Multiplication Resource Pack

for the 2 Multiplication Table

Lancashire County Council

www.lancashire.gov.uk

This resource pack is designed to support the understanding and recall of the multiplication tables.

The combination of resources, activities and challenges help children to realise that:

- multiplication can be thought of as repeated addition;
- unknown multiplication facts can be derived in various ways;
- there are close relationships between different multiplication tables which can be used to further deepen children's understanding of mathematics and develop number sense;
- multiplication and division facts should be learned together; and
- it takes considerable practice to be able to recall the multiplication and division facts for each of the multiplication tables.

These resources should be used alongside appropriate practical modelling and other imagery.

Children should also experience (and recognise) multiplication in a number of different contexts, including a variety of different routine and non-routine problems.

Multiplication Tables Posters and Bookmarks

The Multiplication Tables posters are designed to support the understanding of multiplication as repeated addition.

Ten Multiplication Table

	10 × 0 = 0	zero
10	10 × 1 = 10	ten
10+10	10 × 2 = 20	twenty
10+10+10	10 × 3 = 30	thirty
10+10+10+10	10 × 4 = 40	forty
10+10+10+10+10	10 × 5 = 50	fifty
10+10+10+10+10+10	10 × 6 = 60	sixty
10+10+10+10+10+10+10	10 × 7 = 70	seventy
10+10+10+10+10+10+10+10	10 × 8 = 80	eighty
10+10+10+10+10+10+10+10+10	10 × 9 = 90	ninety
10+10+10+10+10+10+10+10+10+10	10 × 10=100	one hundred
10+10+10+10+10+10+10+10+10+10+10	10 × 11=110	one hundred and ten
10+10+10+10+10+10+10+10+10+10+10+10	10 × 12=120	one hundred and twenty

The addition number sentence on the left demonstrates that with each successive fact in the multiplication table, another group of that size has been added. The line of numbers being added together is one more than the previous line.

The mathematically correct way of writing a multiplication number sentence is to put the number that is being repeatedly added (the number of the multiplication table) first, with the × and the other number providing the instruction to indicate what is happening to the first number.

For example,

4 × 5 means 4 is being added to itself 5 times or it is 4, 5 times

This would result in the related addition number sentence 4 + 4 + 4 + 4 + 4

When children have been introduced to multiplication as an array and understand the commutative nature of multiplication i.e. that the same answer occurs regardless of the order of the numbers, we can then manipulate the understanding of the number sentences and use the language 'lots of' or 'groups of'.

4 × 5 can then be thought of as 4 lots of 5

This would result in the related addition number sentence 5 + 5 + 5 + 5

There are two versions of each poster, one demonstrating the mathematically correct way of writing the multiplication expression and the other version that encourages the language of 'lots of'.

Saying the Multiplication Tables

When children have learned that multiplication is commutative, it can then be useful to say the multiplication tables in the most concise way possible. This can then support children in making the link between the individual multiplication facts and the related division facts.

4 × 5 = 20 should be read as "*four fives are twenty*".

When children are asked a related division question such as,

"*How many fives are in twenty?"* a child can respond by knowing that *four fives are twenty,* so the answer is *four*.

The colours used on the posters indicate which multiplication tables are related to each other.

Yellow	Blue	Pink
10 multiplication table 5 multiplication table	2 multiplication table 4 multiplication table 8 multiplication table	3 multiplication table 6 multiplication table 9 multiplication table

The other multiplication tables are not as closely related so have a separate individual colour scheme.

Bookmarks

Each page is a set of five bookmarks that can be copied and shared so that each child has one bookmark to use.

The coloured triangle at the top of each bookmark corresponds to the colour used in the poster and the number sentence is written in the most convenient order for saying the multiplication tables. For example,
0 x 2 = 0 read as *"zero twos are zero"*
1 x 2 = 2 read as *"one two is two"*
2 x 2 = 4 read as *"two twos are four"*
etc.

