Multiplication and Division – Multiply and Divide by 3, 4 & 8 – Knowledge Organiser

Key Vocabulary

Multiplication	The process of adding the same number multiple times.
Division	Splitting a number into equal groups.
Equal groups	Groups of objects that have the same amount in each group.
Arrays	A way of organizing objects or pictures into columns and rows.
Repeated addition	Adding the same number multiple times.
Sharing	Dividing a quantity equally among a certain number of groups.
Grouping	Putting a certain quantity in groups.

Key Information

1	Make links between repeated addition and multiplication to calculate multiples of 3, 4 and 8.
2	When dividing by 3, you either share into 3 equal groups or by grouping in 3s.
3	When dividing by 4, you either share into 4 equal groups or by grouping in 4s.
4	When dividing by 8, you either share into 8 equal groups or by grouping in 8s.
5	We can use concrete or pictorial resources to support with multiplication and division.

Prior Knowledge

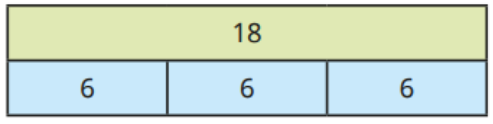
2	Multiplication and Division	Multiplication and division facts for the 2, 5 and 10 times tables.
2	Multiplication and Division	Recognise, make and add equal groups.

Worked Examples

Multiply by 3:
There are 5 equal groups with 3 in each group.

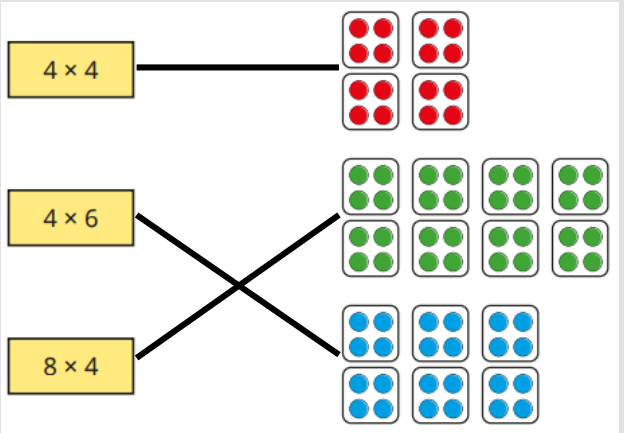
There are 15 altogether.
3+3+3+3+3 = 15
5x3 = 15

Divide by 3:
The bar model shows 18÷3=6



Worked Examples

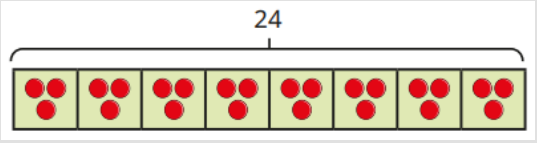
Multiply by 4:
Match the multiplications to the pictures.



Divide by 4:
A shop sells apples in bags of 4. Each bag of apples costs £2. Rosie buys 36 apples. How much does Rosie spend?
a. 36÷4 = 9
b. 9x£2 = £18

Multiply by 8:
How many legs do 5 spiders have?
There are 8 legs on each spider.
8+8+8+8+8 = 40
5x8 = 40

Divide by 8:
24 sweets are shared equally into 8 bags. Dani uses a bar model to show this.
24÷8=3



Multiplication and Division – Multiply and Divide 2-digit by 1-digit – Knowledge Organiser

Key Vocabulary

Multiplication	The process of adding the same number multiple times.
Division	Splitting a number into equal groups.
Partitioning	Separating larger numbers into smaller numbers like tens and ones.
Exchange	When you have to swap a ten for ten ones or ten ones for an additional ten.
Equal groups	Groups of objects that have the same amount in each group.
Remainders	When dividing, the amount left over that can't be shared equally.

Key Information

1. When multiplying, the 2-digit number should be partitioned into tens and ones and then multiplied by the 1-digit number.
2. Once you have answers to the two parts, you then add these together to get the total.
3. When dividing, the 2-digit number should be partitioned into tens and ones and then shared into equal groups.
4. When dividing, you should share the tens first, followed by the ones.
5. If the tens cannot be shared equally, each ten should be exchanged for 10 ones and then shared.

Prior Knowledge

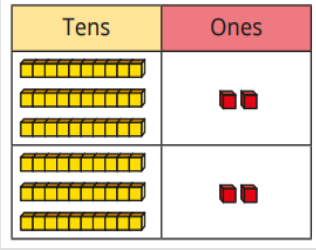
3	Multiplication and division	Use their knowledge of already learnt multiplication and division facts.

Worked Examples

Multiply 2-digit by 1-digit – no exchange:

Complete the number sentences. Use the place value chart for support.

2 ones x 2 = 4 ones
3 tens x 2 = 6 tens
60 + 4 = 64
32 x 2 = 64

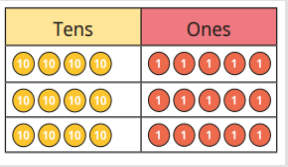


Worked Examples

Multiply 2-digit by 1-digit – exchange:

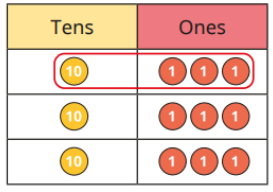
Complete the number sentences. Use the place value chart for support.

5 ones x 3 = 15 ones
4 tens x 3 = 12 tens
120 + 15 = 135
45 x 3 = 135



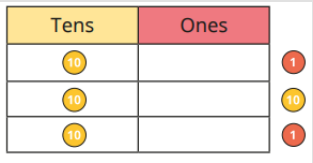
Divide 2-digit by 1-digit – no exchange:

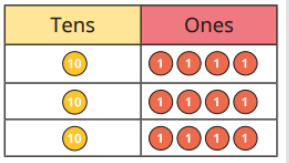
Use the place value chart to work out 39÷3=13



Divide 2-digit by 1-digit – flexible partitioning:

Rob uses counters to work out 42÷3. He cannot share the tens equally so exchanges one for ten ones and then shares the remaining ones.





Divide 2-digit by 1-digit – remainders:

Tommy uses repeated subtraction to work out 31÷4=7r3