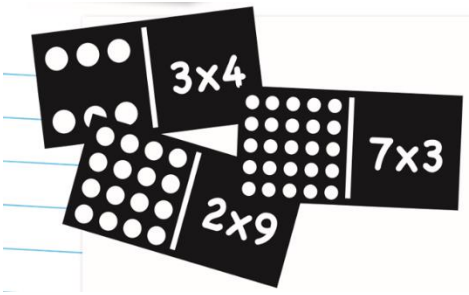
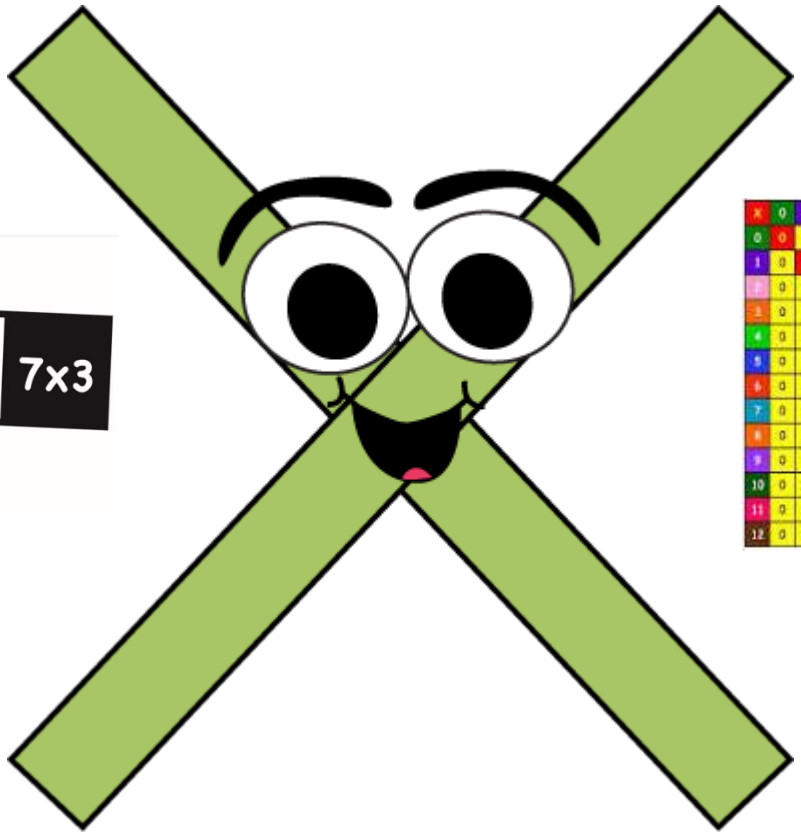
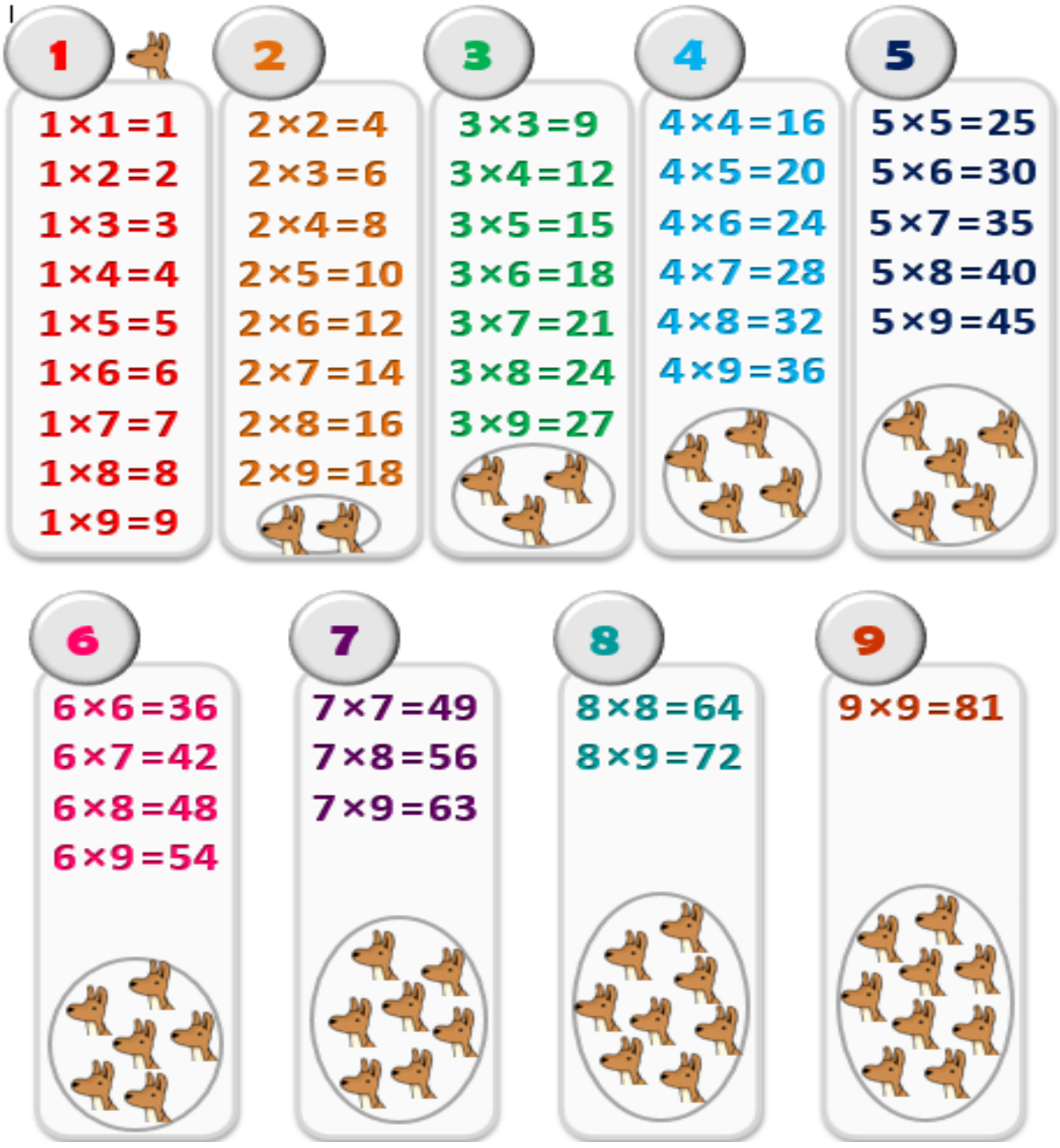
BondBuilder & TableTrainer
numbergym.co.uk

Tips and Ideas for learning the multiplication tables





All you need to know!



The factors in a multiplication fact can swap places and the product (answer) remains the same! **MULTIPLICATION IS COMMUTATIVE.** So if you know

3x6=18

Then you also know

6x3=18

Useful Websites

- Chanting and Singing are the best way to learn them for instant recall. Supermovers is great for this!
- https://www.bbc.co.uk/teach/supermovers/times-table-collection/z4vv6v4

- Creating times tables tests using Times Tables Me is really useful too. http://www.timestables.me.uk/

- TT Rockstars is brilliant for practise. We use it in school and your child has their own login. https://ttrockstars.com/

- Numbergym Table Trainer gradually improves speed and accuracy different levels. Ordered, Mixed and Division Facts. If you achieve lightning fast on all 3 levels then you know that times tables!

LAPTOP/PC https://www.numbergym.co.uk/

Click on online access

Username: springdale

Password: numbergym

Student login: first 3 letters of first and surname

eg Sally Grayson would be: salgra

IPAD: There is an app for a small cost but large benefit!

There are loads of others so if you don't like these then try them out. If they are brilliant then let us know.

LOOK for patterns!

Using a multiplication grid (up t)

×	1	2	3	4	5	6	7	8	9	10
1	1	2	3	4	5	6	7	8	9	10
2	2	4	6	8	10	12	14	16	18	20
3	3	6	9	12	15	18	21	24	27	30
4	4	8	12	16	20	24	28	32	36	40
5	5	10	15	20	25	30	35	40	45	50
6	6	12	18	24	30	36	42	48	54	60
7	7	14	21	28	35	42	49	56	63	70
8	8	16	24	32	40	48	56	64	72	80
9	9	18	27	36	45	54	63	72	81	90
10	10	20	30	40	50	60	70	80	90	100

Patterns

Get children to notice the patterns in the multiplication tables:

- The numbers in the section to the right of the diagonal (white squares) are the same as in the section to the left of the diagonal. Or, in other words, the numbers in the darker shaded section are repeated in the lighter shaded section.

- The 10 × table is just the 10s in order (10, 20, 30, 40 and so on).

- The 5 × table has numbers ending in 5 and 0 alternately, while the first digit increases every 2 numbers.

- The 9 × table has the units decreasing by 1 and the 10s increasing by 1 each time (up to 10 × 9)

- The numbers in the 3 x table have the sum of their digits coming to 3, then 6, then 9. This pattern repeats throughout the table: e.g. 12: 1 + 2 = 3; 15: 1 + 5 = 6, 18: 1 + 8 = 9.

2 Times Table

1 x 2 = 2
2 x 2 = 4
3 x 2 = 6
4 x 2 = 8
5 x 2 = 10
6 x 2 = 12
7 x 2 = 14
8 x 2 = 16
9 x 2 = 18
10 x 2 = 20
11 x 2 = 22
12 x 2 = 24

- A number is even when it can be divided by two without a remainder.
- 2 divided by 2 is 1.
- 10 divided by 2 is 5.
- **All even numbers can be divided by 2.**
- To find out if a number is in the 2 × table, look at the digit at the end.
- **If a number ends in 0, 2, 4, 6, or 8 it is even and is a multiple of 2.** 1,357,318 is a multiple of 2 because the digit at the end is 8.
- **Multiplying a number by 2 is the same as doubling it.** Double 6 is the same as 6 × 2, which equals 12.
- **Dividing a number by 2 is the same as halving it.**

3 Times Table

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

There's a clever trick you can use to find out if a number is in the 3 × table. Add up the digits of the number you want to find out about - this is called finding the digit sum. **If the digit sum is 3, 6, or 9, then you know that it's in the 3 × table.**

Let's look at **15.**
The digits are **1** and **5**.
Add those together and you get **6**. **1 + 5 = 6.**

So 15 is in the 3 × table.

