Theme: Everyday Arithmetic (M-08-056) **CODE B1**	Theme: Everyday Arithmetic (M-08-057) **CODE B5**
Lesson Title: Personal Expenditure	Lesson Title: Income Tax
What is **income**? 1 minute	What are **taxes?** 1 minute
Theme: Everyday Arithmetic (M-08-056) **CODE B2**	Theme: Everyday Arithmetic (M-08-057) **CODE B6**
Lesson Title: Personal Expenditure	Lesson Title: Income Tax
What is a **personal expenditure?** 1 minute	Write down the formula for calculating **income tax** 1 minute
Theme: Everyday Arithmetic (M-08-056) **CODE B3**	Theme: Everyday Arithmetic (M-08-057) **CODE B7**
Lesson Title: Personal Expenditure	Lesson Title: Income Tax
Write down the formula for calculating **Percentage of income** 1 minute	Solve the following word problem: Martin's income is Le 14,500,000.00 per year. His income tax rate is 12%. How much income tax must he pay for one year? 4 minutes
Theme: Everyday Arithmetic (M-08-056) **CODE B4**	Theme: Everyday Arithmetic (M-08-058) **CODE B8**
Lesson Title: Personal Expenditure	Lesson Title: Sales Tax
Mohamed earns Le 8,000,000.00 each month. He spends Le 400,000.00 each month on electricity. What percentage of his income does he spend on electricity? 3 minutes	Define **sales tax** 1 minute

Theme: Everyday Arithmetic (M-08-058) **CODE B9**	**Theme:** Measurement and Estimation (M-08-061) **CODE B13**
Lesson Title: Sales Tax	Lesson Title: Perimeter and Area of Rectangles and Squares
Write down the formula for calculating **sales tax** 1 minute	Define area and perimeter. 1½ minutes
Theme: Everyday Arithmetic (M-08-059) **CODE B10**	**Theme:** Measurement and Estimation (M-08-061) **CODE B14**
Lesson Title: Time and Duration	Lesson Title: Perimeter and Area of Rectangles and Squares
Convert the following times to the **12-hour** clock: 1. 05:00 2. 16:00 2 minutes	Write down the formulas for calculating the **Perimeter** and **Area** of: 1. a square 2. a rectangle 2½ minutes
Theme: Everyday Arithmetic (M-08-059) **CODE B11**	**Theme:** Measurement and Estimation (M-08-061) **CODE B15**
Lesson Title: Time and Duration	Lesson Title: Perimeter and Area of Rectangles and Squares
Solve the following word problem: Fatu started working at 9:00 am. She worked for 3 hours and 30 minutes. At what time did she finish working? 2 minutes	Find the **perimeter** and **area** of a **square** with sides of 14 cm. 3½ minutes
Theme: Everyday Arithmetic (M-08-060) **CODE B12**	**Theme:** Measurement and Estimation (M-08-061) **CODE B16**
Lesson Title: Classification of Decimal Numbers	Lesson Title: Perimeter and Area of Rectangles and Squares
Solve the following word problem: Ama has a maths exam tomorrow. She studied in the morning from 7 am to 8:30 am. She studied again in the afternoon from 2:30 to 3:15. How much time did she spend studying all together? 4 minutes	Find the **perimeter** and **area** of a **rectangle** with a length of 5 metres and a width of 3 metres.

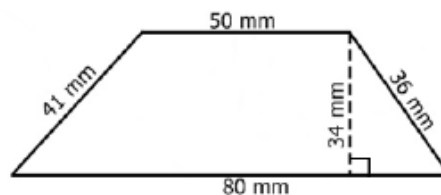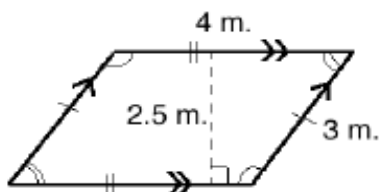|	
Theme: Measurement and Estimation (M-08-062) **CODE B17**	Theme: Measurement and Estimation (M-08-063) **CODE B21**
Lesson Title: Perimeter and Area of Parallelograms	Lesson Title: Perimeter and Area of Trapeziums

Define a **parallelogram.**

1 minute

Define a **trapezium.**

1 minute

Lesson Title: Perimeter and Area of Parallelograms

Lesson Title: Perimeter and Area of Trapeziums

Write down the formulas for calculating the **perimeter** and **area** of:

1. parallelogram
2. rhombus

2 minutes

Write down the formulas for calculating the **perimeter** and **area** of a **trapezium**:

2 minutes

Lesson Title: Perimeter and Area of Parallelograms

Lesson Title: Perimeter and Area of Trapeziums

Find the **perimeter** and **area** of the **parallelogram**:

4 m.
2.5 m.
3 m.

