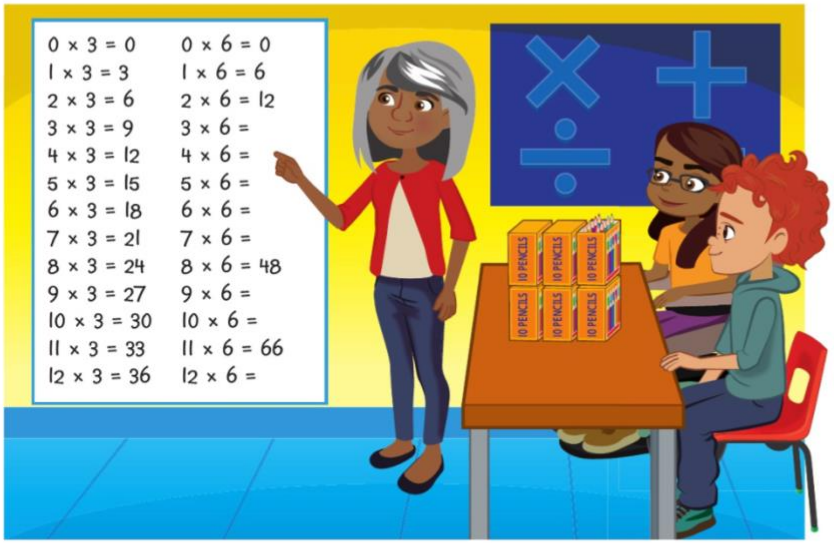
Monday 30th November

6 times-table

Discover



1 **a)** What numbers are missing from the 6 times-table?

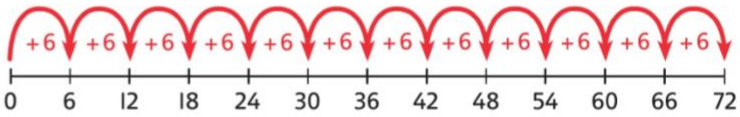
b) Which multiplication fact is shown by the pencils?

Unit 5: Multiplication and division (1), Lesson 6

Share

I counted on in 6s using a number line. This helped me work out the missing numbers.

a)



The missing answers are:

0 × 6 = 0
1 × 6 = 6
2 × 6 = 12
3 × 6 = 18
4 × 6 = 24
5 × 6 = 30
6 × 6 = 36
7 × 6 = 42
8 × 6 = 48
9 × 6 = 54
10 × 6 = 60
11 × 6 = 66
12 × 6 = 72

To work out 9 × 6
I added on 6 from 48.

b)

10 + 10 + 10 + 10 + 10 + 10

The multiplication fact shown is 6 × 10 = 60 or 10 × 6 = 60.

Think together

1 Use multiplication facts to work out how many of each item there are in total.

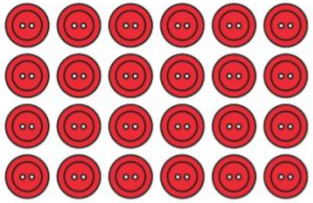
I wonder if I can find two multiplication facts for each array.

a)

□ × □ = □

□ × □ = □

b)



□ × □ = □

□ × □ = □

2 If 7 × 6 = 42, find solutions to these calculations.

a) 42 ÷ 6 = □

b) 42 ÷ 7 = □

c) 70 × 6 = □

d) 700 × 6 = □

e) 420 ÷ 6 = □

f) 4,200 ÷ 6 = □

3 CHALLENGE

0 × 6 = 0	7 × 6 = 42
1 × 6 = 6	8 × 6 = 48
2 × 6 = 12	9 × 6 = 54
3 × 6 = 18	10 × 6 = 60
4 × 6 = 24	11 × 6 = 66
5 × 6 = 30	12 × 6 = 72
6 × 6 = 36	

0 × 5 = 0	7 × 5 = 35
1 × 5 = 5	8 × 5 = 40
2 × 5 = 10	9 × 5 = 45
3 × 5 = 15	10 × 5 = 50
4 × 5 = 20	11 × 5 = 55
5 × 5 = 25	12 × 5 = 60
6 × 5 = 30	