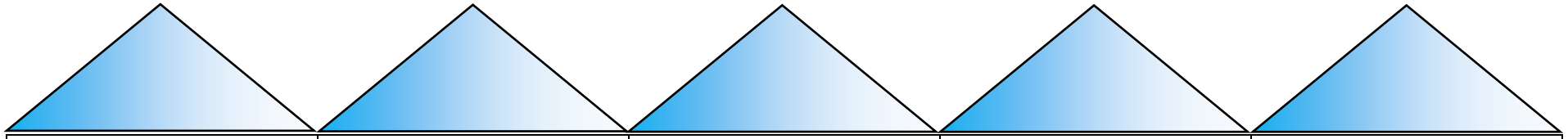
0 x 2 = 0	0 x 2 = 0	0 x 2 = 0	0 x 2 = 0	0 x 2 = 0
1 x 2 = 2	1 x 2 = 2	1 x 2 = 2	1 x 2 = 2	1 x 2 = 2
2 x 2 = 4	2 x 2 = 4	2 x 2 = 4	2 x 2 = 4	2 x 2 = 4
3 x 2 = 6	3 x 2 = 6	3 x 2 = 6	3 x 2 = 6	3 x 2 = 6
4 x 2 = 8	4 x 2 = 8	4 x 2 = 8	4 x 2 = 8	4 x 2 = 8
5 x 2 = 10	5 x 2 = 10	5 x 2 = 10	5 x 2 = 10	5 x 2 = 10
6 x 2 = 12	6 x 2 = 12	6 x 2 = 12	6 x 2 = 12	6 x 2 = 12
7 x 2 = 14	7 x 2 = 14	7 x 2 = 14	7 x 2 = 14	7 x 2 = 14
8 x 2 = 16	8 x 2 = 16	8 x 2 = 16	8 x 2 = 16	8 x 2 = 16
9 x 2 = 18	9 x 2 = 18	9 x 2 = 18	9 x 2 = 18	9 x 2 = 18
10 x 2 = 20	10 x 2 = 20	10 x 2 = 20	10 x 2 = 20	10 x 2 = 20
11 x 2 = 22	11 x 2 = 22	11 x 2 = 22	11 x 2 = 22	11 x 2 = 22
12 x 2 = 24	12 x 2 = 24	12 x 2 = 24	12 x 2 = 24	12 x 2 = 24

Two Multiplication Table

	$0 \times 2 = 0$	zero
2	$1 \times 2 = 2$	two
2 + 2	$2 \times 2 = 4$	four
2 + 2 + 2	$3 \times 2 = 6$	six
2 + 2 + 2 + 2	$4 \times 2 = 8$	eight
2 + 2 + 2 + 2 + 2	$5 \times 2 = 10$	ten
2 + 2 + 2 + 2 + 2 + 2	$6 \times 2 = 12$	twelve
2 + 2 + 2 + 2 + 2 + 2 + 2	$7 \times 2 = 14$	fourteen
2 + 2 + 2 + 2 + 2 + 2 + 2 + 2	$8 \times 2 = 16$	sixteen
2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2	$9 \times 2 = 18$	eighteen
2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2	$10 \times 2 = 20$	twenty
2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2	$11 \times 2 = 22$	twenty two
2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2	$12 \times 2 = 24$	twenty four

Two Multiplication Table

	$2 \times 0 = 0$	zero
2	$2 \times 1 = 2$	two
2 + 2	$2 \times 2 = 4$	four
2 + 2 + 2	$2 \times 3 = 6$	six
2 + 2 + 2 + 2	$2 \times 4 = 8$	eight
2 + 2 + 2 + 2 + 2	$2 \times 5 = 10$	ten
2 + 2 + 2 + 2 + 2 + 2	$2 \times 6 = 12$	twelve
2 + 2 + 2 + 2 + 2 + 2 + 2	$2 \times 7 = 14$	fourteen
2 + 2 + 2 + 2 + 2 + 2 + 2 + 2	$2 \times 8 = 16$	sixteen
2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2	$2 \times 9 = 18$	eighteen
2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2	$2 \times 10 = 20$	twenty
2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2	$2 \times 11 = 22$	twenty two
2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2	$2 \times 12 = 24$	twenty four