Now let's look at a bigger number: **156**.
The digits are **1, 5 and 6**.
Add 1 + 5 + 6 and you get **12.**

Now add up the digits 1 and 2 and you get 3.

So 156 is in the 3 × table.

This trick always works, even with a really big number like 12,346,911.

Just add up the digits: 1 + 2 + 3 + 4 + 6+ 9 + 1 + 1 = 27 then add 2 + 7 = 9

So 12,346,911 is in the 3 × table.

4 Times Table

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

All the numbers in the 4 × table are **even - they end with 0, 2, 4, 6 or 8.**

You can work out a 4 × table calculation by doubling the number twice.

7 × 4 is the same as 7 × 2 × 2

7 × 2 = 14, then 14 × 2 = 28

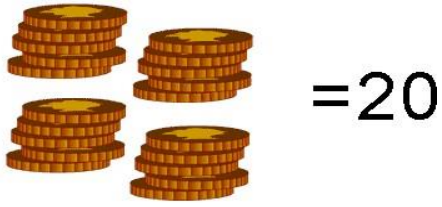
Look at the **last 2 digits** of the number you want to find out about. If they are a multiple of 4, then the **whole** number is also a multiple of 4.

Let's look at the number **116**. This is a multiple of 4 because **16 is in the 4 × table.**

You can reverse the calculation if that makes it easier. Have a look at these coins:

There are 5 piles with 4 coins in each. This is 5 lots of 4 or 5 × 4.

Count them up - there are 20.



You could also have 4 piles with 5 coins in each:

4 lots of 5 or 4 × 5.

The number of coins is the same.

5 Times Table

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

This is an easy one. **All multiples of 5 have a 5 or a 0 in the 1s column (ends in 0)**.

So 4,320 is in the 5 × table because it has a 0 in the 1s.

55,552 is not in the 5 × table because has a 2 in the 1s column.

5 is half of 10, so if you want to know what 5 × a number is you could multiply it by 10 and then work out half of the answer.

10 × 6 = 60, so 5 × 6 = half of 60 = 30

10 Times Table

1 x 10 = 10
2 x 10 = 20
3 x 10 = 30
4 x 10 = 40
5 x 10 = 50
6 x 10 = 60
7 x 10 = 70
8 x 10 = 80
9 x 10 = 90
10 x 10 = 100
11 x 10 = 110
12 x 10 = 120

This is another easy one.

Numbers that are **multiples of 10 always have a 0 in the 1s column 0 (ends in 0):** 10, 20, 30, 40, 50, 60, 70, and so on.

So:

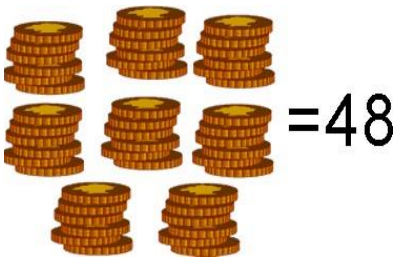
234,560 is a multiple of 10 because the 0 is in the 1s column

6 Times Table

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

There's no easy trick for finding out if a number is in the 6 × table, but here are some tips:

- All the numbers in the 6 × table are even - they end with 0, 2, 4, 6 or 8.
- They are all a multiple of 3; they can be divided by 3.
- The digit sum is always 3, 6 or 9
- **You can work out a 6 × calculation by multiplying the number by 3 (tripling it) and then doubling your answer**
  - 5 × 6 is the same as 5 × 3 = 15, then 15 × 2 = 30.
  - (You can also do this the other way round: 5 × 6 = 5 × 3 × 2 = 15 × 2 = 30.)



You can reverse the calculation if that makes it easier. Have a look at these coins.
There are 8 piles with 6 coins in each. This is 8 lots of 6 or 8 × 6.

Count them up - there are 48.
Now reverse the calculation so you have 6 piles with 8 coins in each - 6 lots

7 Times Table

1 x 7 = 7
2 x 7 = 14
3 x 7 = 21
4 x 7 = 28
5 x 7 = 35
6 x 7 = 42
7 x 7 = 49
8 x 7 = 56
9 x 7 = 63
10 x 7 = 70
11x 7 = 77
12x 7 = 84

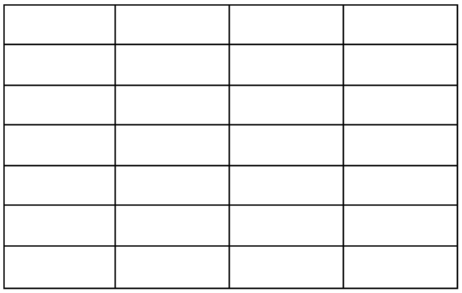
There's no easy trick for finding out if a number is in the 7 × table. But there is a way of remembering the answer to 7 × 8:

7 × 8 = 56. Just remember the sequence: 5, 6, 7, and 8.

Try reversing the order if you're having problems. Remember that 7 × 5 is the same as 5 × 7 (= **35**) so you can use the 5 x table if you know it better.

Make rectangular patterns on a piece of paper to help you. Have a look at this one.

4 rows of 7, which is the same as 4 × 7.
Count them up - there are 28.

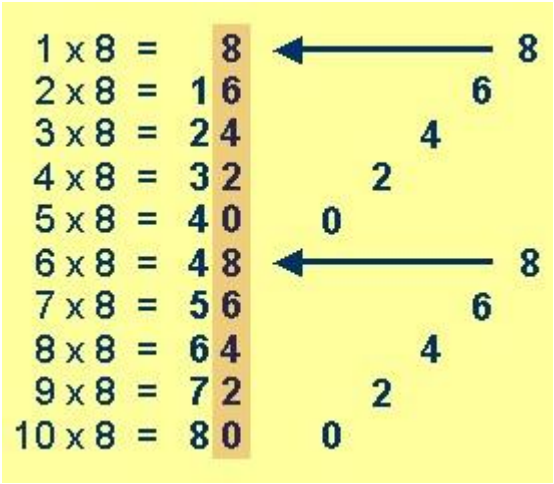


It is the same as 7 × 4: 7 rows of 4.

8 Times Table

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

The numbers in the 8 × table are always even. This means they can be divided by 2 without remainder. If it's an **odd** number then it is not in the 8 × table!



Have a look at the 8 × table again. The unit digits have a regular pattern - they **go down in 2s**.

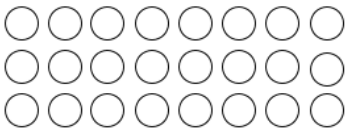
Try reversing the order if you're having problems.

8 × 4 is the same as 4 × 8 (= **32**) so you can use the 4 × table if you know it better.

You can make rectangular patterns on a piece of paper to help you.

Have a look at this one: 3 rows of 8 which is the same as 3 × 8.

Count them up - there are 24. It is **the same as 8 × 3** - 8 rows of 3.



If you want to multiply by 8 you can double a number 3 times.

For example: 8 × 6:
double 6 = 12

9 Times Table

1 x 9 = 9
2 x 9 = 18
3 x 9 = 27
4 x 9 = 36
5 x 9 = 45
6 x 9 = 54
7 x 9 = 63
8 x 9 = 72
9 x 9 = 81
10 x 9 = 90
11 x 9 = 99
12x 9 = 108

Look at the numbers on the right-hand side of the table above. Notice how the **tens go up** but the **units go down**.

There's a good way to remember this table. All the digits in the 9 × table add up to 9.

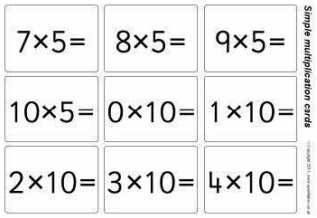
18 = 1 + 8 = **9**
27 = 2 + 7 = **9**
36 = 3 + 6 = **9**

What's **9 × 4**? You can use the **9 method** here. Hold out all 10 fingers and lower or bend the **4th** finger.
There are 3 fingers to the left (3 tens) of the bent finger and 6 fingers to its right (3 ones). The answer is 36

Look at the pattern. The tens column increases by 1 and the ones column increases by 1.Think of it as +10, then -1.

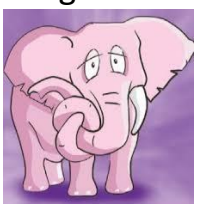
Activities & games to support the learning of times tables

1) **Make a set of flash cards**. Write the problem, like 4 x 9, on the front and the answer, 36, on the back. The act of writing out the multiples will provide another repetition/reinforcement. Use a timer to see how many cards they can go through in a minute. Can they beat that score tomorrow?



2) **Grab a deck of cards**. You each get half the deck to place face down in front of you - don't look at the cards! Each player flips their first card simultaneously - the first person to say the answer based on the two numbers gets both cards (the object of the game is to win them all). If the two of you flip a 7 and a 5, the answer to shout out is 35. For Jacks, Queens, and Kings, you can use 11, 12, and 13, use them as 0's, or take them out entirely.

3) **Throw the dice -** This can be played with one, two or more children. Throw two dice and ask the children to write down the multiplication. If you want to work on tables higher than one to six, use small stickers to change the numbers. Who can calculate the fastest? Who can get the most answers in a given time?



4) **Memory game -** make some numbers cards and write down the corresponding tables calculations onto cut-out card. Make sure the number cards and the tables calculation cards are different shapes so your child can distinguish a calculation from a potential answer. Lay all cards upside-down on the floor or table. First your child has to turn over one of the table calculation cards, and then they need to find the number card that is the answer to the calculation. If cards match they keep them and if not they are turned over again for the next player. The winner is the player with the most cards once all the overturned cards are gone. Try and remember where cards are placed.