3½ minutes

Find the **perimeter** and **area** of the **trapezium** below:

50 mm
41 mm
34 mm
36 mm
80 mm

3½ minutes

Lesson Title: Perimeter and Area of Parallelograms

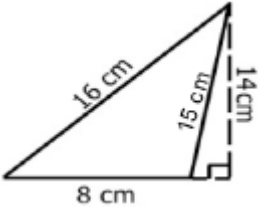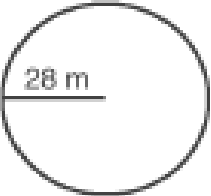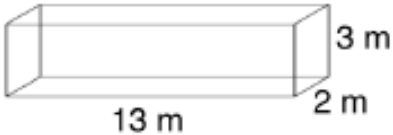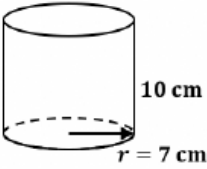Lesson Title: Perimeter and Area of Triangles

A **rhombus** has sides of 5 cm and diagonals of 4 cm and 3 cm. Find:

1. The **area** of the rhombus
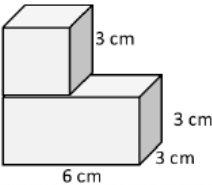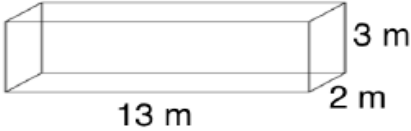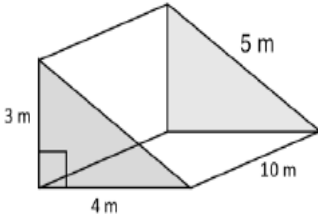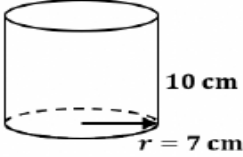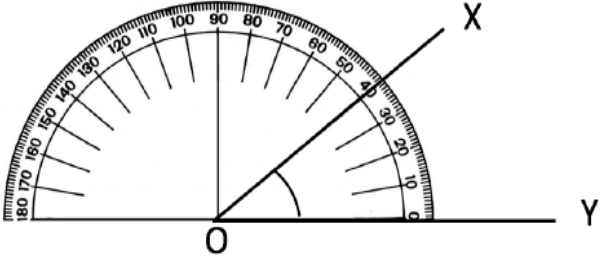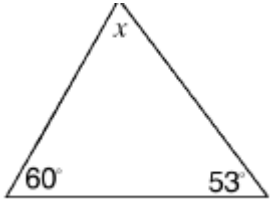2. The **perimeter** of the rhombus

