Multiply and divide by 7

1 Complete the sentences.

a)

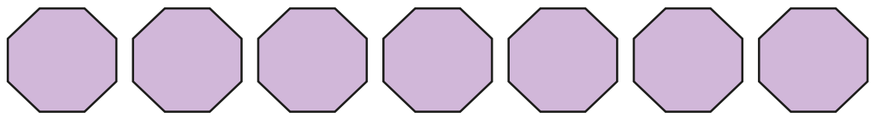
There are [7] triangles.

There are [3] sides on each triangle.

7 × 3 = [21]

There are [21] sides altogether.

b)



There are [7] octagons.

There are [8] sides on each octagon.

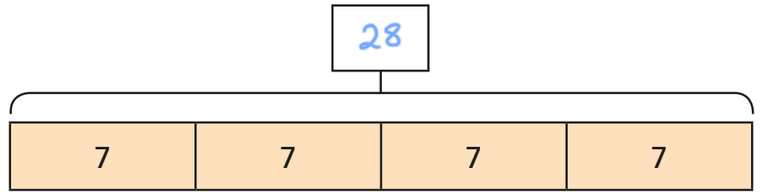
[7] × [8] = [56]

There are [56] sides altogether.

2 There are 7 players in a netball team.

a) How many players are there in 4 netball teams?

Label the whole on the bar model

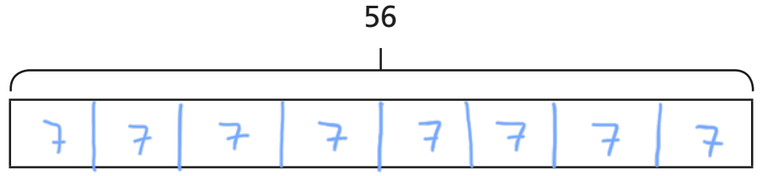


Complete the sentences.

[4] × [7] = [28]

There are [28] players in 4 netball teams.

b) If there are 56 players, how many full teams are there?



There are [8] full teams.

c) How many players are there in 9 netball teams?

There are [63] players in 9 netball teams.

3 Complete the sentences.

a) 1 week has [7] days.

b) 5 weeks have [35] days.

c) [10] weeks have 70 days.

d) [9] weeks have 63 days.

4 The Patel family went on holiday for 6 weeks.

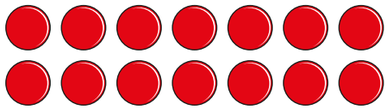
The Logan family went on holiday for 40 days.

Who went on holiday for the longest? The Patel family

How do you know?

6 weeks is 42 days.

5 Complete the number sentences to describe the array.



2 × 7 = [14]

7 × [2] = [14]

[14] ÷ 7 = 2

[14] ÷ [2] = 7

6 A flower has 7 petals.

How many petals are there on 6 flowers?

[42]

7 A computer mouse costs £7

A keyboard costs 6 times as much as the mouse.

How much does a mouse and a keyboard cost in total?

[£49]

8 Use the cards to write a division calculation.

1	1	7	7	7	=	÷

E.g. 77 ÷ 11 = 7

How many different divisions can you write?

Can you use all of the cards?

9 Use counters to make an array to show 3 × 5 and 3 × 2

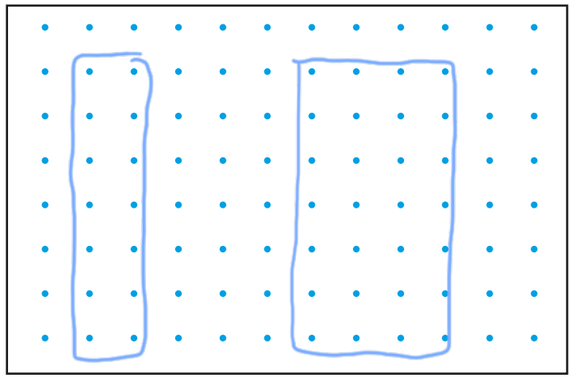
How can you use these arrays to work out 3 × 7?

Add them together.

Talk about it with a partner.

7 times-table and division facts

1 **a)** Draw boxes around the dots to represent the multiplications.



2 × 7 **4 × 7**

b) Use your answers to complete these fact families.

2 × 7 = 14

7 × 2 = 14

14 ÷ 2 = 7

14 ÷ 7 = 2

4 × 7 = 28

7 × 4 = 28

28 ÷ 4 = 7

28 ÷ 7 = 4

2 Complete the calculations.

a) 3 × 7 = 21

b) 6 × 7 = 42

c) 7 × 10 = 70

d) 7 × 9 = 63

e) 77 = 7 × 11

f) 7 × 5 = 35

3 Here is a 100 square.

a) Colour all the numbers that are in the 7 times-table.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

b) Use the 100 square to work out the calculations.

