

MARINA INTERNATIONAL SCHOOL

MATHEMATICS SCHEME OF WORK

YEAR 5 - TERM 1

WEEK	TOPIC	TOPIC DETAILS
1.1	Understand and explain the value of each digit in decimals (tenths and hundredths).	<p>Write a number with hundreds (100s), tens (10s), ones (1s), tenths (1/10 s) and hundredths (1/100 s) on a piece of paper, for example 367.29, and keep this hidden from learners.</p> <p>Ask learners to guess your number by asking you questions. You can only answer 'yes' or 'no'. For example, learners could ask:</p> <p>'Is the number greater than 100?'</p> <p>'Is the digit in your tenths place above 4?'</p> <p>'Is the digit in your hundredths place even?'</p>
1.2	Compose, decompose and regroup numbers, including decimals (tenths and hundredths).	<p>Write a number with hundreds, tens, ones, tenths and hundredths on the board, for example 104.32.</p> <p>Give learners 3 minutes to decompose and regroup this number in as many different ways as they can. For example, for the number 104.32 learners could:</p> <ul style="list-style-type: none">• Decompose $100 + 0 + 4 + 0.3 + 0.02$• Regroup $100 + 4 + 0.2 + 0.1 + 0.01 + 0.01$ $52 + 52 + 0.15 + 0.15 + 0.02$ 10 432 hundredths

WEEK	TOPIC	TOPIC DETAILS
1.3	Round numbers with one decimal place to the nearest whole number.	<p>Check that the learners understand that the number is between two whole numbers. Ask learners to round the number to the nearest whole number by asking which whole number it is nearest to. For example, the decimal 5.2 is between the whole numbers 5 and 6, and rounds to 5.</p> <p>Discuss what happens when the number is half-way between two whole numbers. Discuss answers and methods for rounding as a class.</p> <p>Then give learners a selection of statements relating to rounding. For example:</p> <ul style="list-style-type: none"> • 56.1 rounded to the nearest whole number is 50 • 92.9 rounded to the nearest whole number is 93 • 55.5 rounded to the nearest whole number is 55 • 0.3 rounded to the nearest whole number is 0
1.4	Round numbers with one decimal place to the nearest whole number.	<p>Ask learners to round the number to the nearest whole number by asking which whole number it is nearest to. For example, the decimal 5.2 is between the whole numbers 5 and 6, and rounds to 5.</p> <p>Discuss what happens when the number is half-way between two whole numbers. Discuss answers and methods for rounding as a class.</p> <p>Then give learners a selection of statements relating to rounding. For example:</p> <ul style="list-style-type: none"> • 56.1 rounded to the nearest whole number is 50 • 92.9 rounded to the nearest whole number is 93 • 55.5 rounded to the nearest whole number is 55 • 0.3 rounded to the nearest whole number is 0
2.1	Round numbers with one decimal place to the nearest whole number.	<p>Ask learners to round the number to the nearest whole number by asking which whole number it is nearest to. For example, the decimal 5.2 is between the whole numbers 5 and 6, and rounds to 5.</p> <p>Discuss what happens when the number is half-way between two whole numbers. Discuss answers and methods for rounding as a class.</p> <p>Then give learners a selection of statements relating to rounding. For example:</p> <ul style="list-style-type: none"> • 56.1 rounded to the nearest whole number is 50 • 92.9 rounded to the nearest whole number is 93 • 55.5 rounded to the nearest whole number is 55 • 0.3 rounded to the nearest whole number is 0

WEEK	TOPIC	TOPIC DETAILS
2.2	Use the relationship between repeated addition of a constant and multiplication to find any term of a linear sequence.	<p>Show learners a simple linear number sequence, based on known multiplication facts, such as: 6, 12, 18, 24, ...</p> <p>Ask learners: Can you see a pattern with these numbers? How could you find the 15th term in this sequence?</p> <p>Give learners similar problems to solve so they begin to draw connections between repeated addition and multiplication, for example: How could you find the 11th term of the sequence 3, 6, 9, 12, ...?</p>
2.3	Count on and count back in steps of constant size, and extend beyond zero to include negative numbers	<p>Write a number sequence on a piece of paper and keep it hidden from learners, for example -7, -5, -3, -1, 1, 3, 5, 7. Then write the number sequence on the board, but only provide two numbers for learners to see, for example:</p> <p>___, ___, -3, ___, ___, ___, ___, 7</p>
2.4	Use the relationship between repeated addition of a constant and multiplication to find any term of a linear sequence	<p>Ask learners to discuss in small groups what the other numbers could be in the sequence. Encourage learners to consider what the difference between each of the terms could be and to count on or count back to see if the sequence is correct. Explain that the constant step size in this linear sequence is +2.</p>
3.1	Use the relationship between repeated addition of a constant and multiplication to find any term of a linear sequence	<p>Ask learners to discuss in small groups what the other numbers could be in the sequence. Encourage learners to consider what the difference between each of the terms could be and to count on or count back to see if the sequence is correct. Explain that the constant step size in this linear sequence is +2.</p>
3.2	Recognise and extend the spatial pattern of square and triangular numbers	<p>Show learners the following spatial pattern of square numbers</p>
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WEEK	TOPIC	TOPIC DETAILS
3.4	Understand and explain the difference between prime and composite numbers	Show learners a collection of whole numbers less than 100, such as: 23 26 96 46 6 64 37 48 16 12 81 62
4.1	Use knowledge of factors and multiples to understand tests of divisibility by 4 and 8.	Ask learners if they can recall some of the tests for divisibility for the numbers 2, 3 and 5. Ask learners: What are the factors of 36? How do you know? Check learners' reasoning based on the rules of divisibility.
4.2	Use knowledge of factors and multiples to understand tests of divisibility by 4 and 8.	Ask learners if they can recall some of the tests for divisibility for the numbers 2, 3 and 5. Ask learners: What are the factors of 36? How do you know? Check learners' reasoning based on the rules of divisibility.
4.3	Use knowledge of multiplication to recognise square numbers (from 1 to 100).	Revisit the spatial pattern for square numbers: Remind learners about the lesson previously where they drew the sequence of squares. Ask learners: <ul style="list-style-type: none"> • What do you notice about these squares? • How could you work out the next one in the pattern? • What was special about the number of each squares in each pattern?
4.4	Recognise and extend the spatial pattern of square and triangular numbers	Identify that square numbers are formed by multiplying a number by itself, for example $3 \times 3 = 9$, so 9 is a square number. Then introduce learners to the index notation for square numbers i.e. instead of $3 \times 3 = 9$ we can use the notation $3^2 = 9$. Ask learners some questions: <ul style="list-style-type: none"> • Is 4 a square number? • Is 3 a square number? • What is the 7th square number? • What is 52?
5.1	Understand time intervals less than one second	This activity is based on the interactive NRich task: Estimating Time (https://nrich.maths.org/10629). Learners should identify the need for measurement and accuracy. They may realise that they will need to measure each learner's time to a better level of accuracy than to the nearest second, because many learners may guess 9 seconds and it would then be unclear who was best.

