Theme: Numbers and Numeration (M-07-001) **CODE: A1**	Theme: Numbers and Numeration (M-07-001) **CODE: A2**
Lesson Title: Concept and Vocabulary of Factors	Lesson Title: Concept and Vocabulary of Factors

What are **factors**?

1 minute

Look at this list of numbers: 0;24;48;8;13;2;40;1;14.

Which numbers are factors of 24?

1½ minutes

Theme: Numbers and Numeration (M-07-001) **CODE: A3**	Theme: Numbers and Numeration (M-07-002) **CODE: A4**
Lesson Title: Concept and Vocabulary of Factors	Lesson Title: Multiples of Whole Numbers

Find the factors of the following numbers:
    i.   18
    ii.   30
    iii.   32

4 minutes

What is a **multiple**?

1½ minutes

Theme: Numbers and Numeration (M-07-002) **CODE: A5**	Theme: Numbers and Numeration (M-07-002) **CODE: A6**
Lesson Title: Multiples of Whole Numbers	Lesson Title: Multiples of Whole Numbers

    i   Write down the first 5 multiples of 11
    ii   Write down all multiples of 7 greater than 20
            but less than 45

3 minutes

    a   What is a **prime number**?

    b   Is **1** a prime number?

2 minutes

Theme: Numbers and Numeration (M-07-003) **CODE: A7**	Theme: Numbers and Numeration (M-07-004) **CODE: A8**
Lesson Title: Factors of Whole Numbers	Lesson Title: Common Factors

Complete the following table:

Numbers	Factors	Prime factors
32		
35		
48		

4 minutes

Explain the word '**common**' in relation to numbers.

1½ minutes

Theme: Numbers and Numeration (M-07-004) **CODE: A9**	Theme: Numbers and Numeration (M-07-004) **CODE: A10**
Lesson Title: Common Factors	Lesson Title: Common Factors

Complete the following sentence:
 	
When a number is a factor of two or more given numbers, it is called a _____ ?
 	
1½ minutes
	Below are four pairs of numbers:
	
	    a. 6 and 12
	    b. 5 and 10
	    c. 8 and 20
	    d. 9 and 15
	
	Find the common factors for the pairs of numbers.
	Write down the factors of the numbers.
	
	4 minutes

Theme: Numbers and Numeration (M-07-005) **CODE: A11**	Theme: Numbers and Numeration (M-07-005) **CODE: A12**
Lesson Title: Highest Common Factor (HCF)	Lesson Title: Highest Common Factor (HCF)
What does the term '**Highest Common Factor**' (HCF) mean? 1½ minutes	When do we use the **factor tree** method? 1½minutes
Theme: Numbers and Numeration (M-07-005) **CODE: A13**	Theme: Numbers and Numeration (M-07-006) **CODE: A14**
Lesson Title: Highest Common Factor (HCF)	Lesson Title: Common Multiples

Use a factor tree to find the HCF of:
    a.)   14 and 28
    b.)   18 and 30
 	
4 minutes
	Give the first five multiples of 5
	
	1 minute

Theme: Numbers and Numeration (M-07-006) **CODE: A15**	Theme: Numbers and Numeration (M-07-006) **CODE: A16**
Lesson Title: Common Multiples	Lesson Title: Common Multiples
List the first ten multiples of **3** and **5**. 3 minutes	a. Find the first 5 common multiples of 3 and 6. b. Find the first 3 common multiples of 6 and 9. 4 minutes

Theme: Numbers and Numeration (M-07-007) **CODE: A17**	Theme: Numbers and Numeration (M-07-007) **CODE: A18**
Lesson Title: Lowest Common Multiple (LCM)	Lesson Title: Lowest Common Multiple (LCM)
What does the term '**Lowest Common Multiple'** (LCM) mean? 1½ minutes	a. Find the LCM of 4 and 12 b. Find the LCM of 10 and 25 4 minutes
Theme: Numbers and Numeration (M-07-008) **CODE: A19**	Theme: Numbers and Numeration (M-07-009) **CODE: A20**
Lesson Title: Square of Whole Number	Lesson Title: Cubed Whole Numbers