11 × 7 = 77

7 × 13 = 91

84 ÷ 7 = 12

14 × 7 = 98

c) What patterns do you notice?

Talk about them with a partner.

4 Complete the calculations.

a) 84 ÷ 7 = 12

b) 49 ÷ 7 = 7

c) 28 ÷ 7 = 4

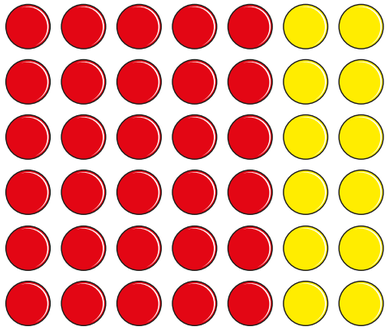
d) 70 ÷ 7 = 10

5 Complete the number tracks.

70	63	56	49	42	35	28

0	7	14	21	28	35	42

6 Here is an array made from double-sided counters.

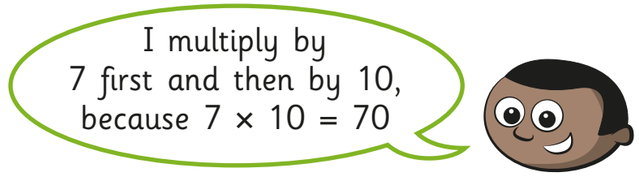


a) Complete the table.

1 × 5 = 5	1 × 2 = 2	1 × 7 = 7
2 × 5 = 10	2 × 2 = 4	2 × 7 = 14
3 × 5 = 15	3 × 2 = 6	3 × 7 = 21
4 × 5 = 20	4 × 2 = 8	4 × 7 = 28
5 × 5 = 25	5 × 2 = 10	5 × 7 = 35

c) How can you use the 5 times-table and the 2 times-table to work out multiples of 7?

7 Mo is multiplying a number by 70



a) Use Mo's method to multiply 5 by 70

350

b) Complete the calculation.

12 × 70 = 840

c) Complete the calculation.

3 × 700 = 2,100

How did you work this out?

Compare methods with a partner.

8 Complete the multiplications.

a) 4 × 70 = 280

4 × 700 = 2,800

b) 6 × 30 = 180

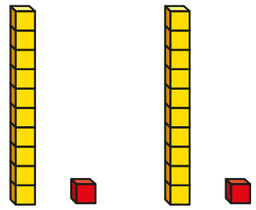
300 × 6 = 1,800

c) 5 × 90 = 450

9 × 500 = 4,500

11 and 12 times-table

1 The base 10 represents 2 × 11



2 × 11 = 22

Use base 10 to work out 3 × 11

Draw your base 10 and complete the multiplication.

3 × 11 = 33

2 Complete the calculations.

5 × 11 = 55

7 × 11 = 77

9 × 11 = 99

4 × 11 = 44

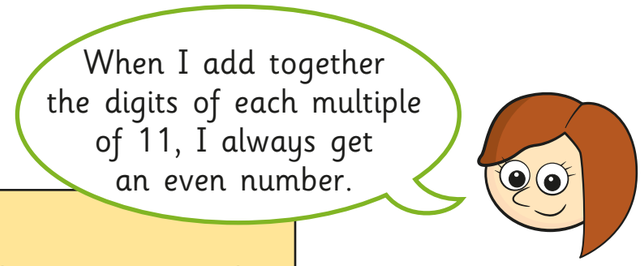
6 × 11 = 66

3 × 11 = 33

10 × 11 = 110

12 × 11 = 132

3 Rosie is spotting patterns in the 11 times-table.



2 × 11 = 22
2 + 2 = 4 which is an even number

a) Do you agree with Rosie? Yes

Explain your answer.

Various answers.

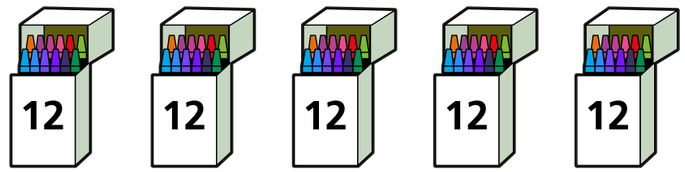
b) What else do you notice?

What other patterns can you see in the 11 times-table?

Talk about it with a partner.

4 Crayons come in packs of 12

Dora buys 5 packs of crayons.



How many crayons does she have?

Dora has 60 crayons.

