packs of 8.
Year 3 need 48 pens.
How many packs should be ordered?



They should order ___ packs of pens.

- Complete the missing numbers.

$$80 \div 8 = \underline{\quad}$$

$$24 \div \underline{\quad} = 8$$

$$64 \div 8 = \underline{\quad}$$

$$8 \times \underline{\quad} = 40$$

$$\underline{\quad} \times 8 = 16$$

$$\underline{\quad} \div 8 = 4$$

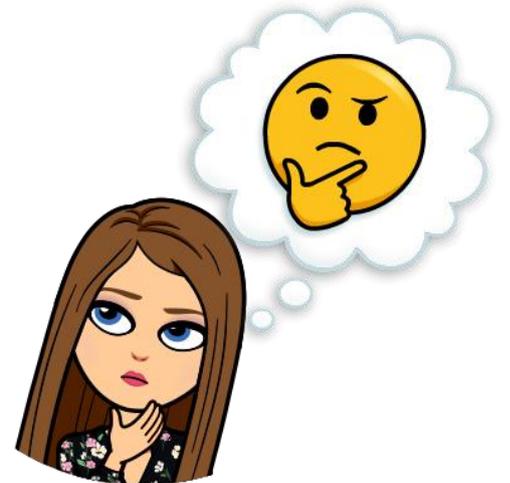
Key questions:

Can you group the numbers in 8's?

Can you share the numbers into 8 groups?

Can you use your knowledge on other times tables to check your answer?

How else could you represent this problem?



Challenge 3: Always, sometimes never?

On a blank hundred square, colour the multiples of 8 in one colour.

Then colour the multiples of 4 in a different colour.

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

Always, sometimes, never:

1. Multiples of 4 are also multiples of 8.
2. Multiples of 8 are also multiples of 4.
3. The numbers in the 8 times table are even.

Challenge 4: Word problems!

Now use your knowledge on dividing by 8 and multiplying by 8 to solve these word problems. Remember to use your other times tables and different methods to help you work out the answer.



Question 1:

Megan has a box of cola that are in packs. Some packs have 4 cans in them and some packs have 8 cans in them.



Megans box contains 64 cans of cola.

How many packs of 4 cans can there be?

How many packs of 8 cans can there be?

Question 2:

$$48 \div 2 =$$

$$48 \div 4 =$$

$$48 \div 8 =$$

What do you notice about the answer to these questions?

Can you predict what $48 \div 16$ would be?

Question 3:

Stacy bought 6 balloons for her birthday party.

They cost £8 each

How much did they cost her? How do you know?

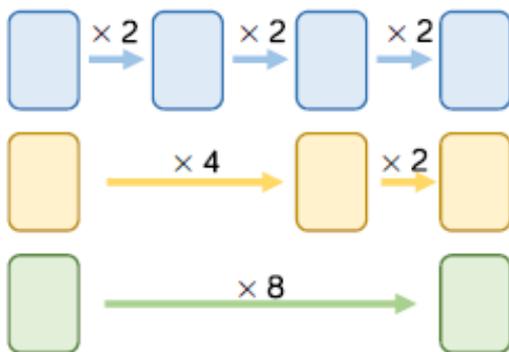
Prove it!



Question 4: The function machine!

Pick a number between 1-9.

Start each function machine with the same number.



a. What do you notice about each final answer?

b. James knows the 4x table off by heart but he is still learning the 8x table. Which colour method should he use and why?

Extra revision: Create your own word problem for the 3, 4 or 8 times table.

Answers:

Challenge 1:

8	16	24	32	40	48	56	64	72	80	88	96
---	----	----	----	----	----	----	----	----	----	----	----

2. Personal choice!

3. All of the answers are equal. Eight has been split into numbers that times together to make the same number.

4. Possible answers include:

I prefer Max's method because I know my 5- and 3-times tables so I can use that to work out the answer. Or I prefer Paddy's method because I know my 4 times table and I can double numbers. 3.

Challenge 2:

1. There are 8 teams and 4 children in each time. Working out might include: $8 \times 4 = 32$
or $32 \div 8 = 4$
2. Year 3 need to buy 6 packs of pens because $8 \times 6 = 48$. Children may have used division
eg. $48 \div 8 =$
3. $80 \div 8 = 10$ $24 \div 3 = 8$
 $64 \div 8 = 8$ $8 \times 5 = 40$
 $2 \times 8 = 16$ $32 \div 8 = 4$

Challenge 3:

1. Sometimes, every other multiple is a multiple of 8. The ones in between aren't because the jumps are smaller than 8.
2. Always, 8 is a multiple of 4 therefore all multiples of 8 will be multiples of 4.

3. Always. When you add an even number to an even number you always make an even number. The 8 times table is a repeated addition so it keeps adding an even number (8) each time.

Challenge 4:

1. Possible answers:

- 2 packs of 4, 7 packs of 8
- 4 packs of 4, 6 packs of 8
- 6 packs of 4, 5 packs of 8
- 8 packs of 4, 4 packs of 8
- 10 packs of 4, 3 packs of 8
- 12 packs of 4, 2 packs of 8
- 14 packs of 4, 1 pack of 8

2. The answers halve and the divisors double. $48 \div 16 = 3$

3. £48 because I know that $6 \times 8 = 48$.

Question 4:

- a. Each time the final number is 8 times greater than the starting number.
- b. Yellow- because he can double 4x to calculate 8x eg. I know $4 \times 6 = 24$ so 8×6 is double that so its 48.