GCSE Maths

ASSIGNMENT

Preparatory Sheet

Required preparation for the session on……

HCF LCM AND PRIME FACTORISATION

Aims of this session: Review your abilities in each of these areas, Green (feel confident…G), Amber (need to work more on...A), Red (Feel weaker at this….R)

G A R

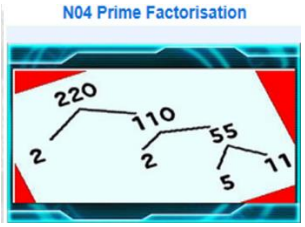
1. Recognise even and odd numbers
2. Identify factors, multiples and prime numbers
3. Find the prime factor decomposition of positive integers
4. Find the common factors and common multiples of two numbers
5. Find the Lowest common multiple (LCM) and Highest common factor (HCF) of two numbers

MOSTLY GREEN ☐ MOSTLY AMBER ☐ MOSTLY RED ☐

START

Watch the video/s, read and practice

using the online materials. Read your GCSE maths AQA book



Write a comment about what you learned from the videos / materials below

1.

Recognise EVEN and ODD numbers

Q….When trying to divide numbers up, often even numbers are best…I wonder why? Try separating the following numbers shown below into two piles, one with all the odd numbers, the other with even.

-7, 15, ½ , 180, 6, 2.4million, 48, 0, 29, 0.0162

HINT… look up the definition of an even number.

2.

Identify factors, multiples and prime numbers

Test your knowledge of the terms 'Factor' 'multiple' and 'prime' by trying these quick questions.

Circle the factor of 20 5, 7, 9, 15 Write a multiple of 13

Write down any 3 prime numbers larger than 20……

Hint… factors are smaller numbers that another number will divide equally into. A multiple is like a times table, so a multiple of 3 is 3 6 9 12 etc. A prime number cannot be divided up.

3.

Find the prime factor decomposition of positive integers

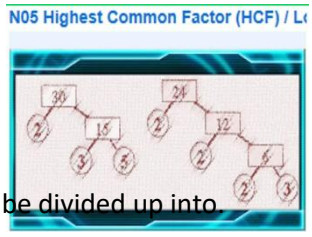
Q… All whole numbers apart from primes are made up of primes. Look at each of the following and decompose each number into other numbers that multiply to get it. Eg.. 21 is 7 groups of 3 where 7 and 3 are prime.

36=….x….x….x…. 45=….x….x….

60=….x….x….x…. 34=….x….

Hint…you need to write numbers in a line that multiply one after each other and get the target number shown, however, each number must be the smallest possible prime number you can think of, most times it's the numbers 2, 3, 5.. etc so always start with 2 and see if it fits!

Watch and learn from Moodle N05 before continuing….>>>



4. ***Find the common factors and common multiples of two numbers***

Q… There are two numbers shown. Your task is to find numbers that **both of them** can be divided up into. Then you need to find a number that both 24 and 36 are factors of.

24 36

Hint… 24 can be broken up into a multiplication sum lots of different ways. So can 36. Look at the sums that make 24 and look at the sums that make 36. Are there any that have the same numbers in the sums? They are

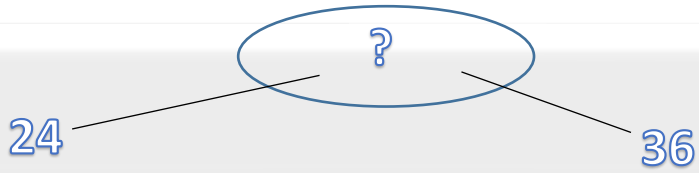
called 'Common factors'. For a common multiple, you are looking to take a big number and make sure it can be divided by 24 and 36….. so really it is 24 x something and 36 x something, at the same time.

5. Find the Lowest common multiple (LCM) and Highest common factor (HCF) of two numbers

Q… From question 4 you should be able to see numbers that both 24 and 36 can be divided by. You next job is to see which one is the highest one. There is a systematic way of finding this number. Do you know how to do it?

Find the HCF of 24 and 36

Now you need to find the lowest number that can be divided by 24 and 36. There are lots of numbers that can be divided by 24 and 36 but you are looking for the lowest one called 'LCM' (lowest common multiple). Again there is a systematic approach you can use to find this LCM, do you know it?



Hint… use the decomposition method in Q2.

END OF PREPATORY ASSIGNMENT

What to do now….

1. **Ensure you have marked in each box if you feel confident in each topic or not (this will inform you and your tutor which activities you should do in the session)**
2. **Bring this yellow assignment with you to your next session and check with your tutor answers given**
3. **Add this to your folder of work IN ORDER YELLOW…GREEN… (and any BLUE you achieve)!**