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: C1**
Lesson Title: Identifying number patterns	
Answer: When a list of numbers follows a certain pattern, it can be referred to as a **sequence**.	

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: C2**
Lesson Title: Identifying number patterns	
Answer: A sequence in which the same number is added again and again to the preceding number is called an **arithmetic pattern** or **arithmetic sequence**.	

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: C3**
Lesson Title: Identifying number patterns	
Answer: a. Yes. Because the same number is being added each time. b. 2 is being added.	

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-07-106)	**CODE: C4**
Lesson Title: Identifying number patterns	
Answer: **a** is an arithmetic pattern because 10 is added each time, and **c** is an arithmetic pattern because 4 is subtracted each time	

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: C5
Lesson Title: Completing number patterns	

Answer:

a. The pattern in the number sequence is to add 3 to the preceding number to get the next number.

b. 3 is the common difference.

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: C6
Lesson Title: Completing number patterns	

Answer:

a. The rule is to add 9 to each number; the common difference is 9.

b. 15; 30; 45; 60; 75.

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: C7
Lesson Title: Completing number patterns	

Answer:

a. 1, 4, 7, 10, 13, 16, 19
the common difference is 3

b. 35, 30, 25, 20, 15, 10, 5, 0
the common difference is -5

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-07-108)	CODE: C8
Lesson Title: Completing number patterns	

Answer:

a. 12, 24, 36, 48, 60, 72

b. -3, -8, -13, -18, -23, -28, -33, -38

c. 150, 300, 450, 600, 750, 900

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

Theme: Algebra (M-07-109)	CODE: C9
Lesson Title: Variables	
Answer: A variable is an unknown value. It is a letter in place of a missing number.	

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: C10
Lesson Title: Variables	
Answer: a. Subtraction b. Addition	

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: C11
Lesson Title: Variables	
Answer: a. $y = 3$ b. $a = 13$	

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-07-109)	CODE: C12
Lesson Title: Variables	
Answer: i. $x = 1$ ii. $y = 10$	

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-07-110)	CODE: C13
Lesson Title: Solving for a variable	
Answer: i. $5 + 8 = y - 8 + 8$ $13 = y$ ii. $x + 9 - 9 = 19 - 9$ $x = 10$	

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: C14
Lesson Title: Coefficients	
Answer: A **coefficient** is any number multiplied by a variable.	

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: C15
Lesson Title: Coefficients	
Answer: The coefficient of x is 4.	

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-07-111)	CODE: C16
Lesson Title: Coefficients	
Answer: a. $9t$ The coefficient is 9 b. $5b$ The coefficient is 5	

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-07-112)	CODE: C17
Lesson Title: Solving for a variable with a coefficient	
Answer: a. $3 \times t = 9 - 3$ $3t = 6$ $\frac{3t}{3} = \frac{6}{3}$ $t = 2$ b. $2u = 10$ $\frac{2u}{2} = \frac{10}{2}$ $u = 5$	

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-07-113)	CODE: C18
Lesson Title: Like terms	
Answer: When adding or subtracting like terms, the variables and exponents in terms don't **change**.	

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: C19
Lesson Title: Combining like terms	
Answer: a. $2p$ and $-5p$ 5 and 11 b. $6m$ and $-8m$ $3n$ and $2n$	

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-07-114)	CODE: C20
Lesson Title: Combining like terms	
Answer: i) $-11x$ ii) $47a$ iii) $79s$ iv) $-33y$	

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: C21
Lesson Title: Simplifying algebraic expressions	
Answer: a. $4y$ and y; 2 and 2 b. $2a$ and $5a$; 7 and - 2	

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: C22
Lesson Title: Simplifying algebraic expressions	
Answer: (a) $4ab - ab + 3a - 2a + 7 - 8$ $= (4 - 1)ab + (3 - 2)a + 7 - 8$ $= 3ab + a - 1$ (b) $4f + f + 6 - 4$ $= (4 + 1)f + 6 - 4$ $= 5f + 2$	

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-07-115)	CODE: C23
Lesson Title: Simplifying algebraic expressions	
Answer: a. $- \times - = +$ b. $- \times + = -$ c. $+ \times + = +$	

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-07-116)	CODE: C24
Lesson Title: Multiplying algebraic expressions	
Answer: (i) $8(3 + 5b) = 24 + 40b$ (ii) $-6(4x + 1) = -24x - 6$ (iii) $2(4a + 2b - 5) = 8a + 4b - 10$	

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-07-117)	CODE: C25
Lesson Title: Dividing algebraic expressions	

Answer:

