Theme: Algebra (M-07-106)	CODE: C1
Lesson Title: Identifying number patterns	
Complete the following sentence: When a list of numbers follows a certain pattern, it can be referred to as a _____. 1½ minutes	

Theme: Algebra (M-07-106)	CODE: C2
Lesson Title: Identifying number patterns	
Complete the following sentence: A sequence in which the same number is added again and again to the preceding number is called an _____. 1½ minutes	

Theme: Algebra (M-07-106)	CODE: C3
Lesson Title: Identifying number patterns	
Consider the following pattern: 5; 7; 9; 11; 13. a. Is the above pattern an arithmetic pattern? Give a reason for your answer. b. What is the number being added to this pattern each time? 3 minutes	

Theme: Algebra (M-07-106)	CODE: C4
Lesson Title: Identifying number patterns	
Which of the following lists of numbers are arithmetic patterns? a. 20, 30, 40, 50, 60 b. 4, 8, 16, 20, 28, 32 c. 21, 17, 13, 9, 5, 1 d. 10, 20, 40, 70, 110 2½ minutes	

Theme: Algebra (M-07-108)	CODE: C5
Lesson Title: Completing number patterns	
Consider the following sequence: 2; 5; 8; 11; 14; 17; 20. a. What is the pattern in this number sequence? b. What is the common difference in this sequence? 3 minutes	

Theme: Algebra (M-07-108)	CODE: C6
Lesson Title: Completing number patterns	
Consider the following number sequence: a. Identify the rule in the pattern: 3, 12, 21, 30, 39, 48. b. Create an arithmetic pattern with a common difference of 15 4 minutes	

Theme: Algebra (M-07-108)	CODE: C7
Lesson Title: Completing number patterns	
a. Write the next 4 terms of the arithmetic pattern: 1, 4, 7, __, __, __, __ b. Find the missing terms: 35, 30, __, __, __, 10, 5, 0 3½ minutes	

Theme: Algebra (M-07-108)	CODE: C8
Lesson Title: Completing number patterns	
a. Find the first 3 terms: __, __, __, 48, 60, 72 b. Find the missing terms: -3, -8, __, -18, -23, -28, __, -38 c. Find the next 3 terms: 150, 300, 450, __, __, __ 3½ minutes	

Theme: Algebra (M-07-109)	CODE: C9
Lesson Title: Variables	
What is a variable? 1½ minutes	

Theme: Algebra (M-07-109)	CODE: C10
Lesson Title: Variables	
a. What is the inverse operation of addition? b. What is the inverse operation of subtraction? 1½ minutes	

Theme: Algebra (M-07-109)	CODE: C11
Lesson Title: Variables	
Consider the following equations: a. $y + 1 = 4$ What number must be added to 1 to get 4? b. $a - 6 = 7$ 6 must be subtracted from which number to get 7? 2 minutes	

Theme: Algebra (M-07-109)	CODE: C12
Lesson Title: Variables	
Solve for the unknown variables in the following equations: i. $x + 2 = 3$ ii. $6 = y - 4$ 2 minutes	

Theme: Algebra (M-07-110)	CODE: C13
Lesson Title: Solving for a variable	
Solve for the unknown variables in the following equations: i. $5 = y - 8$ ii. $x + 9 = 15 + 4$ 2½ minutes	

Theme: Algebra (M-07-111)	CODE: C14
Lesson Title: Coefficients	
What do you understand by the term '**coefficient**'? 1½ minutes	

Theme: Algebra (M-07-111)	CODE: C15
Lesson Title: Coefficients	
Consider the following expression: $4x + 3$ Identify the coefficient of x in the expression. 1 minute	

Theme: Algebra (M-07-111)	CODE: C16
Lesson Title: Coefficients	
Simplify the following expressions: (a) $9 \times t$ (b) $b + b + b + b + b$ 2 minutes	