0 × 2 = 0	0 × 2 = 0	0 × 2 = 0	0 × 2 = 0	0 × 2 = 0
1 × 2 = 2	1 × 2 = 2	1 × 2 = 2	1 × 2 = 2	1 × 2 = 2
2 × 2 = 4	2 × 2 = 4	2 × 2 = 4	2 × 2 = 4	2 × 2 = 4
3 × 2 = 6	3 × 2 = 6	3 × 2 = 6	3 × 2 = 6	3 × 2 = 6
4 × 2 = 8	4 × 2 = 8	4 × 2 = 8	4 × 2 = 8	4 × 2 = 8
5 × 2 = 10	5 × 2 = 10	5 × 2 = 10	5 × 2 = 10	5 × 2 = 10
6 × 2 = 12	6 × 2 = 12	6 × 2 = 12	6 × 2 = 12	6 × 2 = 12
7 × 2 = 14	7 × 2 = 14	7 × 2 = 14	7 × 2 = 14	7 × 2 = 14
8 × 2 = 16	8 × 2 = 16	8 × 2 = 16	8 × 2 = 16	8 × 2 = 16
9 × 2 = 18	9 × 2 = 18	9 × 2 = 18	9 × 2 = 18	9 × 2 = 18
10 × 2 = 20	10 × 2 = 20	10 × 2 = 20	10 × 2 = 20	10 × 2 = 20
11 × 2 = 22	11 × 2 = 22	11 × 2 = 22	11 × 2 = 22	11 × 2 = 22
12 × 2 = 24	12 × 2 = 24	12 × 2 = 24	12 × 2 = 24	12 × 2 = 24

Deriving Unknown Facts from 1×, 2×, 4× and 8× Facts

When learning a new multiplication table, children will often know some facts already or be able to quickly derive some facts.

One method is to use doubling to create the 1×, 2×, 4× and 8× facts for the given multiplication table.

For example,

5 multiplication table

1 × 5 = 5 (read as '*one five is five*')

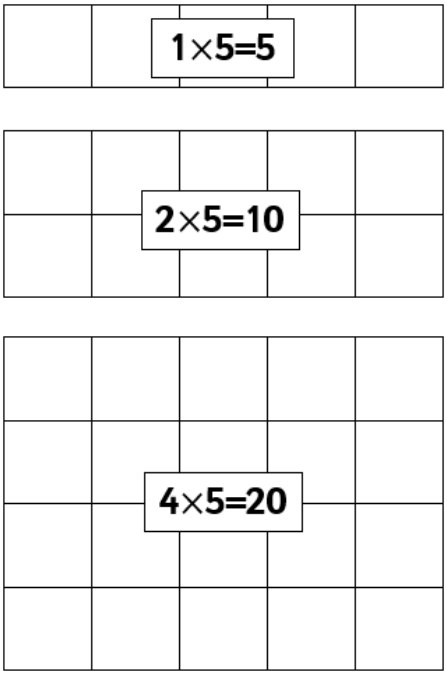
2 × 5 = 10 (read as '*two fives are ten*')

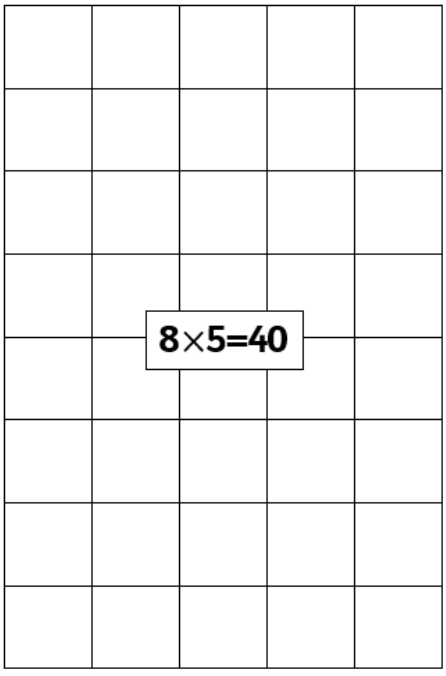
4 × 5 = 20 (read as '*four fives are twenty*')

8 × 5 = 40 (read as '*eight fives are forty*')

These facts can then be combined in different ways by the children to complete the multiplication table being learned.

