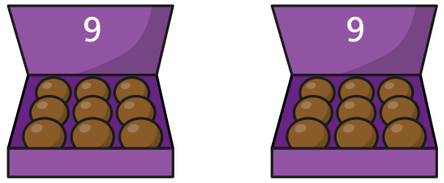
Multiply and divide by 9

1 Complete the sentences.

a)



There are ☐ boxes.

There are ☐ chocolates in each box.

There are ☐ chocolates altogether.

2 × 9 = ☐

b)

There are ☐ cubes.

There are ☐ faces on each cube.

There are ☐ faces altogether.

☐ × ☐ = ☐

2 There are 9 players in a baseball team.

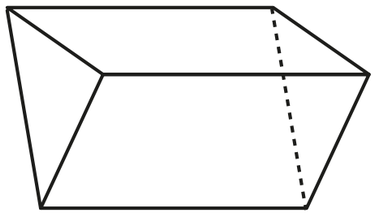
a) How many players are there in 7 baseball teams?

There are ☐ players in 7 baseball teams.

b) If there are 81 players, how many full teams are there?

There are ☐ full teams.

3 A triangular prism has 9 edges.



Use this information to complete the sentences.

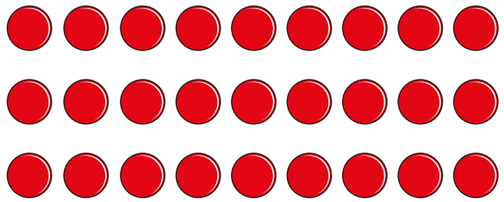
a) 5 triangular prisms have ☐ edges.

b) ☐ triangular prisms have 90 edges.

c) ☐ triangular prisms have 99 edges.

d) 6 triangular prisms have ☐ edges.

4 Complete the number sentences to describe the array.



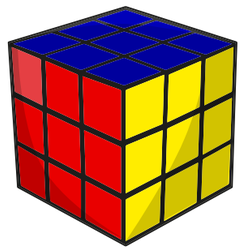
$3 \times 9 = \square$

$9 \times \square = \square$

$\square \div 9 = 3$

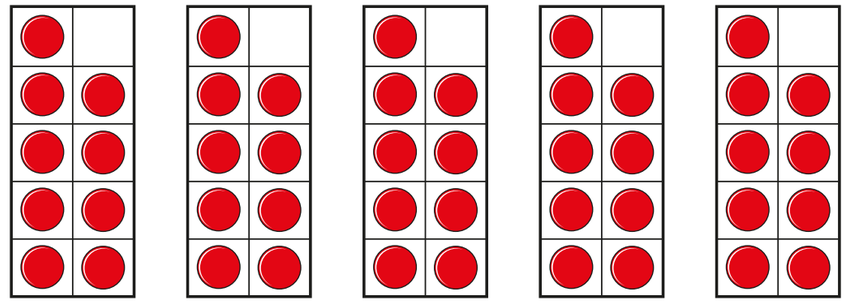
$\square \div \square = 9$

5 There are 9 coloured squares on each face of a puzzle cube.



How many coloured squares are there on the whole puzzle cube?

6 Eva is making groups of 9 on ten frames.



How can Eva work out how many counters she has altogether?

Compare your method with a partner.

7 Here is a number puzzle.

$\square \times \square \times \triangle = 81$

Find three different values of the square and triangle.

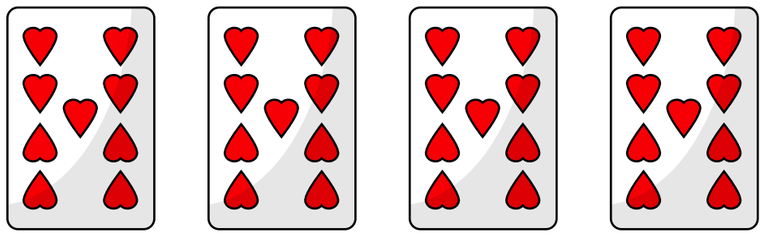
$\triangle = \square$ $\triangle = \square$ $\triangle = \square$

$\square = \square$ $\square = \square$ $\square = \square$

9 times-table and division facts

1 How many hearts are there in total?

Complete the multiplication fact.