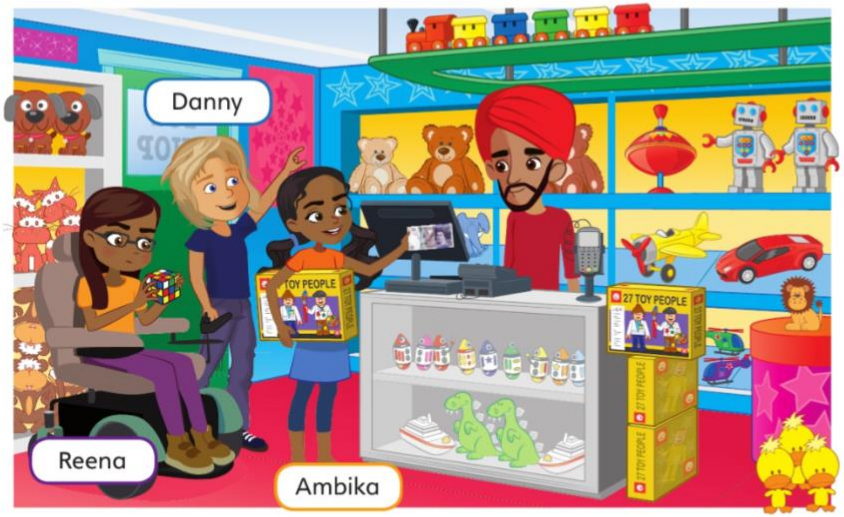
How can you use the 5 times-table to get the 6 times-table facts?

I think I need to add something to each number in the 5 times-table. It seems different each time.

Tuesday 1st December

Multiplying and dividing by 9

Discover



1 **a)** Reena has a puzzle cube.

Each side of a puzzle cube has 9 coloured squares.

How many coloured squares in total are on the outside of the cube?

b) Ambika buys a box of the toy people. A box has 27 toy people.

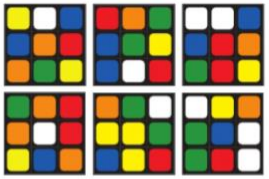
She puts the people into rows of 9.

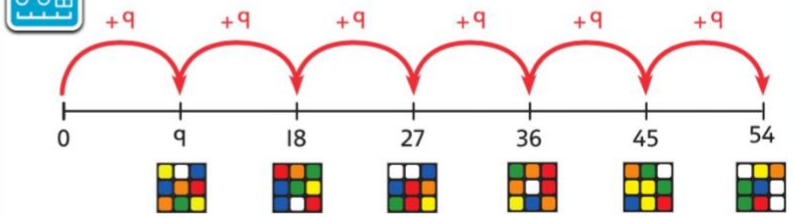
How many rows can she make?

Share

a) Each side of a puzzle cube has 9 coloured squares.

The cube has 6 sides.



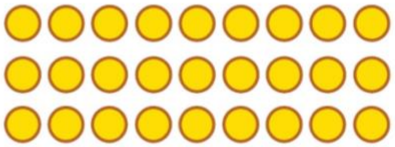


9 + 9 + 9 + 9 + 9 + 9 = 54

6 × 9 = 54

There are 54 coloured squares in total.

b) There are 27 toy people in the box.



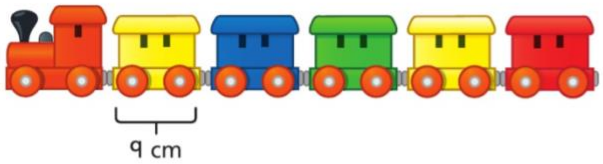
I used counters to represent the toy people and then grouped them into 9s. An array helped me see I could make 3 rows.

There are 9 toy people in a row.

27 ÷ 9 = 3 so Ambika can make 3 rows of toy people.

Think together

1 Each train carriage is 9 cm long.



a) 5 carriages are attached end to end.

What is the total length of the carriages?

□ + □ + □ + □ + □ = □

□ × □ = □

The carriages are □ cm long in total.