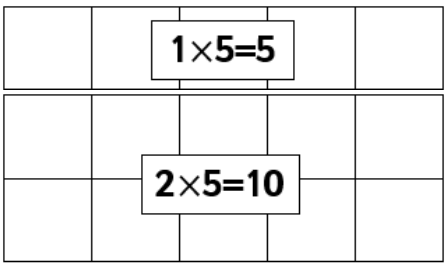
The arrays should be cut out and given to children so that they can physically combine them and reinforce their understanding of multiplication being repeated addition and also that numbers can be made in different ways.

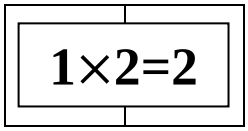


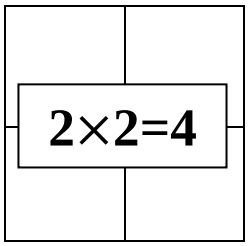


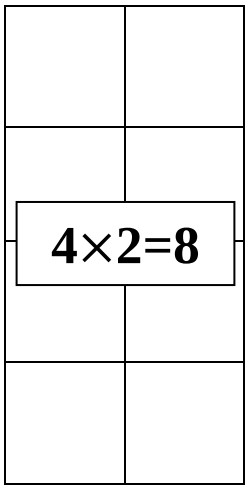
When children are deriving new facts from these, children should be encouraged to think about and describe how the known facts combine. For example,

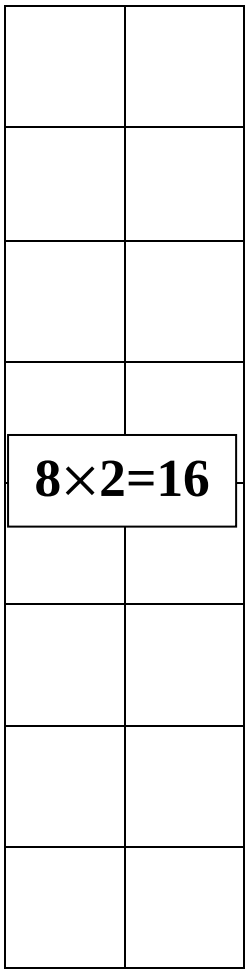
3 × 5 = 1 × 5 + 2 × 5 (read as '*three fives is one five add two fives*')
3 × 5 = 5 + 10 = 15











Deriving Unknown Facts from 1×, 2×, 5× and 10× Facts

When learning a new multiplication table, children will often know some facts already or be able to quickly derive some facts.

One method is to use the 1×, 2×, 5× and 10× facts for the given multiplication table (with the 5× facts being derived from halving the 10× fact).

For example,

5 multiplication table

1 × 5 = 5 (read as '*one five is five*')

2 × 5 = 10 (read as '*two fives are ten*')

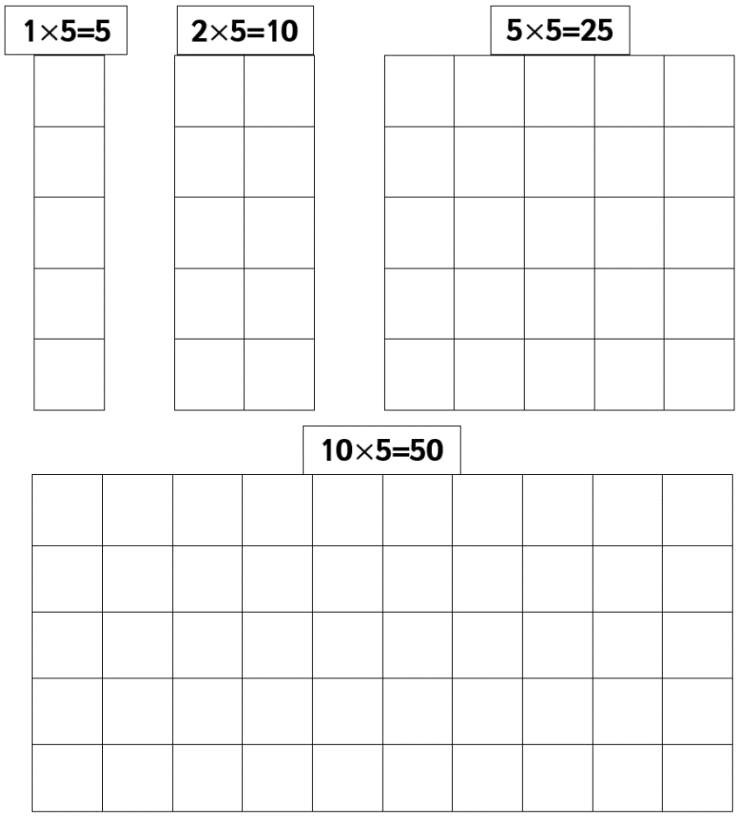
5 × 5 = 25 (read as '*five fives are twenty five*')