Find the values of:
    (a) 8 squared
    (b) 9 squared
    (c) 7 squared
 	
3 minutes
	Find the values of:
	    a.9 cubed
	    b.3 cubed
	    c.5 cubed
	
	3 minutes

Theme: Numbers and Numeration (M-07-010) **CODE: A21**	Theme: Numbers and Numeration (M-07-011) **CODE: A22**
Lesson Title: Higher Powers of Whole Numbers	Lesson Title: Multiplying Two Indices

Simplify the following:
    (a) 6×6×6×6×6
    (b) 7×7×7×7
    (c) 3×3×3×3×3
 	
Expand the following:
    (d)2^5
    (e)8^4
 	
4 minutes
	What is the value of the **power** and what is the value of the **base** in the expression below:
	
	$$3^4$$
	
	2 minutes

Theme: Numbers and Numeration (M-07-011) **CODE: A23**	Theme: Numbers and Numeration (M-07-011) **CODE: A24**
Lesson Title: Multiplying Two Indices	Lesson Title: Multiplying Two Indices
Complete the following sentence: When multiplying two indices with the same base, _____ 1½ minutes	Identify the Law of Indices in the following expression: $$a^m \text{ x } a^n = a^{m+n}$$ 1 minute

Theme: Numbers and Numeration (M-07-011) **CODE: A25**	Theme: Numbers and Numeration (M-07-012) **CODE: A26**
Lesson Title: Multiplying Two Indices	Lesson Title: Dividing Two Indices

Simplify the following.
Leave your answer in index form:

    (a) $4^2 \times 4$
    (b) $2^3 \times 24$

2 minutes

Complete the following sentence:

When we divide two indices with the same base,

_____

1½ minutes

Theme: Numbers and Numeration (M-07-012) **CODE: A27**	Theme: Numbers and Numeration (M-07-012) **CODE: A28**
Lesson Title: Dividing Two Indices	Lesson Title: Dividing Two Indices

Identify the Law of Indices in the following expression:

$$a^m \div a^n = a^{m-n}$$

1½ minutes

Simplify:

    i) $2^4 \div 2^2$

    ii) $\dfrac{t^6}{t^3}$

3 minutes

Theme: Numbers and Numeration (M-07-013) **CODE: A29**	Theme: Numbers and Numeration (M-07-014) **CODE: A30**
Lesson Title: Multiplication and Division of Indices	Lesson Title: Introduction to Fractions

Simplify:

    (a) $\dfrac{3^2 \times 3^5}{3^4 \times 3}$ (b) $\dfrac{2^5 \times 2^4}{2^3 \times 2^2}$ (c) $\dfrac{6^2 \times 6^8}{6^4}$

4 minutes

Draw shapes to show the following fractions:

    (a) $\dfrac{1}{3}$ (b) $\dfrac{3}{8}$ (c) $\dfrac{5}{6}$

3 minutes

Theme: Numbers and Numeration (M-07-015) **CODE: A31**	Theme: Numbers and Numeration (M-07-016) **CODE: A32**
Lesson Title: Introduction to Fractions	Lesson Title: Adding fractions with the same denominator

i) Which fraction is bigger $\dfrac{4}{5}$ or $\dfrac{4}{6}$?

ii) Put this list of fractions in ascending order (smallest first):
    $\dfrac{3}{9}, \dfrac{3}{11}, \dfrac{3}{5}, \dfrac{3}{7}$

iii) Put this list of fractions in descending order (largest first):
    $\dfrac{5}{6}, \dfrac{5}{11}, \dfrac{5}{8}, \dfrac{5}{9}$

4 minutes

Write down the **numerator** and the **denominator** in the following fraction:
    $\dfrac{2}{13}$

