Year 10

Home Learning 4

Focus for this week: Entry Level: Months & dates GCSE: Substitute into algebraic expressions

Essential learning:	• Know the seasons and months, and their order
Practising:	• Use a calendar and write the date correctly • Substitute positive numbers into one step algebraic expressions
Learning about:	• Substitute positive and negative numbers into two+ step algebraic expressions
Extension:	• Substitute algebraic expressions, including brackets and indices

Tasks:

- Look at the learning objectives, reflect on what you are already confident with, what you would like to practise and what you would like to learn this week
- Choose 2-3 worksheets to complete this week and email them to Mr. Croft
- Login to MyMaths and complete MyMaths tasks
- Spend 10 minutes a day on Times Table Rock Stars; Numbots OR Sumdog
- If you do not know your date of birth or the birthdays of people in your household – learn them this week!
- Please email a photo of any worksheets or poster you complete to the email address below.
  This will earn you a golden token.

Additional activities:

- Play 'Countdown' (e.g. https://nrich.maths.org/6499) on your own or with someone else
- Complete SAM learning Maths tasks
- Do Diagnostic questions or Mangahigh tasks for more challenge *(email Mr.Croft for more info)*

If you have queries about this work, please contact me at acroft@bower-grove.kent.sch.uk

4/5/20 Maths Worksheet 1: Know the seasons and months and their order

Name ……..

1. Fill in the missing month.

a) March …….. May

b) August …….. October

c) December …….. February

2. Which month comes after October? ……....

3. Which month comes before August? ……....

4. Which month comes after May? ……....

5. Which month comes before March? ……....

6. Complete the list to show the seasons in order.

Winter

S……

S……

A……

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4/5/20 Maths Worksheet 2: Use a calendar and write the date correctly

1. The 23rd April 2020 can be written as 23/04/20

Complete the following dates.

a) 4th June 2019 ...../……..……/…..……

b) 11th February 2021 ...../……..……/…..……

c) 30th September 2020 ...../……..……/…..……

d) 06/11/20 ……

e) 26/5/19 ……

2 The calendar for **May 2021** is shown below.

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

a) May Day was the first Monday in May. What was the date? ...../……..……/…..……

b) Ben goes swimming every Sunday morning in May.
How many times does Ben swim in May? ……..

c) Which day of the week is 03/06/21? ……..

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4/5/20 Maths Worksheet 3: Substitute positive numbers into one step algebraic expressions

Task 1: Replace the picture with the number shown and find the answer:

⇨ = 7 ☐ = 15 ● = 2 📖 = 3 = 4 = 5 ✈ = 6 = 1

a) 3 + ⇨ = …… b) ☐ - 2 = …… c) ● x ☐ = ……

d) 📖 + = …… e) + ✈ - = …… f) ☐ ÷ 📖 = ……

Task 2: Swap letters with the numbers shown and find the answer (this is called substitution).

a = 2 b = 3 d= 4 f = 7 g = 12 j = 20 y = 25 z = 100

i) a + 6 = …… ii) g - 2 = …… iii) a x b = ……

iv) d + y = …… v) f + g +j = …… vi) z ÷ y = ……

Task 3: When letters are next to each other, we multiply them. For example if a=2 and b=3 then *ab* = 2 x 3

Have a go at these questions

a = 2 b = 3 d= 4 f = 7 g = 12 j = 20 y = 25 z = 100

i) ab = …2 x 3 = 6… ii) ag = …… iii) by = ……

iv) fj = …… v) aj + 5 = …… vi) agz = ……

Task 4: When a number is next to a letter, we multiply them. For example if f=7 then *5f* = 5 x 7

Have a go at these questions

a = 2 b = 3 d= 4 f = 7 g = 12 j = 20 y = 25 z = 100

i) 4b = …4 x 3 = 12… ii) 3g = …… iii) 4j = ……

iv) 5j = …… v) 2j + 5a = …… vi) z – 3j = ……

vii) 3y – 2j = …… viii) az - dj = …… ix) az - 2dj = ……

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4/5/20 Maths Worksheet 4: Substitute positive and negative numbers into two+ step algebraic expressions