5) **Use exercise to make learning fun** - Getting children active is proven to help learning, so instead of just asking your child to recite their tables, encourage them to jog on the spot and do different aerobic moves in time to chanting them. As exercise helps mood and concentration, it should make the sessions more fun and effe

6) **SNAP** – Make some times tables snap cards (calculation cards and answer cards). Shuffle and share cards between players. The players keep their cards face down in a stack. One by one, they take the top card from their stack, and place it on a pile in the middle. When the card just placed

matches the one before it, the players should call **SNAP!** The first player to do this gets to keep all the cards in the pile.

a. Some matches will be easy - for example, if **24** is played on top of **24**.
b. Other matches will require knowledge of times tables - for example, if **7x7** is played on top of **49**.
c. The most interesting matches of all will be when two matching question cards are played, for example if **4x9** is played on top of **12x3**.

Times-tables crossword

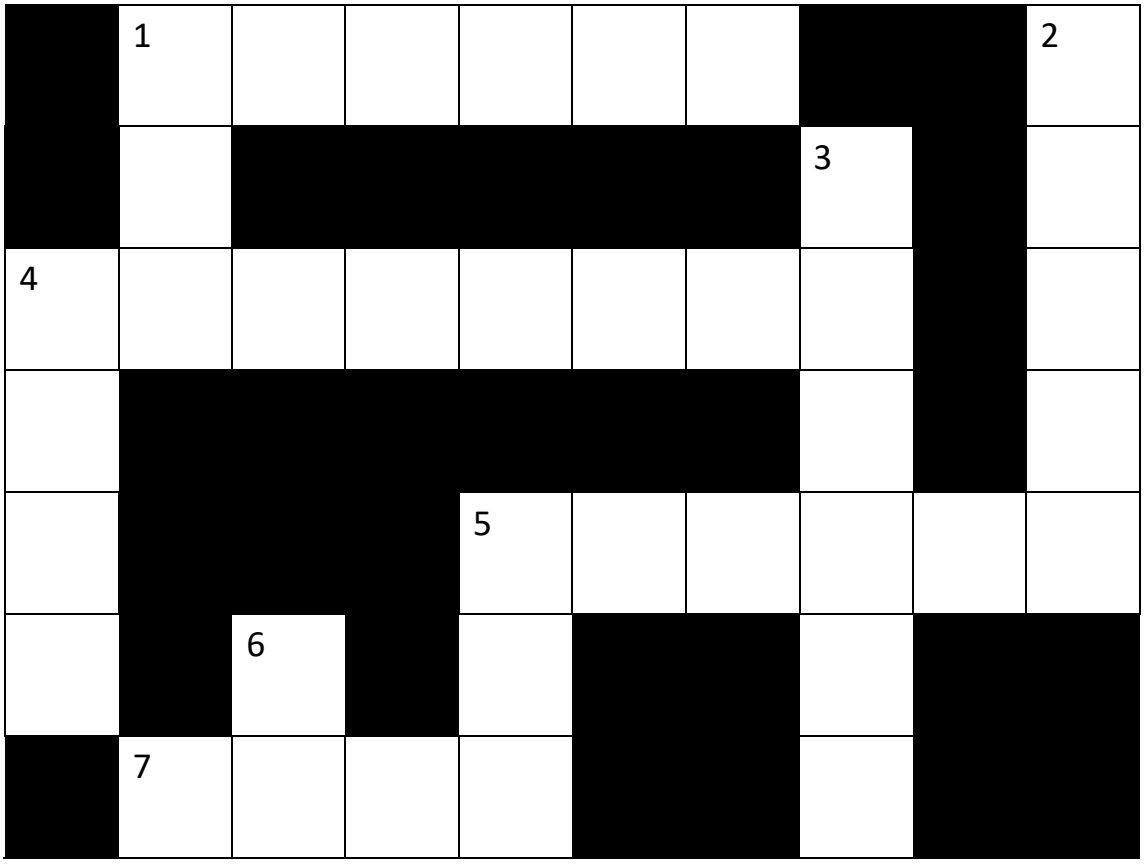
Complete the crossword by writing the answers in **words.**

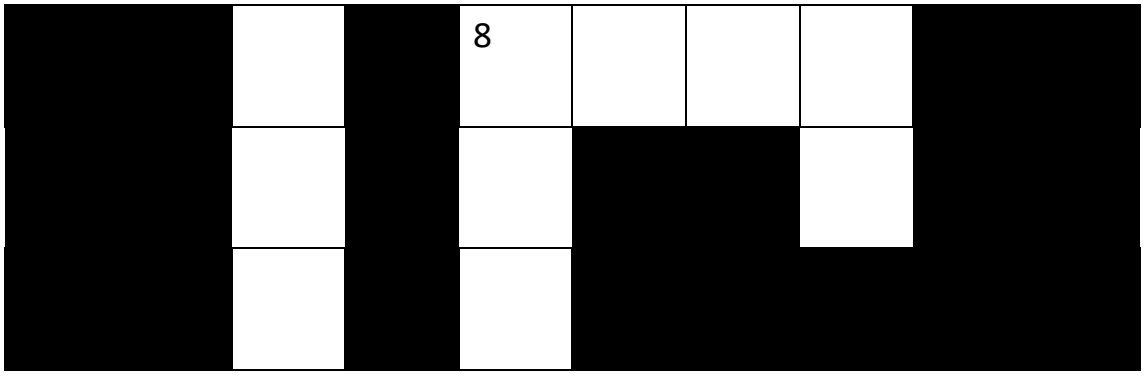
Across

1. 2 × 6 = ?
4. 6 × 7 = ?
5. 5 × 6= ?
7. 8 × ? = 40
8. 5 × ? = 45

Down

1. 8 × ? = 16
2. 10 × 6 = ?
3. 2 × 7 = ?
4. double 2
5. 4 × 5 = ?
6. 4 × ? = 32





Which ones do you know well?

1 Times Table
1 x 1 = 1
2 x 1 = 2
3 x 1 = 3
4 x 1 = 4
5 x 1 = 5
6 x 1 = 6
7 x 1 = 7
8 x 1 = 8
9 x 1 = 9
10 x 1 = 10
11 x 1 = 11
12 x 1 = 12

2 Times Table
1 x 2 = 2
2 x 2 = 4
3 x 2 = 6
4 x 2 = 8
5 x 2 = 10
6 x 2 = 12
7 x 2 = 14
8 x 2 = 16
9 x 2 = 18
10 x 2 = 20
11 x 2 = 22
12 x 2 = 24

3 Times Table
1 x 3 = 3
2 x 3 = 6
3 x 3 = 9
4 x 3 = 12
5 x 3 = 15
6 x 3 = 18
7 x 3 = 21
8 x 3 = 24
9 x 3 = 27
10 x 3 = 30
11 x 3 = 33
12 x 3 = 36

4 Times Table
1 x 4 = 4
2 x 4 = 8
3 x 4 = 12
4 x 4 = 16
5 x 4 = 20
6 x 4 = 24
7 x 4 = 28
8 x 4 = 32
9 x 4 = 36
10 x 4 = 40
11 x 4 = 44
12 x 4 = 48

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

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

7 Times Table
1 x 7 = 7
2 x 7 = 14
3 x 7 = 21
4 x 7 = 28
5 x 7 = 35

8 Times Table
1 x 4 = 8
2 x 8 = 16
3 x 8 = 24
4 x 8 = 32
5 x 8 = 40

9 Times Table
1 x 9 = 9
2 x 9 = 18
3 x 9 = 27
4 x 9 = 36
5 x 9 = 45

10 Times Table
1 x 10 = 10
2 x 10 = 20
3 x 10 = 30
4 x 10 = 40
5 x 10 = 50

11 Times Table
1 x 11 = 11
2 x 11 = 22
3 x 11 = 33
4 x 11 = 44
5 x 11 = 55

12 Times Table
1 x 12 = 12
2 x 12 = 24
3 x 12 = 36
4 x 12 = 48
5 x 12 = 60

Test yourself out with these challenge activities:

do

you

2x table puzzle 1

Sally is at the fair. She has a bucket of wet sponges. She is allowed to throw any number of sponges at the frogs to knock them over, but she needs to get a score of 10 to win.

What combination of frogs would get her a score of 10? There is more than one possibility. See if you can work them out below.

Answer: There are 3 combinations: 4, 2, 2, 2
4, 4, 2
2, 2, 2, 2, 2

2x table puzzle 2

Sally finds a stall at the fair where there is a pool full of ducks. Each one has the number 2 on its back:

She is given a stick with a hook and has to hook out as many ducks as she can in one minute.

After one minute, all the 2s on the ducks she has fished out are added up.

Which scores could she NOT have got? Explain why:

SCORE	Put a tick if you think Sally could have got this score. Put a cross if you think she couldn't have. When you put a cross, explain why Sally couldn't get this score.
4	
20	
15	
8	
11	
10	
24	
12	
5	

Answers:
Ticks for 4, 20, 8, 10 and 12. Crosses for 15, 11 and 5 because adding up lots of 2s would always give an even, not an odd, number. Cross for 24 because there are only 10 ducks, so the highest score she could get is 20.

2x table puzzle 3

Note to parents: It's helpful to use a stack of 2p coins and two small bags to help your child work out the different combinations in this puzzle.

At this stall at the fair, you have three hoops. You have to throw your hoops over the money bags to win what is inside. Each money bag is filled with different numbers of 2p coins.

Jasmine throws her three hoops. One of the hoops misses all the bags, but she manages to get the other two hoops around two of the bags.

She opens the bags and finds she has won 20p.

How many 2p coins could there have been in each of Jasmine's bags? See how many combinations you can find:

1ST MONEY BAG	2ND MONEY BAG

Answers:
There are five combinations: **1.** Bag one - one 2p and bag two - nine 2ps. **2.** Bag one - two 2ps and bag two - eight 2ps. **3.** Bag one - three 2ps and seven 2ps. **4.** Bag one - four 2ps and bag two - six 2ps. **5.** Bag one - five 2ps and bag two - five 2ps.