10 × 5 = 50 (read as '*ten fives are fifty*')

These facts can then be combined in different ways by the children to complete the multiplication table being learned, e.g. 9 × 5 can be thought of as 5×5 + 2×5 + 2×5 (read as, '*nine fives is five fives add two fives add two fives*').

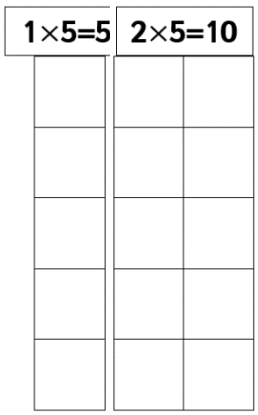
The facts could also be used in a subtraction sense e.g. 9 × 5 can be thought of as 10×5 – 1×5 (read as, '*nine fives is ten fives subtract one five*').

The arrays should be cut out and given to children so that they can physically use them and reinforce their understanding of multiplication being repeated addition and also that numbers can be made in different ways.



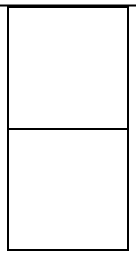
When children are deriving new facts from these, children should be encouraged to think about and describe how the known facts combine. For example,

$3 \times 5 = 1 \times 5 + 2 \times 5$ (read as '*three fives is one five add two fives*')
$3 \times 5 = \quad 5 \quad + \quad 10 = 15$

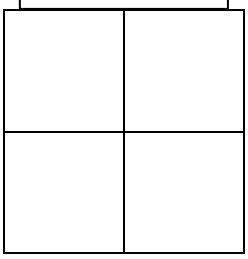


$3 \times 5 = 1 \times 5 + 2 \times 5$ (read as '*three fives is one five add two fives*')
$3 \times 5 = \quad 5 \quad + \quad 10 = 15$

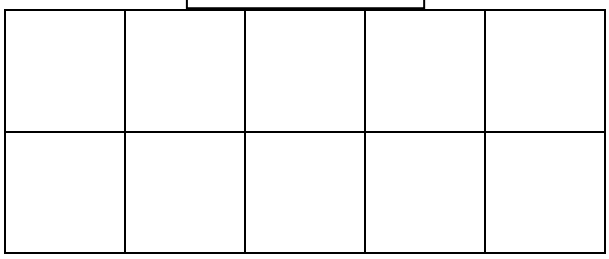
1×2=2



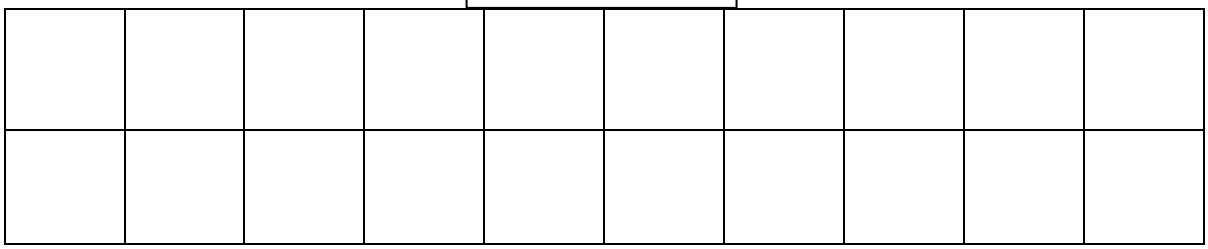
2×2=4



5×2=10



10×2=20



Multiplication Table Challenges

The multiplication table challenges are made up of five sheets, for each multiplication table, to support children in learning and recalling these facts.

