

Multiplication

Let's investigate

Two consecutive numbers multiply together to make 650.

What are the two numbers?

Make up some more puzzles like this and swap them with a partner.

$$\begin{array}{l} 20 \times 20 = 400 \\ 30 \times 30 = 900 \end{array}$$

Vocabulary

consecutive: next to each other. For example, 7 and 8 are consecutive whole numbers.

- 1 Work out these multiplications using the grid method.

(a) 164×5

$$\begin{array}{r} \times 100 \ 60 \ 4 \\ 5 \\ \hline \end{array}$$

(b) 327×8

$$\begin{array}{r} \times 300 \ 20 \ 7 \\ 8 \\ \hline \end{array}$$

- 2 (a) Estimate the answer to 86×7
(b) Calculate 86×7

- 3 Work out the following calculations:

(a) 298

$$\begin{array}{r} \times 4 \\ \hline \end{array}$$

(b) 418

$$\begin{array}{r} \times 3 \\ \hline \end{array}$$

(c) 596

$$\begin{array}{r} \times 2 \\ \hline \end{array}$$

(d) 209

$$\begin{array}{r} \times 6 \\ \hline \end{array}$$

What do you notice about the answers to (a) and (c) and the answers to (b) and (d)?

Explain why this happened.

- 4 Calculate:

(a) 32×83

(b) 57×61

(c) 48×56

(d) 24×92

(e) 47×34

(f) 36×54

- 5 Use these digits 0, 1, 3 and 5 to complete this calculation.
You must use each digit only once.

$$\boxed{?} \boxed{?} \times \boxed{?} \boxed{?} = 450$$

- 6 (a) Find the product of 136 and 9.
(b) Multiply 35 by 16.
(c) Find the product of 98 and 7.

- 7 Calculate $19 \times 5 \times 6$

- 8 Write in the missing digits to make this calculation correct.

$$\begin{array}{r} \boxed{?} \boxed{7} \boxed{?} \\ \times \quad \quad 6 \\ \hline 1 \ 0 \ 3 \ 2 \end{array}$$

- 9 Use the digits 3, 4, 5 and 6 to complete this calculation:

$$\boxed{?} \boxed{?} \times \boxed{?} \boxed{?}$$

- (a) to make the largest possible answer
(b) to make the smallest possible answer.

- 10 In this multiplication each shape stands for a different digit.
Work out what each shape stands for?

$$\begin{array}{r} \quad \square \square \\ \times \quad 5 \square \\ \hline \square 1 \triangle \triangle \\ \quad 8 \square \\ \hline \square 1 8 \square \end{array}$$

- 11 Find different ways of completing this calculation:

$$\boxed{?} \boxed{?} \times \boxed{?} = 256$$

- 12 (a) Find two consecutive numbers with a product of 182.
(b) Find two consecutive numbers with a product of 870.

- 13 Use each of the digits 1 to 6 to make a correct calculation:

$$\boxed{?} \boxed{?} \times \boxed{?} = \boxed{?} \boxed{?} \boxed{?}$$



Division (2)

Let's investigate

- Choose a three-digit number with all the digits the same.
- Add the digits.
- Divide your original number by your addition answer.
- Record the result.

Example:
 666
 $6 + 6 + 6 = 18$
 $666 \div 18 = 37$

Repeat with different starting numbers. What do you notice?

1 Estimate first and then work out these calculations:

- (a) $104 \div 4$ (b) $168 \div 7$ (c) $342 \div 6$
(d) $423 \div 9$ (e) $472 \div 8$ (f) $305 \div 5$

2 Work out these division calculations. They all have a remainder.

- (a) $351 \div 6$ (b) $509 \div 9$ (c) $398 \div 8$
(d) $375 \div 4$ (e) $436 \div 7$ (f) $296 \div 3$

3 What is the missing digit?

$\boxed{?} \boxed{7} \times 9 = 333$

4 Give the answers to these calculations including a remainder.

- (a) $254 \div 9$ (b) $345 \div 6$ (c) $396 \div 7$

5 Give the answers to these calculations including a remainder.

- (a) $964 \div 5$ (b) $305 \div 2$ (c) $231 \div 4$

6 Find the missing number?

$\boxed{?} \div 5 = 22$

7 How many groups of eight can be made from 100?

8 (a) Divide 112 by 7. (b) Divide 7 into 224. (c) Share 207 between 9.

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Special numbers

Let's investigate

Place the numbers 1, 2, 3, 4, 5, 6, 7, 8 and 9 in the squares so the sum of the three numbers in each row and column is a prime number.



Make a list of the prime numbers to 20.



1 Identify the following numbers.

- | | |
|--|---|
| (a) The number is even.
It is a multiple of 4.
It is a factor of 24.
It is between 10 and 20. | (b) The number is less than 80.
It is a multiple of 5.
The sum of the digits is 9.
It is odd. |
| (c) The number is prime.
It is less than 50.
It has two digits which are both the same. | (d) The number has 9 factors.
It is between 10 and 99.
The sum of the digits is 9.
It is even.
It is a square number. |

2 Explain whether these statements are true or false. Explain your answer.

- (a) Every multiple of 5 ends in 5.
- (b) If you double an odd number the answer is always even.
- (c) When you halve an even number the answer is always odd.
- (d) All prime numbers are odd.
- (e) A multiple of 4 can never end in 3.
- (f) All numbers that end in 4 are multiples of 4.
- (g) When you halve a number ending in 8 the answer will always end in 4.

