| **Learning Objective:** | Highest Common Factor using Product of prime numbers | **Name:** | |
| | | **Date:** | |

Do NOW Activity:

1 **Round** 4352 correct to 2 significant figures

2 What is 15% of £130?

3 **Simplify** $a \times a \times b \times b \times b$

4 Find the missing terms 2, **?** , 24, **?**

5 **Complete the ratios** $4 : 3 = 36 : $ **?**

PRIOR KNOWLEDGE CHECK:
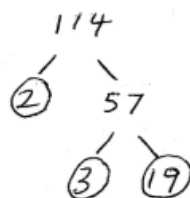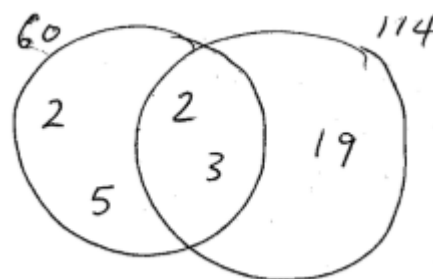1. I can find the product of prime numbers using HCF

THE MAIN EVENT

WORKED EXAMPLE #1:

Find the highest common factor (HCF) of 60 and 114

$$60 = 2 \times 2 \times 3 \times 5 \qquad\qquad 114 = 2 \times 3 \times 19$$

$$HCF = 2 \times 3 = 6$$

PRACTICE #1:

Question 2:   Find the highest common factor (HCF) of each pair of numbers

(a) 21 and 49   (b) 35 and 45   (c) 18 and 24   (d) 18 and 45

(e) 30 and 75   (f) 28 and 42   (g) 60 and 90   (h) 48 and 64

(i) 56 and 72   (j) 18 and 23   (k) 84 and 96   (l) 38 and 95

(m) 66 and 121   (n) 56 and 140   (o) 180 and 225   (p) 64 and 224

Practice #2:

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

Find the highest common factor (HCF)

Question 2:   Find the highest common factor of 24, 56 and 88.

Question 3: Fred says that 20 and 21 have got a highest common factor of 0.
Explain why Fred is wrong.

Question 4: Abby and Annie have the same number of coins.
Abby has sorted her coins into groups of 80.
Annie has sorted her coins into groups of 75.
They each have less than 2000 coins.
How many coins do they altogether?

Question 5: Adam is working out the highest common factor of 100 and 112.
He has worked it out to be 22.
Can you explain what he has done wrong?

Exam type Question :

(b) Find the Highest Common Factor (HCF) of 48 and 56.

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(2)

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

Write down the highest common factor (HCF) of 648 and 540.

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

Write down the highest common factor (HCF) of **A** and **B**.