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5.2	Understand time intervals less than one second	<p>This activity is based on the interactive NRICH task: Estimating Time (https://nrich.maths.org/10629).</p> <p>Learners should identify the need for measurement and accuracy. They may realise that they will need to measure each learner's time to a better level of accuracy than to the nearest second, because many learners may guess 9 seconds and it would then be unclear who was best.</p>
5.3	Find time intervals in seconds, minutes and hours that bridge through 60	Begin by asking learners how much time has elapsed since the start of the school day, or if your maths lesson is at the start of the day you may wish to choose a different time, for example, how long has elapsed since 5:40 am. Encourage learners to discuss their approaches for calculating the elapsed time with a partner.
5.4	Find time intervals in seconds, minutes and hours that bridge through 60	Begin by asking learners how much time has elapsed since the start of the school day, or if your maths lesson is at the start of the day you may wish to choose a different time, for example, how long has elapsed since 5:40 am. Encourage learners to discuss their approaches for calculating the elapsed time with a partner.
6.1	Find time intervals in seconds, minutes and hours that bridge through 60	Begin by asking learners how much time has elapsed since the start of the school day, or if your maths lesson is at the start of the day you may wish to choose a different time, for example, how long has elapsed since 5:40 am. Encourage learners to discuss their approaches for calculating the elapsed time with a partner.
6.2	Recognise that a time interval can be expressed as a decimal, or in mixed units	Give learners a set of cards, each showing a different time interval with some expressed as a decimal and some in mixed units
6.3	Recognise that a time interval can be expressed as a decimal, or in mixed units	Give learners a set of cards, each showing a different time interval with some expressed as a decimal and some in mixed units.
6.4	Compare times between time zones in digital notation (12- and 24-hour) and on analogue clocks.	<p>Ask learners:</p> <ul style="list-style-type: none"> • What is the time right now? • How many different ways could you tell or show me what the time is? • Is it the same time everywhere in the world right now?
7.1	Compare times between time zones in digital notation (12- and 24-hour) and on analogue clocks	<p>Ask learners:</p> <ul style="list-style-type: none"> • What is the time right now? • How many different ways could you tell or show me what the time is? • Is it the same time everywhere in the world right now?

WEEK	TOPIC	TOPIC DETAILS
7.2	Estimate, compare and classify angles, using geometric vocabulary including acute, right, obtuse and reflex.	Ask learners to sort the angles into acute angles, obtuse angles
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7.4	Estimate, compare and classify angles, using geometric vocabulary including acute, right, obtuse and reflex.	Challenge learners to find at least one acute angle, one right angle, one obtuse angle and one reflex angle in the diagram formed on their desks. Ask learners to work in pairs to estimate the size of each of the angles. Ask learners to explain to another pair how they know their estimate is reasonable and what they could do to be sure. Ask learners: How can you be sure about naming an angle that is very close to being a right angle or very close to 180° ?
8.1	Know that the sum of the angles on a straight line is 180° and use this to calculate missing angles on a straight line.	What can you say about the angles in the diagram? (Answer: learners should notice there are two right angles and each is 90°) What is the total of the two right angles? (Answer: 180°) Keep the horizontal line the same, but then show learners the previously vertical line now at a diagonal:
8.2	Know that the sum of the angles on a straight line is 180° and use this to calculate missing angles on a straight line.	What can you say about the angles in the diagram? (Answer: learners should notice there are two right angles and each is 90°) What is the total of the two right angles? (Answer: 180°) Keep the horizontal line the same, but then show learners the previously vertical line now at a diagonal:
8.3	Identify, describe, classify and sketch isosceles, equilateral or scalene triangles, including reference to angles and symmetrical properties.	Ask learners to discuss the angle, side and symmetry properties of each type of triangle. They should sketch each type of triangle and fill in the gaps in the passage below: An equilateral triangle has ... (3) equal angles and ... (3) equal sides. It has ... (3) lines of reflective symmetry. An isosceles triangle has ... (2) equal angles and ... (2) equal sides. It has ... (1) line of reflective symmetry. A scalene triangle has ... (0) equal angles and ... (0) equal sides. It has ... (0) lines of reflective symmetry

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8.4	Identify, describe, classify and sketch isosceles, equilateral or scalene triangles, including reference to angles and symmetrical properties.	<p>Ask learners to discuss the angle, side and symmetry properties of each type of triangle. They should sketch each type of triangle and fill in the gaps in the passage below:</p> <p>An equilateral triangle has ... (3) equal angles and ... (3) equal sides. It has ... (3) lines of reflective symmetry.</p> <p>An isosceles triangle has ... (2) equal angles and ... (2) equal sides. It has ... (1) line of reflective symmetry.</p> <p>A scalene triangle has ... (0) equal angles and ... (0) equal sides. It has ... (0) lines of reflective symmetry.</p>
9.1	Identify, describe, classify and sketch isosceles, equilateral or scalene triangles, including reference to angles and symmetrical properties.	Give each learner some paper and scissors and ask them to sketch and cut out two different triangles. Then ask them to decide where each of their triangles belong in this table:
9.2	Identify, describe, classify and sketch isosceles, equilateral or scalene triangles, including reference to angles and symmetrical properties.	Give each learner some paper and scissors and ask them to sketch and cut out two different triangles. Then ask them to decide where each of their triangles belong in this table:
9.3	Estimate and measure perimeter and area of 2D shapes.	<p>Ask learners:</p> <ul style="list-style-type: none"> • What does perimeter mean? • How do you find the perimeter of a shape? • What does area mean? • How do you find the area inside a shape?
9.4	Estimate and measure perimeter and area of 2D shapes.	<p>Ask learners:</p> <ul style="list-style-type: none"> • What does perimeter mean? • How do you find the perimeter of a shape? • What does area mean? • How do you find the area inside a shape?
10.1	Understanding that shapes with the same perimeter can have different areas and vice versa.	<p>Ask them to draw two different shapes, each with a perimeter of 24 cm.</p> <p>Ask learners:</p> <p>Do you think the area of your two shapes will also be the same? Why or why not?</p>

