

Y3- Overview

	Autumn 1		Autumn 2		Spring 1		Spring 2		Summer 1		Summer 2		
Unit	1	2			3	4	5	6	7	8	9	10	11

	Number and place value
	Number facts
	Addition and subtraction
	Multiplication and division
	Fractions
	Geometry
	Other

Spring 2	Column Subtraction
Ready to progress	3MD-I Apply known multiplication and division facts to solve contextual problems with different structures, including quotitive and partitive division.
NCETM documents	https://www.ncetm.orguk/media/ciykxwgy/ncetm_spined2_segment07_y3.pdf#page=4
Small steps	- To represent counting in fours as the 4 times table. - To use knowledge of the 4 times table to solve problems. - To explain the relationship between adjacent multiples of four. - To explain the relationship between multiples of 2 and multiples of 4. - To use knowledge of the relationship between the 2 and 4 times tables to solve problems. - To represent counting in eights as the 8 times table. - To explain the relationship between adjacent multiples of eight. - To explain the relationship between multiples of 4 and multiples of 8. - To use knowledge of the relationship between the 4 and 8 times tables to solve problems. - To explain the relationship between the multiples of 2, 4 and 8. - To use knowledge of the relationship between the 2, 4 and 8 times tables to solve problems. - To use knowledge of the divisibility rules for divisors of 2 and 4 to solve problems. - To use knowledge of the divisibility rules for divisors of 8 to solve problems. - To scale known multiplication facts by 10. - To scale divisions derived from multiplication facts by 10.
Links	NCETM- https://view.officeapps.live.com/op/view.aspx?src=https%3A%2F%2Fwww.ncetm.orguk%2Fmedia%2Fj2rpznw0%2Fcp-year-3-unit-6-2-4-8-times-tables.pptx&wdOrigin=BROWSELINK OAK https://www.thenationalacademy/teachers/programmes/maths-primary-ks2/units/2-4-and-8-times-tables-using-times-tables-to-solve-problems/lessons?sid-2877cf=Yz_I7gtSA6&sm=0&src=3 WHITE ROSE https://assets.whiteroseeducation.com/new-schemes/Y3%20Autumn%20Block%203%20SOL%20Multiplication%20and%20division%20A.pdf Mastery with greater depth https://www.ncetm.orguk/media/oaqfcvjg/mastery_assessment_y3.pdf
Reasoning	Spot the Mistake $2 \times 6 = 12$ $4 \times 6 = 20$ What is wrong with the second equation? How can you correct it? True or False? Every multiple of 4 is also a multiple of 2. Is this true or false? Explain why. What Comes Next? 4, 8, 12, 16, __, __ What comes next in the pattern? How do you know? Do, Then Explain If 4 children each have 7 stickers, how many stickers do they have altogether? Explain how the 4 times table helped you. Convince Me Each time I move from one multiple of 4 to the next, I add 4. Is this always true? Convince me with examples. True or False? Every multiple of 8 is also a multiple of 4. Explain why this is true or false, using examples. What Comes Next? 8, 16, 24, 32, __, __ Continue the pattern. What do you notice? Do, Then Explain If $4 \times 5 = 20$, what is 8×5? How did your knowledge of the 4 times table help? Show the Value Look at these numbers: 16, 32, 48 Are they multiples of 2, 4, or 8? How do you know? Make Up an Example Create a word problem where you need to use the 2, 4 and 8 times tables to solve it. Convince Me The difference between each multiple of 8 is always 8. Use number facts to convince me this is true. True or False? The number 724 is divisible by 2 and by 4. Is this true or false? Explain how you can tell. Spot the Mistake Someone says 624 is not divisible by 8 because it ends in a 4. What mistake have they made? Do, Then Explain If $4 \times 6 = 24$, what is 40×6? How does scaling help you solve it? What Comes Next? $80 \div 10 = 8$ $800 \div 10 = 80$

2, 4 and 8 times tables: using times tables to solve problems

Problem solving



Glossary

- Factor - Numbers we can multiply together to get another number are known as factors.
- Product - The answer when two or more values are multiplied together.
- Multiple - A multiple is the result of multiplying a number by another whole number.
- Adjacent - Adjacent means next to each other.
- Double / doubling - To double means to become twice as many or to multiply by two.
- Halving - Halving means to divide into two equal parts.
- Half / halve - A half is one of two equal parts of a whole.
- Divisibility - Divisibility is when division of a number results in another whole number.
- Divisor - A divisor is a number that divides the integer exactly (no remainder).
- Divisible - Divisibility is when division of a number results in another whole number.
- Scale / scaling - Scaling is when a given quantity is made ___ times the size. In this lesson, scaling will involve making values 10 times the size.
- Inverse - Inverse means the opposite in effect. The reverse of

Stem sentences

_____ is a factor
_____ is a factor
The product of _____ and _____ is _____
_____ is the product of _____ and _____

When zero is a factor, the product is zero

For every one group of four, there are two groups of two.

Products in the four time table are also in the two times table.

The product of an even number and two is a product in the four times table.

Four is double two, so _____ fours in double _____ twos.
Two is half of four, so _____ twos is half of _____ fours.

For every one group of eight, there are two groups of four.