1½ minutes

Theme: Numbers and Numeration (M-07-016) **CODE: A33**	Theme: Numbers and Numeration (M-07-017) **CODE: A34**
Lesson Title: Adding fractions with the same denominator	Lesson Title: Adding fractions with different denominators
Complete the following sentence: When the fractions have the same denominator, _____ 1½ minutes	Complete the following sentence: A fraction in which the denominator is bigger than the numerator is known as a _____ 1½ minutes
Theme: Numbers and Numeration (M-07-017) **CODE: A35**	Theme: Numbers and Numeration (M-07-017) **CODE: A36**
Lesson Title: Adding fractions with different denominators	Lesson Title: Adding fractions with different denominators
Solve the problems below: (i) $\frac{2}{7} + \frac{5}{7}$ (ii) $\frac{2}{9} + \frac{2}{9}$ 3 minutes	My mother gave me $\frac{3}{8}$ of a pawpaw, and my father gave me $\frac{2}{8}$ of a pawpaw. How much pawpaw do I have in total? 2 minutes
Theme: Numbers and Numeration (M-07-017) **CODE: A37**	Theme: Numbers and Numeration (M-07-017) **CODE: A38**
Lesson Title: Adding fractions with different denominators	Lesson Title: Adding fractions with different denominators

Complete the following sentences:
a) To subtract fractions with different denominators, we need to
 	
   find a _____
 	
b) To add fractions with different denominators, we need to find a
 	
   _____
 	
2 minutes
	Complete the following sentence:
	
	A fraction in which the denominator is bigger than the numerator is
	
	a _____
	
	1½ minutes

Theme: Numbers and Numeration (M-07-017) **CODE: A39**	Theme: Numbers and Numeration (M-07-017) **CODE: A40**
Lesson Title: Adding fractions with different denominators	Lesson Title: Adding fractions with different denominators
Complete the following sentence: A fraction in which the denominator is smaller than the numerator is known as an _____ 1½ minutes	Change the following improper fraction into a mixed fraction: $$\frac{31}{30}$$ 1½ minutes

Theme: Numbers and Numeration (M-07-017) **CODE: A41**	Theme: Numbers and Numeration (M-07-018) **CODE: A42**
Lesson Title: Adding fractions with different denominators	Lesson Title: Subtracting fractions with the same denominators
Solve the following problems: (i) $\frac{1}{4} + \frac{3}{5}$ (ii) $\frac{2}{5} + \frac{2}{3}$ 4 minutes	Solve the following problems: (a) (b) $\frac{6}{7} - \frac{4}{7}$ (c) $\frac{10}{11} - \frac{6}{11}$ 4 minutes
Theme: Numbers and Numeration (M-07-019) **CODE: A43**	Theme: Numbers and Numeration (M-07-020) **CODE: A44**
Lesson Title: Subtracting fractions with different denominators	Lesson Title: Multiplication of fractions
Simplify: (i) $\frac{8}{9} - \frac{2}{3}$ (ii) A man shared $\frac{5}{6}$ of his money between his 2 sons. If the first son received $\frac{3}{4}$ of his total money, what fraction of his money did his second son receive? 4 minutes	Simplify: $\frac{1}{2} \times \frac{3}{8} \times \frac{2}{3}$ 3 minutes
Theme: Numbers and Numeration (M-07-021) **CODE: A45**	Theme: Everyday Arithmetic (M-07-022) **CODE: A46**
Lesson Title: Division of fractions	Lesson Title: Story problems on the basic operations on fractions
Simplify: a. $\frac{1}{2} \div \frac{2}{3}$ b. $\frac{6}{7} \div \frac{5}{6}$ 4 minutes	Solve the problems below: (i) Marie uses $\frac{1}{4}$ of her money to buy rice, and $\frac{3}{8}$ to buy palm oil. What fraction of her money is left? (ii) Bendu wants to buy enough rice for her family's dinner. Each member of her family eats $\frac{3}{4}$ cup of rice, and there are 8 members of her family. How many cups should she buy? 5 minutes
Theme: Numbers and Numeration (M-07-024) **CODE: A47**	Theme: Numbers and Numeration (M-07-025) **CODE: A48**
Lesson Title: Decimals to fractions	Lesson Title: Fractions to decimals
Express the following as fractions in their lowest terms: a. 5.32 b. 0.325 c. 0.66 4 minutes	Express the following fractions as decimals: a) $\frac{4}{5}$ b) $1\frac{19}{100}$ c) $39\frac{1}{2}$ 4 minutes

Theme: Numbers and Numeration (M-07-026) **CODE: A49**	Theme: Numbers and Numeration (M-07-027) **CODE: A50**
Lesson Title: Rounding off decimal numbers to whole numbers	Lesson Title: Rounding off decimal numbers

In a mathematics test, Amadu and Fatmata were asked to round 36.5 to the nearest whole number.
Amadu's answer was 36 while Fatmata's was 37.
 	
