

Noah



Noah saw 12 legs
walk by into the Ark.

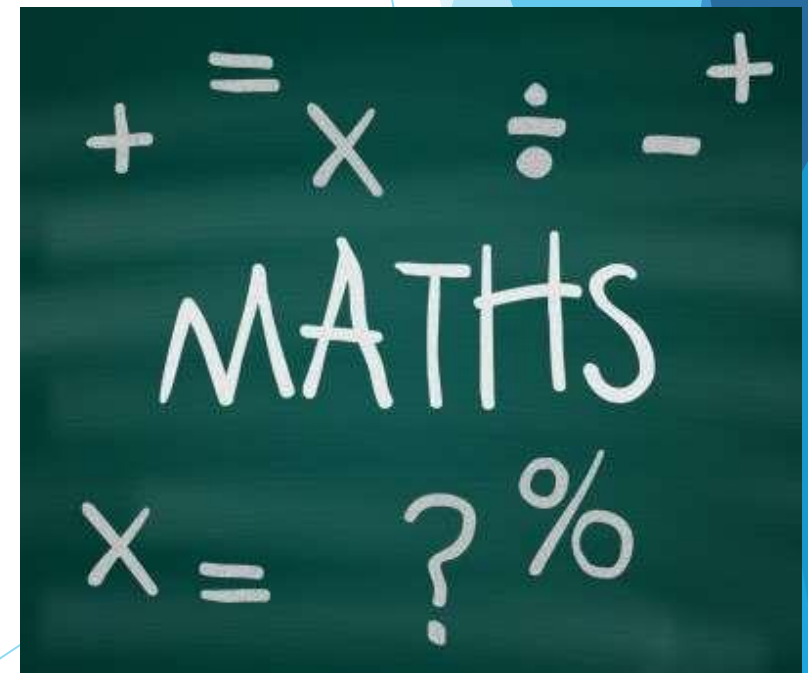
How many creatures
could he have seen?

How many different
answers can you find?



Maths Curriculum Morning

Wednesday 8th February 2023



Overview

- *Why engage with parents?*
- *Importance of times table knowledge*
- *National Curriculum Expectations*
- *What is the Multiplication Tables Check?*
- *Where is times table knowledge applied?*
- *How are times table facts taught?*
- *How to support the teaching of times tables*
- *Time with your children.*

Why engage with parents?

Research evidence suggests that when parents are engaged in their children's learning, outcomes for children can be improved.

The research also highlights the fact that parents feel they need more support to understand the current curriculum content and how they can support their child with their learning at home.

(Desforges, C. & Abouchaar, A. 2003); (Goodall and Vorhaus 2011); The Education Endowment Foundation (2019); Sarjeant, S (2021).

Why engage with parents?

BBC News Report 2006

69% of parents do not help children with their homework because...

Everything has changed since they were at school and they are not confident in the new methods.

BBC News Report 2010

82% of parents feel unable to help pupils with their homework

Importance of Times Tables Knowledge

- ▶ Times table knowledge comes into many areas of the maths curriculum
- ▶ If children are able to recall quickly (without the need to count on fingers), it reduces cognitive load.
- ▶ If children are taught strategies and the commutative law ($7 \times 6 = 42$ and $6 \times 7 = 42$), it reduces the amount of times table fact that they will need to learn.
- ▶ There is now a formal Multiplication Tables Check which is statutory for all year 4 pupils. They will be expected to have learned all of their times tables (up to 12×12) by June each academic year.

National Curriculum Expectations

Year Group	Expectation
Year 1	Count in multiples of 2, 5 and 10 . Recall and use all doubles to 10 and corresponding halves.
Year 2	Recall and use multiplication and division facts for the 2, 5 and 10 times tables including recognising odd and even numbers .
Year 3	Recall and use multiplication and division facts for the 3, 4 and 8 times tables.
Year 4	Recall and use multiplication and division facts for tables up to 12 x 12
Year 5	Revision of all times tables and division facts up to 12 x 12
Year 6	Revision of all times tables and division facts up to 12 x 12

What is the Multiplication Tables Check (MTC)?