Products in the eight times tables are also in the four times table.
The product of an even number and four is a product in the eight times table.

Eight is double four, so _____ eights is double _____ fours.
Four is half of eight, so _____ fours is half of _____ eights.

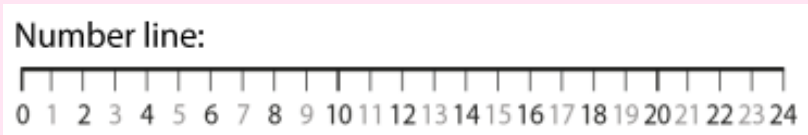
Products in the eight times table are also in the two times table.

If the ones digit of a number is even, the number can be divided by two.
_____ times four is equal to double-_____ times two.
_____ times two is equal to half-of-_____ times four.

If a number is divisible by four, halving it twice gives a whole number
If a number is divisible by four, halving it gives an even number

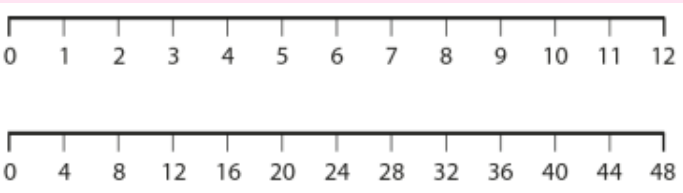
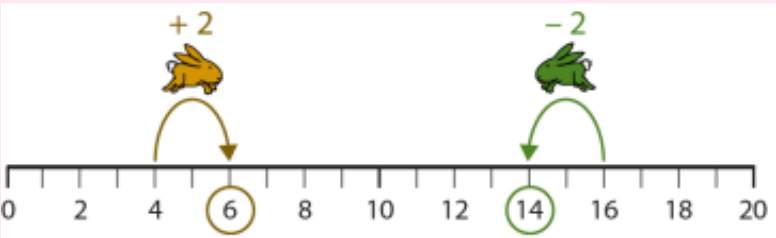
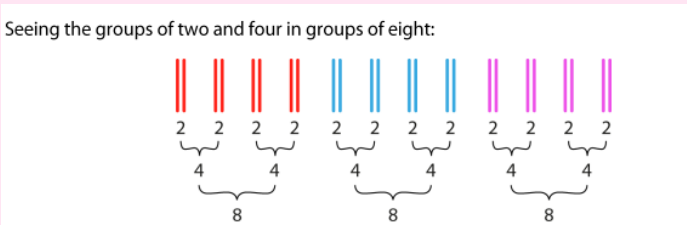
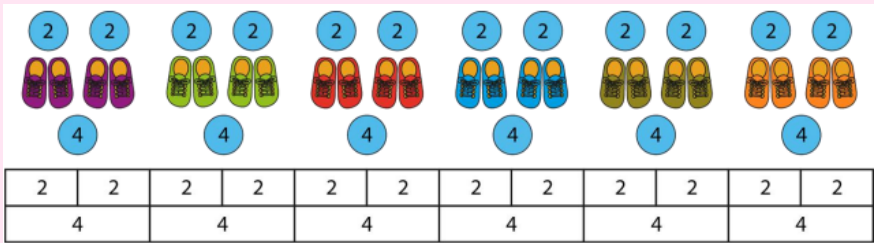
For numbers with more than two digits; if the final two digits are divisible by four then the number is divisible by four.

Representations



Gattegno chart:

1000	2000	3000	4000	5000	6000	7000	8000	9000
100	200	300	400	500	600	700	800	900
10	20	30	40	50	60	70	80	90
1	2	3	4	5	6	7	8	9

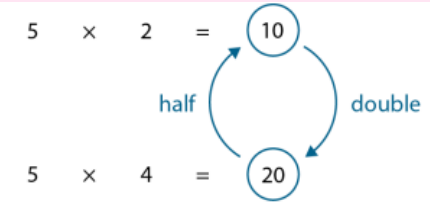


12					
2	2	2	2	2	2
4		4		4	

Multiples chart for two, four and eight:

Number	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Multiples of 2	✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓
Multiples of 4	✓				✓				✓				✓				✓				✓				✓
Multiples of 8	✓								✓								✓								✓

Even numbers	Halve	Halve again
2	1	
4	2	1
6	3	
8	4	2
10	5	
12	6	3
14	7	
16	8	4
18	9	
20	10	5
Not a divisibility rule for 4.	'If a number is divisible by four, halving it gives an even number.'	'If a number is divisible by four, halving it twice gives a whole number.'



Comparing the four and eight times tables:

4 × 0 = 0	8 × 0 = 0
4 × 1 = 4	8 × 1 = 8
4 × 2 = 8	8 × 2 = 16
4 × 3 = 12	8 × 3 = 24
4 × 4 = 16	8 × 4 = 32
4 × 5 = 20	8 × 5 = 40
4 × 6 = 24	8 × 6 = 48
4 × 7 = 28	8 × 7 = 56
4 × 8 = 32	8 × 8 = 64
4 × 9 = 36	8 × 9 = 72
4 × 10 = 40	8 × 10 = 80
4 × 11 = 44	8 × 11 = 88
4 × 12 = 48	8 × 12 = 96