3½ minutes

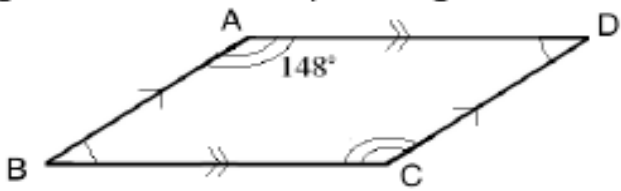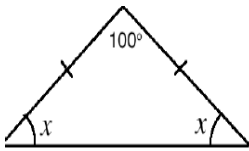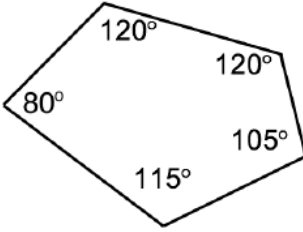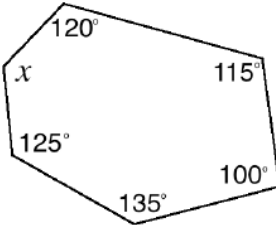Write down the formulas for calculating the **perimeter** and **area** of a **triangle**:
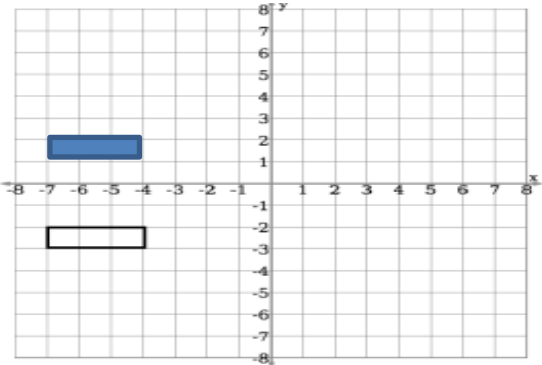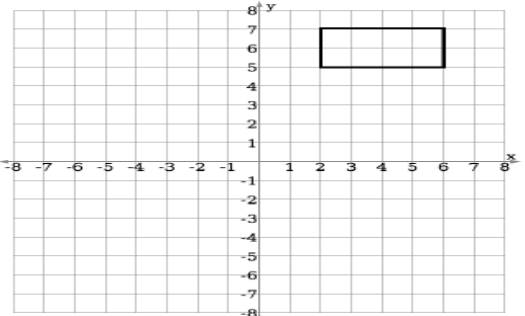
2 minutes

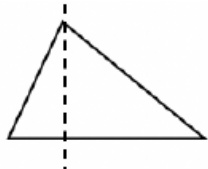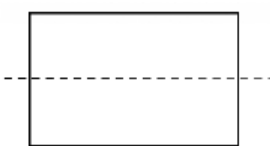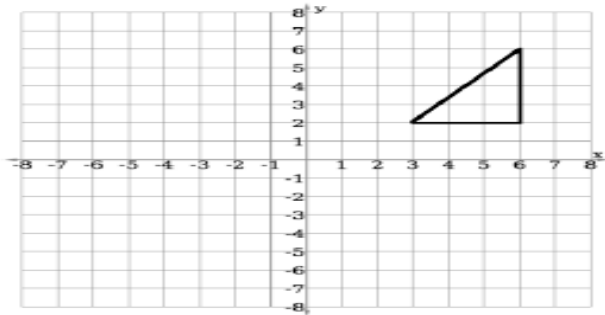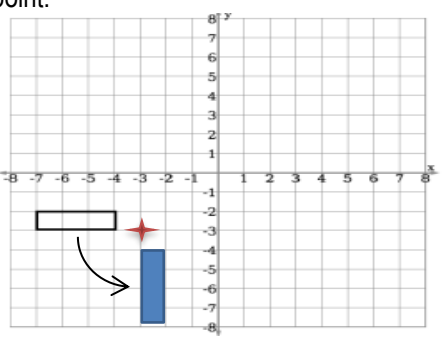| Theme: Measurement and Estimation (M-08-064) **CODE B25**	Theme: Measurement and Estimation (M-08-067) **CODE B29**
Lesson Title: Perimeter and Area of Triangles	Lesson Title: Perimeter and Area Story Problems
Find the **area** and **perimeter** of the **triangle**: 16 cm · 15 cm · 14 cm · 8 cm 3½ minutes	Bright Secondary School has a football field that measures 120 meters on one side and 80 meters on the other side. A gardener is hired to plant carpet grass on the field. a. Calculate the area of the field. b. If the cost of carpet grass is Le 200.00 per square meter, how much will it cost to cover the field? 3½ minutes
Theme: Measurement and Estimation (M-08-065) **CODE B26**	Theme: Measurement and Estimation (M-08-068) **CODE B30**
Lesson Title: Perimeter and Area of Circles	Lesson Title: Volume of Solids
Write down the formulas for calculating the **circumference** and **area** of a **circle**: 2 minutes	Write the general formula for the volume of **prisms** and **cylinders** as cross-sections multiplied by height. 2 minutes
Theme: Measurement and Estimation (M-08-065) **CODE B27**	Theme: Measurement and Estimation (M-08-069) **CODE B31**
Lesson Title: Perimeter and Area of Circles	Lesson Title: Volume of Cubes
Find the **circumference** and **area** of the **circle**, using $\pi = \frac{22}{7}$ 28 m 3 minutes	Find the **volume** of a **cube** of side 7 cm. 2½ minutes
Theme: Measurement and Estimation (M-08-066) **CODE B28**	Theme: Measurement and Estimation (M-08-070) **CODE B32**
Lesson Title: Perimeter and Area of Composite Shapes	Lesson Title: Volume of Rectangular Prisms
Define **composite shapes.** 2 minutes	Find the volume of the cuboid bellow: 3 m · 2 m · 13 m 3 minutes

