Theme: Algebra (M-08-116) **CODE C1**

Lesson Title: Practice with Expansion

Remove the brackets and simplify the following algebraic expressions:

1. $3(2v + 3)$

2. $x\,(4 - x)$

2 minutes

Theme: Algebra (M-08-117) **CODE C2**

Lesson Title: Practice with Factorisation

Complete the sentence:

The factors of a number _____ exactly into that number.

1 minute

Theme: Algebra (M-08-117) **CODE C3**

Lesson Title: Practice with Factorisation

Factorise the expression below. Show how to check your answer.

$3x + 12$

1 minute

Theme: Algebra (M-08-118) **CODE C4**

Lesson Title: Substitution with One Variable

1. Find the value of $5 - 2x$ if $x = 4$.

2. Find the value of $3x + 8$ when $x = -5$.

2 minutes

Theme: Algebra (M-08-119) **CODE C5**

Lesson Title: Substitution with Two Variables

If $x = -3$ and $y = 4$, what is the value of $x + xy$?

1½ minutes

Theme: Algebra (M-08-120) **CODE C6**

Lesson Title: Substitution Practice

Evaluate $x - y + z$ when $x = 4$, $y = -1$ and $z = 2$.

1½ minutes

Theme: Algebra (M-08-121) **CODE C7**

Lesson Title: Linear Equations in One Variable

Solve each of the linear equations for the variable:

1. $z + 7 = 9$

2. $4 + a = -4$

2 minutes

Theme: Algebra (M-08-122) **CODE C8**

Lesson Title: Solving Linear Equations I

Solve for the variable in the equation below.

$60 + x = 15$

1 minute

Theme: Algebra (M-08-123) **CODE C9**

Lesson Title: Solving Linear Equations II

Solve the following equations:

1. $6x = 12$

2. $5y = 5$

2 minutes

Theme: Algebra (M-08-124) **CODE C10**

Lesson Title: Solving Linear Equations III

Solve:

$$2(x + 1) = 6$$

2 minutes

Theme: Algebra (M-08-126) **CODE C11**

Lesson Title: Verifying Solutions

Is $x = 7$ a solution to the equation $3x + 10 = x - 4$?

3 minutes

Theme: Algebra (M-08-128) **CODE C12**

Lesson Title: Solving Linear Equations Story Problems I

Solve the following word problem:
Fatu is a baker. She is going to the market to buy sugar. Sugar costs Le 2,000.00 per cup. She has Le 8,000.00 to spend on sugar.
a. Write a linear equation for the story, where s is cups of sugar.
b. Solve the linear equation to find how many cups of sugar Fatu can buy.

3 minutes

Theme: Algebra (M-08-129) **CODE C13**

Lesson Title: Solving Linear Equation Story Problems II

Solve the following word problem:

Three more than twice a certain number is nineteen.
What is the number?

3 minutes

Theme: Algebra (M-08-130) **CODE C14**

Lesson Title: Linear Equation Practice

The ages of 4 friends are x, $x + 3$, $x - 1$ and $x + 2$.

a. Write an expression for the combined age of the friends.
b. If their combined age is 44 years, what is the age of the youngest friend?

3 minutes

Theme: Algebra (M-08-131) **CODE C15**

Lesson Title: Introduction to the Cartesian Plane

Sketch a Cartesian plane with axes from −10 to +10.
It is not necessary to measure intervals on the axes with a ruler.

Theme: Algebra (M-08-132) **CODE C16**

Lesson Title: Identifying Points in the Cartesian Plane

Identify which quadrant each of the following points is in:

a. (−3, 2)

b. (−5, −7)

c. (1, −3)

3 minutes

Theme: Algebra (M-08-133) **CODE C17**

Lesson Title: Plotting Points on the Cartesian Plane

Draw a Cartesian plane and plot the following points:

(1, 3), (0, 9), (−2, −4)

2 minutes

Theme: Algebra (M-08-134) **CODE C18**

Lesson Title: Table of Values

Complete the table of values for the linear equation

$y = -x - 3$

x	−2	−1	0	1	2
y					

2 minutes

Theme: Algebra (M-08-135) **CODE C19**

Lesson Title: Graphing a Line

Complete the table of values for the linear equation

$y = -2x + 1$.

Plot each point on the given Cartesian plane.

x	−2	−1	0	1	2
y					

2½ minutes

Theme: Statistics and Probability (M-08-136) **CODE C20**

Lesson Title: Data Collection

The coach took the height measurements of the football players to buy them new uniforms. Their heights (in cm) are: 178, 170, 167, 172, 173, 177, 172, 170, 172, 173, 177, 169, 170, 168, 172, 173.

a. Write the heights of the players in **ascending** order.
b. What is the height of the **tallest** player?
c. What is the height of the **shortest** player?
d. If players taller than 175 cm wear a large uniform, how many large uniforms are needed?

3 minutes

Theme: Statistics and Probability (M-08-138) **CODE C21**

Lesson Title: Bar Charts

The table below shows the marks of pupils in a test. No pupil scored lower than 40% or higher than 85%. Draw a bar chart for the information using squared paper or your own paper.

Marks	40%	45%	50%	55%	60%	65%	70%	75%	80%	85%
Number of pupils	1	2	4	3	0	2	5	8	1	2

3 minutes

Theme: Statistics and Probability (M-08-139) **CODE C22**

Lesson Title: Line Graphs

The table below shows daily temperatures for London, recorded for 6 days in degrees Celsius. Display the data in a **line graph.** Use 15 to 25 degrees to mark the y-axis.

