

Monday 20th April – Friday 24th April

Maths New Learning

On Diagnostic Questions, you will have two quizzes: one will be a review, and one will be new learning. The following slides are a guide to help you with the new learning.

Monday 14th is Easter Monday; Tuesday 15th is a Non-Pupil Day.


Monday / Tuesday: Number sequences

Can you spot the pattern?

9, 18, _____, 36, 45, _____

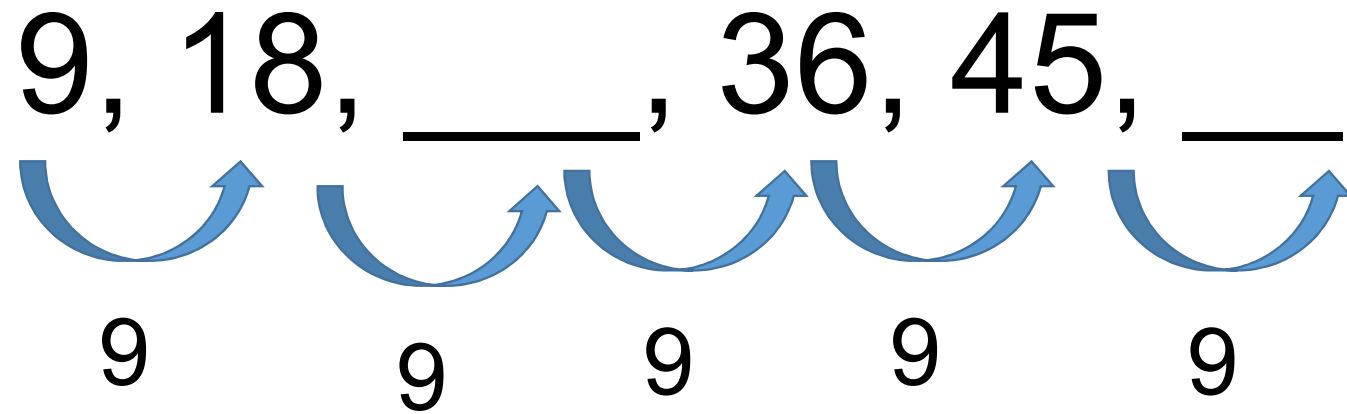
Can you spot the pattern?

9, 18, _____, 36, 45, _____

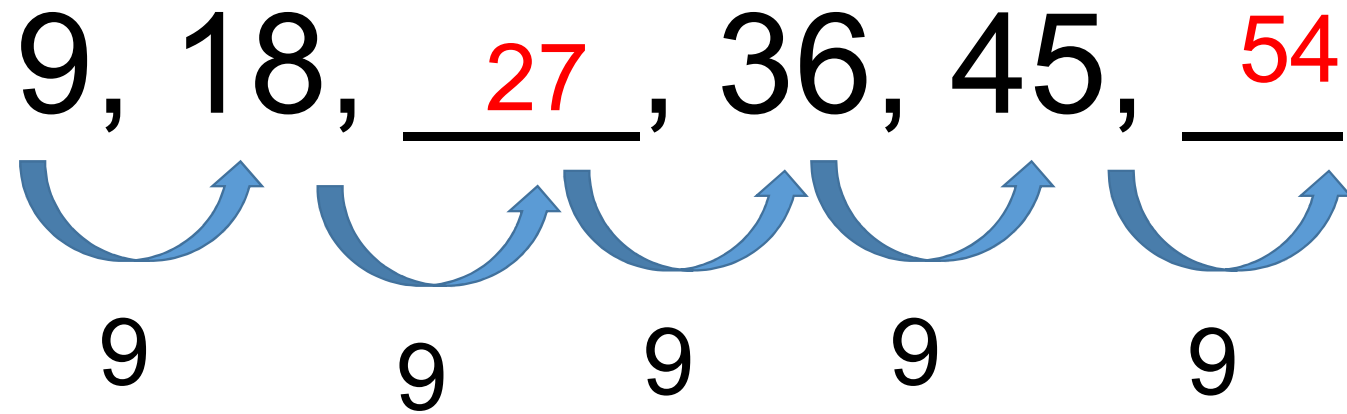


The diagram illustrates a sequence of numbers: 9, 18, followed by a blank line, then 36, 45, followed by another blank line. Below the first blank line, there is a blue curved arrow pointing from 18 to the blank line, with the number 9 written below it. Similarly, below the second blank line, there is a blue curved arrow pointing from 45 to the blank line, with the number 9 written below it. This indicates that the pattern involves adding 9 to each number to get the next one.

Can you spot the pattern?



Can you spot the pattern?

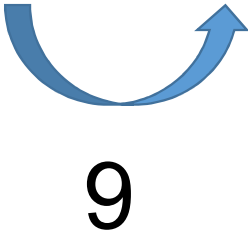


Can you spot the pattern?