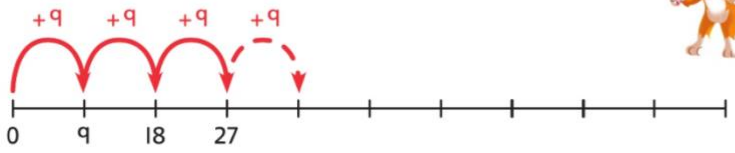
b) More 9 cm long carriages are put together.

The total length of the carriages is 72 cm.

How many carriages were put together?

□ ÷ □ = □

There are □ carriages.



2 Find out how to work out if a number will divide by 9.

CHALLENGE

To test if a number divides by 9:

- add up the digits of the number
- if the total of the digits divides by 9 equally then the original number divides by 9.

126 divides by 9 as 1 + 2 + 6 = 9, and 9 divides by 9.

378 divides by 9 as 3 + 7 + 8 = 18, and 18 divides by 9.

48 does not divide by 9 as 4 + 8 = 12, and 12 does not divide by 9.

39	144	279	521	522	752

a) Which of these numbers divide by 9?

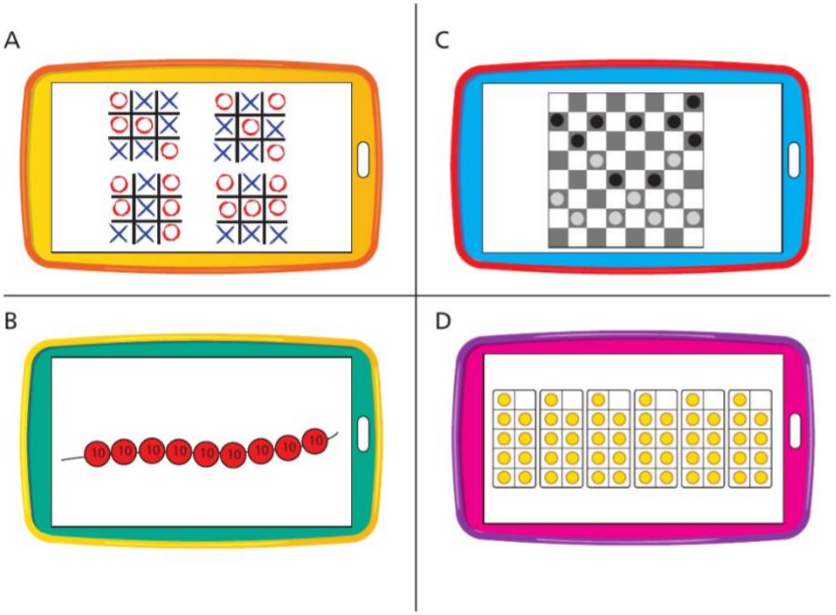
b) 6□7 divides by 9. What is the missing digit?

c) Find three 3-digit numbers that divide by 9.

Wednesday 2nd December

9 times-table

Discover

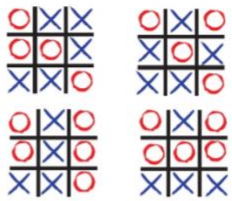


1 **a)** What 9 times-table facts do A, B and C show?

b) Use the ten frames in D to work out 9 × 6.

Share

a) A

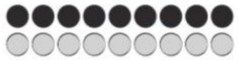


4 × 9 = 36

B

9 × 10 = 90

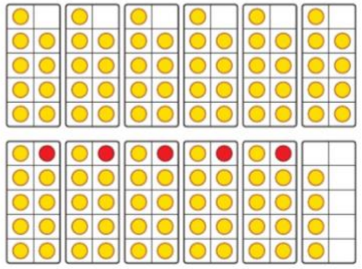
C



2 × 9 = 18

These 9 times-tables facts are shown in different ways: as 4 groups of 9, a 2 x 9 array and a row of nine 10s.

b)

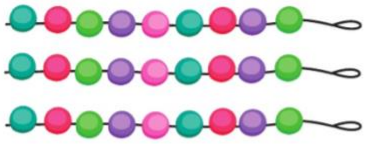


There are 5 complete ten frames and 4 on the final frame, so 6 × 9 = 54.