(i) $14xy \div 7 = 2xy$

(ii) $2ab \div -2 = -ab$

(iii) $-100z \div 25 = -4z$

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-07-118)	CODE: C26
Lesson Title: Factorisation	

Answer:

(i) $18x - 12y = 6(3x - 2y)$

(ii) $16x - 24 = 8(2x - 3)$

(iii) $7a - 14b + 21c = 7(a - 2b + 3c)$

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-07-119)	CODE: C27
Lesson Title: Introduction to linear equations	

Answer:

	Transposition:	Balancing:
(i)	$8 = 4 + n$ $8 - 4 = n$ $n = 4$	$8 = 4 + n$ $8 - 4 = 4 + n - 4$ $n = 4$
(ii)	$y - 6 = -12$ $y = -12 + 6$ $y = -6$	$y - 6 = -12$ $y - 6 + 6 = -12 + 6$ $y = -6$

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-07-120)	CODE: C28
Lesson Title: Showing linear equation (review)	

Answer:

$7m + 3 = 13 + 5m$

$7m + 3 - 5m = 13 + 5m - 5m$ ← Subtract $5m$ from both sides

$2m + 3 = 13$

$2m + 3 - 3 = 13 - 3$ ← Subtract 3 from both sides

$2m = 10$

$\frac{2m}{2} = \frac{10}{2}$ ← Divide both sides by 2

$m = 5$

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.

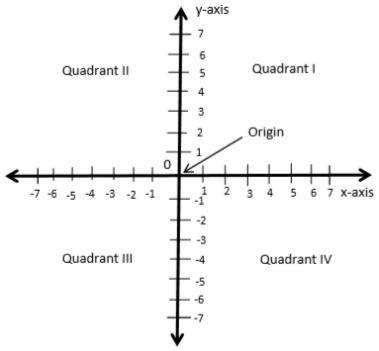
(c) Label the origin.

(d) Label each quadrant.

4½ minutes

Theme: Algebra (M-07-121)	CODE: C29
Lesson Title: Introduction to the Cartesian plane	

Answer:



Theme: Algebra (M-07-122)	CODE: C30
Lesson Title: Identifying points on the Cartesian plane	

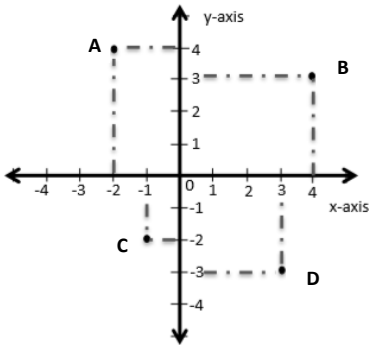
Draw a Cartesian plane showing the points:

A (–2; 4), **B** (4; 3), **C** (–1; –2), **D** (3; –3)

4½ minutes

Theme: Algebra (M-07-122)	CODE: C30
Lesson Title: Identifying points on the Cartesian plane	

Answer:



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-07-126)	CODE: C31
Lesson Title: Data collection	

Answer:

Michael - //// Issa - //// Janet - ////

Abass - /// Jane - / Idrissa - // Fanta - /

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-07-127)	CODE: C32
Lesson Title: Tables of data	

Answer:

SCORES	TALLY MARKS	NUMBER OF PUPILS
12	//// ////	10
15	//// ///	8
20	////	5
25	////	5
30	////	5
TOTAL	33	33

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-07-128)	CODE: C33
Lesson Title: Creating bar charts	

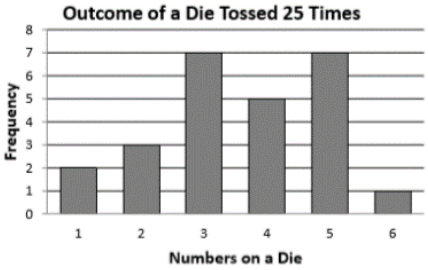
Answer:

Size	Frequency
6	2
7	4
8	6
9	5
10	2
11	1
Total	**20**

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



4½ minutes

Theme: Statistics (M-07-129)	CODE: C34
Lesson Title: Creating bar charts	

Answer:

a. 3 and 5
b. 6
c. 7 – 2 = 5 more times
d. 7 – 1 = 6 fewer times

Theme: Statistics (M-07-130)	CODE: C35
Lesson Title: Creating line graphs	

What is a graph?

1 minute

Theme: Statistics (M-07-130)	CODE: C35
Lesson Title: Creating line graphs	

Answer:

A graph is a picture that shows information.

