# Multiplication and Division — Knowledge Organiser

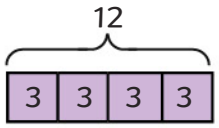
## Key Vocabulary

- times tables
- sharing
- grouping
- equal groups
- multiple
- multiply by
- divide by
- array
- fact families
- regrouping

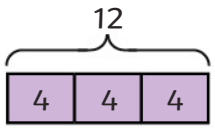
## Sharing and Grouping

12 ÷ 4 = 3

12 counters are shared equally between 4 children.




12 counters are grouped into packs of 4.




## Multiples of 2, 4 and 8

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 |
| 4 | 8 | 12 | 16 | 20 | 24 | 28 | 32 | 36 | 40 | 44 | 48 |
| 8 | 16 | 24 | 32 | 40 | 48 | 56 | 64 | 72 | 80 | 88 | 96 |

Doubling the 2 times table is equal to the 4 times table. Doubling the 4 times table is equal to the 8 times table.

## Multiplication and Division Facts (3, 4 and 8 multiplication tables)

### 3 x Tables

| | |
|---|---|
| 1 × 3 = 3 | 3 ÷ 3 = 1 |
| 2 × 3 = 6 | 6 ÷ 3 = 2 |
| 3 × 3 = 9 | 9 ÷ 3 = 3 |
| 4 × 3 = 12 | 12 ÷ 3 = 4 |
| 5 × 3 = 15 | 15 ÷ 3 = 5 |
| 6 × 3 = 18 | 18 ÷ 3 = 6 |
| 7 × 3 = 21 | 21 ÷ 3 = 7 |
| 8 × 3 = 24 | 24 ÷ 3 = 8 |
| 9 × 3 = 27 | 27 ÷ 3 = 9 |
| 10 × 3 = 30 | 30 ÷ 3 = 10 |
| 11 × 3 = 33 | 33 ÷ 3 = 11 |
| 12 × 3 = 36 | 36 ÷ 3 = 12 |

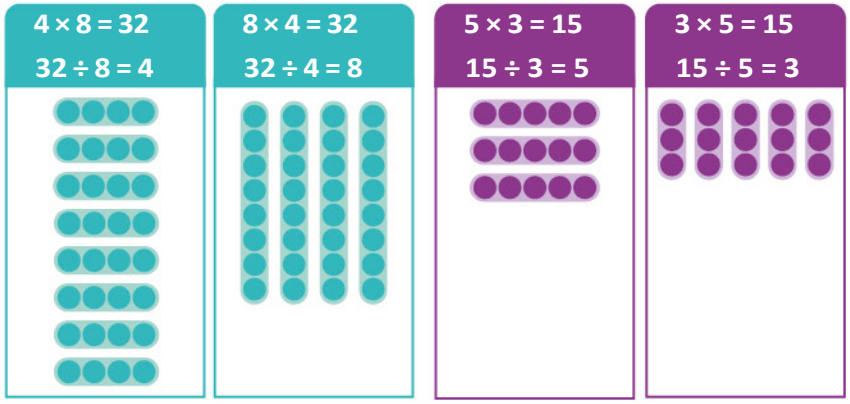
### 4 x Tables

| | |
|---|---|
| 1 × 4 = 4 | 4 ÷ 4 = 1 |
| 2 × 4 = 8 | 8 ÷ 4 = 2 |
| 3 × 4 = 12 | 12 ÷ 4 = 3 |
| 4 × 4 = 16 | 16 ÷ 4 = 4 |
| 5 × 4 = 20 | 20 ÷ 4 = 5 |
| 6 × 4 = 24 | 24 ÷ 4 = 6 |
| 7 × 4 = 28 | 28 ÷ 4 = 7 |
| 8 × 4 = 32 | 32 ÷ 4 = 8 |
| 9 × 4 = 36 | 36 ÷ 4 = 9 |
| 10 × 4 = 40 | 40 ÷ 4 = 10 |
| 11 × 4 = 44 | 44 ÷ 4 = 11 |
| 12 × 4 = 48 | 48 ÷ 4 = 12 |