Think together

1 Use multiplication facts to work out how many of each there are in total.

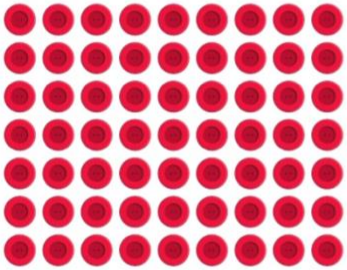
a)



□ × □ = □

□ × □ = □

b)



□ × □ = □

□ × □ = □

2 Complete the multiplication and division facts.

a) 0 × 0 = □

b) 11 × 9 = □

c) 63 ÷ 9 = □

d) 1 × 9 = □

e) 12 × 9 = □

f) 54 ÷ 9 = □

g) 5 × 9 = □

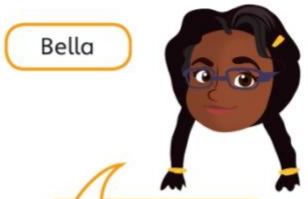
h) 36 ÷ 9 = □

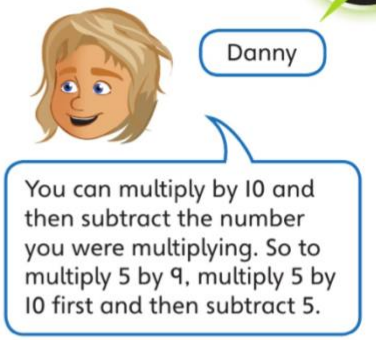
i) 8 × 9 = □

j) 18 ÷ 9 = □

3 Bella and Danny use different methods to work out numbers in the 9 times-table.

CHALLENGE





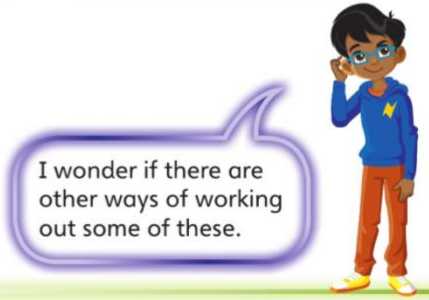
Use Bella's and Danny's methods to work out the following.

4 × 9

8 × 9

11 × 9

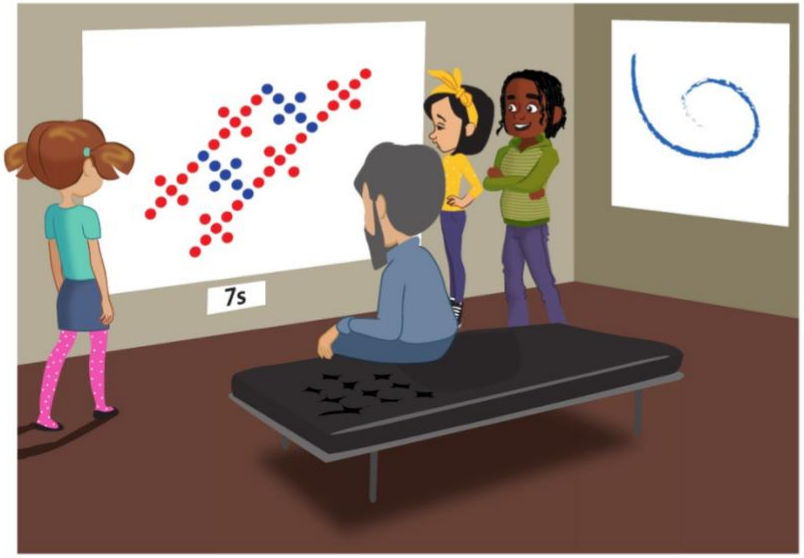
13 × 9



Thursday 3rd December

Multiplying and dividing by 7

Discover



1 a) Why do you think the painting is called '7s'?

How many red circles are there?

How many blue circles are there?