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: C36
Lesson Title: Creating line graphs	

Answer:

a. Months
b. Weight in lbs

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

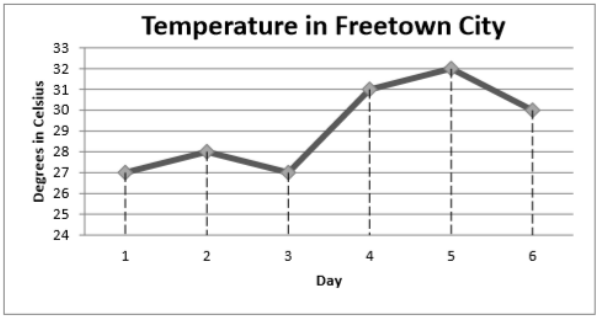
Temperature in Freetown City

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

4½ minutes

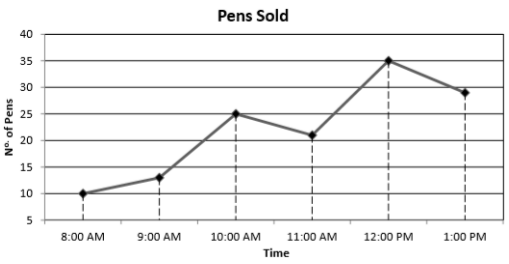
Theme: Statistics (M-07-130)	CODE: C37
Lesson Title: Creating line graphs	

Answer:



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-07-131)	CODE: C38
Lesson Title: Interpreting line graphs	

Answer:

a. 29 pens

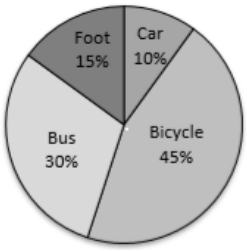
b. 25 pens

c. 12:00 PM

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-07-132)	CODE: C39
Lesson Title: Pie charts	

Answer:

a. Bicycle

b. Car

c. 45 – 109 = 35%

d. 100 – 15 = 85%

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: C40
Lesson Title: Comparing graphs and charts	

Answer:

A chart with rectangular bars of equal width that interpret statistical information.

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: C41
Lesson Title: Comparing graphs and charts	
Answer: When trying to compare different amounts.	

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: C42
Lesson Title: Comparing graphs and charts	
Answer: It is used to display data or information that changes continuously over time.	

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

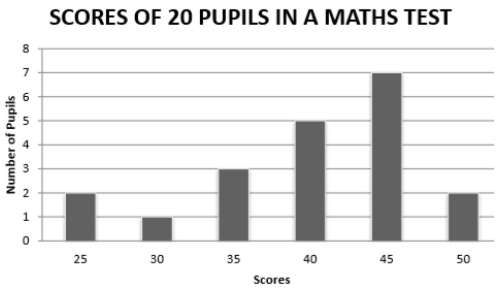
Theme: Statistics (M-07-133)	CODE: C43
Lesson Title: Comparing graphs and charts	
Answer: A pie chart is a type of graph in which a circle is divided into sectors that each represent a proportion of the whole.	

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: C44
Lesson Title: Comparing graphs and charts	
Answer: A pie chart is used to compare parts of the whole.	

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-07-133)	CODE: C45
Lesson Title: Comparing graphs and charts	

Answer:

a. 45
b. 3
c. 45
d. 4

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-07-134)	CODE: C46
Lesson Title: Community survey collecting data	

Answer:

a. A group of people living together, working together and sharing common things.
b. A way of collecting information that you hope represents the views of the whole community or group in which you are interested.
c. The process of gathering and measuring information

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 47
Lesson Title: Mean and median	

Answer:

a. **Mean** is the sum of all data values divided by the number of data values.
b. **Median** is the middle value of the data when it is ordered from smallest to largest.

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-07-136)	CODE: C 48
Lesson Title: Mean and median	

Answer:

a. $\text{mean} = \frac{3+15+16+16+18+20+21+22+27+27+27+31+35+40+42+43}{16}$

$\text{mean} = \frac{403}{16}$ $\text{mean} = 25{,}2$

b. $\text{median} = \frac{22+27}{2}$ $\text{median} = 24{,}5$

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 49
Lesson Title: Mode and range	

Answer:

a. **Mode** is the data value that occurs most often in the data set.

b. **Range** is the difference between the highest and lowest numbers.