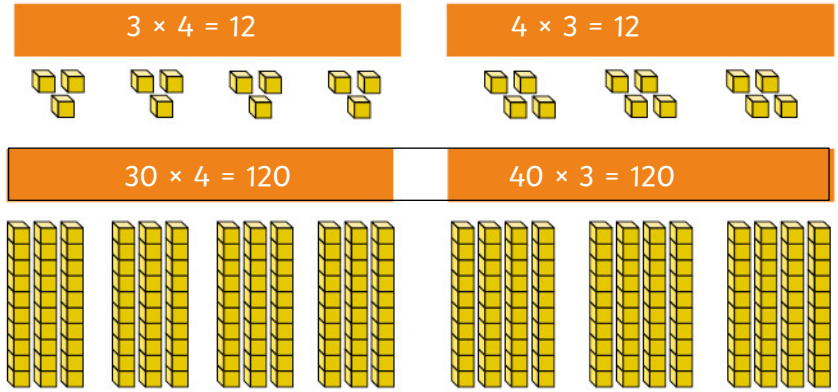
### 8 x Tables

| | |
|---|---|
| 1 × 8 = 8 | 8 ÷ 8 = 1 |
| 2 × 8 = 16 | 16 ÷ 8 = 2 |
| 3 × 8 = 24 | 24 ÷ 8 = 3 |
| 4 × 8 = 32 | 32 ÷ 8 = 4 |
| 5 × 8 = 40 | 40 ÷ 8 = 5 |
| 6 × 8 = 48 | 48 ÷ 8 = 6 |
| 7 × 8 = 56 | 56 ÷ 8 = 7 |
| 8 × 8 = 64 | 64 ÷ 8 = 8 |
| 9 × 8 = 72 | 72 ÷ 8 = 9 |
| 10 × 8 = 80 | 80 ÷ 8 = 10 |
| 11 × 8 = 88 | 88 ÷ 8 = 11 |
| 12 × 8 = 96 | 96 ÷ 8 = 12 |

## Fact Families




## Related Calculations

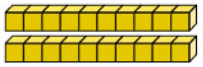
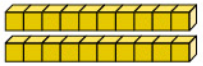
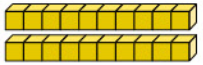


# Multiplication and Division

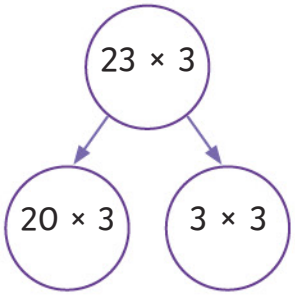
Knowledge Organiser

## Multiplication Methods - No Regrouping

**23 × 3 = 69**

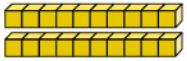
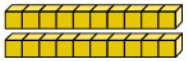
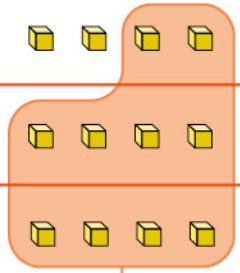
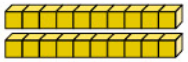
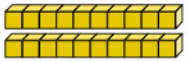
| Tens | Ones |
|---|---|
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|  |  |
|  |  |

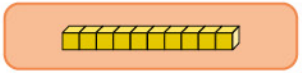
**20 × 3 = 60**
**3 × 3 = 9**
**23 × 3 = 69**



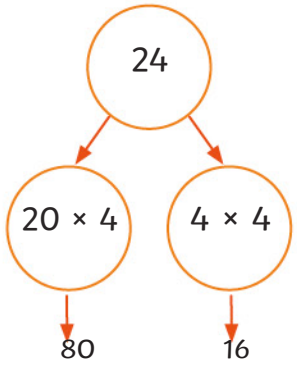

## Multiplication Methods - With Regrouping

**24 × 4 = 96**

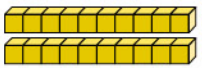
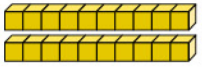
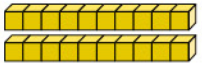
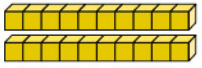
| Tens | Ones |
|---|---|
|  |  |
|  |  |
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|  | |



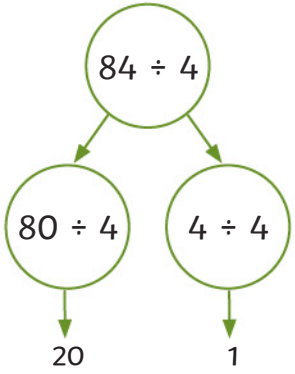
**20 × 4 = 80**
**4 × 4 = 16**
**24 × 4 = 96**



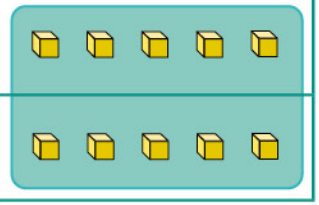

## Division Methods - No Exchange

| Tens | Ones |
|---|---|
|  |  |
|  |  |
|  |  |
|  |  |

**84 ÷ 4 = 21**




## Division Methods - With Regrouping

| Tens | Ones |
|---|---|
|  |  |
|  |  |
|  | |

