

MONDAY

LO: Recognise and use factor pairs and commutativity in mental calculations.

Recap

- Count in your 6 times tables
- Count in your 12 times tables
- Explain how you can use your 6 times tables to find out your 12 times tables.

Answer

Recap

6 TIMES TABLE

6×0	$=$	0
6×1	$=$	6
6×2	$=$	12
6×3	$=$	18
6×4	$=$	24
6×5	$=$	30
6×6	$=$	36
6×7	$=$	42
6×8	$=$	48
6×9	$=$	54
6×10	$=$	60
6×11	$=$	66
6×12	$=$	72

12 TIMES TABLE

12×0	$=$	0
12×1	$=$	12
12×2	$=$	24
12×3	$=$	36
12×4	$=$	48
12×5	$=$	60
12×6	$=$	72
12×7	$=$	84
12×8	$=$	96
12×9	$=$	108
12×10	$=$	120
12×11	$=$	132
12×12	$=$	144

What multiplication fact can you see?



Answer

What multiplication fact can you see?



I see one group with eight in the group.

$$1 \times 8 = 8$$

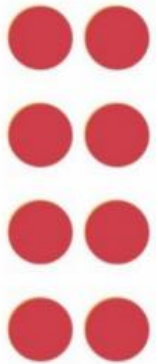
This means 1 and 8 are factors of 8.

How can you find other factors of 8?



Answer

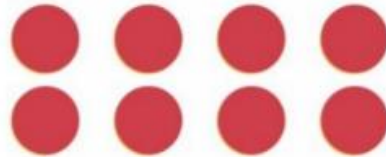
How can you find other factors of 8?



I can see 4 groups of 2 in each group.
 $4 \times 2 = 8$



I see one group with eight in the group.
 $1 \times 8 = 8$



I can see 2 groups with 4 in each group.
 $2 \times 4 = 8$
So 2 and 4 are factors of 8.

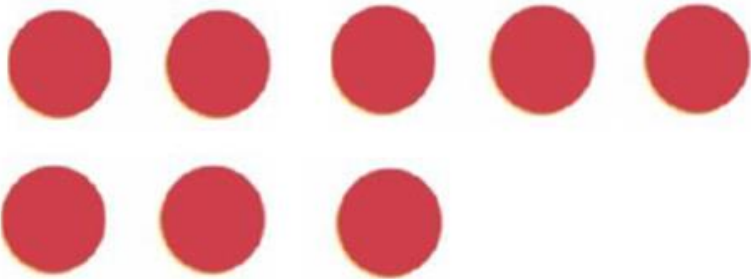
Which whole numbers have a product of 8?

The factors of eight are 1, 2, 4 and 8.

Can 5 be a factor of 8?



Can 5 be a factor of 8?



It is not possible to divide 8 in equal groups of 5 or to build an array for 8 with 5 in each group, hence 5 can not be a factor of 8.

What is a factor pair?
What are the factor pairs of 8?

What is a factor pair?

What are the factor pairs of 8?

A **factor pair** is a **pair** of numbers that, when multiplied will result in a given product.

Factor pairs of the number 8 are:

i. $1 \times 8 = 8$

ii. $2 \times 4 = 8$

What does commutativity mean?

What does commutativity mean?

Commutativity is a property of a mathematical operation (as addition or multiplication) in which the result **does not** depend on the order of the elements.

The **commutative** property of addition states that $1 + 2$ and $2 + 1$ **will** both have a sum of 3.

The **commutative** property of multiplication states that 4×2 and 2×4 **will** both have the product of 8.

Find the factors of 16?

How do you know that you have found all the factors?

Find the factors of 16?

How do you know that you have found all the factors?

$$1 \times 16 = 16$$

$$2 \times 8 = 16$$

$$4 \times 4 = 16$$

The factors of 16 are 1, 2, 4, 8 and 16.

We have found all the factors of 16 because we start dividing 16 with the lowest whole number and go up to all the numbers up to 16 itself. All the whole numbers which divide 16 without a remainder are the factors of 16.

Task – Find all the factors of the following numbers:

1. 6
2. 12
3. 24
4. 32
5. 64
6. 88
7. 93
8. 124

Task – Use the factor pairs to solve the following:

There are 30 children in Laura's class.

How many different ways are there to divide the class into equal groups?



How can factor pairs help you work this out?