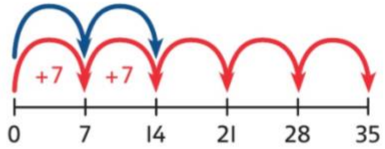
How many circles are there in total?

b) Another picture is made up of groups of 7 circles.

There are 28 circles. How many groups of 7 circles are there?

Share

a) The picture is made up of a pattern of 7 circles.



There are also 7 groups of 7 circles.

$5 \times 7 = 35$

There are 35 red circles.

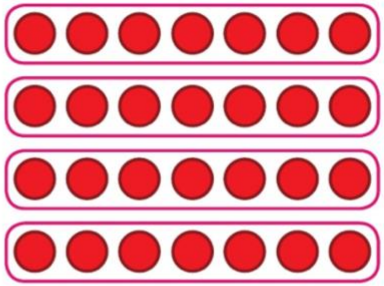
$2 \times 7 = 14$

There are 14 blue circles.

$7 \times 7 = 49$

There are 49 circles in total.

b)



To group the circles I made an array.

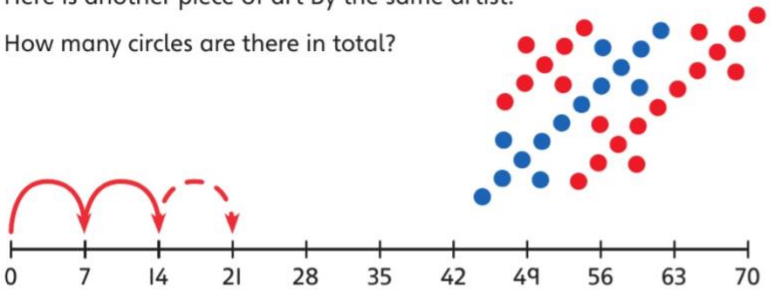
$28 \div 7 = 4$

There are 4 groups of 7 circles.

Think together

1 Here is another piece of art by the same artist.

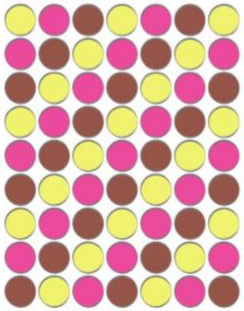
How many circles are there in total?



5 × 7 = ☐

There are ☐ circles in total.