WEEK	TOPIC	TOPIC DETAILS
10.2	Understanding that shapes with the same perimeter can have different areas and vice versa.	Ask them to draw two different shapes, each with a perimeter of 24 cm. Ask learners: Do you think the area of your two shapes will also be the same? Why or why not?
10.3	Draw compound shapes that can be divided into rectangles and squares	Ask learners to draw either a rectangle or a square on centimetre-squared paper. Learners should cut out the shape and estimate then calculate the area and perimeter.
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11.1	Draw compound shapes that can be divided into rectangles and squares	Ask learners to draw either a rectangle or a square on centimetre-squared paper. Learners should cut out the shape and estimate then calculate the area and perimeter.
11.2	Estimate, measure and calculate their perimeter and area.	Then in pairs, ask learners to join their shapes together, to create a compound shape. Ask learners to discuss: <ul style="list-style-type: none"> • What is the area of the compound shape? • What is the perimeter of the compound shape? • What do you notice about the perimeter and area of your individual shapes compared to your compound shape? • Would the area or perimeter change if you changed how the shapes were joined together?
11.3	Estimate, measure and calculate their perimeter and area.	Then in pairs, ask learners to join their shapes together, to create a compound shape. Ask learners to discuss: <ul style="list-style-type: none"> • What is the area of the compound shape? • What is the perimeter of the compound shape? • What do you notice about the perimeter and area of your individual shapes compared to your compound shape? • Would the area or perimeter change if you changed how the shapes were joined together?
11.4	Estimate, measure and calculate their perimeter and area.	Then in pairs, ask learners to join their shapes together, to create a compound shape. Ask learners to discuss: <ul style="list-style-type: none"> • What is the area of the compound shape? • What is the perimeter of the compound shape? • What do you notice about the perimeter and area of your individual shapes compared to your compound shape? • Would the area or perimeter change if you changed how the shapes were joined together?

WEEK	TOPIC	TOPIC DETAILS
12.1	Identify, describe and sketch 3D shapes in different orientations	Give each pair of learners a 3D shape or a selection of interlocking cubes for them to create their own 3D shape. Ask the pairs of learners to each sit at a different angle to the 3D shape and sketch what they see (from above, to the left or right of the shape). Ask learners to compare, discuss and describe their sketches.
12.2	Identify, describe and sketch 3D shapes in different orientations.	Give each pair of learners a 3D shape or a selection of interlocking cubes for them to create their own 3D shape. Ask the pairs of learners to each sit at a different angle to the 3D shape and sketch what they see (from above, to the left or right of the shape). Ask learners to compare, discuss and describe their sketches.
12.3	Identify, describe and sketch 3D shapes in different orientations.	Use a "feely bag" (a bag containing 3D shapes). Ask a learner to choose a shape and describe it to the class, using its properties, by how it feels in the bag (discourage learners from looking at the shape). Encourage the correct use of mathematical vocabulary (e.g. face, vertex, vertices, edge, pyramid, prism). Choose learners to guess the shape from its description.
12.4	Identify and sketch different nets for a cube.	Ask learners to sketch a net for a cube. Then ask them to compare their net with another learner's net. Ask learners: Are your nets the same or different?
13.1	Count on and count back in steps of constant size, and extend beyond zero to include negative numbers	Use a counting stick, divided by lines into 10 sections, as a model for counting on and back. Explain to learners the constant step size and start number e.g. the constant step size is 2 and the start number is 225. Point to each line and ask learners to say the number for that line out loud in unison e.g. 225, 227, 229.... Reverse the sequence and count back from the end number.
13.2	Count on and count back in steps of constant size, and extend beyond zero to include negative numbers	Use a counting stick, divided by lines into 10 sections, as a model for counting on and back. Explain to learners the constant step size and start number e.g. the constant step size is 2 and the start number is 225. Point to each line and ask learners to say the number for that line out loud in unison e.g. 225, 227, 229.... Reverse the sequence and count back from the end number.
13.3	Recognise the use of objects, shapes or symbols to represent two unknown quantities in addition and subtraction calculations	Write an addition or subtraction calculation with two unknowns on the board, for example: Ask learners to write one set of possible values for the square and the circle. Ask them to compare their answers with a partner. Record on the board a range of different, correct, answers from the learners.

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13.4	Recognise the use of objects, shapes or symbols to represent two unknown quantities in addition and subtraction calculations	<p>Write an addition or subtraction calculation with two unknowns on the board, for example:</p> <p>Ask learners to write one set of possible values for the square and the circle. Ask them to compare their answers with a partner. Record on the board a range of different, correct, answers from the learners.</p> <p>Ask learners: How do you know if we have all the possible answers? Can anyone create a bar model to show the problem</p>
14.1	Estimate, add and subtract integers, including where one integer is negative.	<p>Write an addition calculation involving a negative number on the class board, for example: $-7 + 12 = ?$</p> <p>Ask learners to draw a blank number line, and to put 0 in the middle of the number line.</p>
14.2	Estimate, add and subtract integers, including where one integer is negative.	<p>Write a calculation involving negative numbers on the board, for example: $-94 + 104 = ?$</p> <p>Ask learners to create a 'good' and 'bad' estimation for this calculation. Encourage them to ensure that the 'bad' estimation is still plausible but less accurate or efficient than their 'good' estimation.</p>
14.3	Estimate, add and subtract numbers with the same number of decimal places.	<p>Write an addition or subtraction calculation on the board that does not involve any regrouping and where both numbers have one decimal place, for example: $344.2 + 133.2 = ?$</p> <p>Ask learners to solve the calculation, and then to compare their method with another learner. Repeat with calculations where both numbers have two decimal places, still without any regrouping, such as $344.32 + 133.23 = ?$</p>
14.4	Estimate and divide whole numbers up to 1000 by 1-digit whole numbers.	<p>On the board, write several division questions, some of which would be more efficient to solve mentally, and some which would be more efficient to solve using a formal written method. For example:</p> <p>$810 \div 9 = ?$, $344 \div 6 = ?$, $125 \div 5 = ?$, $981 \div 9 = ?$, $907 \div 7 = ?$, $363 \div 6 = ?$</p>
15.1	-----	-----

WEEK	TOPIC	TOPIC DETAILS
15.2	-----	-----
15.3	-----	-----
15.4	-----	-----
16.1	-----	-----
16.2	----- -	-----
16.3	----- -----	-----
16.4	-----	-----

