

Learning Objective:	To be able to use a prime factor tree to find lowest common multiple	Name:	
		Date:	

Do NOW Activity:

- 1 Work out $\frac{3}{5} + \frac{2}{3}$ (answer as a **mixed number**)
- 2 Work out 20% of £42.80
- 3 **Expand** $5(3x - 2)$
- 4 **Solve** $\frac{x}{2} + 5 = 9$
- 5 $y = 5x - 2$ Find the value of y when $x = 3$

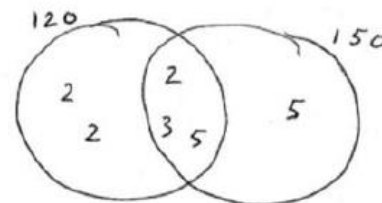
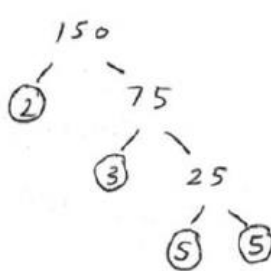
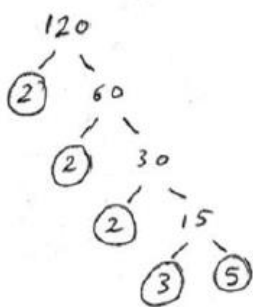
PRIOR KNOWLEDGE CHECK:

1. I am able to express a number as a product of Prime factors

THE MAIN EVENT

WORKED EXAMPLE #1:

Find the lowest common multiple (LCM) of 120 and 150



$$LCM = 120 \times 5 = 600$$

$$120 = 2 \times 2 \times 2 \times 3 \times 5$$

$$150 = 2 \times 3 \times 5 \times 5$$

PRACTICE #1:

Question 1: Find the lowest common multiple (LCM) of each pair of numbers.

- | | | | |
|---------------|---------------|---------------|---------------|
| (a) 15 and 35 | (b) 14 and 22 | (c) 15 and 21 | (d) 9 and 33 |
| (e) 12 and 15 | (f) 18 and 30 | (g) 16 and 20 | (h) 24 and 30 |
| (i) 16 and 36 | (j) 26 and 39 | (k) 25 and 30 | (l) 16 and 18 |

WORKED EXAMPLE #2:

$$A = 2 \times 3^2 \times 5$$

$$B = 2^3 \times 3 \times 5^2$$

$$C = 2 \times 5^2 \times 3$$

a) Work out the value of each number.

$$A = 90$$

$$B = 600$$

$$C = 150$$

b) Find the lcm of

i. A & B

$$A = 2 \times 3^2 \times 5 \quad B = 2^3 \times 3 \times 5^2$$

$$\text{Common multiple: } 2^3 \times 3^2 \times 5^2$$

$$LCM = 1800$$

ii) A & C

$$A = 2 \times 3^2 \times 5 \quad C = 2 \times 5^2 \times 3$$

$$\text{Common factors: } 2 \times 3^2 \times 5^2$$

$$LCM = 450$$

PRACTICE #2:

Question 1: Given $60 = 2^2 \times 3 \times 5$ and $84 = 2^2 \times 3 \times 7$

Find the lowest common multiple (LCM)

Question 2: Find the lowest common multiple (LCM) of 15, 20 and 25.

Question 3: A red light flashes every 28 seconds.
A green light flashes every 24 seconds.
They both flash at the same time.
After how many seconds will they next both flash at the same time?

Question 4: A bus heading to Belfast leaves Antrim every 36 minutes.
A bus heading to Ballymena leaves Antrim every 45 minutes
At 10am bus to Belfast and a bus to Ballymena both leave Antrim Bus Station.
Work out the next time that both buses leave at the same time.



Question 5: Find the lowest common multiple of 124 and 200.

Question 6: The LCM of two numbers is 130.
The HCF of the same two numbers is 13.
Both numbers are less than 100.
Write down two possible numbers.



EXAM PRACTICE

$$648 = 2^3 \times 3^4 \qquad 540 = 2^2 \times 3^3 \times 5$$

(a) Find the lowest common multiple (LCM) of 648 and 540.

$$\mathbf{A} = 2^2 \times 3 \times 5^2 \qquad \mathbf{B} = 2^3 \times 3^2 \times 7$$

.....
(2)

(b) Find the lowest common multiple (LCM) of **A** and **B**.

.....
(2)