LESSON ONE WEEK FOUR

TOPIC / UNIT 4: PATTERNS AND SEQUENCES:
SUBTOPIC: FINDING GCF BY PRIME FACTORIZATION

1. To find the GCF of a given pair of numbers, prime factorisation is applied.
2. To prime factorise, remember always to use only common prime numbers
3. A ladder can be used to find the GCF of a pair of given numbers.
4. Prime factorise the given numbers together and multiply the common prime factors to get the GCF.

Example1
Find the GCF of 12 and 18.

CF	NO	NO
2	12	18
3	6	9
	2	3

GCF = 2 x 3

= **6**

Activity.
Find the GCF of the following pairs of numbers
    a) 8 and 20
    b) 18 and 27
    c) 6 and 24
    d) 24 and 36
    e) 12 and 28

LESSON TWO

SUBTOPIC: FINDING LCM USING PRIME FACTORISATION
1. To find the LCM of a given pair of numbers, prime factorisation is applied.
2. To prime factorise, remember always to use prime numbers eg. 2, 3, 5, 7, 11, 13, …
3. A ladder can be used to find the LCM of a pair of given numbers.
4. Prime factorise the given numbers together and multiply the prime factors

Example I
Find the LCM of 12 and 18.

Prime factorise 12 and 18 together.

PF	NO	NO
2	12	18
2	6	9
3	3	9
3	1	3
	1	1

Example II
Find the LCM of 4 and 3.

Prime factorise 4 and 3 together.

PF	NO	NO
2	4	3
2	2	3
3	1	3
	1	1

LCM = (2 x 2) x (3 x 3)

    =   4   x   9

LCM =   36

LCM = (2 x 2) x 3

= 4 x 3

LCM = 12

LCM of 12 and 18 = 36

LCM of 4 and 3 = 12

ACTIVITY
Prime factorise to find the LCM of the following pairs of numbers.

1. 4 and 12
2. 8 and 16
3. 12 and 15

4. 14 and 28
5. 15 and 30
6. 30 and 40

LESSON THREE

TOPIC / UNIT 4: PATTERNS AND SEQUENCES:
SUBTOPIC: SQUARE NUMBERS
1. Square numbers are numbers got by multiplying two equal numbers. E.g. 2 x 2 = 4
   4 is a square number.

2. Square of a number can be written by raising the number by power 2.
   Eg. Square of 3 = 3^2, Square of a = a^2

Example I

What is the square of 5?

$$5^2 = 5 \times 5$$

$$= 25$$

The square of 5 is 25

Example II

What is the square of 12?

$$12^2 = 12 \times 12$$

$$= 144$$

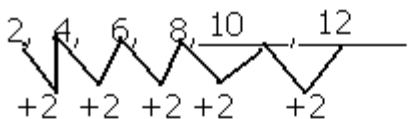**The square of 12 is 144**

ACTIVITY
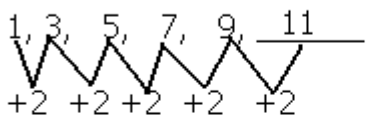### *Find the squares of the following numbers.*

1. The square of 6
2. The square of 8
3. The square of 11
4. The square of 13
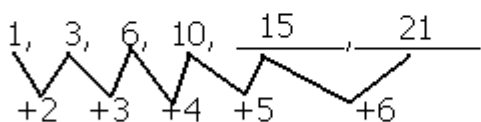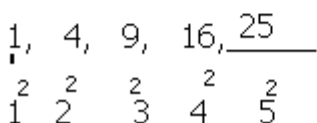5. The square of 21
6. The square of 25

LESSON FOUR

TOPIC / UNIT 4: PATTERNS AND SEQUENCES:
SUBTOPIC: SEQUENCES

Examples

1.
2, 4, 6, 8, 10, 12, ___
+2 +2 +2 +2   +2   (even numbers)

2.
1, 3, 5, 7, 9, 11 ___
+2 +2 +2 +2 +2   (odd numbers)

3.
1, 3, 6, 10, 15, 21 ___
+2 +3 +4 +5   +6   (triangular numbers)

4.
1, 4, 9, 16, 25 ___
1^2 2^2 3^2 4^2 5^2 (square numbers)

ACTIVITY

Find the next numbers in the sequences below.

a) 2, 6, 10, 14, _____

b) 25, 22, 19, 16, _____

c) 2, 3, 5, 7, _____

d) 81, 64, 49, 36, _____

e) 14, 20, 26, 32, _____

LESSON FIVE

TOPIC: FRACTIONS

1. A fraction is part of a whole.

2. A fraction is written with two main parts.

a) The numerator

b) The denominator.

3. The top part of a fraction is the numerator and the bottom part is the denominator.

Eg ½ 1 is the numerator and 2 is the denominator.

TYPES OF FRACTIONS

There are three main types of fractions.

 a) Proper fractions

These are fractions whose numerator is smaller than the denominator.

e.g ½ , ¾ , $\frac{5}{6}$

 b) Improper fractions

These are fractions whose numerator is bigger than the denominator.

e.g. $\frac{5}{4}, \frac{3}{2}, \frac{19}{5}$

 c) Mixed number

These are fractions that have both whole numbers and fractions.

e.g. $1\frac{5}{6}, 3\frac{5}{6}, 12\frac{1}{2}$

EXPRESSING IMPROPER FRACTIONS AS MIXED NUMBER

Example I   **Example II**

Express $^9/_5$ as a mixed number.   Express $^{30}/_7$ as a mixed number.

    9 ÷ 5 = 1 remainder 4   30 ÷ 7 = 4 remainder 2

          $= 1^4/_5$ $= 4^2/_7$

ACTIVITY.

Express the following as mixed numbers.

1. $^3/_2$ 4. $^{15}/_7$

2. $^{11}/_3$ 5. $^{50}/_8$

3. $^{17}/_4$ 6. $^{24}/_7$