☐ × ☐ = ☐

2 Colour all the multiples of 9

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

What pattern do you notice?

Use the 100 square to complete these calculations.

72 ÷ 9 = ☐ 27 ÷ 9 = ☐

3 Complete the calculations.

a) 3 × 9 = ☐ **g)** 6 × 9 = ☐

b) ☐ ÷ 9 = 12 **h)** 9 × ☐ = 18

c) 9 × 4 = ☐ **i)** 9 × ☐ = 72

d) ☐ ÷ 9 = 1 **j)** ☐ ÷ 9 = 11

e) 11 × 9 = ☐ **k)** ☐ × 9 = 45

f) 10 × 9 = ☐ **l)** 20 × 9 = ☐

4 Complete the number tracks.

0	9	18				54	

108	99			72			45	36

5 These numbers are all multiples of 9

45	54	18	108

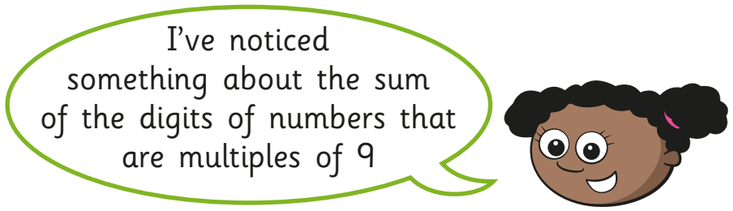
a) Show that the sum of the digits of each number is the same.

b) These numbers are also multiples of 9

198	657	891	999

What is the sum of the digits of each number?

c)

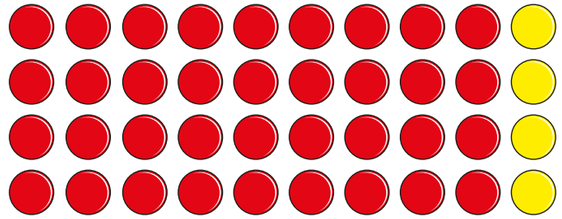


What do you think Whitney has noticed?

d) 7,59_ is a multiple of 9

What is the missing digit? ☐

6 Jack is making arrays.



a) Use the arrays to complete the multiplications.

1 × 10 = ☐ 1 × 9 = ☐

2 × 10 = ☐ 2 × 9 = ☐

3 × 10 = ☐ 3 × 9 = ☐

4 × 10 = ☐ 4 × 9 = ☐

b) Write steps for a partner to explain how you can use the 10 times-table to multiply by 9

c) Use your steps to work out these multiplications.

19 × 9 = ☐ 72 × 9 = ☐

Multiply and divide by 7

1 Complete the sentences.

a)

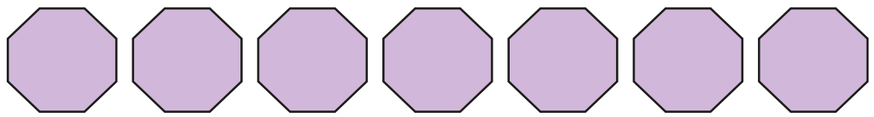
There are ☐ triangles.

There are ☐ sides on each triangle.

7 × 3 = ☐

There are ☐ sides altogether.

b)



There are ☐ octagons.

There are ☐ sides on each octagon.