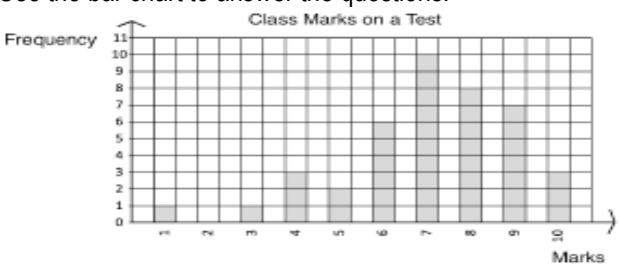
Day	1	2	3	4	5	6
Temperature (°C)	17	19	18	16	21	23

3½ minutes

Theme: Statistics and Probability (M-08-140) **CODE C23**

Lesson Title: Interpreting Charts and Graphs

Use the bar chart to answer the questions.



a. What was the lowest score on the test?
b. If pupils need 7 marks or higher to pass, how many pupils passed the test?

2 minutes

Theme: Statistics and Probability (M-08-141) **CODE C24**

Lesson Title: Mean

The number of goals scored by a team in 9 football matches are as follows:

3, 5, 7, 7, 8, 8, 8, 11, 15.

Calculate the **mean** number of goals scored.

2 minutes

Theme: Statistics and Probability (M-08-142) **CODE C25**

Lesson Title: Median

The shoe sizes of five pupils are 10, 9, 10, 11 and 8.
Find the **median** shoe size.

1½ minutes

Theme: Statistics and Probability (M-08-143) **CODE C26**

Lesson Title: Mode and Range

John is a doctor. Today, he treated 10 children. He recorded the weight of each child in kilograms, listed below.

Find the **mode** and **range** of their weights.

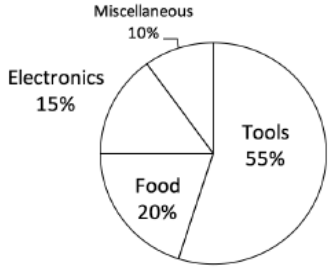
14, 20, 17, 21, 15, 13, 20, 19, 15, 12

2 minutes

Theme: Statistics and Probability (M-08-144) **CODE C27**

Lesson Title: Interpreting Pie Charts

Aminata earned Le 2,000,000.00 by selling goods in her shop. The pie chart below shows the percentage that Aminata earned this week in each category of goods.



How much did Aminata earn from electronics?

1½ minutes

Theme: Statistics and Probability (M-08-144) **CODE C28**

Lesson Title: Interpreting Pie Charts

Please refer to the information and diagram in **CODE C27** to answer the following questions:

a. From which category of goods did Aminata earn the least amount of money?

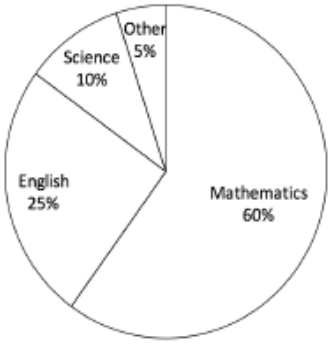
b. How much more did Aminata earn from tools than from electronics?

3½ minutes

Theme: Statistics and Probability (M-08-145) **CODE C29**

Lesson Title: Pie Chart Angles

Find the **combined** sector angle for Mathematics and English on the pie chart below:



Theme: Statistics and Probability (M-08-146) **CODE C30**

Lesson Title: Creating Pie Charts

The cost incurred on infrastructure development by a mining company is as follows:

Wages: 48% Taxes: 12% Material: 20% Transport: 20%.

Show this information in a **pie chart**.

Hint: Use sector angles for a more accurate diagram.

2½ minutes

Theme: Statistics and Probability (M-08-147) **CODE C31**

Lesson Title: Creating Stem Diagrams

The IQ scores of 5 female mathematicians are:

170 164 159 172 154

Display the data in a stem diagram.

2 minutes

Theme: Statistics and Probability (M-08-148) **CODE C32**

Lesson Title: Interpreting Stem Diagrams

Martin is a driver. He recorded the amount of petrol that he used each day for 10 days in the stem diagram below. Find the **mean**, **mode**, and **range** of the data.

PETROL USED

Stem	Leaf
0	8, 9
1	4, 7
2	3, 6, 6
3	0, 4
4	2

Key: 1|4 = 1.4 litres

3½ minutes

Theme: Statistics and Probability (M-08-149) **CODE C33**

Lesson Title: Choosing a Graph or Chart

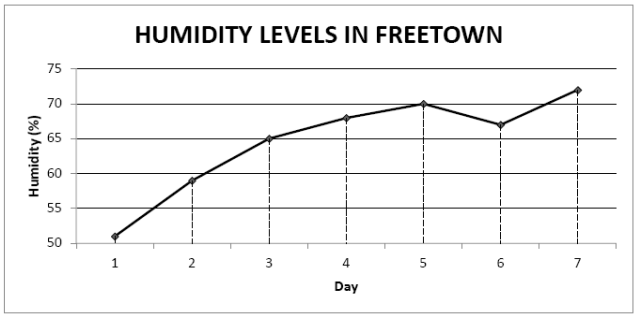
Dr Mkhize wants to create a chart or graph to show the patients admitted to the hospital last week. There were 20 men, 10 women, 10 boys and 20 girls admitted to the hospital. Display this information for her.

2½ minutes

Theme: Statistics and Probability (M-08-150) **CODE C34**

Lesson Title: Practice Making Statistical

The graph below gives the average high temperature in Freetown. Find the mean and median for the data **in %**.



2 minutes