The first page provides children with opportunity to practise the multiplication table presented in various ways.

Calculation written in numerals, children fill in the answer		Calculation written in words, children fill in the answer in numerals	Different parts of the calculation are missing for children to fill in	
0 x 5 = ☐	0 x 5 = ☐	zero fives ☐	☐ x 5 = 0	☐ x 5 = 0
1 x 5 = ☐	1 x 5 = ☐	one five ☐	☐ x 5 = 5	1 x 5 = ☐
2 x 5 = ☐	2 x 5 = ☐	two fives ☐	☐ x 5 = 10	☐ x 5 = 10
3 x 5 = ☐	3 x 5 = ☐	three fives ☐	☐ x 5 = 15	3 x 5 = ☐
4 x 5 = ☐	4 x 5 = ☐	four fives ☐	☐ x 5 = 20	☐ x 5 = 20
5 x 5 = ☐	5 x 5 = ☐	five fives ☐	☐ x 5 = 25	5 x 5 = ☐
6 x 5 = ☐	6 x 5 = ☐	six fives ☐	☐ x 5 = 30	☐ x 5 = 30
7 x 5 = ☐	7 x 5 = ☐	seven fives ☐	☐ x 5 = 35	7 x 5 = ☐
8 x 5 = ☐	8 x 5 = ☐	eight fives ☐	☐ x 5 = 40	☐ x 5 = 40
9 x 5 = ☐	9 x 5 = ☐	nine fives ☐	☐ x 5 = 45	9 x 5 = ☐
10 x 5 = ☐	10 x 5 = ☐	ten fives ☐	☐ x 5 = 50	☐ x 5 = 50
11 x 5 = ☐	11 x 5 = ☐	eleven fives ☐	☐ x 5 = 55	11 x 5 = ☐
12 x 5 = ☐	12 x 5 = ☐	twelve fives ☐	☐ x 5 = 60	☐ x 5 = 60
Time taken	Time taken	Time taken	Time taken	Time taken

Children could be timed to see how long it takes for them to complete each column, with their progress being measured through greater success with the questions and also the time taken being reduced.

As with all the pages in the Multiplication Table Challenges, they could be used in lessons or given as homework for children to practise.

The subsequent pages are progressive in demand.

Each column of calculations should be completed and timed.
The aim is for a child to complete all the calculations in a column in less than 1 minute.

Challenge 1

The numbers in all of the calculations are in the same order and children should be encouraged to read the calculations in the most efficient way:
4 x 5 = read as '*four fives are…*'
6 x 5 = read as '*six fives are…*'

Challenge 2

The numbers in all of the calculations are not in the same order. Children should recognise that multiplication is commutative, so may need to read some of the calculations differently than in the previous challenge.
4 x 5 = read as '*four fives are…*'
5 x 3 = read as '*three fives are…*' and not '*five threes*'

Challenge 3

This challenge involves recalling the related division facts for the given multiplication table.
Children should be encouraged to read the division calculations in this way:
10 ÷ 5 = read as '*how many fives in ten?*' This is closely related to how children have read the multiplication facts, e.g. '*two fives are ten'*

Challenge 4

This is the final challenge for the given multiplication table. Each column of calculations is a mixture of multiplication (in both forms) and division.

Once a child has demonstrated accuracy and speed, all calculations within each column answered correctly and within 1 minute, they can be judged to have achieved recall of that multiplication table.