- The Multiplication Tables Check (MTC) will be administered to children in Year 4 in June 2023. It is a statutory assessment for all pupils.
- The purpose of the MTC is to determine whether Year 4 pupils can recall their multiplication tables up to 12×12 fluently as outlined in the National Curriculum.
- Children will be tested using a computer, where they will have to answer multiplication questions against a clock. The test will last no longer than 5 minutes; children will have 6 seconds to answer each question in a series of 25.
- The results will be reported to the Department of Education.
- <https://www.timestables.co.uk/multiplication-tables-check/> Practice website.

Having a secure understanding of times table and division facts underpins:

- Formal written methods of multiplication and division
 - Multiples, factors, factor pairs, common factors, prime numbers
 - Square numbers, cube numbers
 - Multiply and divide by 10, 100 or 1000
 - Percentages
 - Conversion of measures
- Multiply fractions, divide fractions, simplify fractions, add fractions, subtract fractions, compare and order fractions
 - Area, perimeter and volume
 - Ratio and proportion
 - Algebra
 - Mean (average)
 - Estimation
 - Solve multistep problems

Without the foundations the tower will collapse!



In 2018, 62 marks (out of 110 marks) of KS2 SATs involved the use of multiplication and division. This equated to 56% of the total marks.

Around 60% of the GCSE syllabus is underpinned by multiplication and division knowledge.

How are tables and division facts taught?

If children are taught to make connections when learning multiplication facts, and are supported to make, understand and use the relationships and links within multiplication, they will gain the ability to rapidly recall their multiplication facts, and will be able to use them to help them calculate in other areas of maths as well.

In lessons children will be taught

- Repeated addition
- Inverse relationships (Division)
- Number families
- Patterns
- Derive facts from those already known *If I know $3 \times 4 = 12$, then I know $30 \times 4 = 120$*
- Commutative Law $4 \times 5 = 20 = 5 \times 4$
- Distributive Law $23 \times 4 = 20 \times 4 + 3 \times 4$
 $(80) + (12)$

How many facts can we derive?

$$8 \times 2 = 16$$

$$2 \times 8 = 16 \quad \text{commutative law}$$

$$16 \div 8 = 2$$

$$16 \div 2 = 8$$

To extend this, we can apply an understanding of related facts:

If I know $8 \times 2 = 16$, then I know $80 \times 2 = 160$,

$$8 \times 20 = 160, 160 \div 80 = 2, 160 \div 20 = 8$$

Key facts

If you use these 4 multiplication facts, you can derive other facts

$$1 \times 6 = 6$$

$$2 \times 6 = 12$$

$$5 \times 6 = 30$$

$$10 \times 6 = 60$$

Which facts would you add together to derive 12×6 ?

Which facts would you add together to derive 6×6 ?

Times Tables to Learn

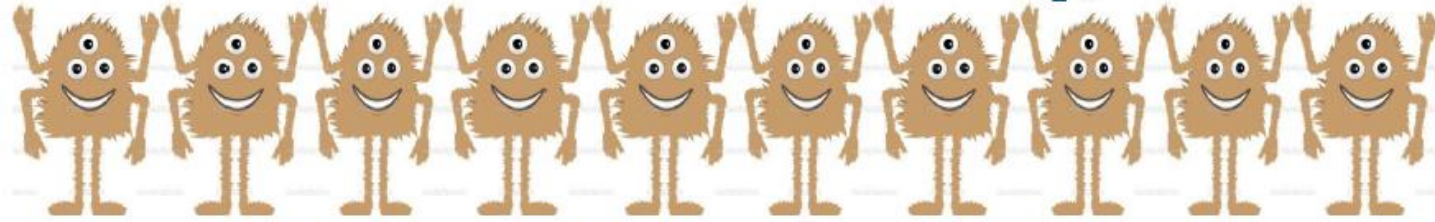
- 66 facts
- The coloured ones are 42 of them - 36 left
- Nines trick - 29 left
- Elevens - 23 left
- Square numbers - 16 left

