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, __

9

9

Can you spot the pattern?

9, 18, ____, 36, 45, ___

9 9 9 9 9

Can you spot the pattern?

9, 18, 27, 36, 45, 54

9 9 9 9 9

Can you spot the pattern?

- 10, __, __, 37, 46

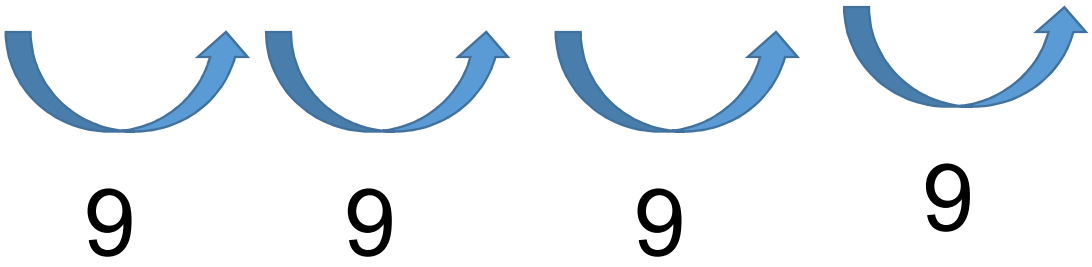
Can you spot the pattern?

- 10, __, __, 37, 46

9

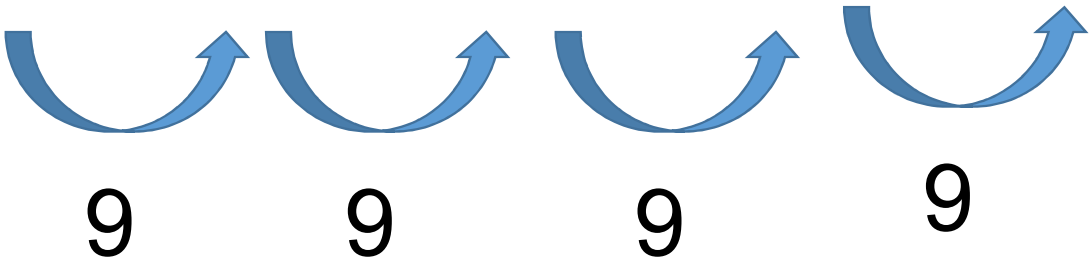
Can you spot the pattern?

- 10, __, __, 37, 46



Can you spot the pattern?

- 10, 19, 28, 37, 46



Can you spot the pattern?

- 7, 13, __, 25, 31, ___

Can you spot the pattern?

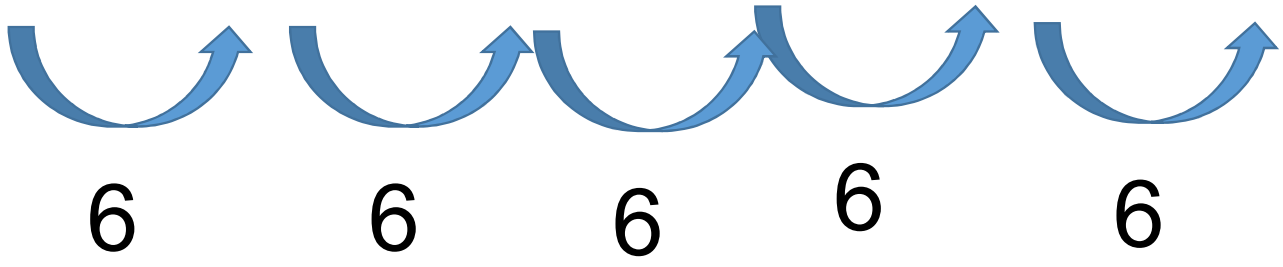
- 7, 13, __, 25, 31, ___

6

6

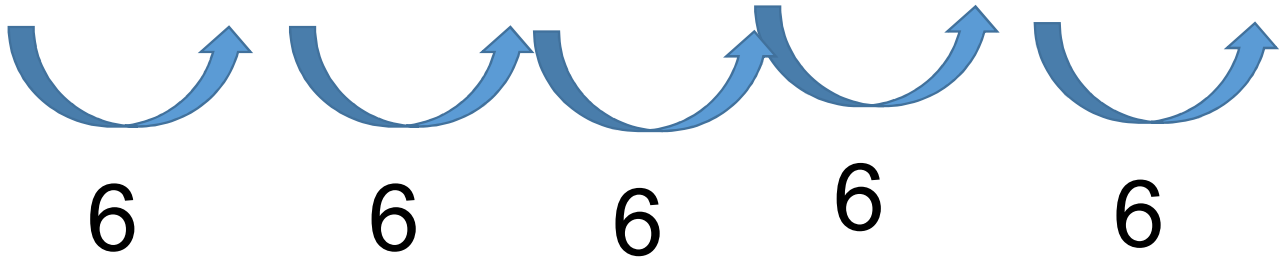
Can you spot the pattern?