3x table puzzle 1

Note to parents: It may help your child to cut out the pictures of the books below, so that they can move them around to work out the different combinations. Make sure they record each combination as they go, otherwise they will forget what they have worked out!

Jack is in a bookshop. He has exactly £18 to spend.

Which of the above books could he buy?

See how many combinations you can find.

Answer: There are four combinations:

£6 + £6 + £6
£6 + £6 + £3 + £3
£6 + £3 + £3 + £3 + £3
£3 + £3 + £3 + £3 + £3 + £3

Fast Factors

Suggested age range	Children in year 2 (aged 6-7) and year 3 (aged 7-8)
Number of players	One
How to prepare the game	• Cut out all the cards on the following page.

How to play the game

Look at the Fast Factors cards on the next page. Each of the numbers in red is a multiple of the numbers following it in blue.

The numbers in blue are factors of the number in red.

Once you have cut out all the carts, space the red numbers out on a table or flat surface. Jumble up the blue numbers. Now see if you can put all the blue factors back with their multiples. How quickly can you complete the game? Time yourself and aim to beat your record every time you play.

How does this game support learning?

Fast Factors will help your child practise the 2x and 3x table, as well as reinforce the use of the correct mathematical language.

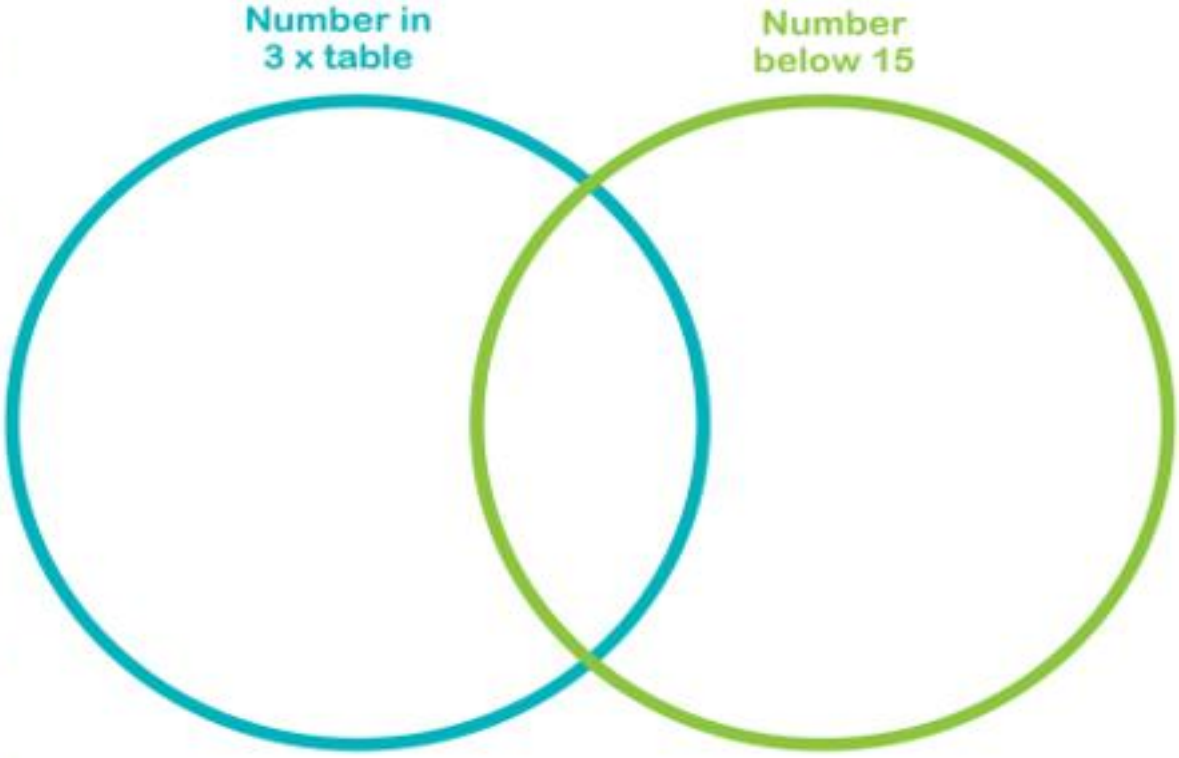
The **multiple** of a number is the product of that number and any other whole number.

A **factor** is a number that divides exactly (without a remainder) into a larger number.

Fast Factors cards

60	30	12	10	6	5	2		
24	12	8	6	4	3	2		
100	50	25	20	10	5	4	2	
33	11	3						
80	40	20	16	10	8	5	4	2
12	6	4	3	2				
40	20	10	8	5	4	2		

3x table puzzle 2



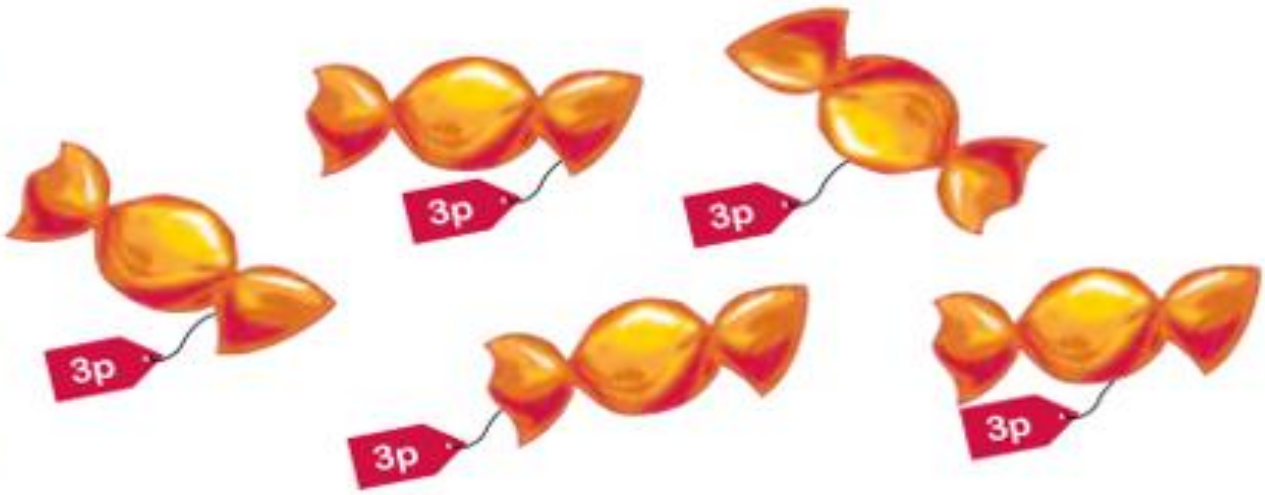
1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30

Cut out the number cards above. Work out where each one should go in the Venn diagram.

The numbers should be arranged as follows:
15, 18, 21, 24, 27, 30 in the Number in the 3x table circle.
3, 6, 9, 12 in the centre overlap.
1, 2, 4, 5, 7, 8, 10, 11, 13, 14 in the Number below 15 circle.
16, 17, 19, 20, 22, 23, 25, 26, 28, 29 outside the circles.

3x table puzzle 3

Note to parents: It may help your child to cut out the pictures of the sweets so they can move them around. Encourage a methodical way of working this out, for example: let's try first with five 3p sweets, now four 3p sweets, now three 3p sweets, etc. This allows you to work out whether you have tried each combination, rather than doing it randomly.



Jack has 12p in his pocket.

What different combinations of the sweets above could he buy?

There are 3 combinations:
3p + 3p + 3p + 3p
2p + 2p + 2p + 2p + 2p + 2p

4x table puzzle 1

Elizabeth is trying to crack the code to open this safe and find out what's inside.

She has been given the following clues:

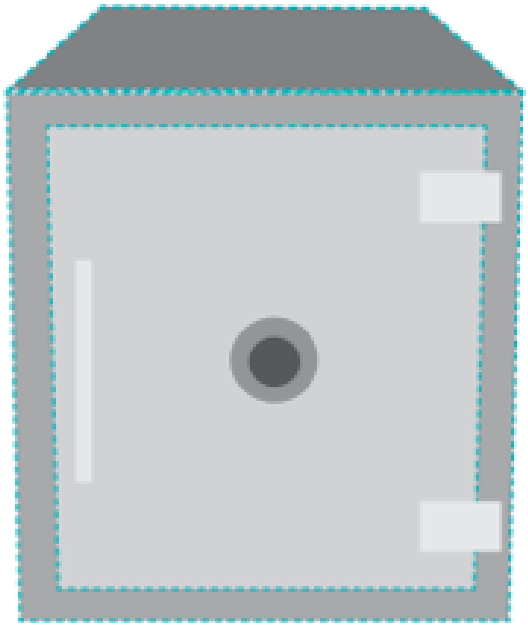
The code has four digits

The last digit is the answer to 1 x 4

The middle two digits add up to 4

The first digit is double the last digit

Each digit is in the 2x table; one of them isn't in the 4x table



Work out what the code is and put the answer in the boxes.

: The code is 8224. The number 2 isn't in the 4x table.

4x table puzzle 2

In a room there are 24 legs.
The room is full of sheep (each with 4 legs) and people (each with 2 legs).

How many sheep and people could there be?
There are a few different combinations.
Cut out the cards below to help you work them out.

Answer: Combinations are: 5 sheep, 2 people OR 4 sheep, 4 people OR 3 sheep, 6 people OR 2 sheep, 8 people OR 1 sheep, 10 people.

4x table puzzle 3

Chloe has £24 to spend.

How many different combinations of the above items could she buy? (She can buy as many of each item as she likes.)