MATHEMATICS SCHEME OF WORK

YEAR 5 - TERM 2

WEEK	TOPIC	TOPIC DETAILS
1.1	Estimate and divide whole numbers up to 1000 by 1-digit whole numbers.	<p>On the board, write several division questions, some of which would be more efficient to solve mentally, and some which would be more efficient to solve using a formal written method. For example:</p> $810 \div 9 = ?, 344 \div 6 = ?, 125 \div 5 = ?, 981 \div 9 = ?, 907 \div 7 = ?, 363 \div 6 = ?$
1.2	Estimate and multiply whole numbers up to 1000 by 1-digit or 2-digit whole numbers.	<p>Ask learners to find two whole numbers that when multiplied together total 1000. Then ask them to find another different pair of whole numbers that when multiplied together total 1000, and then ask them to find a third pair. Ask learners to compare their pairs of numbers with their partner.</p> <p>Ask learners: Have you got the same pairs as your partner?</p>
1.3	Estimate and multiply whole numbers up to 1000 by 1-digit or 2-digit whole numbers.	<p>Ask learners to find two whole numbers that when multiplied together total 1000. Then ask them to find another different pair of whole numbers that when multiplied together total 1000, and then ask them to find a third pair. Ask learners to compare their pairs of numbers with their partner.</p> <p>Ask learners: Have you got the same pairs as your partner? How many possible pairs do you think there are?</p>
1.4	Estimate and multiply whole numbers up to 1000 by 1-digit or 2-digit whole numbers.	<p>To explore estimation, provide learners with some multiplication questions, which might be more efficient to solve using a written method, for example:</p> <ul style="list-style-type: none">• $373 \times 6 = ?$• $567 \times 5 = ?$• $837 \times 8 = ?$• $483 \times 7 = ?$

WEEK	TOPIC	TOPIC DETAILS
2.1	Estimate and multiply whole numbers up to 1000 by 1-digit or 2-digit whole numbers.	<p>To explore estimation, provide learners with some multiplication questions, which might be more efficient to solve using a written method, for example:</p> <ul style="list-style-type: none"> • $373 \times 6 = ?$ • $567 \times 5 = ?$ • $837 \times 8 = ?$ • $483 \times 7 = ?$
2.2	Use knowledge of place value to multiply and divide decimals by 10 and 100	<p>Create a set of 8 cards that have either $\div 10$, $\div 100$, $\times 10$, $\times 100$ on them and distribute one set to each pair of learners, who shuffle the cards and place them in a pile.</p> <p>Ask learners to take turns with their partner to roll a 0–9 die 4 times and to create a 4-digit number with two decimal places, for example, 35.64.</p>
2.3	Use knowledge of place value to multiply and divide decimals by 10 and 100	<p>Create a set of 8 cards that have either $\div 10$, $\div 100$, $\times 10$, $\times 100$ on them and distribute one set to each pair of learners, who shuffle the cards and place them in a pile.</p> <p>Ask learners to take turns with their partner to roll a 0–9 die 4 times and to create a 4-digit number with two decimal places, for example, 35.64.</p>
2.4	Estimate and multiply numbers with one decimal place by 1-digit whole numbers.	<p>Write a calculation that involves a number with one decimal place multiplied by a whole number on the board, for example: $6.7 \times 6 = ?$</p> <p>Ask learners: How could you estimate the answer first? What might be a reasonable way to estimate it? How could you solve this calculation to find the correct answer</p>
3.1	Estimate and multiply numbers with one decimal place by 1-digit whole numbers.	<p>Write a calculation that involves a number with one decimal place multiplied by a whole number on the board, for example: $6.7 \times 6 = ?$</p> <p>Ask learners: How could you estimate the answer first? What might be a reasonable way to estimate it? How could you solve this calculation to find the correct answer?</p>

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3.2	Understand which law of arithmetic to apply to simplify calculations	<p>Explain to learners that these are the names of the three laws of arithmetic. Provide learners with some examples of each law.</p> <p>Ask learners: What do these different laws mean?</p>
3.3	Understand which law of arithmetic to apply to simplify calculations	<p>Write the following calculation on the board: $5 \times 6 + 4 \div 2 - 1 = ?$</p> <p>Ask learners to imagine there were no rules for which order to use the four operations. Ask them to see how many different possible answers they could get for this calculation. Ask them to explain how they arrived at each of their answers.</p>
3.4	Understand that the four operations follow a particular order.	<p>Write the following calculation on the board: $5 \times 6 + 4 \div 2 - 1 = ?$</p> <p>Ask learners to imagine there were no rules for which order to use the four operations. Ask them to see how many different possible answers they could get for this calculation. Ask them to explain how they arrived at each of their answers.</p>
4.1	Understand that the four operations follow a particular order.	<p>Write the following calculation on the board: $5 \times 6 + 4 \div 2 - 1 = ?$</p> <p>Ask learners to imagine there were no rules for which order to use the four operations. Ask them to see how many different possible answers they could get for this calculation. Ask them to explain how they arrived at each of their answers.</p>

WEEK	TOPIC	TOPIC DETAILS
4.2	Plan and conduct an investigation to answer a set of related statistical questions, considering what data to collect (categorical, discrete and continuous data).	Ask learners to work in small groups to investigate the journey to school of all learners in their school. Learners must first create a set of statistical questions, which they could answer through collecting and analysing data. Encourage learners to consider the time it takes to get to school or the distance they travel (continuous data), as well as the method of transport (categorical data) or how many people they travel with (discrete data).
4.3	Record, organise and represent categorical, discrete and continuous data. Choose and explain which representation to use in a given situation: - Venn and Carroll diagrams - tally charts and frequency tables - bar charts - waffle diagrams - frequency diagrams for continuous data - line graphs - dot plots (one dot per data point).	<p>Show learners the two sets of data below showing the heights in centimetres of 15 customers from Shop A and 15 customers from Shop B.</p> <p>Shop A: 164.5, 180.2, 193, 157.8, 156.2, 166.6, 175.2, 163.3, 185.3, 192.1, 165.3, 176.7, 158.6, 175.3, 170</p> <p>Shop B: 132.2, 122.3, 182.4, 143.2, 123.1, 178, 111.3, 130, 187.1, 116.8, 167.3, 115.2, 134.2, 141.1, 122.9</p>
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5.1	Record, organise and represent categorical, discrete and continuous data. Choose and explain which representation to use in a given situation: - Venn and Carroll diagrams - tally charts and frequency tables - bar charts - waffle diagrams - frequency diagrams for continuous data - line graphs - dot plots (one dot per data point).	<p>Show learners the two sets of data below showing the heights in centimetres of 15 customers from Shop A and 15 customers from Shop B.</p> <p>Shop A: 164.5, 180.2, 193, 157.8, 156.2, 166.6, 175.2, 163.3, 185.3, 192.1, 165.3, 176.7, 158.6, 175.3, 170</p> <p>Shop B: 132.2, 122.3, 182.4, 143.2, 123.1, 178, 111.3, 130, 187.1, 116.8, 167.3, 115.2, 134.2, 141.1, 122.9</p>