Theme: Measurement and Estimation (M-08-071) **CODE B33**	Theme: Measurement and Estimation (M-08-075) **CODE B37**
Lesson Title: Volume of Triangular Prisms	Lesson Title: Surface Area of Solids
Find the **volume** of a **rectangular prism** with **base** 4 m, **height** 7 m, and **length** 3 m 3 minutes	Define the term **surface area.** 1 minute
Theme: Measurement and Estimation (M-08-072) **CODE B34**	Theme: Measurement and Estimation (M-08-075) **CODE B38**
Lesson Title: Volume of Cylinders	Lesson Title: Surface Area of Solids
Find the **volume** of the figure. Use $\pi = \frac{22}{7}$ 10 cm $r = 7$ cm 3 minutes	A **rectangular prism** has a **length** of 21 m, **width** of 20 m and **height** of 43 m. In what units is the **surface area** measured? 2 minutes
Theme: Measurement and Estimation (M-08-073) **CODE B35**	Theme: Measurement and Estimation (M-08-076) **CODE B39**
Lesson Title: Volume of Composite Solids	Lesson Title: Surface Area of Cubes and Rectangular Prisms
Find the **volume** of the solid shown: 3 cm 3 cm 3 cm 6 cm 3½ minutes	Calculate the **surface area** for the **rectangular prism:** 3 m 2 m 13 m **Hint:** Use the formula: $SA = 2lw + 2wh + 2lh$ 3½ minutes
Theme: Measurement and Estimation (M-08-074) **CODE B36**	Theme: Measurement and Estimation (M-08-077) **CODE B40**
Lesson Title: Volume Story Problems	Lesson Title: Surface Area of Triangular Prisms
A carpenter built a box in the shape of a **rectangular prism**. The area of the bottom of the box is 42 cm², and the box is 20 cm tall. How many cubic centimetres of seeds will the box be able to hold? 3½ minutes	Find the **surface area** of the right-angled **triangular prism:** 5 m 3 m 10 m 4 m **Hint:** Use the formula: $SA = bh + (a + b + c)\, l$ 3½ minutes

Theme: Measurement and Estimation (M-08-078) **CODE B41**	Theme: Geometry (M-08-082) **CODE B45**
Lesson Title: Surface Area of Cylinders	**Lesson Title: Measurement of Angles**
Find the **surface area** of the **cylinder** shown below. Use $\pi = \frac{22}{7}$ and give your answers to the nearest whole number. 10 cm $r = 7$ cm **Hint:** Use the formula: $SA = 2\pi r^2 + 2\pi rh$ 3½ minutes	Estimate the measure of the given angle: X O Y 2 minutes
Theme: Measurement and Estimation (M-08-080) **CODE B42**	Theme: Geometry (M-08-083) **CODE B46**
Lesson Title: Surface Area Story Problems	**Lesson Title: Finding Unknown Angles in Triangles**
An open **cylindrical tank** has a radius of 3 metres and a height of 2 metres. Find its surface area to the nearest whole number. (Use π = 3.14) 3½ minutes	Define the **interior** angles of a triangle. 2 minutes
Theme: Geometry (M-08-081) **CODE B43**	Theme: Geometry (M-08-083) **CODE B47**
Lesson Title: Introduction to Angles	**Lesson Title: Finding Unknown Angles in Triangles**
Describe the five types of angles: 1. acute 2. obtuse 3. right 4. straight 5. reflex 5 minutes	Find the measure of the angle marked x in the triangle below: x 60° 53° 3 minutes
Theme: Geometry (M-08-081) **CODE B44**	Theme: Geometry (M-08-084) **CODE B48**
Lesson Title: Introduction to Angles	**Lesson Title: Finding Unknown Angles in Quadrilaterals**
Write the following angle measurements in words: 1. 104° 2. 180° 1 minute	Find the measures of angles B, C and D in the parallelogram: A D 148° B C 3 minutes