Helpful hint: To make sure you have covered every possible combination, start with the biggest number first (16) and try adding it to itself. Then concentrate on adding the next biggest number to 16, then working down to the smallest number. Once you have worked out all possible combinations regarding 16, go onto 12 and do the same thing. Then work your way down to 4. Keep checking that you are not repeating combinations!

Answer: There should be nine combinations in all:

£16 + £8
£16 + £4 + £4
£12 + £12
£12 + £8 + £4
£12 + £4 + £4 + £4
£8 + £8 + £8
£8 + £8 + £4 + £4
£8 + £4 + £4 + £4 + £4
£4 + £4 + £4 + £4 + £4 + £4

Times Tables Dominoes

Suggested age range Children aged 7 and up (from year 3).

Number of players 1 – 4

How to prepare the game

- Print off the dominoes – ideally on card.
- Cut out each domino.

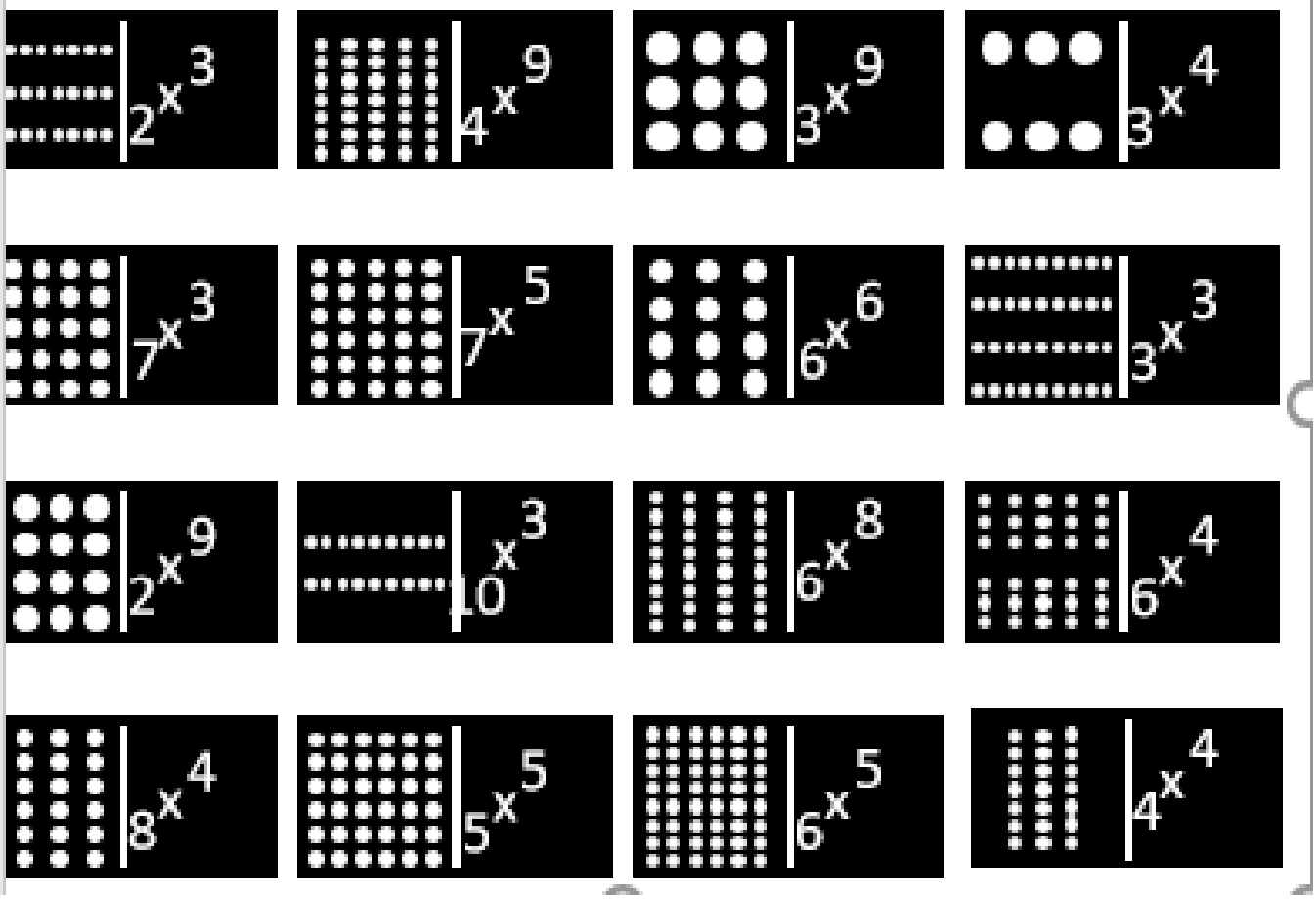
How to play the game

The dominoes are placed face down on the table and mixed up. Each player takes an even number of dominoes and keeps them hidden from the other players. The youngest player starts first and places a domino in the centre of the table. Play then works around the group in a clockwise direction. Players must match the number sentences on the dominoes (in arrays or numbers). If they cannot go, they knock on the table and play passes to the next player. The winner is the first person to get rid of all of their dominoes.

How does this game support learning?

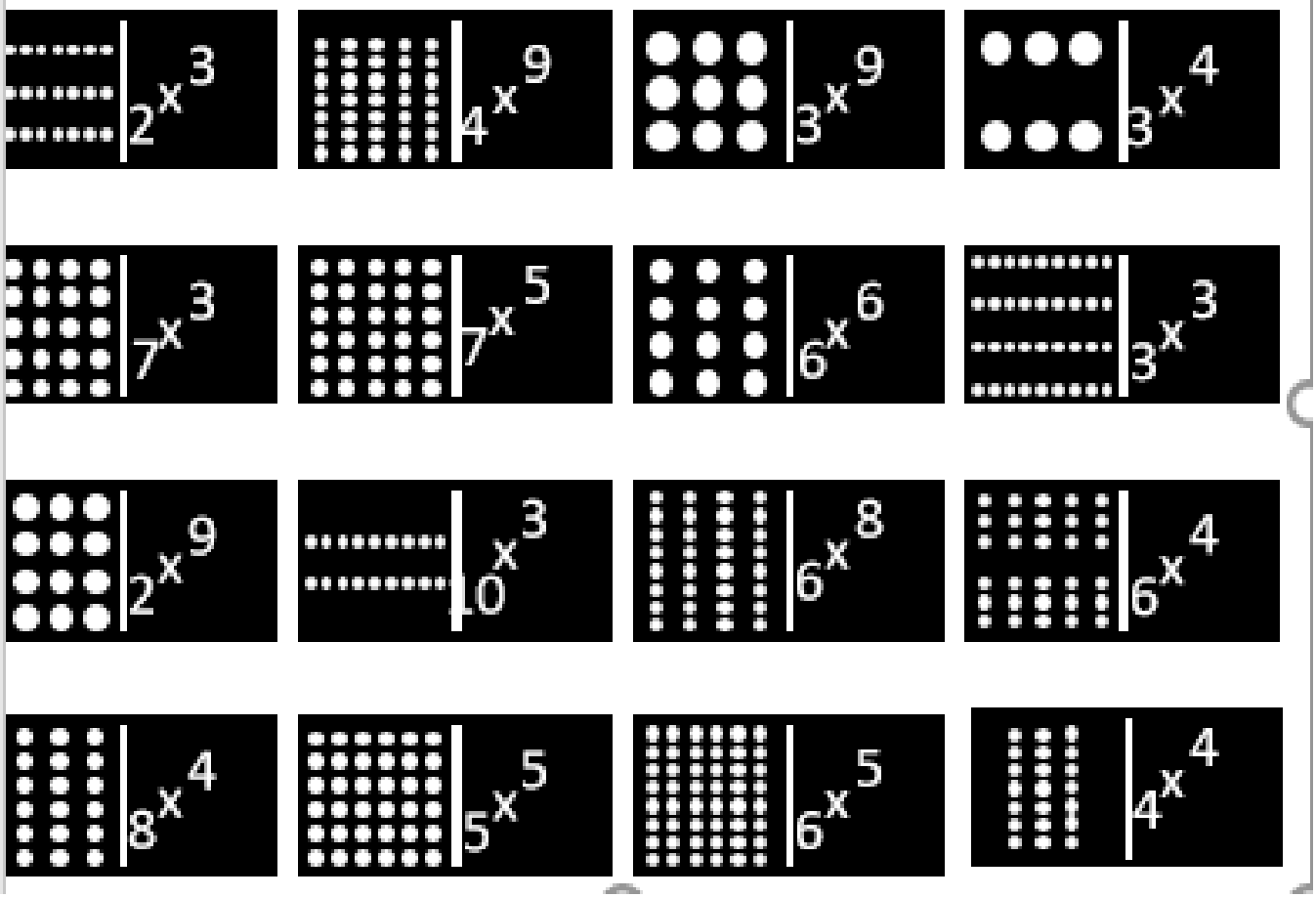
This is a good game for children who have not quite grasped their times tables yet, as the dots help them to visualise the numbers they are making.

Times Tables Dominoes



Times Tables Dominoes

13



5x table puzzle 1

On a stall at the fair you are given balls to throw into these cups. Each time a ball falls into a cup, you get the number of points written on the side of the cup. You need to try to get as high a score as possible.

Five children got the following scores. Which cups must they have thrown their balls into to get these scores?

The first one is done for you:

CHILD	SCORE	CUPS BALL WAS THROWN INTO
Maya	12	5, 5, 2
Ben	20	
Akram	11	
Josh	17	
Sam	10	

Could any of the scores above have more than one possible combination? Which ones? What are the combinations?

Child	Score	Cups ball was thrown into
Maya	12	5, 5, 2 OR 2, 2, 2, 2, 2
Ben	20	5, 5, 5, 5 OR 5, 5, 2, 2, 2, 2
Akram	11	2, 2, 2, 5
Josh	17	5, 5, 5, 2 OR 5, 2, 2, 2, 2, 2
Sam	10	5, 5 OR 2, 2, 2, 2, 2

5x table puzzle 2

Josh is given two bags full of 5p coins.