WEEK	TOPIC	TOPIC DETAILS
5.2	Interpret data, identifying patterns, within and between data sets, to answer statistical questions	Learners should also consider the sources of variation, For example, shop A might have measured the heights of the customers on a Monday morning when only adults entered the shop whereas shop B measured the heights of customers on a Saturday afternoon when both adults and children entered the shop, and this may cause variation between the data sets.
5.3	Interpret data, identifying patterns, within and between data sets, to answer statistical questions.	Learners should also consider the sources of variation, For example, shop A might have measured the heights of the customers on a Monday morning when only adults entered the shop whereas shop B measured the heights of customers on a Saturday afternoon when both adults and children entered the shop, and this may cause variation between the data sets.
5.4	Record, organise and represent categorical, discrete and continuous data. Choose and explain which representation to use in a given situation: - Venn and Carroll diagrams - tally charts and frequency tables - bar charts - waffle diagrams - frequency diagrams for continuous data - line graphs - dot plots (one dot per data point).	<ul style="list-style-type: none"> • the data in the table is easy to read, but does not give a visual representation of the data • it is clear to see the proportion of each location in the waffle diagram, but it is more difficult to make comparisons between similarly sized sections • it is easy to compare locations in the horizontal bar chart and order the locations from largest to smallest, but using an axis and labelling would make it easier to read exact frequencies.
6.1	Interpret data, identifying patterns, within and between data sets, to answer statistical questions. Discuss conclusions, considering the sources of variation.	Interpret data, identifying patterns, within and between data sets, to answer statistical questions. Discuss conclusions, considering the sources of variation.
6.2	Interpret data, identifying patterns, within and between data sets, to answer statistical questions. Discuss conclusions, considering the sources of variation.	Interpret data, identifying patterns, within and between data sets, to answer statistical questions. Discuss conclusions, considering the sources of variation.

WEEK	TOPIC	TOPIC DETAILS
6.3	Understand that the mode and median are ways to describe and summarise data sets. Find and interpret the mode and the median, and consider their appropriateness for the context.	<p>introduce learners to the median by presenting them these sets of numbers and their corresponding medians. The numbers represent three tests (Test 1, 2 and 3 each that had a possible score out of 15) that 9 learners completed:</p> <p>Test 1: 1, 2, 4, 4, 5, 6, 6, 6, 7 median = 5</p> <p>Test 2: 3, 3, 3, 3, 3, 4, 4, 7, 8 median = 3</p> <p>Test 3: 7, 7, 8, 9, 9, 10, 10, 10, 15 median = 9</p>
6.4	Understand that the mode and median are ways to describe and summarise data sets. Find and interpret the mode and the median, and consider their appropriateness for the context.	<p>introduce learners to the median by presenting them these sets of numbers and their corresponding medians. The numbers represent three tests (Test 1, 2 and 3 each that had a possible score out of 15) that 9 learners completed:</p> <p>Test 1: 1, 2, 4, 4, 5, 6, 6, 6, 7 median = 5</p> <p>Test 2: 3, 3, 3, 3, 3, 4, 4, 7, 8 median = 3</p> <p>Test 3: 7, 7, 8, 9, 9, 10, 10, 10, 15 median = 9</p>
7.1	Understand that the mode and median are ways to describe and summarise data sets. Find and interpret the mode and the median, and consider their appropriateness for the context.	<p>Angelique completes a spelling test with 10 questions each week. Her last five scores out of 10 were 1, 1, 5, 6, 7.</p> <p>Ask learners to find the mode and the median for this set of data. Ask learners: Is the mode an appropriate representation of Angelique's scores? Why or why not?</p>
7.2	Understand that the mode and median are ways to describe and summarise data sets. Find and interpret the mode and the median, and consider their appropriateness for the context.	<p>Angelique completes a spelling test with 10 questions each week. Her last five scores out of 10 were 1, 1, 5, 6, 7.</p> <p>Ask learners to find the mode and the median for this set of data. Ask learners: Is the mode an appropriate representation of Angelique's scores? Why or why not? Is the median an appropriate representation of Angelique's scores? Why or why not?</p>

WEEK	TOPIC	TOPIC DETAILS
7.3	Interpret data, identifying patterns, within and between data sets, to answer statistical questions. Discuss conclusions, considering the sources of variation.	Ensure learners understand that in this situation the mode is not an appropriate measure as most of Angelique's marks (3 out of 5) were above 1. In this case, they should choose the median as a more accurate representation of the data. Ensure that learners understand that the median is a measure of her typical score of 5 which is more representative of her spelling than the mode
7.4	Interpret data, identifying patterns, within and between data sets, to answer statistical questions. Discuss conclusions, considering the sources of variation.	Ensure learners understand that in this situation the mode is not an appropriate measure as most of Angelique's marks (3 out of 5) were above 1. In this case, they should choose the median as a more accurate representation of the data. Ensure that learners understand that the median is a measure of her typical score of 5 which is more representative of her spelling than the mode
8.1	Plan and conduct an investigation to answer a set of related statistical questions, considering what data to collect (categorical, discrete and continuous data).	<p>Select three pieces of text aimed at different reading levels, e.g. one for young children, one for teenagers, one for adults.</p> <p>Ask learners: What differences are there between these texts, which are aimed at different age groups?</p> <p>Learners should discuss their ideas and consider which data they might collect, e.g. number of pictures, word length, words per paragraph, font size, number of paragraphs.</p>
8.2	Plan and conduct an investigation to answer a set of related statistical questions, considering what data to collect (categorical, discrete and continuous data).	<p>Select three pieces of text aimed at different reading levels, e.g. one for young children, one for teenagers, one for adults.</p> <p>Ask learners: What differences are there between these texts, which are aimed at different age groups?</p> <p>Learners should discuss their ideas and consider which data they might collect, e.g. number of pictures, word length, words per paragraph, font size, number of paragraphs.</p>

