# Lowest Common Multiple & Highest Common Factor – Part I

www.drfrostmaths.com

**Prerequisites:** You should understand the terms 'multiple' and 'factor'.

### **Key Definitions:**

dfm

The <u>Highest Common Factor</u> of two numbers is the largest number which is a factor of both these numbers.

Similarly the <u>Lowest Common Multiple</u> of two numbers is the smallest number which is a multiple of both numbers.

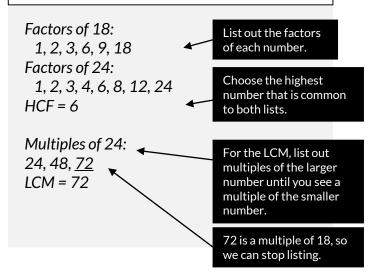
Why is it useful? Common multiples allow us for example to determine when buses will arrive together if the arrive at different intervals.

K4: <u>9:00</u>, 9:10, 9:20, <u>9:30</u>, 9:40, ... K5: <u>9:00</u>, 9.15, <u>9:30</u>, 9.45, ...



#### Worked Example:

Determine the (a) Highest Common Factor and (b) Lowest Common Multiple of 18 and 24.

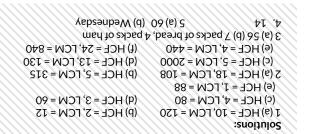


### **Core Questions**

- Determine the Lowest Common Multiple and Highest Common Factor of the following numbers:
  - (a) 30 and 40
  - (b) 6 and 2
  - (c) 16 and 20
  - (d) 12 and 15
  - (e) 8 and 11
- 2

Determine the Lowest Common Multiple and Highest Common Factor of the following numbers:

- (a) 36 and 54
- (b) 35 and 45
- (c) 125 and 80
- (d) 26 and 65
- (e) 40 and 44
- (f) 84 and 120



## **Problem Solving**



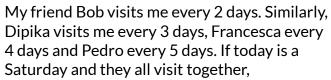
I want to make some ham sandwiches. Slices of bread come in packs of 8 and slices of ham come in packs of 14. I use one slice of bread and one slice of ham for each sandwich. If I don't want to have any ham or bread left over,

(a) what is the minimum number of sandwiches I can make?



(b) how many packs of each will I need?

A PE teacher has to organise two year groups into netball teams, each separately. Year 7 has 70 students and Year 8 has 98 students. If each year group must be split up equally into teams all of the same size, what is the largest team size she can use?



- (a) When will they all simultaneously visit together next?
- (b) On what day will this be?



5