	1	2	3	4	5	6	7	8	9	10	11	12
1	1											
2	2	4										
3	3	6	9									
4	4	8	12	16								
5	5	10	15	20	25							
6	6	12	18	24	30	36						
7	7	14	21	28	35	42	49					
8	8	16	24	32	40	48	56	64				
9	9	18	27	36	45	54	63	72	81			
10	10	20	30	40	50	60	70	80	90	100		
11	11	22	33	44	55	66	77	88	99	110	121	
12	12	24	36	48	60	72	84	96	108	120	132	144

Times Tables

- ▶ $0 \times 4 = 0$
- ▶ $1 \times 4 =$ the number itself (4)
- ▶ $2 \times 4 =$ double 4
- ▶ $3 \times 4 =$ double 4 plus one lot of 4
- ▶ $4 \times 4 =$ double double
- ▶ $5 \times 4 =$ half of 10 lots OR double double + 1 lot
- ▶ $6 \times 4 =$ double 3 lots OR 5 lots + 1 lot
- ▶ $7 \times 4 =$ 5 lots + 2 lots OR 6 lots + 1 lot
- ▶ $8 \times 4 =$ double double double
- ▶ $9 \times 4 =$ 10 lots subtract 1 lot
- ▶ $10 \times 4 = 40$
- ▶ $11 \times 4 =$ 10 lots + 1 lot
- ▶ $12 \times 4 =$ 10 lots + 2 lots OR double 6 lots