WEEK	TOPIC	TOPIC DETAILS
8.3	Record, organise and represent categorical, discrete and continuous data. Choose and explain which representation to use in a given situation: - Venn and Carroll diagrams - tally charts and frequency tables - bar charts - waffle diagrams - frequency diagrams for continuous data - line graphs - dot plots (one dot per data point).	Learners should plan and conduct an investigation to answer a set of related statistical questions from the ideas suggested by the class. Learners should create a data collection sheet or tally chart to record their data. For example:
8.4	Understand that the mode and median are ways to describe and summarise data sets. Find and interpret the mode and the median, and consider their appropriateness for the context.	Learners should then organise and create representations of the data e.g. frequency tables, waffle diagrams, bar charts, line graphs etc., considering which representation is best.
9.1	Understand that the mode and median are ways to describe and summarise data sets. Find and interpret the mode and the median, and consider their appropriateness for the context.	Learners should then organise and create representations of the data e.g. frequency tables, waffle diagrams, bar charts, line graphs etc., considering which representation is best.
9.2	Interpret data, identifying patterns, within and between data sets, to answer statistical questions. Discuss conclusions, considering the sources of variation.	Learners should then organise and create representations of the data e.g. frequency tables, waffle diagrams, bar charts, line graphs etc., considering which representation is best.
9.3	Interpret data, identifying patterns, within and between data sets, to answer statistical questions. Discuss conclusions, considering the sources of variation.	Learners should then organise and create representations of the data e.g. frequency tables, waffle diagrams, bar charts, line graphs etc., considering which representation is best.
9.4	Understand that the mode and median are ways to describe and summarise data sets. Find and interpret the mode and the median, and consider their appropriateness for the context.	Learners should then organise and create representations of the data e.g. frequency tables, waffle diagrams, bar charts, line graphs etc., considering which representation is best.
10.1	MID TEAR EXAM	Revision

WEEK	TOPIC	TOPIC DETAILS
10.2	Find and interpret the mode and the median, and consider their appropriateness for the context.	<p>Then, introduce learners to the median by presenting them these sets of numbers and their corresponding medians. The numbers represent three tests (Test 1, 2 and 3 each that had a possible score out of 15) that 9 learners completed:</p> <p>Test 1: 1, 2, 4, 4, 5, 6, 6, 6, 7 median = 5</p> <p>Test 2: 3, 3, 3, 3, 3, 4, 4, 7, 8 median = 3</p> <p>Test 3: 7, 7, 8, 9, 9, 10, 10, 10, 15 median = 9</p>
10.3	Find and interpret the mode and the median, and consider their appropriateness for the context	<p>Then, introduce learners to the median by presenting them these sets of numbers and their corresponding medians. The numbers represent three tests (Test 1, 2 and 3 each that had a possible score out of 15) that 9 learners completed:</p> <p>Test 1: 1, 2, 4, 4, 5, 6, 6, 6, 7 median = 5</p> <p>Test 2: 3, 3, 3, 3, 3, 4, 4, 7, 8 median = 3</p> <p>Test 3: 7, 7, 8, 9, 9, 10, 10, 10, 15 median = 9</p>
10.4	Find and interpret the mode and the median, and consider their appropriateness for the context	<p>Then, introduce learners to the median by presenting them these sets of numbers and their corresponding medians. The numbers represent three tests (Test 1, 2 and 3 each that had a possible score out of 15) that 9 learners completed:</p> <p>Test 1: 1, 2, 4, 4, 5, 6, 6, 6, 7 median = 5</p> <p>Test 2: 3, 3, 3, 3, 3, 4, 4, 7, 8 median = 3</p> <p>Test 3: 7, 7, 8, 9, 9, 10, 10, 10, 15 median = 9</p>
11.1	Discuss conclusions, considering the sources of variation.	Interpret data, identifying patterns, within and between data sets, to answer statistical questions. Discuss conclusions, considering the sources of variation.
11.2	Discuss conclusions, considering the sources of variation.	Interpret data, identifying patterns, within and between data sets, to answer statistical questions. Discuss conclusions, considering the sources of variation.

WEEK	TOPIC	TOPIC DETAILS
11.3	Find and interpret the mode and the median, and consider their appropriateness for the context.	<p>Learners should then organise and create representations of the data e.g. frequency tables, waffle diagrams, bar charts, line graphs etc., considering which representation is best.</p> <p>Number of letters in a word Frequency</p> <p>1 6</p> <p>2 7</p> <p>3 9</p> <p>4 10</p> <p>5 8</p> <p>6 5</p> <p>7 4</p> <p>8 1</p>
11.4	Find and interpret the mode and the median, and consider their appropriateness for the context.	<p>Learners should then organise and create representations of the data e.g. frequency tables, waffle diagrams, bar charts, line graphs etc., considering which representation is best.</p>
12.1	Understand that a fraction can be represented as a division of the numerator by the denominator (unit fractions, three-quarters, tenths and hundredths	<p>Write the following on the board and ask learners: What is the same and what is different?</p> <p>$\frac{1}{4}$ 0.25 $1 \div 4$</p> <p>Through discussion, identify that all three have the same value and are equivalent. $\frac{1}{4}$ can be written as $1 \div 4$, which when calculated is 0.25.</p>
12.2	Understand that a fraction can be represented as a division of the numerator by the denominator (unit fractions, three-quarters, tenths and hundredths	<p>Write the following on the board and ask learners: What is the same and what is different?</p> <p>$\frac{1}{4}$ 0.25 $1 \div 4$</p> <p>Through discussion, identify that all three have the same value and are equivalent. $\frac{1}{4}$ can be written as $1 \div 4$, which when calculated is 0.25.</p>
12.3	Recognise that proper fractions, decimals (one decimal place) and percentages can have equivalent values.	<p>To help demonstrate this, provide learners with a number line from 0 to 1, marked into tenths, on a piece of paper.</p>
12.4	Recognise that proper fractions, decimals (one decimal place) and percentages can have equivalent values.	<p>To help demonstrate this, provide learners with a number line from 0 to 1, marked into tenths, on a piece of paper.</p>

