Theme: Numbers and Numeration (M-08-001) **CODE A1**

Lesson Title: Converting between Mixed and Improper fractions

1. What is a **mixed fraction**?

2. What is an **improper fraction**?

2 minutes

Theme: Numbers and Numeration (M-08-001) **CODE A2**

Lesson Title: Converting between Mixed and Improper fractions

Convert the following improper fractions to mixed fractions:

1. $\frac{7}{6}$
2. $\frac{21}{5}$
3. $\frac{16}{5}$

3 minutes

Theme: Numbers and Numeration (M-08-001) **CODE A3**

Lesson Title: Converting between mixed and Improper fractions

Convert the following mixed fractions to improper fractions:

1. $2\frac{1}{8}$
2. $3\frac{1}{5}$
3. $8\frac{3}{5}$

4 minutes

Theme: Numbers and Numeration (M-08-002) **CODE A4**

Lesson Title: Converting Decimals to Fractions

Convert the following decimals to fractions:

1. 0.6
2. 0.025
3. 1.35

3 minutes

Theme: Numbers and Numeration (M-08-003) **CODE A5**

Lesson Title: Converting Fractions to Decimals

Convert the following fractions to decimal numbers:

1. $8\frac{17}{100}$
2. $\frac{7}{20}$

3 minutes

Theme: Numbers and Numeration (M-08-004) **CODE A6**

Lesson Title: Comparing and Ordering a Mixture of Numbers

What is a n**umber line?**

1 minute

Theme: Numbers and Numeration (M-08-004) **CODE A7**

Lesson Title: Comparing and Ordering a Mixture of Numbers

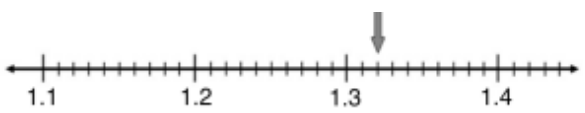
Draw a number line that shows the fractions in thirds from **0 to 1**.

2 minutes

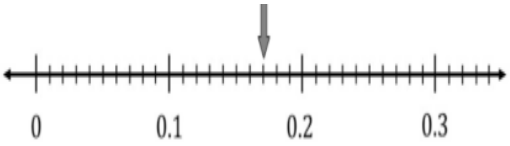
Theme: Numbers and Numeration (M-08-004) **CODE A8**

Lesson Title: Comparing and Ordering a Mixture of Numbers

Identify the number shown by the arrow on the number line.



1 minute

Theme: Numbers and Numeration (M-08-004) **CODE A9**	Theme: Numbers and Numeration (M-08-006) **CODE A13**
Lesson Title: Comparing and Ordering a Mixture of Numbers	Lesson Title: Classification of Decimal Numbers
Create a number line that represents these numbers in their correct order: 0.1, 0.2, 0.4, 0.8, 0.9, 0.3, 0.5, 0.6, 0.7, 0, 1 2½ minutes	Determine whether the following decimal numbers are recurring or terminating: 1. 3.8261 2. 2.999… 3. $9.\dot{9}$ 2 minutes
Theme: Numbers and Numeration (M-08-005) **CODE A10**	Theme: Numbers and Numeration (M-08-006) **CODE A14**
Lesson Title: Locating a Mixture of Numbers on the Number Line	Lesson Title: Classification of Decimal Numbers
Identify the number shown by the arrow:  2 minutes	Write the following decimal numbers in their **shortened notation**: 1. 1.5454545454… 2. 0.666666… 3. 0.123123123123… 1½ minutes
Theme: Numbers and Numeration (M-08-005) **CODE A11**	Theme: Numbers and Numeration (M-08-007) **CODE A15**
Lesson Title: Locating a Mixture of Numbers on the Number Line	Lesson Title: Rounding off Decimal Numbers to the Nearest Whole
Identify the number shown with the arrow:  1½ minutes	Round off the following decimals to the nearest whole number. 1. 13.29 2. 20.8 3 minutes
Theme: Numbers and Numeration (M-08-006) **CODE A12**	Theme: Numbers and Numeration (M-08-008) **CODE A16**
Lesson Title: Classification of Decimal Numbers	Lesson Title: Rounding off Decimal Numbers to Stated Decimal
1. What is a **recurring** decimal? 2. What is a **terminating** decimal? 2 minutes	Round off 11.2389 to: 1. 1 decimal place 2. 2 decimal places 3. 3 decimal places 4 minutes