Recognising Connections

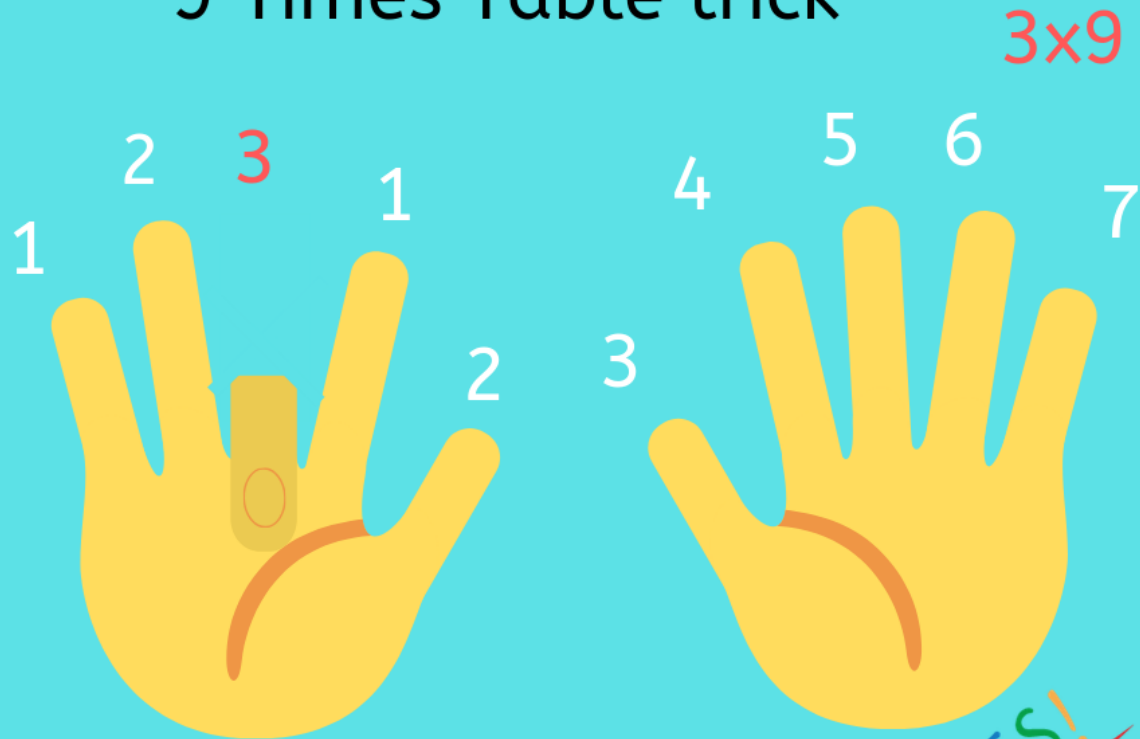


1	alien,	3	eyes.	6	limbs.
2	aliens,	(6)	eyes.	(12)	limbs.
3	aliens,	(9)	eyes.	(18)	limbs.
(4)	aliens,	12	eyes.	(24)	limbs.
5	aliens,	(15)	eyes.	(30)	limbs.
6	aliens,	(18)	eyes.	(36)	limbs.
7	aliens,	(21)	eyes.	(42)	limbs.
(8)	aliens,	24	eyes.	(48)	limbs.
9	aliens,	(27)	eyes.	(54)	limbs.
10	aliens,	(30)	eyes.	60	