Theme: Algebra (M-07-112)	CODE: C17
Lesson Title: Solving for a variable with a coefficient	
Simplify and find the value of the variable in the expression: a. $3 \times t = 9 - 3$ b. $2u = 10$ 2½ minutes	

Theme: Algebra (M-07-113)	CODE: C18
Lesson Title: Like terms	
Complete the following sentence: When adding or subtracting like terms, the variables and exponents in terms don't _____. 1½ minutes	

Theme: Algebra (M-07-114)	CODE: C19
Lesson Title: Combining like terms	
Identify the like terms from the expressions: a. $2p + 5 - 5p - 11$ b. $6m + 3n - 8m + 2n$ 2½ minutes	

Theme: Algebra (M-07-114)	CODE: C20
Lesson Title: Combining like terms	
Combine the like terms: i) $-20x + 9x$ ii) $12a + 35a$ iii) $100s - 21s$ iv) $9y - 42y$ 3 minutes	

Theme: Algebra (M-07-115)	CODE: C21
Lesson Title: Simplifying algebraic expressions	
Consider the following expressions and identify the like terms: a. $4y + 2 + y + 2$ b. $2a + 7 + 5a - 2$ 2 minutes	

Theme: Algebra (M-07-115)	CODE: C22
Lesson Title: Simplifying algebraic expressions	
Simplify: (a) $4ab + 3a + 7 - ab - 2a - 8$ (b) $4f + 6 + f - 4$ 3 minutes	

Theme: Algebra (M-07-115)	CODE: C23
Lesson Title: Simplifying algebraic expressions	
Complete the following: a. $- \times - =$ _____ b. $- \times + =$ _____ c. $+ \times + =$ _____ 2 minutes	

Theme: Algebra (M-07-116)	CODE: C24
Lesson Title: Multiplying algebraic expressions	
Simplify the following expressions: (i) $8(3 + 5b)$ (ii) $-6(4x + 1)$ (iii) $2(4a + 2b - 5)$ 3½ minutes	

Theme: Algebra (M-07-117)	CODE: C25
Lesson Title: Dividing algebraic expressions	
Simplify the following expressions: (i) $14xy \div 7$ (ii) $2ab \div -2$ (iii) $-100z \div 25$ 2½ minutes	

Theme: Algebra (M-07-118)	CODE: C26
Lesson Title: Factorisation	
Factorise the following: (i) $18x - 12y$ (ii) $16x - 24$ (iii) $7a - 14b + 21c$ 3½ minutes	

Theme: Algebra (M-07-119)	CODE: C27
Lesson Title: Introduction to linear equations	
Solve for the unknown variables on the following equations: (i) $8 = 4 + n$ (ii) $y - 6 = -12$ 3 minutes	

Theme: Algebra (M-07-120)	CODE: C28
Lesson Title: Showing linear equation (review)	
Solve for the unknown variables in the following equation: $7m + 3 = 13 + 5m$ 2 minutes	

Theme: Algebra (M-07-121)	CODE: C29
Lesson Title: Introduction to the Cartesian plane	
(a) Draw a Cartesian plane. (b) Label the axes from –7 to +7. (c) Label the origin. (d) Label each quadrant. 4½ minutes	

Theme: Algebra (M-07-122)	CODE: C30
Lesson Title: Identifying points on the Cartesian plane	
Draw a Cartesian plane showing the points: **A** (–2; 4), **B** (4; 3), **C** (–1; –2), **D** (3; –3) 4½ minutes	

Theme: Statistics (M-07-126)	CODE: C31
Lesson Title: Data collection	
7 pupils are each asked to state how many sisters they have. The data is collected is as follows: Michael (4), Issa (4), Janet (5), Abass (3), Jane (1) Idrissa (2) and Fanta (1). Display the information with tally marks. 2½ minutes	