Theme: Geometry (M-08-085) **CODE B49**	Theme: Geometry (M-08-087) **CODE B53**
Lesson Title: Angle Practice	Lesson Title: Sum of the Interior Angles of a Pentagon

Calculate the size of *x* in the **isosceles triangle** below:

100°

x   *x*

Remember: An isosceles triangle has two equal angles.

2 minutes

Add the angles of the **pentagon** below to verify that they add up to 540°.

120°
120°
80°
105°
115°

1 minute

Theme: Geometry (M-08-086) **CODE B50**	Theme: Geometry (M-08-088) **CODE B54**
Lesson Title: Polygons	Lesson Title: Sum of the Interior Angles of a Polygon

List any three types of **regular polygons**.

3 minutes

Calculate the sum of the **interior angles** of a **polygon** with 8 sides

Hint: Use the formula for the sum of interior angles

3 minutes

Theme: Geometry (M-08-086) **CODE B51**	Theme: Geometry (M-08-089) **CODE B55**
Lesson Title: Polygons	Lesson Title: Interior Angle Practice

Draw the following **polygon**.

5 Sides - pentagon

3 Minutes

Find the measure of angle *x*:

120°
x   115°
125°
       100°
   135°

.   2 minutes

Theme: Geometry (M-08-087) **CODE B52**	Theme: Geometry (M-08-090) **CODE B56**
Lesson Title: Sum of the Interior Angles of a Pentagon	Lesson Title: Interior Angle Story Problems

Write the formula for calculating the sum of the **interior angles** of a **polygon**.

2 minutes

Issa is building a house. He wants to build a strong one, and he knows the two angles between the roof and walls must be equal. Help him by finding the missing angles in the diagram of his house.

124°

3 minutes

Theme: Geometry (M-08-091)　　CODE B57	Theme: Geometry (M-08-093)　　CODE B61
Lesson Title: Introduction to Transformation	Lesson Title: Reflection
What is meant by the **translation** of a shape**?** 1 minute	Identify the reflection applied to the object: 1 minute
Theme: Geometry (M-08-091)　　CODE B58	Theme: Geometry (M-08-094)　　CODE B62
Lesson Title: Introduction to Transformation	Lesson Title: Line of Symmetry
What is meant by the **rotation** of a shape**?** 1 minute	What is meant by **line of symmetry**? 1 minute
Theme: Geometry (M-08-092)　　CODE B59	Theme: Geometry (M-08-094)　　CODE B63
Lesson Title: Translation	Lesson Title: Line of Symmetry
Translate the rectangle on the plane below to 3 units down and 1 unit to the right 3 minutes	Identify whether the line drawn through each shape is a line of symmetry or not. a.　　　　　　　　　　b. 1 minute
Theme: Geometry (M-08-093)　　CODE B60	Theme: Geometry (M-08-095)　　CODE B64
Lesson Title: Reflection	Lesson Title: Rotation
Reflect the shape about the *x*-axis. Where does the reflection lie? 	Identify the rotation applied to the object about the marked point: 1 minute