The total amount of money in both the bags is 30p. How much money could be in each bag? Work out all the possible combinations in the table below:

1ST BAG	2ND BAG

Parent tip: It might be helpful to use actual 5p coins to help your child with this puzzle. First, get them to count out 30p in 5ps. Then ask them to find all the different ways of splitting the 5ps into two bags, recording in the table as they go. Remind them to keep telling you how much they are putting in each bag, each time, by counting the coins in 5s.

1ST BAG	2ND BAG
5p	5p, 5p, 5p, 5p (20p)
5p, 5p (10p)	5p, 5p, 5p (15p)
5p, 5p, 5p (15p)	5p, 5p (10p)
5p, 5p, 5p, 5p (20p)	5p
5p, 5p, 5p, 5p, 5p (25p)	

5x table puzzle 3

Karen is given three darts. She throws them at the boards above.

Which three numbers would she need to hit, to get the following scores? She could hit the same number more than once.

For each score, there may be only one answer or there may be several possible answers.

SCORE	3 NUMBERS HIT
30	
55	
15	
40	
45	

SCORE	3 NUMBERS HIT
30	10, 10, 10 OR 5, 10, 15 OR 20, 5, 5
55	25, 20, 10 OR 20, 20, 15 OR 25, 15, 15
15	5, 5, 5
40	5, 15, 20 OR 5, 10, 25 OR 15, 15, 10 OR 20, 10, 10
45	25, 15, 5 OR 20, 15, 10 OR 20, 20, 5 OR 10, 10, 25 OR 15, 15, 15

6x table puzzle 1

Faye is trying to crack the code to open this safe in the wall. She has been given the following clues:

The code has four digits

The first and second digits add up to make a multiple of 6

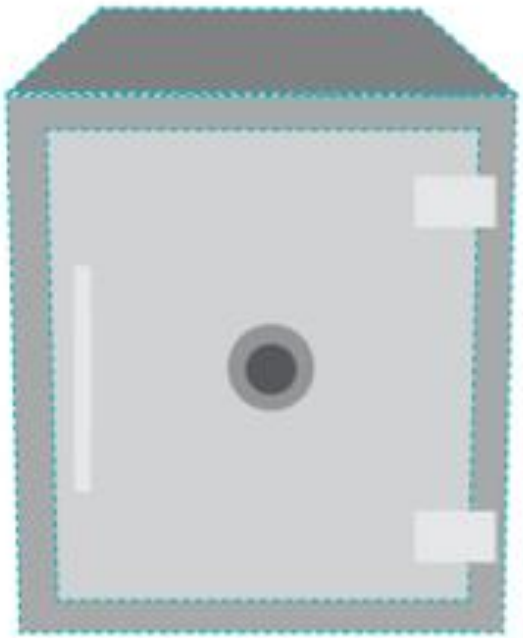
The third and fourth digits add up to make the same multiple as above

There is a difference of 6 between the first and second digits

The third and fourth digits are the same

There are no zeros in the code

The first digit is the smallest of the four



Work out what the code is and put the answer in the boxes.

Answer: The code is 3966

6x table puzzle 2

On this stall at the fair, you have a bucket of 5 wet sponges to throw at the frogs. You win a prize if you get a score of 18 or more.

This table shows the hits and misses and final scores five children made. See if you can complete the table:

CHILD	HIT	MISSES	WHICH FROGS HIT?	TOTAL SCORE	PRIZE WON?
Jack	3	2		15	
Isobel		4		3	
Nkechi				27	
Louise		2		15	
Robert			6, 6, 3, 3		

Answer:

NAME	HITS	MISSES	WHICH FROGS HIT?	TOTAL SCORE	PRIZE WON?
Jack	3	2	6, 6, 3	15	No
Isobel	1	4	3	3	No
Nkechi	5	0	6, 6, 6, 6, 3	27	Yes
Louise	3	2	6, 6, 3	15	No
Robert	4	1	6, 6, 3, 3	18	Yes

Times Tables Right or Wrong

Suggested age range	7+ (from year 3)
Number of players	2 (one caller and one player)
How to prepare the game	• Print out the tables on the next page.

How to play the game

One player needs to call out the times table number sentences on the tables on the next page. The other player says 'right' or 'wrong' depending on whether they think the caller has read out a correct sentence.

Every time the player correctly says 'right' or 'wrong', the caller gives them a tick or cross in the box next to the number sentence (they have the answers already on the table).

When you have finished, swap roles and play again on the second table. You can also make up your own tables to play with.

How does this game support learning?

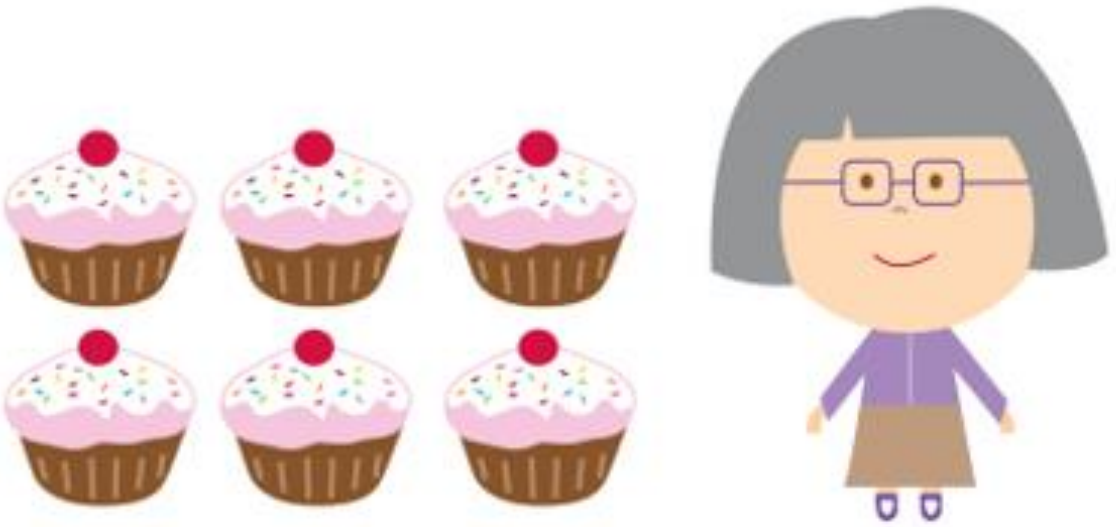
Instant recall is vital in times tables; children need to know the correct answers without stopping to think about them. This activity can be played at speed and is a different way to test knowledge and confidence.

Right or Wrong?

	r ight or Wrong?	t ick box if player is correct
x 4 =	Wrong	
x 5 =	Wrong	
x 3 =	r ight	
x 4 =	r ight	
x 9 =	Wrong	
x 10 = 90	r ight	
x 7 =	Wrong	
x 11 =	Wrong	
x 6 =	r ight	
x 2 =	r ight	

	r ight or Wrong?	t ick box if player is correct
x 4 =	Wrong	
x 5 =	Wrong	
x 3 =	r ight	
x 4 =	r ight	
x 9 =	Wrong	
x 10 = 90	r ight	
x 7 =	Wrong	
x 11 =	Wrong	
x 6 =	r ight	
x 2 =	r ight	

6x table puzzle 3



Mrs Brown the Baker makes 6 cakes on Monday.

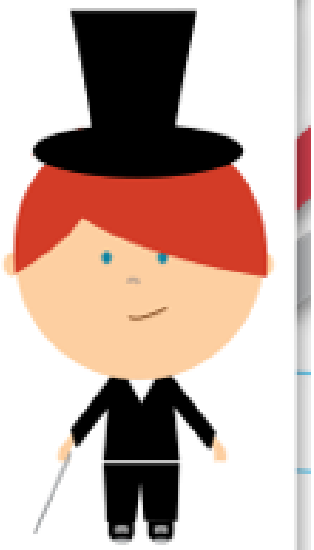
Each day after that, she makes 6 more cakes than she made the previous day. She stops baking once she has made a total of 168 cakes.

How many days does she bake for altogether?

Answer:

Monday 6, Tuesday 12, Wednesday 18, Thursday 24, Friday 30, Saturday 36, Sunday 42. If you total these numbers, you get 168, so Mrs Brown bakes for seven days altogether.

7x table puzzle 1



Louise has to work out how many of each object Martin the Magician has in his box of tricks. It contains: magic wands, rabbits, packs of cards, rubber balls, handkerchiefs and hoops. He has a different number of each and each number is a multiple of 7 smaller than 84. He gives her the following clues:

There are twice as many magic wands as there are rabbits.

The number of hoops is also a multiple of 11.

There are 7 more handkerchiefs than packs of cards.

The number of rubber balls is half the number of packs of cards.

The number of rabbits is also a multiple of 5.

The total number of the handkerchiefs and packs of cards is the same as the number of rabbits.

