Today's Lesson…

Highest Common Factor (HCF) and Lowest Common Multiple (LCM)

LO: To be able to find the HCF **_and_** the LCM of two or more numbers (C)

CO: To be able to answer GCSE questions on this topic (C)

Starter...

List all the factors of the following numbers. Can you circle the primes?

30

1, 2, 3, 5, 6, 10, 15, 30

20

1, 2, 4, 5, 10, 20

16

1, 2, 4, 8, 16

6

1, 2, 3, 6

REMINDER

- Factor: a number that goes into a given number

  e.g. 2 is a factor of 8

- Multiple: a number that is in the times tables of a given number

  e.g. 30 is a multiple of 10

Highest Common Factor (HCF)

When given 2 numbers, the highest common factor is the highest number which will go into both numbers.

You can find the **highest common factor (HCF)** of two numbers by listing all the factors of both numbers.

Find the HCF of 24 and 40

Factors of 24: 1, 2, 3, 4, 6, 8, 12, 24

Factors of 40: 1, 2, 4, 5, 8, 10, 20, 40

The highest common factor is 8

Find the highest common factor of 6 and 8

Factors of 6: 1, 2, 3, 6

Factors of 8: 1, 2, 4, 8

2

Find the highest common
factor of 15 and 20

Factors of 15: 1, 3, 5, 15

Factors of 20: 1, 2, 4, 5, 10, 20

5

Find the highest common factor of 12 and 26

Factors of 12: 1, 2, 3, 4, 6, 12

Factors of 26: 1, 2, 13, 26

2

Find the highest common
factor of 24 and 42

Factors of 24: 1, 2, 3, 4, 6, 8, 12, 24

Factors of 42: 1, 2, 6, 7, 14, 42

6

Lowest Common Multiple (LCM)

When given 2 numbers, the lowest common multiple is the lowest number which is a multiple of both numbers.

You can find the **lowest common multiple (LCM)** of two numbers by listing the first few multiples of each number.

Find the LCM of 10 and 15

Multiples of 10: 10, 20, 30, 40, 50, 60

Multiples of 15: 15, 30, 45, 60, 75, 90

The lowest common multiple is 30

Find the lowest common multiple of 4 and 5

Multiples of 4: 4, 8, 12, 16, 20, 24

Multiples of 5: 5, 10, 15, 20, 25, 30

20

Find the lowest common multiple of 12 and 8

Multiples of 12: 12, 24, 36, 48, 60

Multiples of 8: 8, 16, 24, 32, 40

24

Find the lowest common multiple of 6 and 9

Multiples of 6: 6, 12, 18, 24, 30

Multiples of 9: 9, 18, 27, 36, 45

18

Find the lowest common multiple of 10 and 6

Multiples of 10: 10, 20, (30) 40, 50, 60

Multiples of 6: 6, 12, 18, 24, (30) 36

30

CO: To be able to answer GCSE questions on this topic (C)

Your turn...

Find the HCF and the LCM of the following numbers:

a) 6 and 12

b) 30 and 15

c) 15 and 27

d) 21 and 18

e) 45 and

a) 75 and 30

b) 45 and 81

c) 27 and 54

d) 60 and 50

e) 200 and 100

f) 90 and 120

a) 270 and 135

b) 96 and 36

c) 200 and 250

d) 350 and 560

e) 12, 16 and 24

f) 14, 28 and 49

Extension: See me to try some past GCSE

Your turn…

Find the HCF and the LCM of the following numbers:

a) 6, 12	a) 15, 150	a) 135, 270
b) 15, 30	b) 9, 405	b) 12, 288
c) 3, 135	c) 27, 54	c) 50, 1000
d) 3, 126	d) 10, 300	d) 70, 2800
e) 15, 45	e) 100, 200	e) 4, 48
f) 3, 72	f) 30, 360	f) 7, 196

Extension: See me to try some past GCSE

Did you meet today's Learning Objectives?

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