Theme: Statistics (M-07-127)	CODE: C32
Lesson Title: Tables of data	
This is a list of the scores obtained by pupils in a mathematics test worth 30 possible points. Organise the data in a table: 12, 25, 30, 20, 15, 12, 25, 12, 20, 12, 25, 12, 15, 12, 15, 12, 15, 20, 30, 25, 15, 30, 20, 15, 25, 30, 12, 12, 15, 12, 30, 20, 15. 5 minutes	

Theme: Statistics (M-07-128) **CODE: C33**

Lesson Title: Creating bar charts

The following are sizes of shoes worn by 20 pupils:
7, 9, 6, 10, 8, 8, 9, 11, 8, 7, 9, 6, 8, 10, 9, 8, 7, 7, 8, 9.
Copy and complete the table below:

Size	Frequency
6	
7	
8	
9	
10	
11	

5 minutes

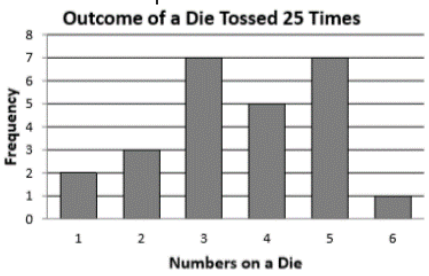
Theme: Statistics (M-07-129) **CODE: C34**

Lesson Title: Creating bar charts

Consider the bar chart and answer the questions:

a. Which number was rolled most often?
b. Which number was rolled least often?
c. How many more times did Aminata roll a 3 than a 1?

How many fewer times did Aminata roll a 6 than a 5?



4½ minutes

Theme: Statistics (M-07-130) **CODE: C35**

Lesson Title: Creating line graphs

What is a graph?

1 minute

Theme: Statistics (M-07-130) **CODE: C36**

Lesson Title: Creating line graphs

Consider the following table:

Months	1	2	3	4	5	6	7	8	9
Weight in lbs.	10	15	20	25	30	35	40	45	50

a. Which values should we put on the x-axis?
b. Which values should be on the y-axis?

1½ minutes

Theme: Statistics (M-07-130) **CODE: C37**

Lesson Title: Creating line graphs

The table below shows daily temperatures for Freetown City, recorded for 6 days in degrees Celsius.

Display the data in a line graph with a y-axis ranging from 24 to 33

Temperature in Freetown City

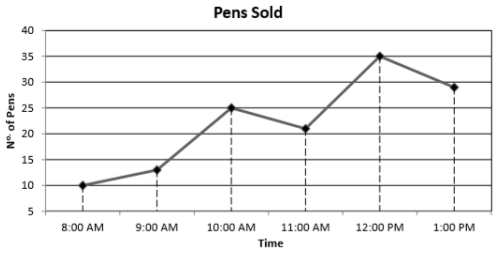
Day	1	2	3	4	5	6
Temperature (°C)	27	28	27	31	32	30

4½ minutes

Theme: Statistics (M-07-131) **CODE: C38**

Lesson Title: Interpreting line graphs

a. How many pens were sold at 1 pm?
b. How many more pens were sold at 12 pm than at 8 am?



c. What time had the highest sale?

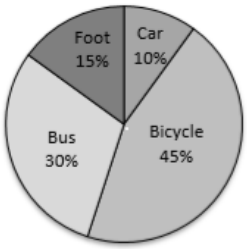
4½ minutes

Theme: Statistics (M-07-132) **CODE: C39**

Lesson Title: Pie charts

Consider the pie chart showing transportation used by pupils:

a. Which means of transportation do the highest percentage of pupils use?
b. Which means of transportation do the lowest percentage of pupils use?
c. What is the difference in percentage between pupils who use bicycles and those who use cars?
d. What percentage of pupils do not walk to school?



4½ minutes

Theme: Statistics (M-07-133) **CODE: C40**

Lesson Title: Comparing graphs and charts

What is a bar chart?