5 Ron uses a bar model to represent 84 divided by 12

84											
12	12	12	12	12	12	12	12	12	12	12	12

a) Explain Ron's mistake.

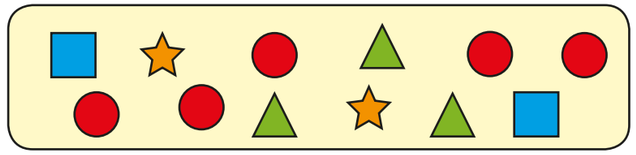
He has split his bar into 12 sections and wrote 12 in each.

b) Draw the correct bar model diagram to represent 84 divided by 12

84											
7	7	7	7	7	7	7	7	7	7	7	7

6 Amir is making pictures using shapes.

Here is one picture.



Amir makes 12 pictures like this one.

a) How many shapes does he use altogether?
Show your working.

144

b) If each picture is exactly the same, how many of each shape does Amir use?

■ = 24 ★ = 24

● = 60 ▲ = 36

7 Mr Scott is organising a cricket tournament.

a) There are 11 players in a cricket team.

5 teams have signed up for the tournament.

How many players have signed up?

55

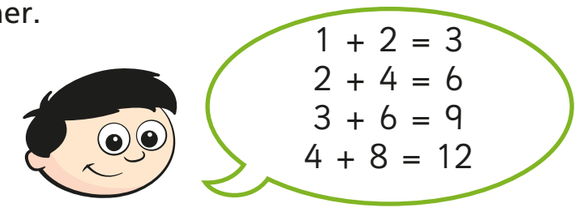
b) Mr Scott needs 132 players signed up to go ahead with the tournament.

How many more teams are needed?

7 more teams are needed.

8 Dexter has been looking at the 12 times-table.

He notices something when he adds the digits of the multiples of 12 together.



a) Dexter thinks the next number in the pattern will be 15

Is he correct? No

Explain your answer. 6 + 0 = 6

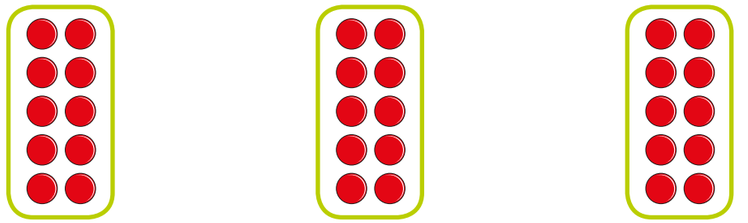
b) What happens when he tries this for all the multiples of 12 up to 12 × 12?

Is there a pattern?

Multiply 3 numbers

1 Tommy is making arrays using counters.

a) Complete the multiplications.



$2 \times 5 =$ 10 $2 \times 5 =$ 10 $2 \times 5 =$ 10

b) Use your answer to part a) to complete the multiplication.

$3 \times 2 \times 5 =$ 6 $\times 5 =$ 30

2 Use counters or cubes to complete the calculations.

a) $2 \times 4 \times 5 =$ 40

b) $3 \times 5 \times 4 =$ 60

c) $2 \times 5 \times 8 =$ 80

Is there a quick way to complete each calculation?

Talk about it with a partner.

3 Complete the multiplications.

a) $3 \times 4 \times 5 =$ 60

b) $2 \times 3 \times 8 =$ 48

c) $2 \times 4 \times 7 =$ 56

d) $3 \times 5 \times 4 =$ 60

e) $3 \times 6 \times 10 =$ 180

f) $2 \times 5 \times 12 =$ 120

4 Is each statement true or false?

Tick your answers.

	True	False
$7 \times 8 = 7 \times 4 \times 2$	✓	
$12 \times 4 = 2 \times 4 \times 6$	✓	
$3 \times 2 \times 8 = 5 \times 8$		✓
$2 \times 7 \times 4 = 4 \times 7 \times 2$	✓	

Compare answers with a partner.

5 Here are some digit cards. 3 5 6

a) Use the digit cards to create a multiplication and work out the answer.

3 × 5 × 6 = 90

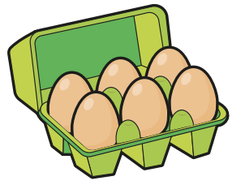
b) How many different multiplications can you create?

What do you notice about all of your answers?

6 Eggs are put in boxes in arrays of 2 × 3

Dani buys 12 boxes.

How many eggs does she buy altogether?



72

Dani buys 5 more boxes.

How many eggs does she have now?

102

7 **a)** Write 30 as the product of 3 numbers.

2 × 3 × 5 = 30

b) How many different ways can you write the multiplication?