Theme: Geometry (M-08-096) **CODE B65**	Theme: Algebra (M-08-101) **CODE B69**
Lesson Title: Rotational Symmetry	Lesson Title: Arithmetic Patterns
Determine the following: a. Does the object have rotational symmetry? b. If it does have rotational symmetry, what is its order? Equilateral triangle 2 minutes	Identify whether each of the following lists of numbers is an arithmetic pattern. If it is an arithmetic pattern, give the common difference: a. 8, 16, 24, 32, … b. 1, 4, 7, 10, 13, … c. 3, 6, 12, 24, 48, … 3 minutes
Theme: Geometry (M-08-097) **CODE B66**	Theme: Algebra (M-08-101) **CODE B70**
Lesson Title: Enlargement	Lesson Title: Arithmetic Patterns
Which of the shapes shown below are **not** enlargements of shape 1? 1 minute	Find the common difference and write the missing numbers in each pattern: 15, 11, _____, 3, –1 , _____ 1 minute
Theme: Geometry (M-08-097) **CODE B67**	Theme: Algebra (M-08-102) **CODE B71**
Lesson Title: Enlargement	Lesson Title: Creating Arithmetic Patterns
Draw an enlargement of the square with scale factor 3. 2 minutes	Write an arithmetic pattern starting with **0**, with a **common difference** of **4**. Write the first 6 terms of the pattern. 1 minute
Theme: Algebra (M-08-101) **CODE B68**	Theme: Algebra (M-08-103) **CODE B72**
Lesson Title: Arithmetic Patterns	Lesson Title: Introduction to Geometric Patterns
What is an **arithmetic pattern**? 1 minute	Determine whether each of the following lists of numbers is a geometric pattern. If it is a geometric pattern, give the common ratio: a. 10, 30, 50, 70, … b. −2, 6, −18, 54, … c. −1, −3, −5, −7, … 3 minutes

Theme: Algebra (M-08-104) **CODE B73** Lesson Title: Terms of Geometric Patterns	Theme: Algebra (M-08-107) **CODE B77** Lesson Title: Simplifying Expressions with Higher Powers
Find the common ratio and write the missing numbers in each pattern 3, 9, _____, _____, _____, ... 1 minute	Consider the algebraic expression: $$x^3 + 7x - x^2 + 3x + 8x^3 + 4x^2$$ a. Simplify the expression. b. How many terms are there in this simplified algebraic expression? 3 minutes
Theme: Algebra (M-08-105) **CODE B74** Lesson Title: Creating Geometric Patterns	Theme: Algebra (M-08-108) **CODE B78** Lesson Title: Simplifying Expressions with Fractions
Write a geometric pattern starting with −1, with a common ratio of −2. Write the first 4 terms of the pattern. 1 minute	Simplify: $$6 + \frac{1}{2}x^2 + x - \frac{1}{4}x^2 + 2x^1 - 4x^3$$ 2 minutes
Theme: Algebra (M-08-106) **CODE B75** Lesson Title: Simplifying Algebraic Expressions	Theme: Algebra (M-08-108) **CODE B79** Lesson Title: Simplifying Algebraic Expressions
What are **like terms**? 1 minute	Simplify: $$8 + \frac{5}{6}x^2 + \frac{1}{3}x + \frac{1}{3}x^2 + \frac{1}{5}$$ 2 minutes
Theme: Algebra (M-08-106) **CODE B76** Lesson Title: Simplifying Algebraic Expressions	Theme: Algebra (M-08-110) **CODE B80** Lesson Title: Multiplying Variables
Simplify the following algebraic expressions: a. $10x - 5y + 2y - 7x + 6$ b. $3u - 3 + 4v - 2u + 7 - 2v$ 3 minutes	Remove brackets and simplify the following algebraic expressions: a. $-7x^5(-x^2 + y^3)$ b. $100w(x^2 - 3w^2)$ c. $2(p^2 - p + 5)$ 3 minutes

Lesson Title: Simplifying and Expanding Algebraic Expressions

Expand and simplify:

$2a\,[(a + 3b) + 4(2a - b)]$

2 minutes

Lesson Title: Algebraic Expression Story

Solve the following word problems:

1. Hawa is twice as old as Musa. If Musa is x + 3 years old, write an expression for Hawa's age.

2. A man has $15x$ sheep and $10y$ goats. He sells $6x$ sheep and $2y$ goats. How many animals are left after the sales?

2 minutes

Lesson Title: Factoring Integers from Algebraic Expressions

Factorise the following expressions:

1. $5x^3 + 15x^2 + 35x + 20$

2. $10s + 12t - 4t$

2 minutes

Lesson Title: Factoring Variables from Algebraic Expressions

Factorise the following expressions:

a. $x^3 + 5x^2$

b. $9a^2 + 13a - 3a - 4a^2$

3 minutes