

HOME LEARNING

Year 8

Home Learning 2

Focus for this week: times-tables; factors; multiples; common factors and multiples; prime numbers

Essential learning:	<ul style="list-style-type: none">• Recognise multiples of 2, 5 and 10
Practising:	<ul style="list-style-type: none">• Identify multiples of numbers 1-12• Find factors of numbers less than 30
Learning about:	<ul style="list-style-type: none">• Recognise prime numbers• Common factors and multiples
Extension:	<ul style="list-style-type: none">• Highest Common Factor• Lowest Common Multiple• Prime factors

Tasks:

- Complete at least two worksheets
- Login to MyMaths and complete MyMaths tasks
- Spend 10 minutes a day on Times Table Rock Stars; Numbots OR Sumdog
- 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:

- Have a go at this puzzle: <https://nrich.maths.org/factorpuzzle>
- Practise saying your times tables (e.g. every-time you walk up some stairs)
- Play 'Countdown' (e.g. <https://nrich.maths.org/6499>) on your own or with someone else
- Play Yahtzee
- **More challenge:** https://www.cimt.org.uk/projects/mepres/book8/bk8_2.pdf (complete the exercises instead of the worksheets)

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

Yr8 Maths w/b 20/4/20: Worksheet 1 Multiples and Prime numbers

You will need colouring pencils to complete this activity

1. Colour the following numbers **red**: 2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, 41, 43, 47
2. Miss 2, then colour all of the other multiples of two (2-times table numbers) **yellow**
3. Miss 3, then colour all of the other multiples of three (3-times table numbers) **light green**
4. Miss 5, then colour all of the other multiples of five (5-times table numbers) **brown**
5. Miss 7, then colour all of the other multiples of seven (7-times table numbers) **light blue**
6. Miss 11, then colour all of the other multiples of eleven (11-times table numbers) **dark blue**
7. Colour the following numbers **red**: 53, 59, 61, 67, 71, 73, 79, 83, 89, 97

Red numbers are prime numbers.

What number has the most colours?

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	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Yr8 Maths w/b 20/4/20: Worksheet 2 Multiples of 2, 3, 5, 6 and 10.

Use the information in the table to help you to complete the worksheet:

Multiple	Rule	Example 1	Example 2
2	A number is a multiple of 2 if it ends with a 0, 2, 4, 6 or 8. <i>Multiples of 2 are called even numbers</i>	138 is a multiple of 2 because it ends with an 8	683 is not a multiple of 2 because it does not end with a 2, 4, 6, 8 or 0
10	A number is a multiple of 10 if it ends with a 0	830 is a multiple of 10 because it ends with a 0	683 is not a multiple of 10 because it does not end with a 0
5	A number is a multiple of 5 if it ends with a 5 or a 0	235 is a multiple of 5 because it ends with a 5 or a 0	683 is not a multiple of 5 because it does not end with a 5 or a 0
3	A number is a multiple of 3 the digit sum is a multiple of 3. <i>Digit sum means add the numerals together, e.g. digit sum of 63 = 9</i>	237 is a multiple of 3 because $2 + 3 + 7 = 12$ and 12 is in the 3 times-table	683 is not a multiple of 3 because $6 + 8 + 3 = 17$ and 17 is not in the 3 times-table
6	A number is a multiple of 6 if it is also a multiple of 2 AND a multiple of 3	234 is a multiple of 6 because it is a multiple of 2 and it is a multiple of 3	683 is not a multiple of 6 because it is not a multiple of 2 and it is not a multiple of 3

Task A

- Circle the multiples of 2: 124 125 126 127 128 129 130 131 132 133 134
- Circle the multiples of 10: 124 125 126 127 128 129 130 131 132 133 134
- Circle the multiples of 5: 124 125 126 127 128 129 130 131 132 133 134
- Circle the multiples of 3: 124 125 126 127 128 129 130 131 132 133 134
- Circle the multiples of 6: 124 125 126 127 128 129 130 131 132 133 134

Task B: Complete these tables using the numbers 410 411 412 413 414 415 416 417

	Multiple of 10	Not a multiple of 10
Multiple of 5		
Not a multiple of 5		

	Multiple of 2	Not a multiple of 2
Multiple of 3		
Not a multiple of 3		

Which of these numbers is a multiple of 6? How do you know?