WEEK	TOPIC	TOPIC DETAILS
13.1	Recognise that proper fractions, decimals (one decimal place) and percentages can have equivalent values.	To help demonstrate this, provide learners with a number line from 0 to 1, marked into tenths, on a piece of paper.
13.2	Understand that proper fractions can act as operators.	<p>Ask learners what finding a fraction of something means. Give the example of $\frac{1}{5}$ and ask what it would mean finding a fifth of something. Establish that they understand that it means finding equal parts of a whole, in this example 5 equal parts.</p> <p>Ask learners to calculate $\frac{1}{5}$ of 45. Encourage learners to show their working and use diagrams, such as the bar, for support. For example:</p>
13.3	Understand that proper fractions can act as operators.	<p>Ask learners what finding a fraction of something means. Give the example of $\frac{1}{5}$ and ask what it would mean finding a fifth of something. Establish that they understand that it means finding equal parts of a whole, in this example 5 equal part.</p> <p>Ask learners to calculate $\frac{1}{5}$ of 45. Encourage learners to show their working and use diagrams, such as the bar, for support. For example:</p>
13.4	Recognise that improper fractions and mixed numbers can have an equivalent value.	Show learners the following diagram, and ask them to write the fraction of the shape that is shaded:
14.1	Recognise that improper fractions and mixed numbers can have an equivalent value.	Show learners the following diagram, and ask them to write the fraction of the shape that is shaded:
14.2	Recognise that improper fractions and mixed numbers can have an equivalent value.	<p>Show learners the following problem: Oliver says that $\frac{27}{5}$ is less than $\frac{64}{5}$. Do you agree? Why or why not?</p> <p>Encourage learners to convince using different ways, such as by reasoning with the numbers but also reasoning with diagrams or pictorial representations.</p>
14.3	Recognise that improper fractions and mixed numbers can have an equivalent value.	<p>Show learners the following problem: Oliver says that $\frac{27}{5}$ is less than $\frac{64}{5}$. Do you agree? Why or why not?</p> <p>Encourage learners to convince using different ways, such as by reasoning with the numbers but also reasoning with diagrams or pictorial representations.</p>

WEEK	TOPIC	TOPIC DETAILS
14.4	Recognise that improper fractions and mixed numbers can have an equivalent value.	<p>Show learners the following problem: Oliver says that $27/5$ is less than $64/5$. Do you agree? Why or why not?</p> <p>Encourage learners to convince using different ways, such as by reasoning with the numbers but also reasoning with diagrams or pictorial representations.</p>
15.1	-----	-----
15.2	-----	-----
15.3	-----	-----
15.4	-----	-----
16.1	-----	-----
16.2	-----	-----
16.3	-----	-----
16.4	-----	-----

MATHEMATICS SCHEME OF WORK

YEAR 5 - TERM 3

WEEK	TOPIC	TOPIC DETAILS
1.1	Understand the relative size of quantities to compare and order numbers with one decimal place, proper fractions with the same denominator and percentages, using the symbols =, > and <.	Show learners five pairs of fractions with the same denominator or decimals. Ask learners to compare each pair of fractions or decimals and insert the correct symbol between them (=, > or <). 0.4 0.9 5/6 1/6 1/4 0.2 0.1 1/10 1/5 0.
1.2	Recognise that proper fractions, decimals (one decimal place) and percentages can have equivalent values.	Then give learners sets of fractions with the same denominator or decimals and ask them to order them from smallest to largest. For example: 6/7, 3/7, 5/7, 4/7, 1/7 0.3, 0.7, 0.1, 0.9, 0.5, 0.8 0.4, 1/10, 0.9, 5/10, 6/10, 0.7
1.3	Recognise that proper fractions, decimals (one decimal place) and percentages can have equivalent values.	Then give learners sets of fractions with the same denominator or decimals and ask them to order them from smallest to largest. For example: 6/7, 3/7, 5/7, 4/7, 1/7 0.3, 0.7, 0.1, 0.9, 0.5, 0.8 0.4, 1/10, 0.9, 5/10, 6/10, 0.7

WEEK	TOPIC	TOPIC DETAILS
1.4	Estimate, add and subtract fractions with the same denominator and denominators that are multiples of each other.	<p>Write the following on the board:</p> $1/5 + 2/5 = ?$ <p>Ask learners: Can you use a diagram to represent and help you solve this problem?</p>
2.1	Estimate, add and subtract fractions with the same denominator and denominators that are multiples of each other.	<p>Write the following on the board:</p> $1/5 + 2/5 = ?$ <p>Ask learners: Can you use a diagram to represent and help you solve this problem?</p>
2.2	Estimate, multiply and divide unit fractions by a whole number.	<p>Show learners the following question:</p> $1/7 \times 4 = ?$ <p>Ask learners: How can you use your understanding of adding fractions to help you answer this multiplication question? How could we use a bar model or other diagram to represent the problem?</p>
2.3	Estimate, multiply and divide unit fractions by a whole number.	<p>Show learners the following question:</p> $1/7 \times 4 = ?$ <p>Ask learners: How can you use your understanding of adding fractions to help you answer this multiplication question? How could we use a bar model or other diagram to represent the problem?</p>
2.4	Estimate, multiply and divide unit fractions by a whole number.	<p>Show learners the following question:</p> $1/7 \times 4 = ?$ <p>Ask learners: How can you use your understanding of adding fractions to help you answer this multiplication question? How could we use a bar model or other diagram to represent the problem?</p>

WEEK	TOPIC	TOPIC DETAILS
3.1	Estimate, multiply and divide unit fractions by a whole number.	Show learners the following question: $\frac{1}{7} \times 4 = ?$ Ask learners: How can you use your understanding of adding fractions to help you answer this multiplication question? How could we use a bar model or other diagram to represent the problem?
3.2	Estimate, multiply and divide unit fractions by a whole number.	There is $\frac{1}{4}$ of a chocolate bar in Mike's fridge. Mike shares the chocolate bar equally with his friend, Mia. What fraction of the whole chocolate bar do they get each?
3.3	Estimate, multiply and divide unit fractions by a whole number.	There is $\frac{1}{4}$ of a chocolate bar in Mike's fridge. Mike shares the chocolate bar equally with his friend, Mia. What fraction of the whole chocolate bar do they get each?
3.4	Estimate, multiply and divide unit fractions by a whole number.	There is $\frac{1}{4}$ of a chocolate bar in Mike's fridge. Mike shares the chocolate bar equally with his friend, Mia. What fraction of the whole chocolate bar do they get each?
4.1	Recognise percentages of shapes, and write percentages as a fraction with denominator 100.	Ask learners to record the proportion of the diagram that is shaded in at least two different ways, for example, $\frac{1}{4}$, $\frac{25}{100}$, 0.25 and 25%. Select learners to share their answers with the class.
4.2	Recognise percentages of shapes, and write percentages as a fraction with denominator 100.	Ask learners to record the proportion of the diagram that is shaded in at least two different ways, for example, $\frac{1}{4}$, $\frac{25}{100}$, 0.25 and 25%. Select learners to share their answers with the class.
4.3	Recognise that proper fractions, decimals (one decimal place) and percentages can have equivalent values.	When working on these problems, encourage learners to represent the fractions, decimals and percentages as diagrams to help them identify the equivalencies. For example, they could use 10×10 squares or bar models to help them identify equivalencies between fractions, decimals and percentages.
4.4	Recognise that proper fractions, decimals (one decimal place) and percentages can have equivalent values.	When working on these problems, encourage learners to represent the fractions, decimals and percentages as diagrams to help them identify the equivalencies. For example, they could use 10×10 squares or bar models to help them identify equivalencies between fractions, decimals and percentages.