Name_____ **2 Multiplication Table**

0 × 2 = ☐	0 × 2 = ☐	zero twos ☐	☐ × 2 = 0	☐ × 2 = 0
1 × 2 = ☐	1 × 2 = ☐	one two ☐	☐ × 2 = 2	1 × 2 = ☐
2 × 2 = ☐	2 × 2 = ☐	two twos ☐	☐ × 2 = 4	☐ × 2 = 4
3 × 2 = ☐	3 × 2 = ☐	three twos ☐	☐ × 2 = 6	3 × 2 = ☐
4 × 2 = ☐	4 × 2 = ☐	four twos ☐	☐ × 2 = 8	☐ × 2 = 8
5 × 2 = ☐	5 × 2 = ☐	five twos ☐	☐ × 2 = 10	5 × 2 = ☐
6 × 2 = ☐	6 × 2 = ☐	six twos ☐	☐ × 2 = 12	☐ × 2 = 12
7 × 2 = ☐	7 × 2 = ☐	seven twos ☐	☐ × 2 = 14	7 × 2 = ☐
8 × 2 = ☐	8 × 2 = ☐	eight twos ☐	☐ × 2 = 16	☐ × 2 = 16
9 × 2 = ☐	9 × 2 = ☐	nine twos ☐	☐ × 2 = 18	9 × 2 = ☐
10 × 2 = ☐	10 × 2 = ☐	ten twos ☐	☐ × 2 = 20	☐ × 2 = 20
11 × 2 = ☐	11 × 2 = ☐	eleven twos ☐	☐ × 2 = 22	11 × 2 = ☐
12 × 2 = ☐	12 × 2 = ☐	twelve twos ☐	☐ × 2 = 24	☐ × 2 = 24
Time taken	Time taken	Time taken	Time taken	Time taken

Name_____

2 Multiplication Table Challenge 1

1 × 2 =	10 × 2 =	0 × 2 =	2 × 2 =	3 × 2 =
2 × 2 =	3 × 2 =	4 × 2 =	5 × 2 =	11 × 2 =
10 × 2 =	0 × 2 =	11 × 2 =	6 × 2 =	1 × 2 =
5 × 2 =	4 × 2 =	1 × 2 =	11 × 2 =	9 × 2 =
3 × 2 =	11 × 2 =	5 × 2 =	3 × 2 =	0 × 2 =
4 × 2 =	7 × 2 =	8 × 2 =	9 × 2 =	10 × 2 =
8 × 2 =	5 × 2 =	7 × 2 =	12 × 2 =	12 × 2 =
11 × 2 =	1 × 2 =	3 × 2 =	0 × 2 =	2 × 2 =
9 × 2 =	8 × 2 =	10 × 2 =	7 × 2 =	7 × 2 =
6 × 2 =	6 × 2 =	2 × 2 =	4 × 2 =	4 × 2 =
7 × 2 =	2 × 2 =	7 × 2 =	1 × 2 =	5 × 2 =
5 × 2 =	12 × 2 =	9 × 2 =	10 × 2 =	8 × 2 =
3 × 2 =	9 × 2 =	6 × 2 =	8 × 2 =	6 × 2 =
0 × 2 =	8 × 2 =	12 × 2 =	6 × 2 =	9 × 2 =
12 × 2 =	5 × 2 =	2 × 2 =	9 × 2 =	11 × 2 =
Time taken	Time taken	Time taken	Time taken	Time taken

Name_____ **2 Multiplication Table Challenge 2**

2 × 2 =	2 × 1 =	2 × 3 =	0 × 2 =	10 × 2 =
5 × 2 =	2 × 2 =	11 × 2 =	2 × 4 =	2 × 3 =
2 × 6 =	2 × 10 =	1 × 2 =	2 × 11 =	0 × 2 =
11 × 2 =	5 × 2 =	2 × 9 =	1 × 2 =	2 × 4 =
2 × 3 =	2 × 3 =	0 × 2 =	2 × 5 =	11 × 2 =
9 × 2 =	2 × 4 =	2 × 10 =	8 × 2 =	2 × 7 =
12 × 2 =	8 × 2 =	2 × 12 =	2 × 7 =	5 × 2 =
2 × 0 =	2 × 11 =	2 × 2 =	3 × 2 =	1 × 2 =
2 × 7 =	9 × 2 =	7 × 2 =	10 × 2 =	8 × 2 =
4 × 2 =	6 × 2 =	2 × 4 =	2 × 2 =	2 × 6 =
1 × 2 =	2 × 7 =	5 × 2 =	7 × 2 =	2 × 2 =
2 × 10 =	2 × 5 =	2 × 8 =	2 × 9 =	12 × 2 =
8 × 2 =	3 × 2 =	6 × 2 =	2 × 6 =	2 × 9 =
2 × 6 =	2 × 0 =	2 × 9 =	2 × 12 =	2 × 8 =
2 × 9 =	12 × 2 =	11 × 2 =	2 × 2 =	5 × 2 =
Time taken	**Time taken**	**Time taken**	**Time taken**	**Time taken**