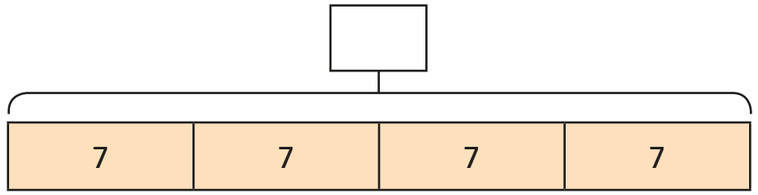
☐ × ☐ = ☐

There are ☐ 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

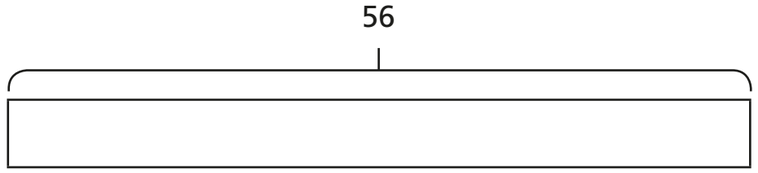


Complete the sentences.

☐ × ☐ = ☐

There are ☐ players in 4 netball teams.

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



There are ☐ full teams.

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

There are ☐ players in 9 netball teams.

3 Complete the sentences.

a) 1 week has ☐ days.

b) 5 weeks have ☐ days.

c) ☐ weeks have 70 days.

d) ☐ weeks have 63 days.

4 The Patel family went on holiday for 6 weeks.

The Logan family went on holiday for 40 days.

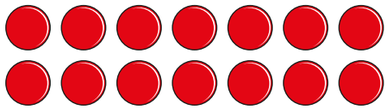
Who went on holiday for the longest? _____

How do you know?

_____

_____

5 Complete the number sentences to describe the array.



$2 \times 7 =$ ☐ ☐ $\div 7 = 2$

$7 \times$ ☐ $=$ ☐ ☐ $\div$ ☐ $= 7$

6 A flower has 7 petals.

How many petals are there on 6 flowers?

☐

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?

☐

8 Use the cards to write a division calculation.

1	1	7	7	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?

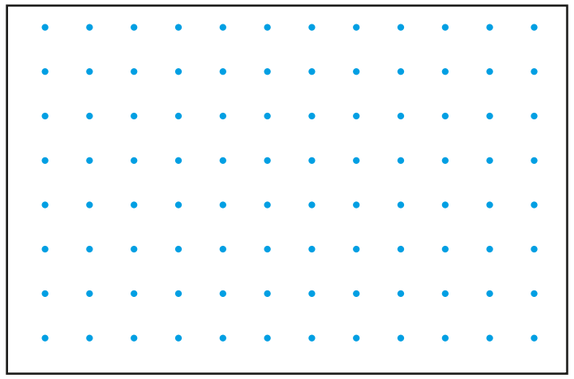
_____

_____

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.

$2 \times 7 = \square$ $4 \times 7 = \square$

$7 \times 2 = \square$ $7 \times \square = \square$

$\square \div 2 = 7$ $\square \div \square = 7$

$\square \div 7 = 2$ $\square \div \square = \square$

2 Complete the calculations.

a) $3 \times 7 = \square$ d) $7 \times \square = 63$

b) $6 \times 7 = \square$ e) $\square = 7 \times 11$

c) $7 \times 10 = \square$ f) $7 \times \square = 35$

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.

$11 \times 7 = \square$ $84 \div 7 = \square$

$7 \times 13 = \square$ $14 \times 7 = \square$

c) What patterns do you notice?

Talk about them with a partner.

4 Complete the calculations.

a) $\square \div 7 = 12$

b) $\square \div 7 = 7$

c) $\square \div 7 = 4$

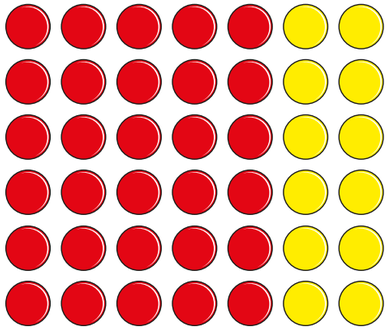
d) $\square \div 7 = 10$

5 Complete the number tracks.

70	63	56			35	

	7	14		28		

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

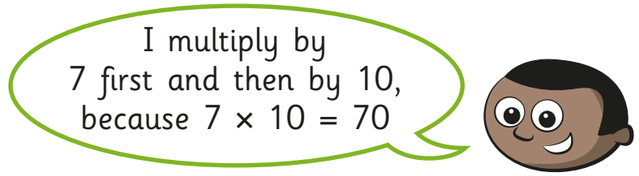


a) Complete the table.