2 How many counters are there in total?

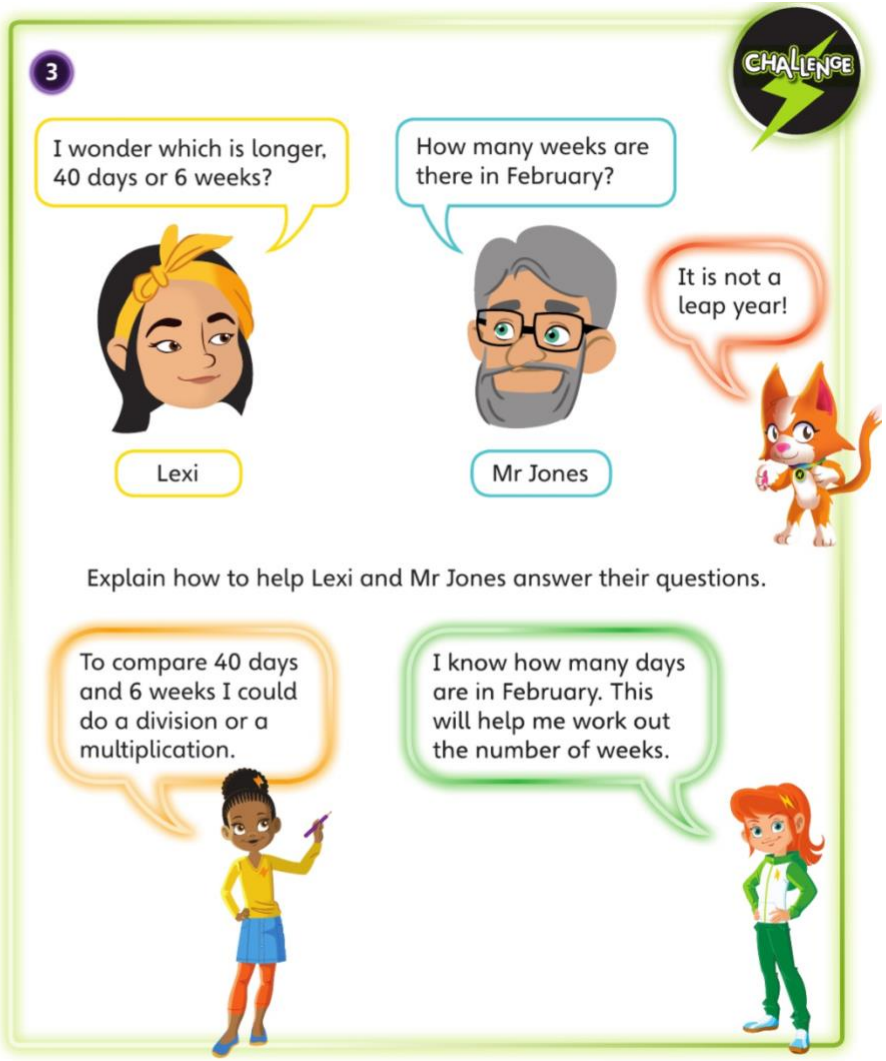


☐ × ☐ = ☐ or

☐ × ☐ = ☐

There are ☐ counters in total.

3 CHALLENGE



Friday 4th December

7 times-table

Discover

1 a) Which treasure chest do you think each key opens?

Explain why.

b) What would be written on the key that opens treasure chest 14?

What about the other chests?

Share

a) The treasure chests that are opened by the keys are the answers to the multiplications.

0 × 7 = 0

The 0 × 7 key opens the 0 chest.

4 × 7 = 28

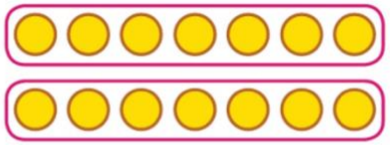
The 4 × 7 key opens the 28 chest.

8 × 7 = 56

The 8 × 7 key opens the 56 chest.

I used my knowledge of the 4 and 8 times-tables to help me.

b) How many 7s are in 14?



I took 14 counters and made them into an array. I put 7 counters in each row.

14 ÷ 7 = 2

There are 2 groups of 7 in 14, so the key to open treasure chest 14 would have 2 × 7 written on it. The keys to the other chests would also have 7 times-table facts.

Think together

1 Use multiplication facts to work out how many of each there are in total.

a)

□ × □ = □

b)

□ × □ = □

□ × □ = □

2 Find out the solutions to the related multiplication and division facts.

a) 5 × 7 = 35

7 × 5 = □

35 ÷ 7 = □

35 ÷ 5 = □

b) 12 × 7 = □

□ × □ = □

□ ÷ □ = □

□ ÷ □ = □

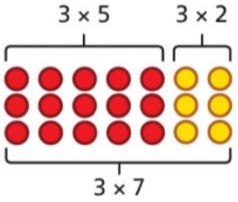
You might want to make an array to help you.

3 Danny uses the 5 times-table and 2 times-table to help him multiply by 7.

CHALLENGE

Danny

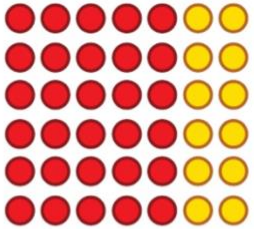
I fit 3 × 5 and 3 × 2 together to make one array that shows me 3 × 7.



3 × 5 = 15 and 3 × 2 = 6

15 + 6 = 21 3 × 7 = 21

a) Find the solution to 6 × 7 by first solving 6 × 5 and 6 × 2.



6 × 5 = □

6 × 2 = □

□ + □ = □

So, 6 × 7 = □

b) Use the 5 times-table and 2 times-table to help you work out 9 × 7 and 11 × 7.

9 × 7 = □

11 × 7 = □

I will create arrays using the 5 and 2 times-tables to work out the answers.