Extension: Jamie says that 413 is a multiple of 7 because it is 7 less than 420. Do you agree with Jamie. Explain your answer:

Yr8 Maths w/b 20/4/20: Worksheet 2 Finding factors of a number

Factors of a number are numbers that divide exactly into it.

For example, 6 is a **factor of 12** because 6 divides exactly into 12 (two times).

We can also say 12 is a **multiple of 6**. Factors are reverse of multiples.

Task A

Circle the incorrect number for each question:

- a) Factors of 12: 1, 2, 3, 4, 5, 6, 12
b) Factors of 15: 1, 2, 3, 5, 15
c) Factors of 16: 1, 2, 4, 8, 16, 32
d) Factors of 20: 0, 1, 2, 4, 5, 10, 20

Task B

Fill in the missing number for each list of factors:

- a) Factors of 10: 1, 2, 5,
b) Factors of 18: 1, 2,, 6, 9, 18
c) Factors of 22: 1,,, 22
d) Factors of 25: 1,, 25
e) Factors of 30:, 2,, 5,, 10,,
f) Factors of 33:,,,

Task C

Find all of the factors for each number:

- a) Factors of 24 (8 factors)
b) Factors of 32 (6 factors)
c) Factors of 49 (3 factors)
d) Factors of 100 (9 factors)

Extension: e) Factors of 120 (16 factors)

f) Factors of 144 (15 factors)

Example question:

Find all of the factors of 42

Step 1: Start with 1 and write all of the multiply sentences (using whole numbers) that make 42

Step 2: The numbers are your answer

$1 \times 42 = 42$	$42 \times 1 = 42$
$2 \times 21 = 42$	$21 \times 2 = 42$
$3 \times 14 = 42$	$14 \times 3 = 42$
$6 \times 7 = 42$	$7 \times 6 = 42$

So... the factors of 42 are: 1, 2, 3, 6, 7, 14, 21 and 42.

Yr8 Maths w/b 20/4/20: Worksheet 4 Common Multiples & Factors

Email completed worksheets to me at acroft@bower-grove.kent.sch.uk.
Each good attempt earns a golden token.

Part A: Identifying common multiples

- i. Circle the numbers below which are multiples of 2 AND 5

3 5 9 15 25 27 30 33 42 45

- ii. Circle the numbers below which are multiples of 3 AND 5

3 5 9 15 25 27 30 33 42 45

- iii. Circle the numbers below which are multiples of 2, 3 AND 5

3 5 9 15 25 27 30 33 42 45

- iv. Starting with the smallest, list the first five common multiples of 2 and 3:
Hint. Write each times table out

- v. What is the **smallest** (or **lowest**) common multiple of 3 and 5?

Part B: Identifying factors

- i. Circle the numbers below that are factors of 12

1 2 3 4 5 6 9 12 18

- ii. Circle the numbers below that are factors of 18

1 2 3 4 5 6 9 12 18

- iii. How do we know that 5 is NOT a factor of 12 or of 18?

- iv. How do we know that 3 IS a factor of 12 and 18?

- v. What is the largest (highest) number that is a **common factor** of 12 and 18?

Part B: Identify larger multiples

- i. Write down a multiple of 5 that is larger than 100:
ii. Write down a multiple of 2 that is smaller than 120 and larger than 110:
iii. Is there a multiple of 10 that is larger than 321 and smaller than 329? How do you know?

Extension:

Find the **Lowest Common Multiple** for these numbers:

- i. 2 and 3
ii. 4 and 5
iii. Convince me that 24 is the Lowest Common Multiple of 8 and 12

Find the **Highest Common Factor** for these numbers:

- i. 24 and 30
ii. 40 and 50
iii. Convince me that 8 is the Highest Common Factor (HCF) of 16 and 24
iv. Find the HCF of 100 and 150 (hint: the answer is bigger than 10)
v. Find the HCF of 49 and 140