Theme: Numbers and Numeration (M-08-011) **CODE A17**	Theme: Numbers and Numeration (M-08-016) **CODE A21**
Lesson Title: Adding and Subtracting Integers and Decimals	Lesson Title: Review the Concept and Vocabulary of Factors and
Add or subtract the numbers: 1. 215.98 + 125.2 2. 1.5 – 0.9 3. 2.25 – 1.81 2 minutes	List the factors of 16. 3 minutes
Theme: Numbers and Numeration (M-08-012) **CODE A18**	Theme: Numbers and Numeration (M-08-017) **CODE A22**
Lesson Title: Adding and Subtracting Fractions with Integers and Decimals	Lesson Title: Review Prime and Composite Numbers
Evaluate the following: 4.5 × 4 ÷ 0.25 **Hint:** Convert the decimal numbers into fraction form 2 minutes	What is a **prime number?** 1 minute
Theme: Numbers and Numeration (M-08-015) **CODE A19**	Theme: Numbers and Numeration (M-08-017) **CODE A23**
Lesson Title: Story Problems with Operations on Different Number	Lesson Title: Review Prime and Composite Numbers
Solve the following story problem: David had ¾ cup of rice, and his sister gave him ¾ cup more. How much rice did he have in total? 1½ minutes	What is a **composite number?** 1 minute
Theme: Numbers and Numeration (M-08-016) **CODE A20**	Theme: Numbers and Numeration (M-08-018) **CODE A24**
Lesson Title: Review the Concept and Vocabulary of Factors and	Lesson Title: Review Prime and Composite Numbers
What is a **factor** of a number? 1½ minutes	Identify prime and composite numbers between 5 and 15. 3 minutes

Theme: Numbers and Numeration (M-08-018) **CODE A25**	Theme: Numbers and Numeration (M-08-021) **CODE A29**
Lesson Title: Prime Factors of Whole Numbers	Lesson Title: Index Notation
What are **prime factors?** 1½ minutes	Evaluate the following: 1. 6^3 2. 8^1 1 minute
Theme: Numbers and Numeration (M-087-018) **CODE A26**	Theme: Numbers and Numeration (M-08-022) **CODE A30**
Lesson Title: Prime Factors of Whole Numbers	Lesson Title: Index Law 1: Multiplication of Indices
Identify the prime factors of 20. 3 minutes	Simplify the following. Give the answer in index notation. $2^8 \times 2^5$ 2 minutes
Theme: Numbers and Numeration (M-08-019) **CODE A27**	Theme: Numbers and Numeration (M-08-023) **CODE A31**
Lesson Title: Calculating the Least Common Multiple (LCM)	Lesson Title: Index Law 2: Division of Indices
Find the lowest common multiple (LCM) of 12 and 20. 4 minutes	Simplify the following: $3^5 \div 3^3$ 2 minutes
Theme: Numbers and Numeration (M-08-021) **CODE A28**	Theme: Numbers and Numeration (M-08-025) **CODE A32**
Lesson Title: Index Notation	Lesson Title: Index Law 4: Powers of Indices
Identify the **base** and the **index** in this number: 3^2 1 minute	Simplify and leave the answer in index notation. $(2^2)^3$ 1½ minutes