Which of them is correct? Give reasons.
 	
4 minutes
	Round to the number of decimal places given in brackets:
	
	    (a) 7.263 (2)
	    (b) 73.0448 (2)
	    (c) 0.04168 (3)
	    (d) 0.7208 (3)
	
	4 minutes

Theme: Numbers and Numeration (M-07-028) **CODE: A51**	Theme: Numbers and Numeration (M-07-029) **CODE: A52**
Lesson Title: Rounding off whole numbers and decimals to nearest	Lesson Title: Multiplying and dividing whole numbers and decimals

(a) Round 6309 to nearest 10;
 	
    (b) Round 9672.64 to nearest 100;
 	
    (c) Round 5085.12 to nearest 1000.
 	
3½ minutes
	Complete the following sentence:
	
	To multiply or divide decimals and whole numbers by powers of 10,
	
	we move the point to the_____
	
	1½ minutes

Theme: Numbers and Numeration (M-07-029) **CODE: A53**	Theme: Everyday Arithmetic (M-07-030) **CODE: A54**
Lesson Title: Multiplying and dividing whole numbers and decimals by powers of 10	Lesson Title: Review of the four operations with whole numbers

Solve:
 	
    (a) 7300÷100
 	
    (b) 5.38×1000
 	
    (c) 5.6÷ 10^2
 	
3 minutes
	Solve:
	
	    (a) Add: 2096+4360+3685
	
	    (b) Subtract: 840−512
	
	3 minutes

Theme: Everyday Arithmetic (M-07-030) **CODE: A55**	Theme: Everyday Arithmetic (M-07-031) **CODE: A56**
Lesson Title: Review of the four operations with whole numbers	Lesson Title: Review of addition and subtraction of decimals

Solve:
 	
    (a) Multiply: 45×32
 	
    (b) Divide: 1005 ÷5
 	
3 minutes
	Solve:
	
	    (a) Add: 15.47+9.656
	
	    (b) Subtract 45.7−18.635
	
	3 minutes

Theme: Everyday Arithmetic (M-07-032) **CODE: A57**	Theme: Everyday Arithmetic (M-07-033) **CODE: A58**
Lesson Title: Multiplying and dividing decimals	Lesson Title: Order of operations (BODMAS)

Solve:
 	
    i) $1.341 \div 0.03$
 	
    ii) 0.24×0.02
 	
                           1½ minutes
	What do the letters of **BODMAS** stand for?
	
	                        1½ minutes

Theme: Everyday Arithmetic (M-07-033) **CODE: A59**	Theme: Everyday Arithmetic (M-07-034) **CODE: A60**
Lesson Title: Order of operations (BODMAS)	Lesson Title: Estimation

Simplify:
 	
  a. $5.1 \times (6.2 - 3)$
  b. $7 \times 2^3 \div 4$
  c. $15 \div 3 + 4^3$
 	
                        4 minutes
	(a) Round 63,194 to nearest Thousands;
	
	(b) Estimate 828 + 43 to the nearest Tens place
	
	  (a) Estimate 23,489 – 2373 to the nearest Thousands place.
	
	                        3 minutes

Theme: Everyday Arithmetic (M-07-035) **CODE: A61**	Theme: Numbers and Numeration (M-07-036) **CODE: A62**
Lesson Title: Story problems with whole numbers and decimals	Lesson Title: Percentages

a) A trader has 500 mangoes. After selling some mangoes, the number reduced to 289.
      How many mangoes were sold?
 	
b) After recovering from illness, Mustapha tried to gain weight. For 7 weeks he was able to gain 0.4 kg. each week.
      How much did he gain in total?
      Round your answer to the nearest kilogram.
                4 minutes
	What do we mean by '**percent**'?
	