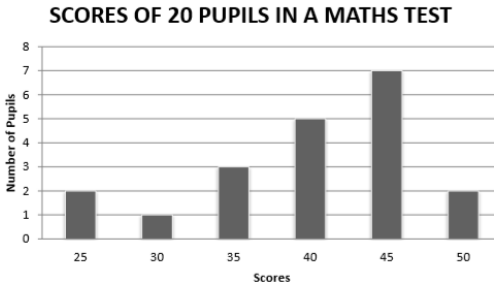
1½ minutes

Theme: Statistics (M-07-133)	CODE: C41
Lesson Title: Comparing graphs and charts	
When do we use a bar chart? 1½ minutes	

Theme: Statistics (M-07-133)	CODE: C42
Lesson Title: Comparing graphs and charts	
What is a line graph? 1½ minutes	

Theme: Statistics (M-07-133)	CODE: C43
Lesson Title: Comparing graphs and charts	
What is a pie chart? 1½ minutes	

Theme: Statistics (M-07-133)	CODE: C44
Lesson Title: Comparing graphs and charts	
When do we use a pie chart? 1½ minutes	

Theme: Statistics (M-07-133)	CODE: C45
Lesson Title: Comparing graphs and charts	
a. Which score was achieved by the most pupils? b. How many pupils scored 35? c. Did more pupils score 45 or 35? d. How many more pupils scored 45 than 35?  4½ minutes	

Theme: Statistics (M-07-134)	CODE: C46
Lesson Title: Community survey collecting data	
a. What is a community? b. What is a survey? c. What is data collection? 3½ minutes	

Theme: Statistics (M-07-136)	CODE: C 47
Lesson Title: Mean and median	
a. What do you understand by the term '**mean**'? b. What do you understand by the term '**median**'? 2½ minutes	

Theme: Statistics (M-07-136)	CODE: C 48
Lesson Title: Mean and median	
The marks for a class of 16 pupils for a mathematics test are ordered from smallest to largest: 3; 15; 16; 16; 18; 20; 21; 22; 27; 27; 27; 31; 35; 40; 42; 43 Calculate the following: a. The mean for the class b. The median for the class 4 minutes	

Theme: Statistics (M-07-137)	CODE: C 49
Lesson Title: Mode and range	

What do you understand by the following terms?

a. **Mode**

b. **Range**

2½ minutes

Theme: Statistics (M-07-137)	CODE: C 50
Lesson Title: Mode and range	

Consider the following set of data and answer the questions below:

2; 1; 7; 5; 6; 8; 6; 9; 6; 9

a. What is the lowest number?

b. What is the highest number?

c. Which number appears more often than the others?

3 minutes

Theme: Statistics (M-07-138)	CODE: C 51
Lesson Title: Statistical calculations from a list of data	

Find the:

a. mean
b. median
c. mode
d. range

of the following number set:

8; 9; 10; 10; 10; 11; 11; 11; 12; 13

4½ minutes

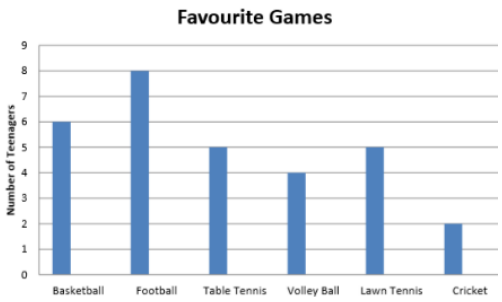
Theme: Statistics (M-07-139)	CODE: C 52
Lesson Title: Statistical calculations from a bar chart	

Consider the chart and answer the following questions:

a. What is the median number of teenagers that like each sport?

b. What is the mode?

c. What is the range?



3 minutes

Theme: Statistics (M-07-140)	CODE: C 53
Lesson Title: Statistics story problems	

One day a distributor was supplied with crates of soft drinks as follows:
Sprite 15 crates, Coke 20 crates, Mega cola 10 crates, Vimto 5 crates, Apple Sidra 20 crates, Fanta 25 crates, Maltina 10 crates.