Making Connections
between 3 and 6 times
table

Help to learn the 9 times table

9 Times Table trick



1. Hold your hands out as shown
2. Put down the finger you are multiplying by (3)
3. Count the fingers on either side (2 and 7)
4. You have the answer! (27)



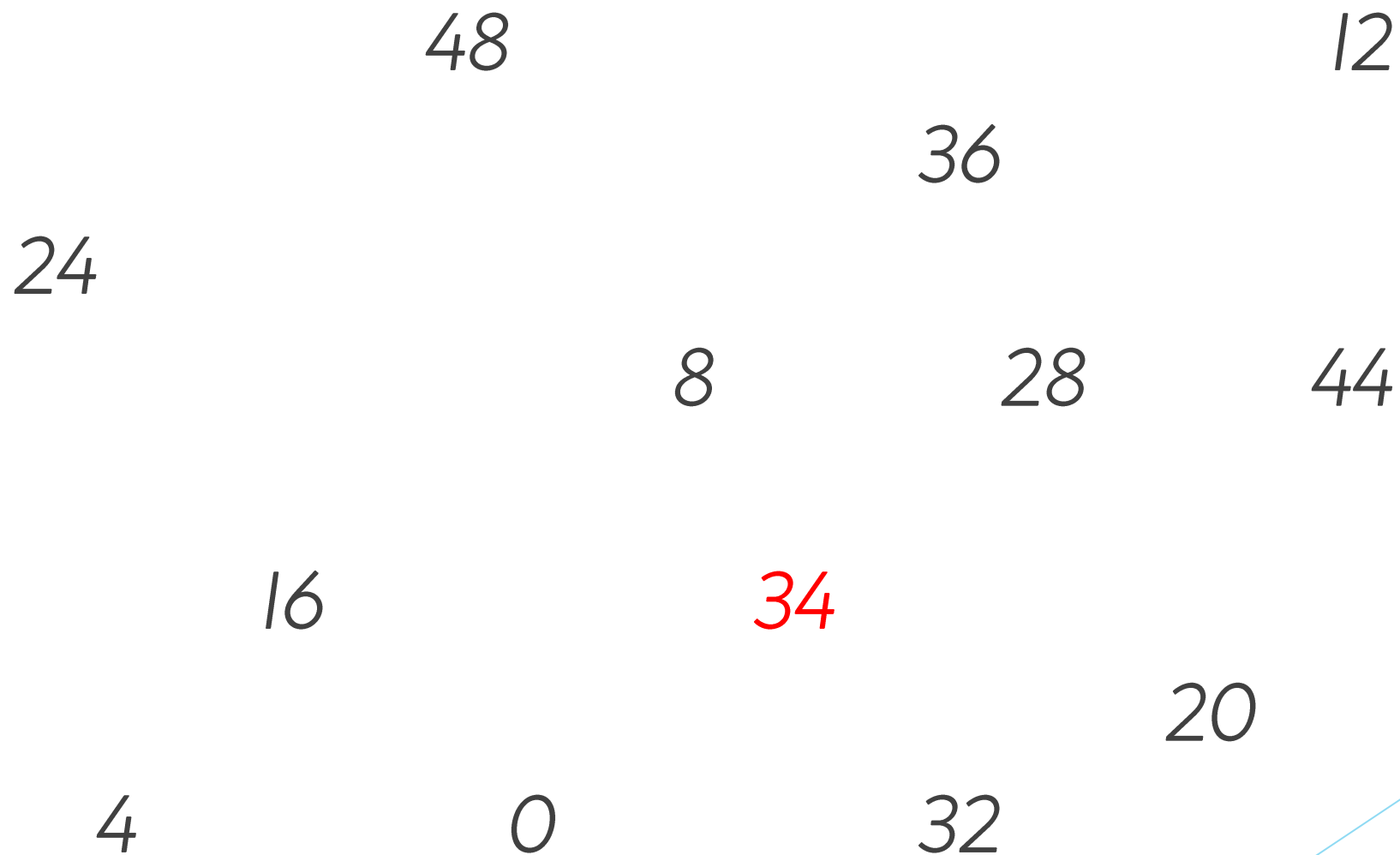
Did you know that the digits which make up the multiples of 9 add up to 9?!