Have a go at the worksheet then check your answers with a calculator

Task 1: True or false ⇨ = 6 ☐ = 4 ● = 2 🕮 = 0 🖱 = -1 ✋ = -5 ✈ = -6

REMINDER: 7 - -3 = 7+3 7 - -3 = 10 Also: -7 - -3 = -4 *(because -7 - -3 = -7 +3)*

i) ⇨ + ⇨ = 2 x ⇨ ii) ☐ + ☐ + -☐ + -☐ = 4 x ☐ iii) ● x ☐ = 6

iv) 🕮 + 🖱 = -1 v) ✋ + ✈ = -11 vi) ✈ - ✋ = -1

Task 2: Swap letters with the numbers shown and find the answer (this is called substitution).

a = -2 b = -3 d= -4 f = -7 g = 0 j = 7 y = 15 z = 20

i) a + 6 = …… ii) g - 2 = …… iii) a x b = ……

iv) d + y = …… v) f + g +j = …… vi) z ÷ y = ……

Task 3: When letters are next to each other, we multiply them. For example if a=-2 and b=3 then *ab* = -2 x 3

Have a go at these questions

a = -2 b = 3 c= 1 f = -7 h = -9 j = 10 y = -10 z = 12

i) ab = …-2 x 3 = -6… ii) aj = …… iii) by = ……

iv) fj = …… v) aj + 5 = …… vi) agz = ……

Task 4: When a number is next to a letter, we multiply them. For example if f=7 then *-5f* = -5 x -7

Have a go at these questions

a = -2 b = 3 c= 1 f = -7 h = -9 j = 10 y = -10 z = 12

i) -4a = …-4 x -2 = 8 ii) 3f = …… iii) 4j = ……

iv) -5j = …… v) -5h + c = …… vi) z – 3b = ……

vii) 3y + 2j = …… viii) az – 2f = …… ix) jy - 2 = ……

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4/5/20 Maths Worksheet 5: Substitute algebraic expressions, including brackets and indices

Have a go at the worksheet then check your answers with a calculator

Examples (where z = 8 and y = -2): $\frac{z}{4} = z \div 4 = 2$ $yz = y \times z = -16$ $\frac{z+2}{y} = 10 \div -2 = -5$

Task 1: Substitute a = -2 b = 6 f = -7 g = 10 into the following expressions

i) a + 6 = ……. ii) $\frac{g}{2}$ = ……. iii) -2b = …….

iv) $\frac{g}{a}$= ……. v) $\frac{g+8}{b}$= ……. vi) $\frac{3g+a}{f}$ = …….

Task 2: Numbers or letters next to brackets mean solve the bracket and then multiply.

Example: $4(5 + 2) = 4 \times 7 = 28$

Substitute a = -2 b = -3 g = 0 y = 15 z = 20 into the following expressions

i) 2(a + 6) = ……. ii) 3(g – 2) = ……. iii) 4(ab) = …….

iv) -2(z-y) = ……. v) -4(2y-z) = ……. vi) (a+g)(z-y) = …….

Task 3: Reminder: indices means multiply by itself, e.g. $5^3 = 5 \times 5 \times 5$

Substitute a = -2 b = -3 g = 0 y = 4 z = 6 into the following expressions

i) $b^2 = -3 \times -3 = 9$ ii) y^2 = ……. iii) z^2 = …….

iv) a^2 = ……. v) g^3 = ……. vi) a^3 = …….

Task 4: Example: $(5 + 2)^2 = 7^2 = 49$

Substitute a = 5 c = -4 g = 3 w = -5 y = -7 z = -10 into the following expressions

i) $(a + 1)^2 = 6^2 = 36$ ii) $(g + 1)^2$ = ……. iii) $(c + 6)^2$ =…….

iv) $(w + 9)^2$ =……. v) $(a - 7)^2$ =……. vi) $(g - 11)^2$ =…….

vii) $(w - 1)^2$ =……. viii) $(3a - 6)^2$ =……. ix) $(4z + 7a)^2$ =…….

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