• 10, __, __, 37, 46

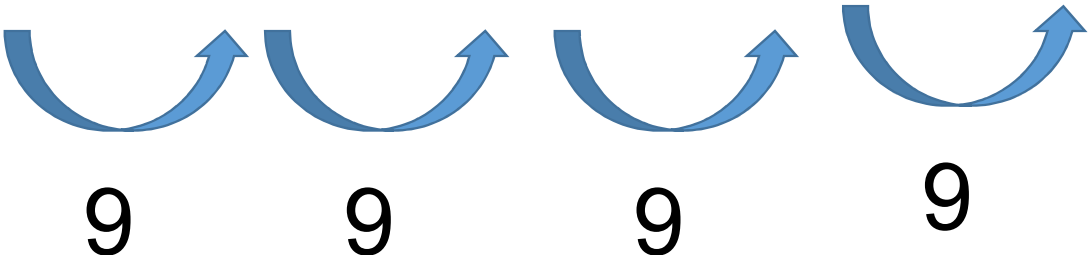
Can you spot the pattern?

• 10, __, __, 37, 46



Can you spot the pattern?

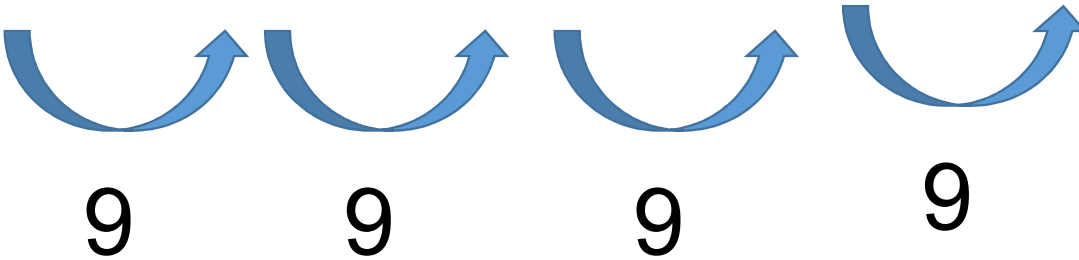
• 10, __, __, 37, 46



The diagram illustrates a sequence of numbers: 10, followed by two blank spaces, then 37, and finally 46. Below the first blank space, there is a blue curved arrow pointing from 10 to the blank space, with the number 9 written underneath it. This pattern repeats for the second blank space, the space between 37 and 46, and a final 9 is shown below the last blank space. This indicates that each number in the sequence is 9 more than the previous one.

Can you spot the pattern?

• 10, 19, 28, 37, 46



The diagram illustrates the pattern in the sequence 10, 19, 28, 37, 46. Below the numbers, there are four blue curved arrows pointing from left to right, each representing an addition of 9. Under each of these four arrows is the number 9, indicating the constant difference between consecutive terms.


9 9 9 9

Can you spot the pattern?

• 7, 13, __, 25, 31, __

Can you spot the pattern?

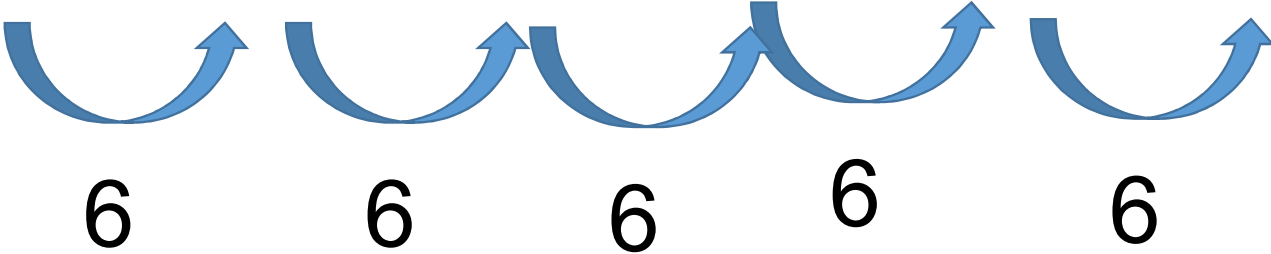
• 7, 13, __, 25, 31, __



The diagram illustrates the pattern in the sequence. It shows two blue curved arrows, each pointing from a number to the next one in the sequence. The first arrow starts at 7 and points to 13. The second arrow starts at 25 and points to 31. Below each arrow is the number 6, indicating that the difference between consecutive terms is 6.

Can you spot the pattern?