Theme: Numbers and Numeration (M-08-026) **CODE A33**	Theme: Numbers and Numeration (M-08-031) **CODE A37**
Lesson Title: Index Laws 5 and 6: Power of a Product and Quotient	Lesson Title: Identifying the Percentage of a Given Quantity
Simply the following: $(2 \times 3)^2$ 2 minutes	Answer: A percentage is a number or ratio expressed as a fraction of 100. It is often identified by using the sign "%" **Example** $30\% = \frac{30}{100}$
Theme: Numbers and Numeration (M-08-027) **CODE A34**	Theme: Numbers and Numeration (M-08-031) **CODE A38**
Lesson Title: Application of the Laws of Indices	Lesson Title: Identifying the Percentage of a Given Quantity
Simplify the following. Leave your answer in index notation. $(2^3)^4 \times 2^5$ 4 minutes	Answer: Convert the percentage to a fraction $10\% = \frac{10}{100} = \frac{1}{10}$ Find 10% of 150 $\frac{1}{10} \times 150$ $= \frac{150}{10}$ $= 15$ **Answer: 15** of the 150 oranges were rotten.
Theme: Numbers and Numeration (M-08-028) **CODE A35**	Theme: Everyday Arithmetic (M-08-032) **CODE A39**
Lesson Title: Indices with Negative Powers	Lesson Title: Expressing One Quantity as a Percentage of Another
Simplify and leave the answer with positive indices. 1. 2^{-2} 2. 23^{-41} 3 minutes	Answer: Convert 1 hour = 60 minutes Write the given quantity (9 minutes) as a fraction of one hour (60 minutes) $\frac{9}{60}$ Multiply by 100%: $\frac{9}{60} \times 100\% = 15\%$ **Answer:** The percentage of the test time used to answer the question was **15%**
Theme: Numbers and Numeration (M-08-030) **CODE A36**	Theme: Numbers and Numeration (M-08-033) **CODE A40**
Lesson Title: Negative Powers and the Index Laws	Lesson Title: Percentage increase
Simplify: $2^4 \div 2^{-3} \times 2^2$ **Hint:** Use BODMAS. 4 minutes	Answer: When the new value is **greater** than the old value, we are calculating a percentage **increase**. When the new value is **less** than the old value, we are calculating a percentage **decrease**.

Theme: Numbers and Numeration (M-08-033) **CODE A41**	Theme: Numbers and Numeration (M-08-035) **CODE A45**
Lesson Title: Percentage increase	Lesson Title: Applying Percentage Increase and decrease
What is the formula for finding the percentage increase or decrease? 1 minute	Solve the following word problems: 1. A messenger received a salary of Le 68,500. She is promoted to a higher salary level and her salary increases by 14%. Calculate her new salary. 2. The number 600 is decreased by 35%. Find the new number.
Theme: Numbers and Numeration (M-08-033) **CODE A42**	Theme: Everyday Arithmetic (M-08-036) **CODE A46**
Lesson Title: Percentage increase	Lesson Title: Introduction to Profit and Loss
Solve the word problem: A bag of rice cost le 150,000 and was increased to Le 210,000. Calculate the percentage increase. 2 minutes	Differentiate between a **profit** and a **loss.** 1½ minutes
Theme: Numbers and Numeration (M-08-033) **CODE A43**	Theme: Everyday Arithmetic (M-08-036) **CODE A47**
Lesson Title: Percentage increase	Lesson Title: Introduction to Profit and Loss
Solve the word problem: 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. 2 minutes	State the formulae for **percent profit** and **percent loss.** 1½ minutes
Theme: Numbers and Numeration (M-08-035) **CODE A44**	Theme: Everyday Arithmetic (M-08-037) **CODE A48**
Lesson Title: Applying Percentage Increase and decrease	Lesson Title: Calculating Profit
You are given a quantity K and given the percentage increase or decrease M on it. Explain what steps you need to calculate the new quantity.	Solve the following word problem: A watermelon was bought for Le 1.00 and sold at Le 1.70. Calculate the **percent profit.** 3 minutes

