Year 6

Wednesday 17th June 2020

Maths

LO: Substitution

[The video of this lesson is available here – Summer Term – Week 7 - lesson 3](#)
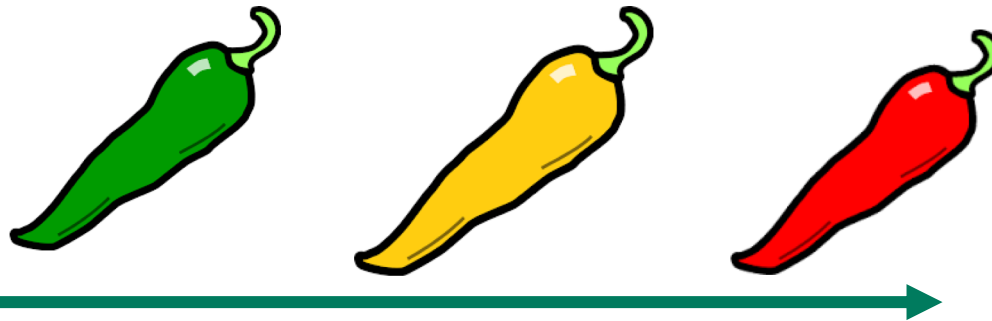
This link works on the printable version and is available above the PowerPoint.

You will need to watch this video to learn the skills you need in this lesson.

The independent work continues on the next two slides. There are 6 questions and 1 extension.

(Espanol – nueve preguntas y una extensión)

The chili suggests a good starting point.
If you have time you can complete all the independent work!

Substitution

1

$$\pentagon = 4 \qquad \bigcirc = 5$$

Use the given facts to work out the calculations.

a) $\pentagon + \pentagon + \bigcirc$

b) $\pentagon + \pentagon - \bigcirc$

c) $\bigcirc + \bigcirc + \bigcirc + \pentagon + \pentagon$

2

$$\triangle = 12 \qquad \blacksquare = 5$$

Use the given facts to work out the calculations.

a) $\triangle - \blacksquare$

b) $\triangle \times \blacksquare$

c) Create your own calculation that will be equal to 22

3 If $x = 5$, write the values of the expressions in the corresponding grid.
The first one has been done for you.

$3x$	x^2	$2x - 5$
$4x + 2$	$\dfrac{x}{2}$	$2(x + 1)$
$7x$	$x + 9$	$x - 7$

15		

4 If $a = 10$ and $b = 6$, work out the values of the expressions.

a) $a + b = \boxed{}$ 　　 d) $2a + b = \boxed{}$

b) $a - b = \boxed{}$ 　　 e) $3a - 17 = \boxed{}$

c) $2a = \boxed{}$ 　　 f) $2(a - b) = \boxed{}$

5 If $m = \dfrac{4}{5}$ and $k = 0.1$, work out the value of $m + 2k$

6

It does not matter what p and q are, $p + q$ and $q + p$ will always give the same answer.

Mo

Do you agree with Mo? _____

Explain your answer.

_____

_____

_____

7

$m = 7 \quad n = 5$

Write >, < or = to compare the expressions.

a) $2m$ ◯   10

b) $n - 1$ ◯   5

c) $2n + m$ ◯ $2m + n$

d) $7n$ ◯ $5m$

8

$a = 10$

Write the expressions in order, starting with the smallest value.

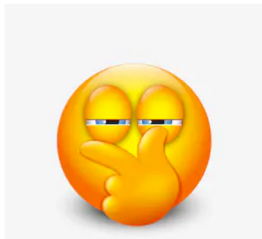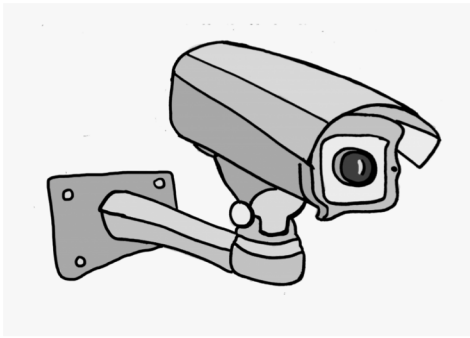| $5a$ | $a + 5$ | $\dfrac{a}{5}$ | a^2 |

| | | | |

9

$a = 15$

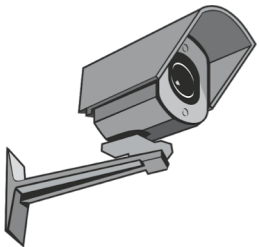Write three different algebraic expressions that give a value of 40

_____   _____   _____

Ext: Complete the table.

x	$5x$	$5x - 1$
2		
10		
12		
	25	
		34
		99

The next two slides contain the answers should you wish to check you work and reflect on what you understand.

Substitution

1

$\pentagon$ = 4 $\bigcirc$ = 5
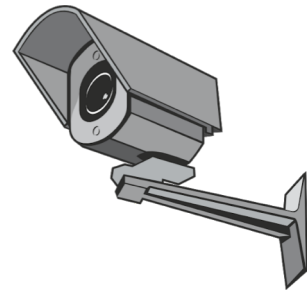
Use the given facts to work out the calculations.

a) $\pentagon + \pentagon + \bigcirc$

13

b) $\pentagon + \pentagon - \bigcirc$

3

c) $\bigcirc + \bigcirc + \bigcirc + \pentagon + \pentagon$

23

2

$\triangle$ = 12 $\square$ = 5

Use the given facts to work out the calculations.

a) $\triangle - \square$

7

b) $\triangle \times \square$

60

c) Create your own calculation that will be equal to 22

e.g. $\triangle + \square + \square$

3 If $x = 5$, write the values of the expressions in the corresponding grid.

The first one has been done for you.

$3x$	x^2	$2x - 5$
$4x + 2$	$\frac{x}{2}$	$2(x + 1)$
$7x$	$x + 9$	$x - 7$

15	25	5
22	2.5	12
35	14	-2

4 If $a = 10$ and $b = 6$, work out the values of the expressions.

a) $a + b =$ 16

d) $2a + b =$ 26

b) $a - b =$ 4

e) $3a - 17 =$ 13

c) $2a =$ 20

f) $2(a - b) =$ 8

5 If $m = \frac{4}{5}$ and $k = 0.1$, work out the value of $m + 2k$

1

6

It does not matter what p and q are, $p + q$ and $q + p$ will always give the same answer.

Mo

Do you agree with Mo? __Yes__

Explain your answer.

__Addition is commutative__

7

$$m = 7 \quad n = 5$$

Write >, < or = to compare the expressions.

a) $2m$ $\boxed{>}$ 10

b) $n - 1$ $\boxed{<}$ 5

c) $2n + m$ $\boxed{<}$ $2m + n$

d) $7n$ $\boxed{=}$ $5m$

8

$$a = 10$$

Write the expressions in order, starting with the smallest value.

| $5a$ | $a + 5$ | $\dfrac{a}{5}$ | a^2 |

| $\dfrac{a}{5}$ | $a + 5$ | $5a$ | a^2 |

9

$$a = 15$$

Write three different algebraic expressions that give a value of 40

e.g.

__$2a + 10$__   __$3a - 5$__   __$\dfrac{8a}{3}$__

Ext: Complete the table.

x	$5x$	$5x - 1$
2	10	9
10	50	49
12	60	59
5	25	24
7	35	34
20	100	99