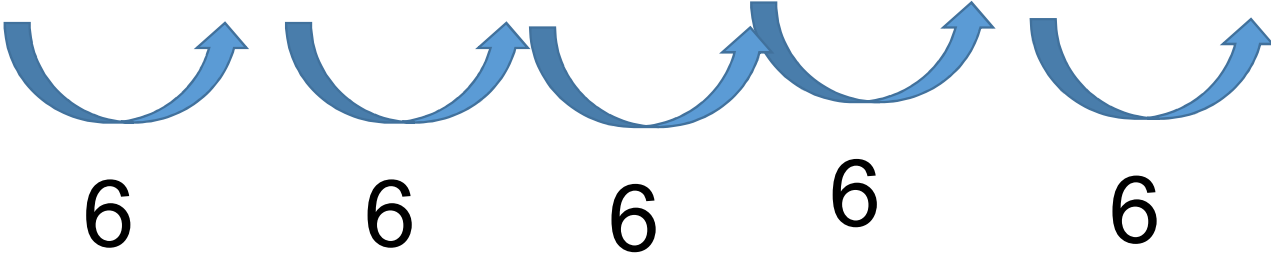
• 7, 13, _____, 25, 31, _____



The diagram illustrates the pattern by showing five blue curved arrows pointing from left to right between the numbers. Each arrow is labeled with the number 6, indicating that each term in the sequence increases by 6 from the previous term.

Can you spot the pattern?

• 7, 13, 19, 25, 31, 37



The diagram illustrates the pattern by showing five blue curved arrows pointing from each number to the next. Below each arrow is the number 6, indicating a constant difference of 6 between consecutive terms in the sequence.

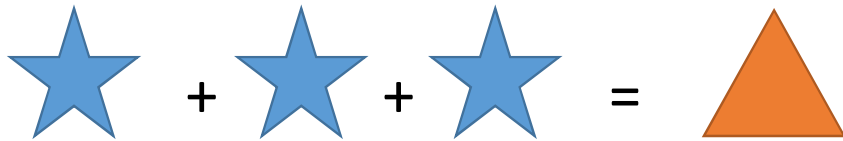
Wednesday/Thursday: Missing numbers

What does each shape represent?

$$\star + \star + \star = \triangle$$

$$\star \times \star = \triangle$$

What does each shape represent?



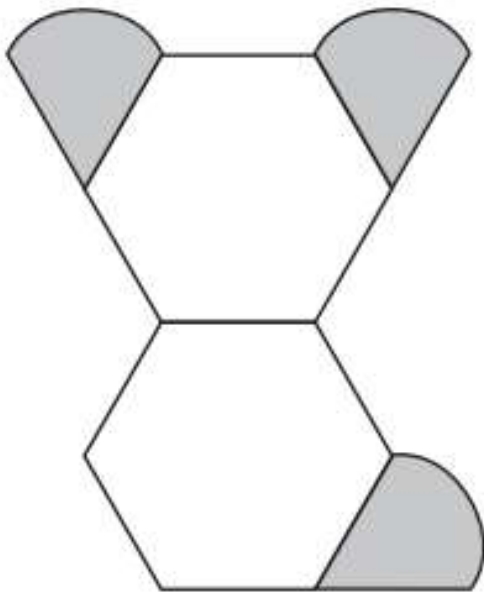
$$3 + 3 + 3 = 9$$

$$3 \times 3 = 9$$

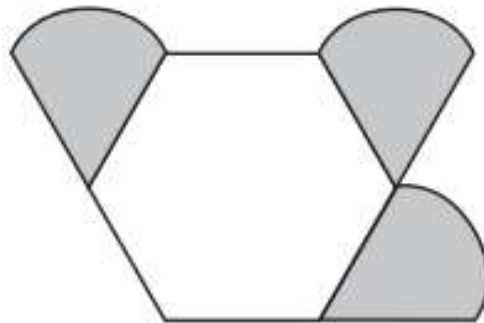


Amina is making designs with two different shapes.

She gives each shape a value.



Total value is 147

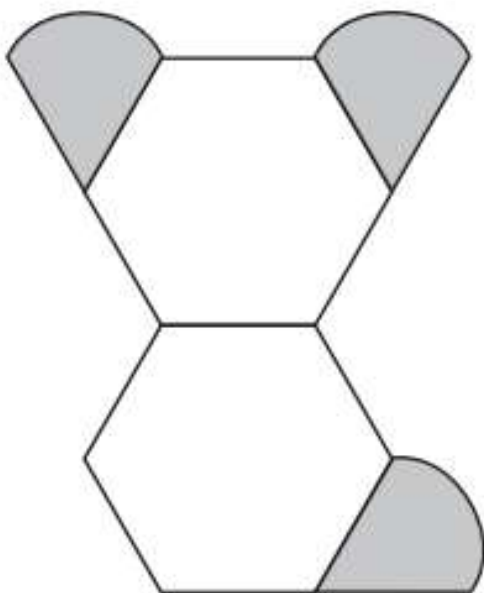


Total value is 111

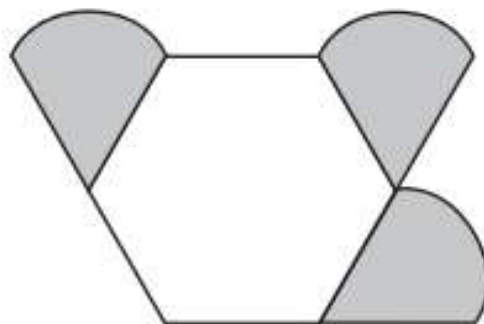
Calculate the value of each shape.