E.g. 1 × 6 × 5 = 30

3 × 1 × 10 = 30

8 Kim rolls three 6-sided dice.

The product of her numbers is 60

a) What numbers could she have rolled?

E.g. 2, 5, 6

b) How many different ways could Kim have made 60?
Talk about it with a partner.

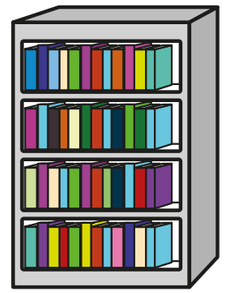
c) Roll three dice and find the product of the numbers you roll.

9 In the library there are 5 bookcases.

Each bookcase has 4 shelves.

On each shelf there are 12 books.

How many books are there in the library?

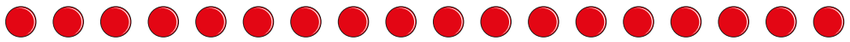


240

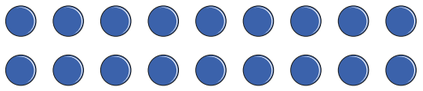
Factor pairs

1 Alex is making arrays using counters.

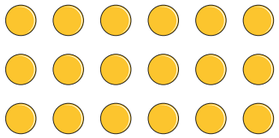
a) What calculation is represented in each array?



1 × 18 = 18



2 × 9 = 18



3 × 6 = 18

b) Use your answers from part a) to help you write all the factors of 18

1, 2, 3, 6, 9, 18

2 Use counters to make arrays and find the factor pairs for each number.

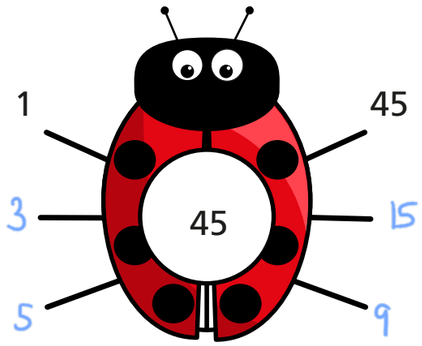
a) 12 1×12 2×6 3×4 1, 2, 3, 4, 6, 12

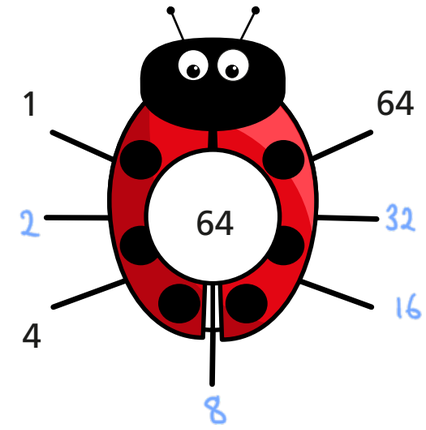
b) 15 1×15 3×5 1, 3, 5, 15

c) 24 1×24 2×12 3×8 4×6 1, 2, 3, 4, 6, 8, 12, 24

Which of the numbers has the most factor pairs? 24

3 Complete the factor bugs for 45 and 64





4 Find all the factor pairs for the number 72

The factor pairs of 72 are 1, 72, 2, 36, 3, 24, 4, 18,

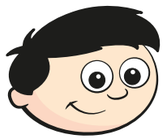
6, 12, 8, 9

5 Are these statements true or false?

	True	False
8 and 2 are both factors of 10	☐	☑
5 and 50 are both factors of 50	☑	☐
25 has only three factors.	☑	☐
All the factors of 15 are odd.	☑	☐

Talk about your answers with a partner.

6



The bigger the number the more factor pairs it has.

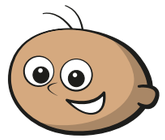
Use examples to show that Dexter is wrong.

E.g. 4 has 3 factors (1, 2, 4)

and 5 only has 2 (1, 5)

7 Tommy is finding factors of 12 and 18

12 and 18 have the same number of factor pairs.



a) Is Tommy correct? Yes

Explain your answer.

They both have 3 factor pairs and so 6 factors.

b) Find two other numbers with the same number of factor pairs.

E.g. 32 and 50

8 Class 4B is having a sports day.

There are 36 children in the class.

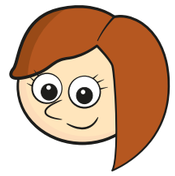
The children need to be in equal groups.

What group sizes are possible?

E.g. 36 groups of 1, 18 groups of 2 etc.

9 Rosie is investigating factor pairs.

6 is a perfect number because when you add its factors together, apart from itself, they equal 6



What is the next perfect number after 6?

28