- 7, 13, __, 25, 31, ___



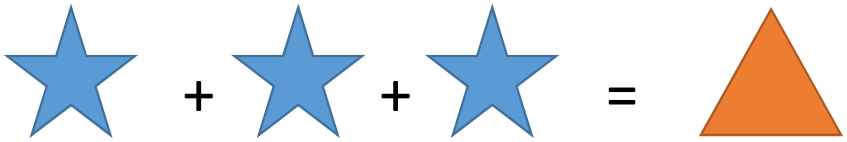
Can you spot the pattern?

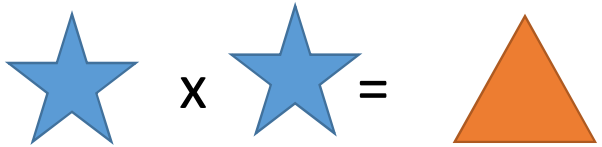
- 7, 13, 19, 25, 31, 37



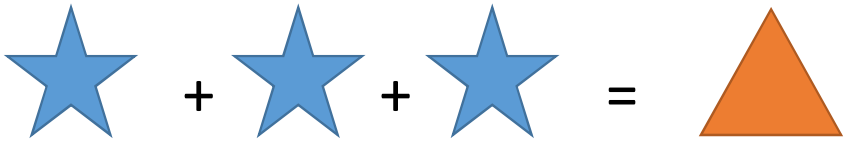
Wednesday/Thursday: Missing numbers

What does each shape represent?



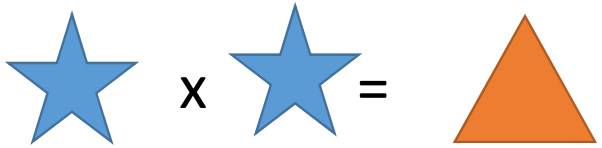


What does each shape represent?



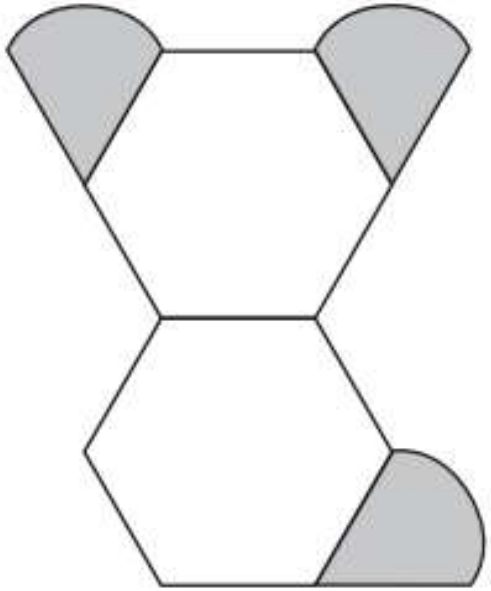
3 + 3 + 3 = 9

3 x 3 = 9

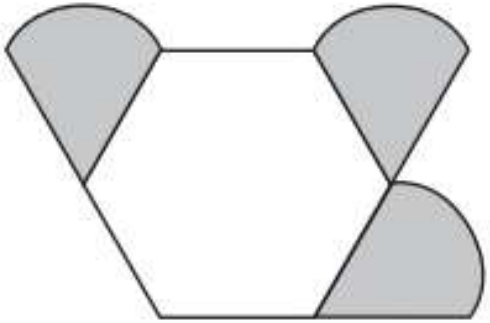


Amina is making designs with two different shapes.

She gives each shape a value.