	                        1½minutes

Theme: Numbers and Numeration (M-07-036) **CODE: A63**	Theme: Numbers and Numeration (M-07-037) **CODE: A64**
Lesson Title: Percentages	Lesson Title: Percentages as fractions and decimals

i.   A student scored 85 marks out of 100 on an exam. Express this as a percentage.
  ii.   There were 100 women in a meeting, but 25 of them left. What percentage of the women left the meeting?
  iii.   There are 100 pupils registered in a school, and 56 of them are girls. What percentage of the pupils are girls? What percentage are boys?
 	
                4 minutes
	Three friends divided a pawpaw. Michael ate 30%, Zainab ate 25%, and Juliette ate 45%.
	  i. Write each percentage as a fraction and simplify the fraction. Write the fraction as a decimal.
	  ii. Add all three fractions together, and add all three decimals together.
	
	                4 minutes

Theme: Numbers and Numeration (M-07-038) **CODE: A65**	Theme: Numbers and Numeration (M-07-039) **CODE: A66**
Lesson Title: Fractions and decimals to percentages	Lesson Title: Identify the percentage of a given quantity
Express the following as a percentage: i) 0.65 ii) $\frac{4}{5}$ iii) 0.2 3½ minutes	i. Calculate 22% of Le 60,000. ii. Alpha was given 42% of Le 150, 000. Calculate the amount given to Alpha. 3 minutes
Theme: Numbers and Numeration (M-07-040) **CODE: A67**	Theme: Numbers and Numeration (M-07-041) **CODE: A68**
Lesson Title: Express one quantity as a percentage of another	Lesson Title: Percentage increase
a) In a mathematics lesson, 5 pupils are absent from a class of 25 pupils. What percentage of the class is absent? b) 7 out of every 10 people have watched a football match at the National Stadium. What is this as a percentage? 3 minutes	What do we mean by '**increase**'? 1 minute
Theme: Numbers and Numeration (M-07-041) **CODE: A69**	Theme: Numbers and Numeration (M-07-042) **CODE: A70**
Lesson Title: Percentage increase	Lesson Title: Percentage decrease
(i) A bag of rice cost le 150,000, and was increased to le 210,000. Calculate the percentage increase. (ii) A man sells cassava in the market. One week he sold 200 bags and the next week he sold 240 bags. Calculate the percentage increase. 3 minutes	What is the formula for finding the percentage increase or decrease? 1½ minutes
Theme: Numbers and Numeration (M-07-042) **CODE: A71**	Theme: Numbers and Numeration (M-07-042) **CODE: A72**
Lesson Title: Percentage decrease	Lesson Title: Percentage decrease
i. A businesswoman sells her lappa for le 20,000 per yard, but she sold one yard to her friend for le 15,000. Calculate the percentage decrease. ii. In one year, the number of people who own cell phones in one village increased from 40 people to 60 people. Calculate the percentage increase. 3 minutes	(i) There were 800 people living in a village in 2005. By 2015, the population had grown by 20%. What was the population in 2015? (ii) David had 400 DVDs for sale in his shop, but he sold 30% of them. How many DVDs remain in his shop? 4 minutes

Theme: Numbers and Numeration (M-07-044) **CODE: A73**	Theme: Numbers and Numeration (M-07-045) **CODE: A74**
Lesson Title: Applying percentages to problems with money	Lesson Title: Story problems with percentages
i. Francis opened a new cookery shop. On the first day, his profit was Le150, 000. The second day, his profit was 25% lower. What was his profit the second day? ii. Juliet sells lappa in the market. Before, she sold it for le15, 000 per yard. However, the cost of her rent increased and she wants to increase the price of her lappa by 15%. What will be the new price per yard? 4 minutes	a. Abass gets 80% correct in a test of 20 questions. Calculate the number of questions in the test he got wrong. b. A man bought a car for Le8,000,000 and sold it a year later at Le6,000,000. What was the percentage decrease in the value of the car? 4 minutes