Name_____

2 Multiplication Table Challenge 3

4 ÷ 2 =	2 ÷ 2 =	6 ÷ 2 =	0 ÷ 2 =	20 ÷ 2 =
10 ÷ 2 =	4 ÷ 2 =	22 ÷ 2 =	8 ÷ 2 =	6 ÷ 2 =
12 ÷ 2 =	20 ÷ 2 =	2 ÷ 2 =	22 ÷ 2 =	0 ÷ 2 =
22 ÷ 2 =	10 ÷ 2 =	18 ÷ 2 =	2 ÷ 2 =	8 ÷ 2 =
6 ÷ 2 =	6 ÷ 2 =	0 ÷ 2 =	10 ÷ 2 =	22 ÷ 2 =
18 ÷ 2 =	8 ÷ 2 =	20 ÷ 2 =	16 ÷ 2 =	14 ÷ 2 =
24 ÷ 2 =	16 ÷ 2 =	24 ÷ 2 =	14 ÷ 2 =	10 ÷ 2 =
0 ÷ 2 =	22 ÷ 2 =	4 ÷ 2 =	6 ÷ 2 =	2 ÷ 2 =
14 ÷ 2 =	18 ÷ 2 =	14 ÷ 2 =	20 ÷ 2 =	16 ÷ 2 =
8 ÷ 2 =	12 ÷ 2 =	8 ÷ 2 =	4 ÷ 2 =	12 ÷ 2 =
2 ÷ 2 =	14 ÷ 2 =	10 ÷ 2 =	14 ÷ 2 =	4 ÷ 2 =
20 ÷ 2 =	10 ÷ 2 =	16 ÷ 2 =	18 ÷ 2 =	24 ÷ 2 =
16 ÷ 2 =	6 ÷ 2 =	12 ÷ 2 =	12 ÷ 2 =	18 ÷ 2 =
12 ÷ 2 =	0 ÷ 2 =	18 ÷ 2 =	24 ÷ 2 =	16 ÷ 2 =
18 ÷ 2 =	24 ÷ 2 =	22 ÷ 2 =	4 ÷ 2 =	10 ÷ 2 =
Time taken	Time taken	Time taken	Time taken	Time taken

Name_____

2 Multiplication Table Challenge 4

1 × 2 =	10 × 2 =	0 × 2 =	2 × 2 =	3 × 2 =
4 ÷ 2 =	3 × 2 =	8 ÷ 2 =	10 ÷ 2 =	2 × 11 =
20 ÷ 2 =	0 ÷ 2 =	11 × 2 =	2 × 6 =	2 ÷ 2 =
2 × 5 =	8 ÷ 2 =	2 × 1 =	22 ÷ 2 =	18 ÷ 2 =
3 × 2 =	2 × 11 =	10 ÷ 2 =	6 ÷ 2 =	0 × 2 =
8 ÷ 2 =	14 ÷ 2 =	16 ÷ 2 =	9 × 2 =	10 × 2 =
8 × 2 =	5 × 2 =	2 × 7 =	12 × 2 =	24 ÷ 2 =
11 × 2 =	2 ÷ 2 =	3 × 2 =	0 × 2 =	2 × 2 =
18 ÷ 2 =	8 × 2 =	10 × 2 =	14 ÷ 2 =	2 × 7 =
6 × 2 =	12 ÷ 2 =	4 ÷ 2 =	2 × 4 =	4 × 2 =
14 ÷ 2 =	2 × 2 =	7 × 2 =	1 × 2 =	10 ÷ 2 =
10 ÷ 2 =	12 × 2 =	2 × 9 =	10 × 2 =	8 × 2 =
2 × 3 =	2 × 9 =	12 ÷ 2 =	16 ÷ 2 =	2 × 6 =
0 ÷ 2 =	16 ÷ 2 =	12 × 2 =	6 × 2 =	9 × 2 =
12 × 2 =	5 × 2 =	2 × 2 =	2 × 9 =	22 ÷ 2 =
Time taken	Time taken	Time taken	Time taken	Time taken