1 × 5 =	1 × 2 =	1 × 7 =
2 × 5 =	2 × 2 =	2 × 7 =
3 × 5 =	3 × 2 =	3 × 7 =
4 × 5 =	4 × 2 =	4 × 7 =
5 × 5 =	5 × 2 =	5 × 7 =

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

$\square$

b) Complete the calculation.

$\square \times 70 = 840$

c) Complete the calculation.

$3 \times 700 = \square$

How did you work this out?

Compare methods with a partner.

8 Complete the multiplications.

a) $4 \times 70 = \square$

$4 \times 700 = \square$

b) $6 \times 30 = \square$

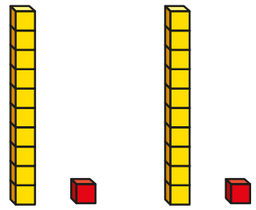
$300 \times 6 = \square$

c) $5 \times 90 = \square$

$9 \times 500 = \square$

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 = ☐

2 Complete the calculations.

5 × 11 = ☐

7 × 11 = ☐

9 × 11 = ☐

4 × 11 = ☐

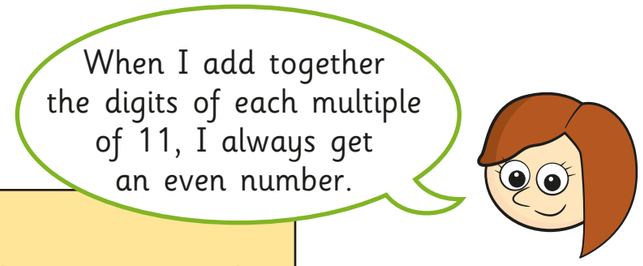
6 × 11 = ☐

3 × 11 = ☐

10 × 11 = ☐

12 × 11 = ☐

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? _____

Explain your answer.

_____

_____

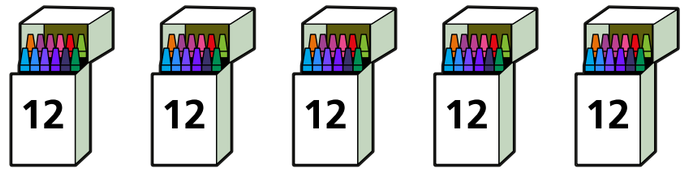
b) What else do you notice?

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 ☐ crayons.

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

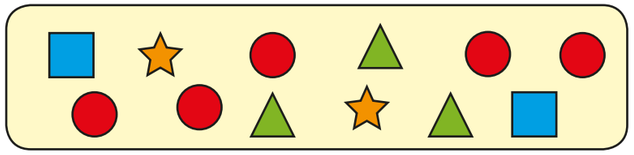
84											
12	12	12	12	12	12	12	12	12	12	12	12

a) Explain Ron's mistake.

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

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.

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

= ☐ = ☐

= ☐ = ☐

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?

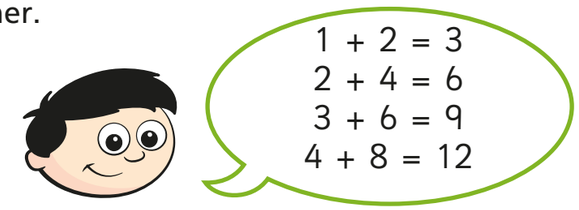
b) Mr Scott needs 132 players signed up to go ahead with the tournament.

How many more teams are needed?

☐ 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? _____

Explain your answer. _____

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

Is there a pattern?