$$\begin{aligned}0 \times 9 &= 0 \\1 \times 9 &= 9 \\2 \times 9 &= 18 \\3 \times 9 &= 27 \\4 \times 9 &= 36 \\5 \times 9 &= 45 \\6 \times 9 &= 54 \\7 \times 9 &= 63 \\8 \times 9 &= 72 \\9 \times 9 &= 81 \\10 \times 9 &= 90\end{aligned}$$

Games - Intruder/Odd One Out - 4 times table



Games - Intruder/Odd One Out - 4 times table



Games - Missing Multiples

12

0

33

15

3

36

21

24

27

30

6

9



Games - Missing Multiples

12

0

33

15

3

36

21

18

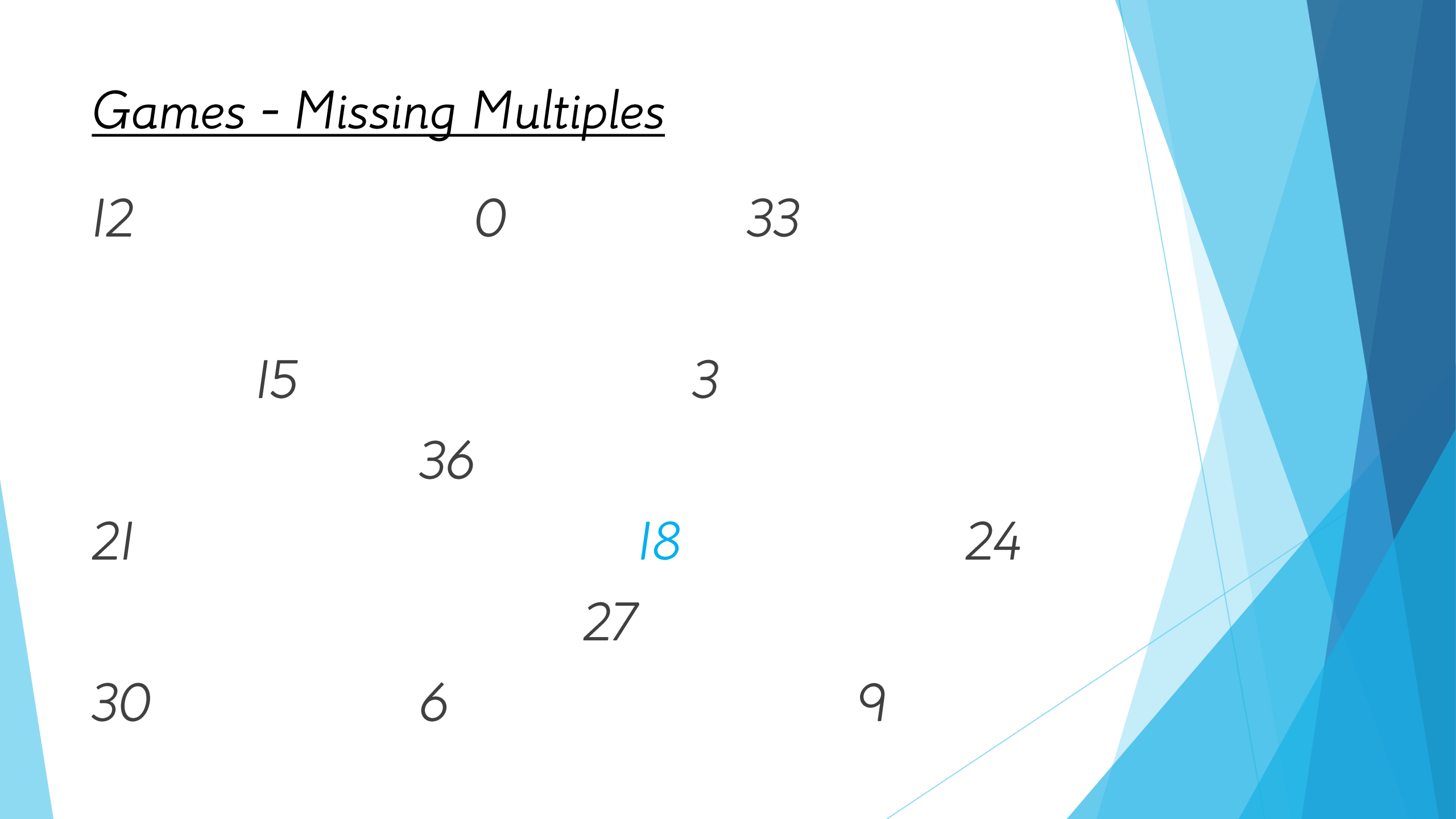
24

27

30

6

9



Times Table Splat

This can be played two ways.
Randomly write all the multiplication facts – up to the 12th multiple – on a sheet of paper.

1. Point to each multiple and the child has to say the multiplication fact.
2. Say the times table and the child has to 'splat' the correct multiple.

49

28

14

77

70

84

7

56

63

42

21

35

Useful Tips for home

- *Stick to one table at a time to minimise confusion – times table of the week.*
- *Start with chanting and writing them out slowly in order.*
- *Then move on to completing the answers quickly in order – on paper or verbally with your child.*
- *Finally, move on to completing the answers in any order.*
- *Keep reminding your child that 3×4 is the same as 4×3 – this effectively halves the number of tables facts.*
- *Each table has a square number 3×3 , 7×7 etc. These are special numbers that can act as a memory hook – emphasise them!*
- *Talk about the numbers as you are encountering them “ $5 \times 7 = 35$ that’s our house number” – this makes more memory hooks.*
- *Use the heat maps on Times Tables Rock Stars to focus on problem times tables.*

Other Ideas To Help At Home



- All children have access to Times Tables Rock Stars at home. This can be accessed via computers, phones and tablet. The app is free to download
- Play 'bingo'
- BBC Supermovers website
<https://www.bbc.co.uk/sport/av/supermovers/42675177>
- Hit the Button <https://www.topmarks.co.uk/maths-games/hit-the-button>
- Oxford Owl website - Top Tips <https://www.oxfordowl.co.uk/for-home/advice-for-parents/times-tables-tips>
- Rakegate Primary School Website
<https://www.rakegateprimary.co.uk/maths-useful-links>

Any Questions?