Amina is making designs with two different shapes.

She gives each shape a value.



Total value is 147



Total value is 111

We can express this algebraically.

Hexagon = h

Cone = c

$$c + c + c + h + h = 147$$

$$c + c + c + h = 111$$

We can see the difference is one h .

$$147 - 111 = 36$$

This means $h = 36$

Calculate the value of each shape.

Friday: Equations

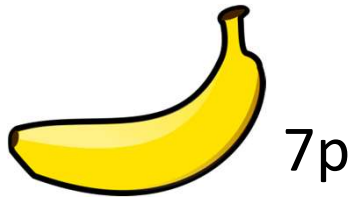
Algebra

- This is algebra: $l \times w = \text{area}$ It is the formula to find an area of a rectangle.
- So is this: $\times 5 = 15$

Vocabulary

- An algebraic **expression** has no equals sign e.g.
 - $a + b$
- An **equation** has a equals sign. E.g
 - $a + b = 5$
- A **formula** is an equation that gives us instructions on how to do something.
- E.g. to find the area of a triangle: $area = (b \times h) \div 2$
- *Equations and formula can sometimes be used interchangeably.*

Writing algebraic equations



You want to buy 3 bananas.
You can use algebra to
express how you are going to
work out the cost.

3 x bananas can become ...

3 x b , which can become

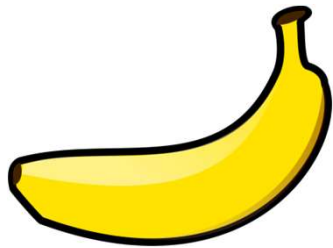
3b

$$3b = 3 \times 7p$$

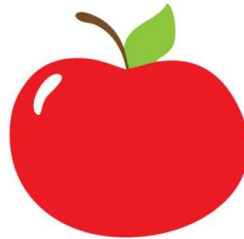
$$3 \times 7p = 21p$$

In algebra there is no
need for a x symbol
– just the letter next
to the number tells
us it is a
multiplication.

Writing algebraic equations



5p



9p

Now you would like 4 bananas and 5 apples. Can you express this algebraically ?

4 x bananas + 5 x apples

$4b + 5a$

$20p + 45p = 65p$

What happens when we don't know all the values?

- How many sweets are in this bag??

► We don't know!



► We have to call it 'n' for aNy number!

SOLVING EQUATIONS

- Solving **equations** allows us to calculate the number of sweets in each bag!



$$+ 3 = 5$$

?

$$+ 3 = 5$$



$$+ 3 = 5$$

X

$$+ 3 = 5$$

It can be any letter
e.g. b for banana or
n of aNy number. Or
it can be just an
empty box or
question mark. In
algebra you just use
letters to represent
numbers or
variables.



11	
n	5

Use the inverse.
 $11 - 5 = 6$

$$n + 5 = 11$$

To solve the equation, use the inverse operation.



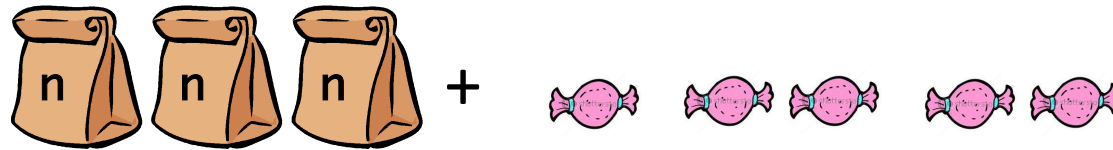
10	
n	n



Use the inverse.
 $10 \div 2 = 5$

$$2n = 10$$

To solve the equation, use the inverse operation.



17			
n	n	n	5

Now there are two operations. What are we going to do?

Use the inverse.

$$17 - 5 = 12$$

$$12 \div 3 = 4$$

$$3n + 5 = 17$$

To solve the equation, use the inverse operation.



23				
n	n	n	n	3

$$4n + 3 = 23$$

Use the inverse.

$$23 - 3 = 20$$

$$20 \div 4 = 5$$

To solve the equation, use the inverse operation.