Total value is 147

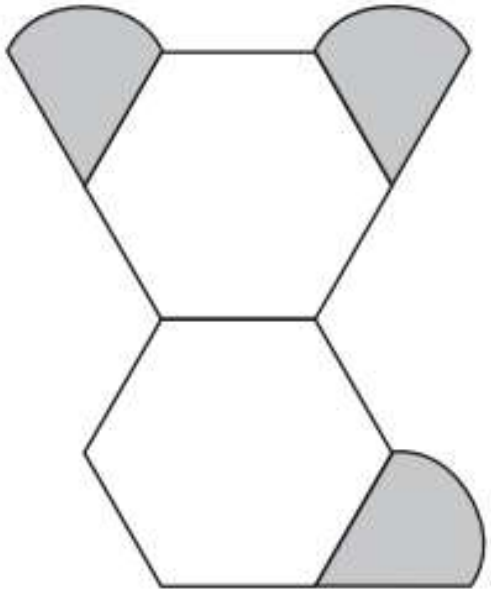


Total value is 111

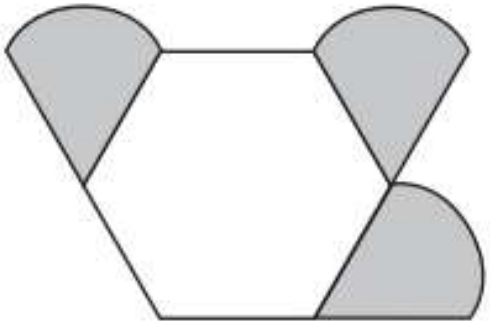
Calculate the value of each shape.

Amina is making designs with two different shapes.

She gives each shape a value.



Total value is 147



Total value is 111

Calculate the value of each shape.

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

Friday: Equations

Algebra

- This is algebra: l x w = area It is the formula to find an area of a rectangle.

- So is this:  X 5 = 15

Vocabulary

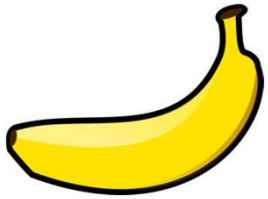
- An algebraic **expression** has no equals sign e.g.
- $a + b$

- An **equation** has a equals sign. E.g
- $a + b = 5$

- A **formula** is an equation that gives us instructions on how 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



7p

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

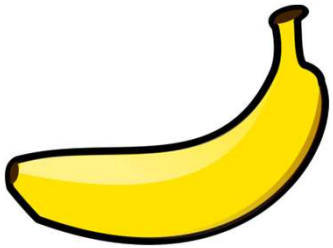
3b

3b = 3 x 7p

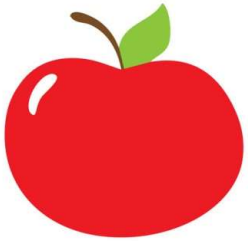
3 x 7p = 21p

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!

$+ \quad 3 = 5$

$? \quad + \quad 3 = 5$

$\square \quad + \quad 3 = 5$

$X \quad + \quad 3 = 5$

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.

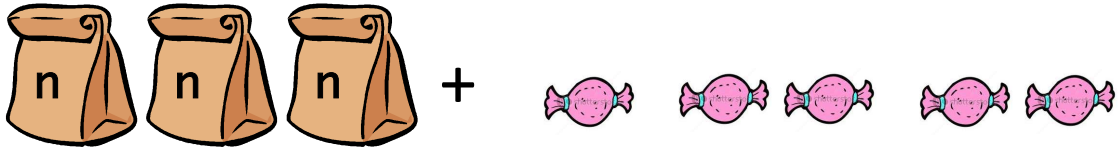
10	
n	n

Use the inverse.
10 ÷ 2 = 5

2n = 10

To solve the equation, use the inverse operation.

17			
n	n	n	5

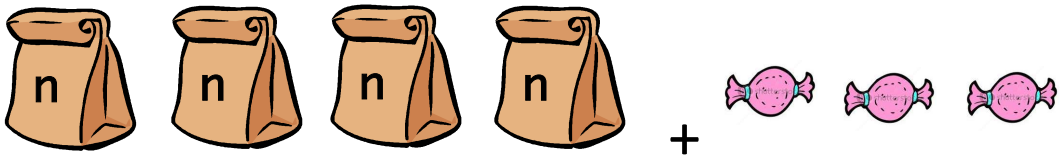


Now there are two operations. What are we going to do?

Use the inverse.
17 – 5 = 12
12 ÷ 3 = 4

$3n + 5 = 17$

To solve the equation, use the inverse operation.



23				
n	n	n	n	3

Use the inverse.
23 – 3 = 20
20 ÷ 5 = 5

$4n + 3 = 23$

To solve the equation, use the inverse operation.