Theme: Numbers and Numeration (M-08-039) **CODE A49**	Theme: Numbers and Numeration (M-08-41) **CODE A53**
Lesson Title: Introduction to Percentages Greater than 100	Lesson Title: Ratio
Solve: 1. Calculate 90 as a percentage of 60. 2. Calculate 100 as a percentage of 40. 3 minutes	Express the following ratios as fractions: 1. 20 : 35 2. 200 : 800 2 minutes
Theme: Numbers and Numeration (M-08-039) CODE A50	**Theme: Everyday Arithmetic (M-08-42) CODE A54**
Lesson Title: Introduction to Percentages Greater than 100	Lesson Title: Rate
Write the following percentages as fractions over 100 and simplify if possible. 1. 102% 2. 199% 3. 200% 3 minutes	Define the term **rate.** 3 minutes
Theme: Numbers and Numeration (M-08-40) CODE A51	**Theme: Everyday Arithmetic (M-08-42) CODE A55**
Lesson Title: Calculations with Percentages Greater than 100	Lesson Title: Rate
Calculate: 1. 120% of 80. 2. 250% of Le 8,000.00 3 minutes	Solve the following word problems: 1. Fatu sat a mathematics exam. She solved 20 problems in 40 minutes. What is her rate in minutes per problem? 2. A car needs 4 litres of petrol to travel 45 km. What is its rate of petrol consumption?
Theme: Numbers and Numeration (M-08-41) CODE A52	**Theme: Everyday Arithmetic (M-08-044) CODE A56**
Lesson Title: Ratio	Lesson Title: Calculation of Unit Price
What is a **ratio**? 1½ minutes	Solve the following word problems: 1. Bendu paid Le 80,000.00 for 20 litres of petrol. What is the unit price for each litre of petrol? 2. Juliet sells palm oil in large bottles that carry 5 litres. She sells each bottle for Le 65,000.00. What is the unit cost for each litre of palm oil? 3 minutes

Theme: Everyday Arithmetic (M-08-045) **CODE A57**	Theme: Everyday Arithmetic (M-07-047) **CODE A61**
Lesson Title: Making Comparisons with Unit Price	Lesson Title: Identifying Direct Proportions
Michael sells beans. He sells 3 kg of beans for Le 42,000.00, and 5 kg of beans for Le 65,000.00. Which option has the better unit price? 4 minutes	y and x are directly proportional. When x = 10, y = 4. Find the value of the constant of proportionality, k. 3 minutes
Theme: Everyday Arithmetic (M-08-046) **CODE A58**	Theme: Everyday Arithmetic (M-08-048) **CODE A62**
Lesson Title: Direct Proportion	Lesson Title: Solving Direct Proportions
Define the term **proportion.** What is **direct proportion**? 3 minutes	Find the value of *b* that completes the direct proportion: $\frac{1}{b} = \frac{7}{21}$ 3 minutes
Theme: Everyday Arithmetic (M-08-046) **CODE A59**	Theme: Everyday Arithmetic (M-08-050) **CODE A63**
Lesson Title: Direct Proportion	Lesson Title: Direct Proportion Story Problems
Consider the ratios 3 : 12 and 5 : 20. a. Write the ratios as fractions. b. What are the extremes and the means? c. Is this a direct proportion? 3 minutes	Solve the following word problem: A woman sold 50 oranges in 4 hours. If she continues selling them at the same rate, how many can she sell in 6 hours? 3 minutes
Theme: Everyday Arithmetic (M-08-047) **CODE A60**	Theme: Everyday Arithmetic (M-08-051) **CODE A64**
Lesson Title: Identifying Direct Proportions	Lesson Title: Indirect Proportion
Write down the equation for **direct proportion** using the letters x, y and k. 1 minute	Define an **indirect proportion**. 1½ minutes

Theme: Everyday Arithmetic (M-08-051) **CODE A65**

Lesson Title: Indirect Proportion

Write down the equation for **indirect proportion** or **inverse proportions** using the letters x, y and k.

1 minute

Theme: Everyday Arithmetic (M-08-051) **CODE A66**

Lesson Title: Indirect Proportion

Determine whether the following represents an indirect proportion or not.

$1 : 6 \propto 30 : 5$

3 minutes