

1 Multiplication and Division Mosaic

Your challenge:

- Can you use your multiplication and division skills to reveal the picture hidden in the grid?

How to play:

1. Work out the answer to the calculation in each square using your knowledge of the 1-12 times tables (including square and cubed numbers) and related division facts.
2. Colour in each square based on the key at the top of the sheet.

What picture will you reveal?

You will need:

- Challenge 1 Sheet
- Colouring pencils or felt tips

Challenge 1 Sheet Multiplication and Division Mosaic

Solve the questions in the squares below. Colour in the squares with the colours based on your answer. What picture will you make?

Blue: 4, 8, 18, 24, 40, 48

Red: 6, 16, 60, 64

Green: 0, 1, 2, 10, 12, 20, 21, 27

Purple: 3, 30, 36

Pink: 5, 25, 35, 72, 125

$?^2 = 4$	$10 \div ? = 2$	$9 \times 0 =$	3^3	$18 \div 9 =$	$7 \times ? = 70$	$? \div 5 = 5$	$? \div 5 = 2$
$12 \times 6 =$	$?^2 = 9$	$6 \times 1 =$	$20 \div 20 =$	$5 \times 4 =$	$6 \times 10 =$	$5 \times 6 =$	5^3
$? \div 3 = 12$	4^3	2^2	$8 \times 9 =$	$7 \times 5 =$	$? \times 1 = 8$	$? \div 8 = 2$	$27 \div ? = 9$
$8 \times 2 =$	$? \div 12 = 2$	$? \div 12 = 5$	$6 \times 3 =$	$? \div 10 = 4$	$30 \div 6 =$	$? \div 8 = 6$	8^2
$64 \div ? = 8$	$?^2 = 25$	$? \div 10 = 3$	$? \div 4 = 6$	$32 \div 8 =$	$? \div 8 = 8$	$2 \times 2 \times 2 =$	$9 \times 2 =$
$21 \div 7 =$	$?^2 = 16$	$8 \times 5 =$	4^2	$10 \times 3 =$	$?^3 = 64$	6^2	$54 \div ? = 9$
$100 \times 0 =$	$6 \times 4 =$	$48 \div 6 =$	$? \div 5 = 7$	$8 \times 6 =$	$?^2 = 36$	$? \div 8 = 5$	$? \div 12 = 1$
$3 \times 9 =$	$14 \div 14 =$	$?^3 = 125$	2^3	$45 \div 9 =$	5^2	$?^3 = 8$	$? \div 2 = 10$
$?^2 = 100$	$24 \div ? = 12$	$? \div 2 = 6$	$? \div 10 = 6$	$4 \times 12 =$	$10 \times ? = 100$	$? \div 3 = 7$	1^2
$2 \times 10 =$	$15 \times 0 =$	$? \div 5 = 4$	$3 \times 3 \times 3 =$	$1 \times 1 =$	$2 \times 2 \times ? = 8$	$? \times 1 = 12$	$8 \times ? = 0$

Challenge 2 Sheet Mystery Times Tables

These times tables are a mystery. Each digit has been replaced by a letter and the order of the times tables has been jumbled up!

Can you work out which digit each letter stands for? There are two sets of times tables for you to complete.

Try to spot patterns in the digits so you can rule out certain numbers and rule in others.

Can you work out which times table is the 11 times table or the 1 times table? Does the number of single digit answers help you work out which times table it could be?

Solve the puzzle and record which digit each letter stands for on the challenge sheet.

Times Tables Set 1

$$A = \square \quad B = \square \quad C = \square \quad D = \square \quad E = \square$$

$$F = \square \quad G = \square \quad H = \square \quad J = \square \quad K = \square$$

$$D \times A = A$$

$$H \times A = EJ$$

$$C \times A = EC$$

$$E \times A = JE$$

$$DB \times A = AB$$

$$J \times A = DJ$$

$$K \times A = GB$$

$$DJ \times A = HJ$$

$$F \times A = KE$$

$$A \times A = GA$$

$$G \times A = DC$$

$$DD \times A = AA$$

3 My Favourite Number

Your challenge:

- How much do you know about your favourite number?

What to do:

1. What's your favourite number? Write it down in the centre of a piece of plain paper (if you don't have a favourite number, pick a number at random).
2. Note down at least 20 facts about the number around your number, creating a poster. Examples you could choose include factors, multiples, even/odd, square number, sides on a shape etc.
3. For example, if your favourite number was 32, you could write down facts like:
 - It's a multiple of 1, 2, 4, 8 and 16
 - It's an even number
 - $32 \times 2 = 64$
 - $1 + 31 = 32$
4. Try to make sure you have a good range of different types of facts.
5. Be as creative as you can with how you present your work.

You will need:

- A piece of plain paper
- Colouring pencils or crayons