Calculate the mean, median, mode, and range of the information.

4 minutes

Theme: Probability (M-07-141)	CODE: C 54
Lesson Title: Introduction to probability	

The sun rises at 10 o'clock in the night.

Is this statement impossible, unlikely, likely, or certain?

1½ minutes

Theme: Probability (M-07-142)	CODE: C 55
Lesson Title: Probability experiments	

What is an experiment?

1½ minutes

Theme: Probability (M-07-142)	CODE: C 56
Lesson Title: Probability experiments	

What is an outcome when we talk about experiments?

1½ minutes

Theme: Probability (M-07-142)	CODE: C 57
Lesson Title: Probability experiments	
For each of the following, which is an **outcome** and which is an **experiment**? a. A coin landing on heads b. Randomly choosing any pen from a cup of 10 different coloured pens c. Rolling a die d. Choosing a red pen from a cup e. Choosing a football jersey at random from a box of different team jerseys f. A die landing on 3 g. Choosing a Manchester United jersey from a box 4 minutes	

Theme: Probability (M-07-143)	CODE: C 58
Lesson Title: Certain and uncertain probability	
What is the probability of the following: a. A cat giving birth to chickens b. Next year being 2015 c. A 14-year old turning 15 on her next birthday. 3 minutes	

Theme: Probability (M-07-144)	CODE: C 59
Lesson Title: Likely and unlikely events	
a. What does it mean if an event is *likely* to happen? b. What does it mean if an event is *unlikely* to happen? 2½ minutes	

Theme: Probability (M-07-144)	CODE: C 60
Lesson Title: Likely and unlikely events	
There are 25 football jerseys in a box. 8 of them are yellow, 2 are orange, and the rest are black. I will randomly select one to wear. Rank the following events from most likely (or certain) to least likely (or impossible): a. I will select a yellow jersey b. I will select a green jersey c. I will select an orange jersey d. I will select a black jersey e. I will select a jersey that is yellow, orange, or black. 3½ minutes	

Theme: Probability (M-07-145)	CODE: C 61
Lesson Title: The language of probability	
Amadu and his two sisters lives with their grandmother. Randomly select one person from Amadu's family to win a prize. Write down the probability of the following: a. Is it more likely that you will choose a male or a female? b. Is it more likely that you will choose someone over 40 years old, or under 40 years old? 3 minutes	

Theme: Probability (M-07-146)	CODE: C 62
Lesson Title: The language of probability	
Mary will choose a letter at random from the 26 letters in the alphabet. What is the probability that she will choose: 1. E 2. Z 3. A vowel 4 minutes	

Theme: Probability (M-07-147)	CODE: C63
Lesson Title: Probability fraction problems	
There are six red balls and nine blue balls in a box. A ball is selected at random. Find the probability that the ball is: a. Red b. Blue c. Either red or blue 4 minutes	

Theme: Probability (M-07-148)	CODE: C64
Lesson Title: Probability as a percent	
Martina has 100 mangoes for sale. 20 of them are unripe. Another 5 of them are bad. If a mango is picked at random, find: a. The probability that it is unripe mango. b. The probability that it is a bad mango. 2½ minutes	

Theme: Probability (M-07-149) **CODE: C65**	Theme: Probability (M-07-149) **CODE: C66**
Lesson Title: Solving probability story problems	Lesson Title: Solving probability story problems
a. What does a probability of zero mean? b. What does a probability of one mean? c. What does it mean if the probability of an event equals half? 3 minutes	Sam will buy a new kitten. He found someone with a mother cat, and there were 2 black kittens, 3 grey kittens, and 1 white kitten. Of the kittens, 4 were male. He will choose one at random. What is the probability that he will choose: a. A black kitten? b. Either a black or grey kitten? c. A brown kitten? d. A female kitten? 4 minutes