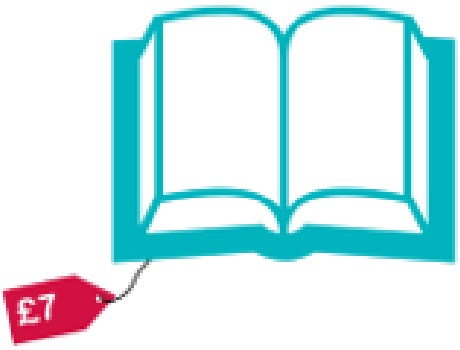
Cut out the multiples of 7 below and then practise trying different combinations in the table to help you work this out:

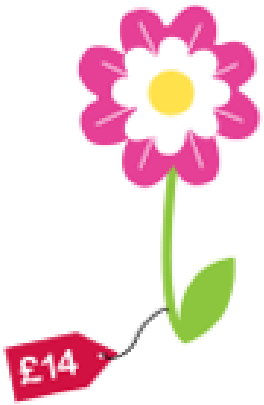
7	14	21	28	35	42	49	56	63	70	77

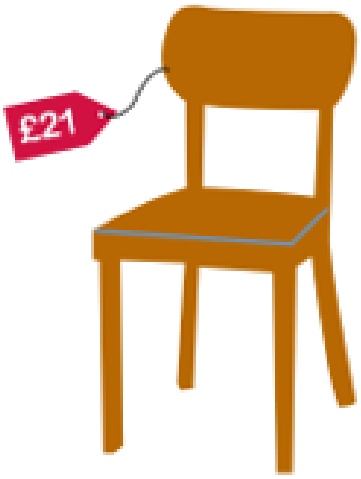
Magic wands	
Rabbits	
Packs of cards	
Rubber balls	
Handkerchiefs	
Hoops	

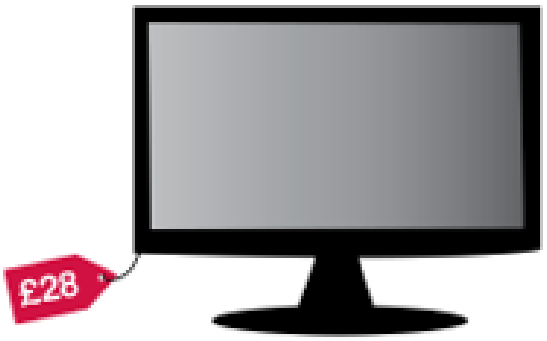
Answer:
Magic Wands 70; Rabbits 35; Packs of cards 14; Rubber balls 7; Handkerchiefs 21; Hoops 77

7x table puzzle 2







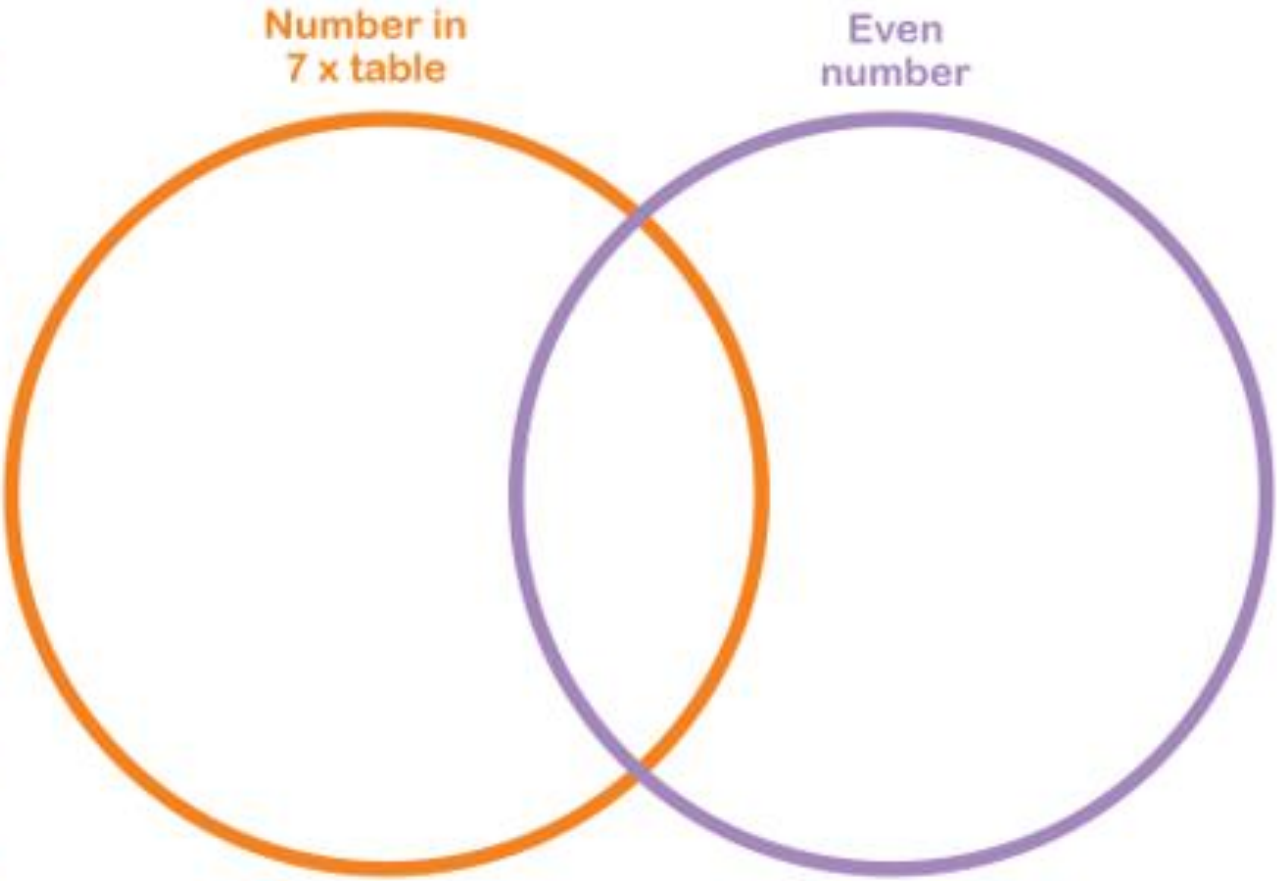


Frank has £35 to spend.

How many different combinations of the above items could he buy if he spent all his money? (He can buy as many of each item as he likes.)

Answer: There are five combinations:
TV and book, £28 + £7
Chair and flower, £21 + £14
Chair and two books, £21 + £7 + £7
Flower and three books, £14 + £7 + £7 + £7
Five books £7 + £7 + £7 + £7 + £7

7x table puzzle 3



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

Cut out the numbers above. Work out where each one should go in the Venn diagram.

Answer: 7, 21 in the Number in the 7x table circle.
14, 28 in the centre overlap.
2, 4, 6, 8, 10, 12, 16, 18, 20, 22, 24, 26, 30 in the Even numbers circle.
1, 3, 5, 9, 11, 13, 15, 17, 19, 23, 25, 27, 29 outside the circles.

8x table puzzle 1

Molly has a box full of packs of cans of pop. Some packs have 4 cans in them, some packs have 8 cans in them.

She knows the box contains 64 cans of pop. How many packs of 4 cans and how many packs of 8 cans could there be?

See if you can find all the combinations.

Helpful Hint: You could draw a table to help you record your combinations. Make sure you have some kind of order to the way you work this out, or you will get in a muddle!

Answer:

There are seven combinations: **1.** One 8-pack and 14 4-packs, **2.** Two 8-packs and 12 4-packs, **3.** Three 8-packs and 10 4-packs, **4.** Four 8-packs and eight 4-packs, **5.** Five 8-packs and six 4-packs, **6.** Six 8-packs and four 4-packs, **7.** Seven 8-packs and two 4-packs.

8x table puzzle 2

Daniel washes cars for 5 days. Each day, the number of cars he washes is a multiple of 8. Every day, he washes 8 more cars than the previous day. By the end of the 5 days, he has washed a total of 240 cars. How many cars did he wash each day?

Helpful hint: It will help you to write down your multiples of 8 first!

Answer:

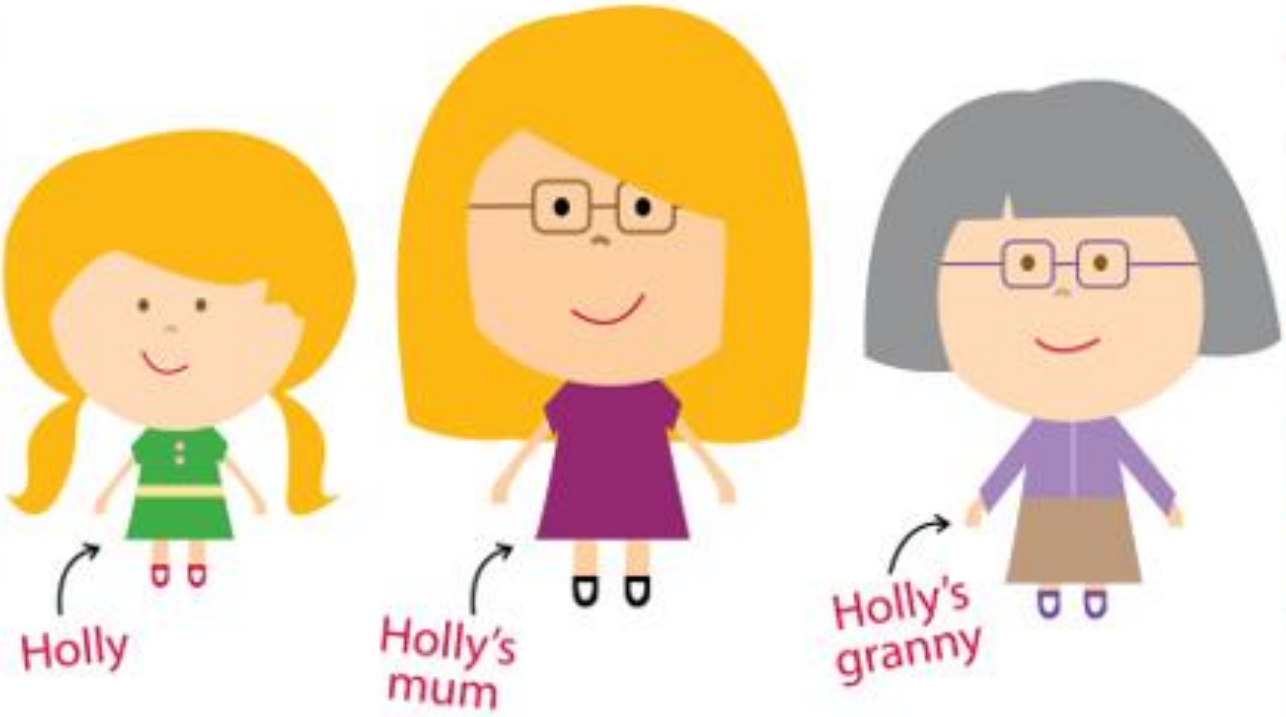
Daniel washed 32 cars the first day, 40 the second day, 48 the third day, 56 the fourth day and 64 the fifth day.