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-07-137)	CODE: C 50
Lesson Title: Mode and range	

Answer:

a. 1

b. 9

c. 6

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

Answer:

a. $\text{mean} = \frac{8+9+10+10+10+11+11+11+12+13}{10}$
$= \frac{105}{10} = 10{,}5$

b. $\text{median} = \frac{10+11}{2} = \frac{21}{2} = 10{,}5$

c. $\text{mode} = 10; 11$

d. $\text{range} = 13 - 8 = 5$

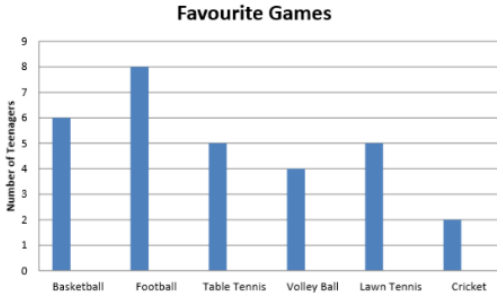
Theme: Statistics (M-07-139)	CODE: C 52
Lesson Title: Statistical calculations from a bar chart	

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

Answer:

a. To find the median, list the numbers in order:
2, 4, 5, 5, 6, 8
Median = $\frac{5+5}{2} = 5$

b. Mode = 5 because the bars for table tennis and lawn tennis are the same height.

c. range = 8 – 2 = 6

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: Statistics (M-07-140)	CODE: C 53
Lesson Title: Statistics story problems	
Answer: Mean $= \frac{105}{7}$ $= 15$ Median $= 15$ Mode $= 10$ and 20 Range $= 25 - 5 = 20$	

Theme: Probablity (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-07-141)	CODE: C 54
Lesson Title: Introduction to probability	
Answer: It is impossible: the sun rises in the morning, not at night.	

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 55
Lesson Title: Probability experiments	
Answer: It's when we try something to understand how it works, scientists do experiments to understand new ideas.	

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 56
Lesson Title: Probability experiments	
Answer: An outcome is a single result of an experiment.	

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	Answer: a. Outcome b. Experiment c. Experiment d. Outcome e. Experiment f. Outcome g. Outcome

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	Answer: a. Impossible b. Impossible c. Certain

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	Answer: a. A likely event has a greater chance of occurring: it will probably happen but we are not certain that it will happen. b. An unlikely event is an event that is not sure to occur; it is not impossible, but it will probably not happen.

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	Answer: e; d; a; c; b

Theme: Probability (M-07-145) **CODE: C 61**	Theme: Probability (M-07-145) **CODE: C 61**
Lesson Title: The language of probability	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	Answer: a. It is more likely that we will choose a female because there are more females than males in Amadu's family. b. It is more likely that we will choose someone under 40 years old because 3 out of 4 members of Amadu's family are under 40.
Theme: Probability (M-07-146) **CODE: C 62**	Theme: Probability (M-07-146) **CODE: C 62**
Lesson Title: The language of probability	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	Answer: 1. $\frac{1}{26}$ because E only appears in the alphabet once and there are 26 possible letters to choose from. 2. $\frac{1}{26}$ because Z only appears in the alphabet once and there are 26 possible letters to choose from. 3. $\frac{5}{26}$ because there are 5 vowels in the alphabet (a, e, i, o, u) and there are 26 possible letters to choose from.
Theme: Probability (M-07-147) **CODE: C63**	Theme: Probability (M-07-147) **CODE: C63**
Lesson Title: Probability fraction problems	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	Answer: a. $\frac{6}{15} = \frac{2}{5}$ there is a 2 in 5 chance of selecting a red ball b. $\frac{9}{15} = \frac{3}{5}$ there is a 3 in 5 chance of selecting a blue ball c. $\frac{6}{15} + \frac{9}{15} = \frac{6+9}{15} = \frac{15}{15} = 1$
Theme: Probability (M-07-148) **CODE: C64**	Theme: Probability (M-07-148) **CODE: C64**
Lesson Title: Probability as a percent	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	Answer: a. $\frac{20}{100} = 20\%$ b. $\frac{5}{100} = 5\%$

Theme: Probability (M-07-149) **CODE: C65**	Theme: Probability (M-07-149) **CODE: C65**
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	Answer: a. Impossible for the event to occur b. Certain that the event will occur c. There is an even chance that it will occur or will not occur – it is neither likely nor unlikely
Theme: Probability (M-07-149) **CODE: C66**	Theme: Probability (M-07-149) **CODE: C66**
Lesson Title: Solving probability story problems	Lesson Title: Solving probability story problems
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	Answer: a. $\frac{2}{6} = \frac{1}{3}$ b. $\frac{2}{6} + \frac{3}{6} = \frac{5}{6}$ c. 0 because there are no brown kittens d. $\frac{2}{6} = \frac{1}{3}$