

Key Vocabulary

product

multiples

scale up

division facts

multiplication facts

bus stop method

grid method

patterns

formal written method

visually

array

fact family

times tables

regrouping

Multiplication

| x | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|----|----|----|----|----|----|----|----|----|-----|-----|-----|-----|
| 1 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 2 | 2 | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 |
| 3 | 3 | 6 | 9 | 12 | 15 | 18 | 21 | 24 | 27 | 30 | 33 | 36 |
| 4 | 4 | 8 | 12 | 16 | 20 | 24 | 28 | 32 | 36 | 40 | 44 | 48 |
| 5 | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 |
| 6 | 6 | 12 | 18 | 24 | 30 | 36 | 42 | 48 | 54 | 60 | 66 | 72 |
| 7 | 7 | 14 | 21 | 28 | 35 | 42 | 49 | 56 | 63 | 70 | 77 | 84 |
| 8 | 8 | 16 | 24 | 32 | 40 | 48 | 56 | 64 | 72 | 80 | 88 | 96 |
| 9 | 9 | 18 | 27 | 36 | 45 | 54 | 63 | 72 | 81 | 90 | 99 | 108 |
| 10 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 11 | 11 | 22 | 33 | 44 | 55 | 66 | 77 | 88 | 99 | 110 | 121 | 132 |
| 12 | 12 | 24 | 36 | 48 | 60 | 72 | 84 | 96 | 108 | 120 | 132 | 144 |