8x table puzzle 3

At the fair, Louise has to hook as many ducks out of the pond as she can in 3 minutes. She gets a score of 24. Which ducks could she have hooked out in the 3 minutes? See if you can find all the possible combinations.

There are 4 combinations:
8 + 8 + 8
8 + 8 + 4 + 4
8 + 4 + 4 + 4 + 4
4 + 4 + 4 + 4 + 4 + 4

9x table puzzle 1



Holly is 9.

Holly's mum is 9 years older than Holly's aunt.

Holly's granny is 9 times the age of Holly.

Holly was born when her mum was 27.

Work out the ages of Holly's mum, aunt and granny.

Mum is 36, Aunt is 27 and Granny is 81.

9x table puzzle 2

The weight of each box in kg is a multiple of 9 no larger than 108kg.

Box 1 weighs half of what box 2 weighs.

Box 3 weighs half of what box 1 weighs.

What could the three boxes weigh?

See if you can find all the possibilities.

There are three possibilities:

BOX 1	BOX 2	BOX 3
18kg	36kg	9kg
36kg	72kg	18kg
54kg	108kg	27kg

9x table puzzle 3

The centre rectangle in this picture is a farmer's house.
The eight rectangles around it, marked 1 – 8, are fields.

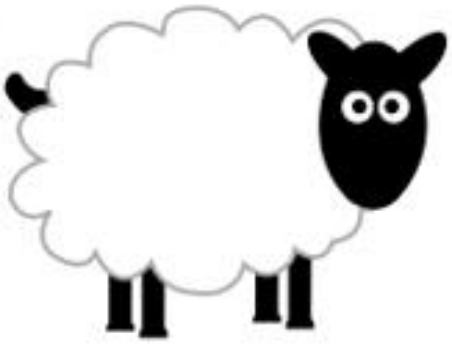
Each field contains a certain number of sheep. The number of sheep in each field is always a multiple of 9. The largest number of sheep found in a field is 27.

From the windows at the front of the house, the farmer can see fields 1, 2 and 3. He can see a total of 36 sheep.

From the windows at the right hand side of the house he can see fields 3, 4 and 5. He can see a total of 54 sheep.

From the windows at the back of the house, he can see fields 5, 6 and 7. He can see a total of 45 sheep.

From the windows at the left hand side of the house he can see fields 7, 8 and 1. He can see a total of 36 sheep.



See if you can work out how many sheep could be in each field. There will be more than one way of doing this, but you only need to find one combination.

9x table puzzle 3
Answers:
Possible combinations:

9	18	9
9		27
18	9	18

9	9	18
9		27
18	18	9

18	9	9
9		27
9	18	18

10x table puzzle 1

Four children are given five darts each.

They have to throw the darts at the numbers above and try to get the highest score possible.

This table shows their total scores. Write down which numbers they could have hit to get these scores (there will often be more than one possible combination).

Remember that they will not always hit five numbers!

NAME	SCORE	POSSIBLE NUMBERS HIT
Carla	20	
Jane	25	
Peter	15	
Jack	30	

NAME	SCORE	POSSIBLE NUMBERS HIT
CARLA	20	10, 10 OR 10, 5, 5 OR 5, 5, 5, 5
JANE	25	10, 10, 5 OR 10, 5, 5, 5 OR 5, 5, 5, 5, 5
PETER	15	10, 5 OR 5, 5, 5
JACK	30	10, 10, 10 OR 10, 10, 5, 5 OR 10, 5, 5, 5, 5

10x table puzzle 2

Sam only buys sweets on dates of the year that are a multiple of ten. Can you work out on how many days Sam buys sweets, from March to October?

March 10th, 20th, 30th, April 10th, 20th, 30th, May 10th, 20th, 30th, June 10th, 20th, 30th, July 10th, 20th, 30th, August 10th, 20th, 30th, September 10th, 20th, 30th, October 10th, 20th, 30th – so 24 days in all.

10x table puzzle 3

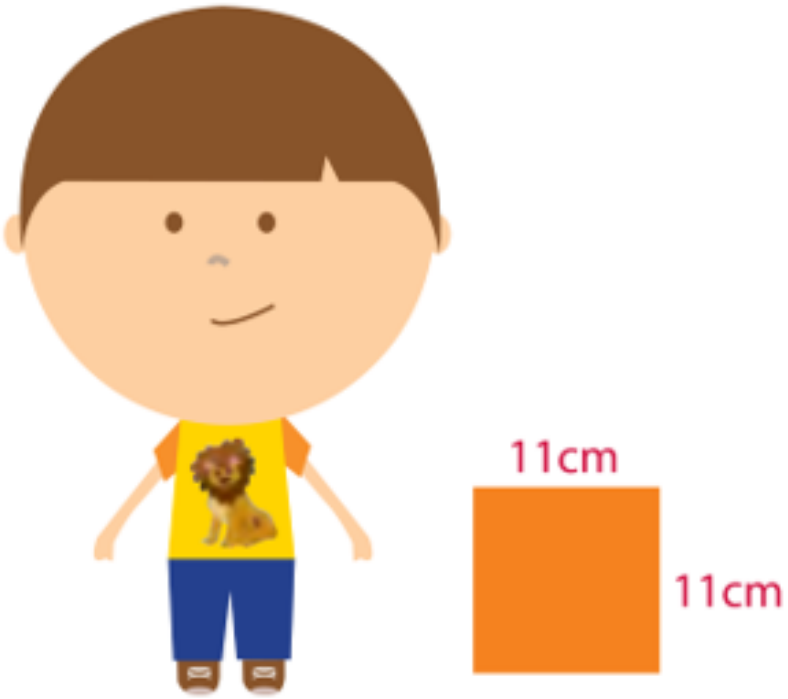
A teacher cuts up pieces of squared paper into strips that are 10 squares long. Each square measures 1cm along each side.

How many of these strips could you fit into a rectangle measuring 20cm by 60cm?

What would the surface area of this shape be?

You would be able to fit 120 strips in the shape. The total surface area would be 1200cm squared.

11x table puzzle 1



Brian buys a set of 20 square bricks that are 11cm by 11cm.

He arranges them in a 5 by 4 rectangle.

What is the perimeter of this rectangle?

What is the area?

Helpful hint: Draw a picture of the tiles arranged in the rectangle to help you.

The perimeter is 198cm, the area is 2420cm squared.

11x table puzzle 2

In the school dinners hall, each table has 11 children sat at it. There are 132 children in the hall altogether.

In the packed lunch hall, each table has 11 children sat at it. There are 99 children in the hall altogether.

How many more TABLES of children are there in the school dinners hall than the packed lunch hall?

11x table puzzle 3

Louise has a bag full of 10p coins and 1p coins. There are the same number of 10p coins in the bag as there are 1p coins.

She has £1.43 altogether.

How many 10ps and 1ps are there in the bag?

There are 13 10ps and 13 1ps.

12x table puzzle 1

See if you can work out the four mystery numbers above with the following clues:

Each number is a multiple of 12.

The first, third and fourth numbers have two digits.

The second number has three digits.

None of the numbers are larger than 144.

Each number contains the digit 4.

The third number is half the first number.

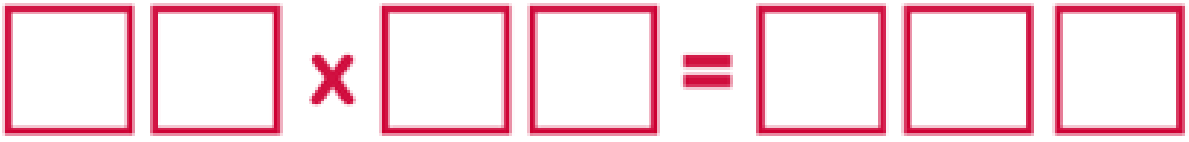
The last number is 60 more than the third number.

The numbers are (in this order): 48, 144, 24, 84

12x table puzzle 2

Cut out and re-arrange these cards into the gaps below so that the number sentence makes sense:

1	1	1	2	3	5	6



12x table puzzle 3

John has a bag with blue, red, yellow, orange and green sweets in it. He's given the following clues about how many sweets of each colour there are in the bag:

Each number of sweets is a multiple of 12, no bigger than 108.

Both the number of orange sweets and the number of green sweets have the digit 4 in them.

There are less than 40 red sweets.

There are twice as many yellow sweets than red sweets.

There are more than 50 yellow sweets.

There are twice as many green sweets as orange sweets.

The number of blue sweets has three digits.

COLOUR OF SWEET	NUMBER OF SWEETS
Blue	
Red	
Yellow	
Orange	
Green	

Answer:

Colour of Sweet	Number of Sweets
Blue	108
Red	36
Yellow	72
Orange	24
Green	48

Jumbled Times Tables

Suggested age range	7+ (year 4 onwards)
Number of players	One
How to prepare the game	• Cut out the number sentences on the following page and jumble them up.

How to play the game

Start with a pile of jumbled up number sentences cards. How fast can you get them back into the right order?

Time yourself and see if you can beat your time with your next attempt.

To check your answers, consult the answers sheet.

How does this game support learning?

Arranging number sentences correctly will help your child practise tricky times tables and see patterns - for example, 9 x 3 and 3 x 9 have the same answer.

Jumbled Times Tables

7	x	7	=	49
8	x	9	=	72
10	x	4	=	40
9	x	3	=	27
6	x	5	=	30
7	x	8	=	56
4	x	6	=	24
9	x	5	=	45
8	x	8	=	64
11	x	5	=	55

Jumbled Times Tables

48

7	x	7	=	49
8	x	9	=	72
10	x	4	=	40
9	x	3	=	27
6	x	5	=	30
7	x	8	=	56
4	x	6	=	24
9	x	5	=	45
8	x	8	=	64
11	x	5	=	55