3 x Tables

$1 \times 3 = 3$

$2 \times 3 = 6$

$3 \times 3 = 9$

$4 \times 3 = 12$

$5 \times 3 = 15$

$6 \times 3 = 18$

$7 \times 3 = 21$

$8 \times 3 = 24$

$9 \times 3 = 27$

$10 \times 3 = 30$

$11 \times 3 = 33$

$12 \times 3 = 36$

$3 + 3 = 1$

$6 + 3 = 2$

$9 + 3 = 3$

$12 + 3 = 4$

$15 + 3 = 5$

$18 + 3 = 6$

$21 + 3 = 7$

$24 + 3 = 8$

$27 + 3 = 9$

$30 + 3 = 10$

$33 + 3 = 11$

$36 + 3 = 12$

4 x Tables

$1 \times 4 = 4$

$2 \times 4 = 8$

$3 \times 4 = 12$

$4 \times 4 = 16$

$5 \times 4 = 20$

$6 \times 4 = 24$

$7 \times 4 = 28$

$8 \times 4 = 32$

$9 \times 4 = 36$

$10 \times 4 = 40$

$11 \times 4 = 44$

$12 \times 4 = 48$

$4 + 4 = 1$

$8 + 4 = 2$

$12 + 4 = 3$

$16 + 4 = 4$

$20 + 4 = 5$

$24 + 4 = 6$

$28 + 4 = 7$

$32 + 4 = 8$

$36 + 4 = 9$

$40 + 4 = 10$

$44 + 4 = 11$

$48 + 4 = 12$

8 x Tables

$1 \times 8 = 8$

$2 \times 8 = 16$

$3 \times 8 = 24$

$4 \times 8 = 32$

$5 \times 8 = 40$

$6 \times 8 = 48$

$7 \times 8 = 56$

$8 \times 8 = 64$

$9 \times 8 = 72$

$10 \times 8 = 80$

$11 \times 8 = 88$

$12 \times 8 = 96$

$8 + 8 = 1$

$16 + 8 = 2$

$24 + 8 = 3$

$32 + 8 = 4$

$40 + 8 = 5$

$48 + 8 = 6$

$56 + 8 = 7$

$64 + 8 = 8$

$72 + 8 = 9$

$80 + 8 = 10$

$88 + 8 = 11$

$96 + 8 = 12$

Multiply by 3

$3 + 3 + 3 + 3 + 3 = 15$

$3 \times 5 = 15$

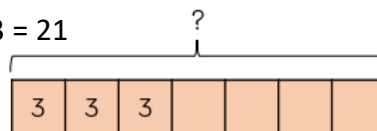
$5 \times 3 = 15$



$3 + 3 + 3 + 3 + 3 + 3 + 3 = 21$

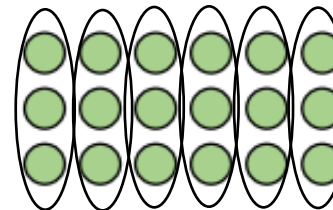
$3 \times 7 = 21$

$7 \times 3 = 21$

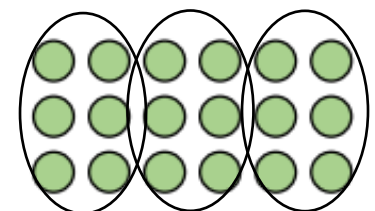


Divide by 3

Groups of 3



3 equal groups



There are 18 spots altogether.

$18 \div 3 = 6$

$18 \div 6 = 3$

Multiply by 4



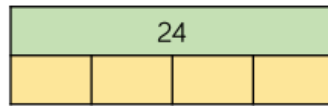
$$4 + 4 + 4 + 4 + 4 = 20$$

$$5 \text{ groups of } 4 = 20$$

$$5 \times 4 = 20$$

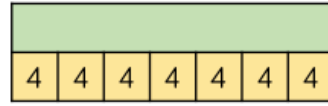
$$4 \times 5 = 20$$

Divide by 4



$$24 \div 4 = 6$$

$$24 \div 6 = 4$$



$$28 \div 4 = 7$$

$$28 \div 7 = 4$$

Multiply by 8



There are 8 legs on each spider

$$8 + 8 + 8 + 8 = 32$$

$$4 \times 8 = 32$$

$$8 \times 4 = 32$$

Divide by 8

Crayons are sold in packs of 8. Year 3 need 48 crayons. How many packs should be ordered?



$$48 \div 8 = 6$$

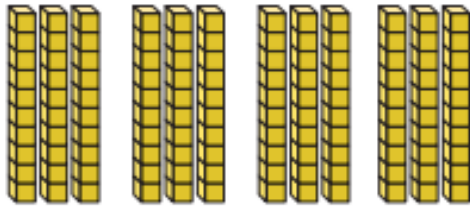
We also know that: $48 \div 6 = 8$

Related calculations

$$3 \times 4 = 12$$



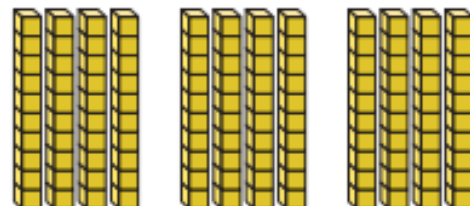
$$30 \times 4 = 120$$



$$4 \times 3 = 12$$



$$40 \times 3 = 120$$



Written multiplication methods

Without regrouping

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

$$23 \times 3 = 69$$

| | | |
|----------|---|---|
| | T | O |
| | 2 | 3 |
| \times | | 3 |
| | 6 | 9 |

With regrouping

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

$$24 \times 4 = 96$$

| | | |
|----------|---|---|
| | T | O |
| | 2 | 4 |
| \times | | 4 |
| | 9 | 6 |
| | 1 | |

Grid method

$$23 \times 4 = 92$$

| | | | |
|----------|----|----|----|
| \times | 20 | 3 | |
| | 80 | 12 | |
| | | | 92 |

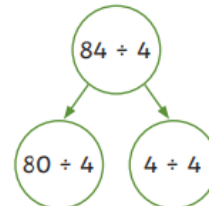
Written division methods

Without regrouping

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

$$84 \div 4$$

| | | |
|---|---|---|
| | 2 | 1 |
| 4 | 8 | 4 |



With regrouping

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

$$45 \div 3$$

| | | |
|---|---|---|
| | 1 | 5 |
| 3 | 4 | 5 |