WEEK	TOPIC	TOPIC DETAILS
5.1	Recognise that proper fractions, decimals (one decimal place) and percentages can have equivalent values.	When working on these problems, encourage learners to represent the fractions, decimals and percentages as diagrams to help them identify the equivalencies. For example, they could use 10×10 squares or bar models to help them identify equivalencies between fractions, decimals and percentages.
5.2	Recognise that proper fractions, decimals (one decimal place) and percentages can have equivalent values.	When working on these problems, encourage learners to represent the fractions, decimals and percentages as diagrams to help them identify the equivalencies. For example, they could use 10×10 squares or bar models to help them identify equivalencies between fractions, decimals and percentages.
5.3	Understand the relative size of quantities to compare and order numbers with one decimal place, proper fractions with the same denominator and percentages, using the symbols =, > and <.	<p>Provide learners with pairs of percentages, fractions or decimals, and ask them to compare them using the symbols =, > and <.</p> <p>25% 40%</p> <p>0.3 50%</p> <p>$\frac{1}{4}$ 4%</p> <p>1% 0.1</p> <p>$\frac{1}{5}$ 20%</p>

WEEK	TOPIC	TOPIC DETAILS
5.4	Understand the relative size of quantities to compare and order numbers with one decimal place, proper fractions with the same denominator and percentages, using the symbols =, > and <.	<p>Provide learners with pairs of percentages, fractions or decimals, and ask them to compare them using the symbols =, > and <.</p> <p>25% 40%</p> <p>0.3 50%</p> <p>1/4 4%</p> <p>1% 0.1</p> <p>1/5 20%</p>
6.1	Understand that: - a proportion compares part to whole - a ratio compares part to part of two or more quantities.	<p>Anastasia is making a necklace out of orange and blue beads. She is using a repeating pattern.</p> <p>Discuss different ways to write ratio and proportion statements based on Anastasia's necklace. For</p>
6.2	Understand that: - a proportion compares part to whole - a ratio compares part to part of two or more quantities	<p>Anastasia is making a necklace out of orange and blue beads. She is using a repeating pattern.</p> <p>Discuss different ways to write ratio and proportion statements based on Anastasia's necklace. For example:</p>
6.3	Understand that: - a proportion compares part to whole - a ratio compares part to part of two or more quantities.	<p>Discuss different ways to write ratio and proportion statements based on Anastasia's necklace. For example:</p> <p>1 in every 4 beads is blue, so the proportion of blue beads on the necklace is 1/4 or 25%</p> <p>3 in every 4 beads are orange, so the proportion of orange beads on the necklace is 3/4 or 75%</p> <p>for every 3 orange beads there is 1 blue bead, so the ratio of orange to blue beads is 3:1 and the ratio of blue to orange beads is 1:3.</p>

WEEK	TOPIC	TOPIC DETAILS
6.4	Understand that: - a proportion compares part to whole - a ratio compares part to part of two or more quantities.	Understand that: - a proportion compares part to whole - a ratio compares part to part of two or more quantities.
7.1	Understand that: - a proportion compares part to whole - a ratio compares part to part of two or more quantities	Write the following on the board and ask learners to discuss in small groups: What is the same? What is different? 1:2 1/2 50% 0.5 3/6
7.2	Understand that: - a proportion compares part to whole - a ratio compares part to part of two or more quantities.	Write the following on the board and ask learners to discuss in small groups: What is the same? What is different? 1:2 1/2 50% 0.5 3/6
7.3	Compare the relative position of coordinates (with or without the aid of a grid).	Ask learners to determine the approximate relative position of other coordinates, such as: <ul style="list-style-type: none"> • (1, 3) • (3, 3) • (2, 0) • (2, 5) • (3, 5)
7.4	Compare the relative position of coordinates (with or without the aid of a grid).	Ask learners to determine the approximate relative position of other coordinates, such as: <ul style="list-style-type: none"> • (1, 3) • (3, 3) • (2, 0) • (2, 5) • (3, 5)
8.1	Compare the relative position of coordinates (with or without the aid of a grid).	Ask learners to determine the approximate relative position of other coordinates, such as: <ul style="list-style-type: none"> • (1, 3) • (3, 3) • (2, 0) • (2, 5) • (3, 5)
8.2	Use knowledge of 2D shapes and coordinates to plot points to form lines and shapes in the first quadrant (with the aid of a grid	Tell learners a robot is positioned at the coordinate (4, 2) and ask them to mark this position on their grid. Then tell learners the robot moves in straight lines and travels to (1, 2), then to (4, 5) and then back to (4, 2). Ask learners to draw the route of the robot.

WEEK	TOPIC	TOPIC DETAILS
8.3	Use knowledge of 2D shapes and coordinates to plot points to form lines and shapes in the first quadrant (with the aid of a grid	Tell learners a robot is positioned at the coordinate (4, 2) and ask them to mark this position on their grid. Then tell learners the robot moves in straight lines and travels to (1, 2), then to (4, 5) and then back to (4, 2). Ask learners to draw the route of the robot.
8.4	Use knowledge of reflective symmetry to identify and complete symmetrical patterns.	<p>selection of national flags, such as those in the NRICH task: National Flags (https://nrich.maths.org/7749).</p> <p>Then give learners some incomplete symmetrical patterns and ask them to shade a number of squares to complete them. For example:</p> <p>Shade two more squares so that this pattern has 4 lines of symmetry.</p>
9.1	END OF YEAR ASSESSMENT	Revision
9.2	-----	-----
9.3	-----	-----
9.4	-----	-----
10.1	Use knowledge of reflective symmetry to identify and complete symmetrical patterns.	<p>Ask learners to identify the lines of reflective symmetry in a selection of national flags, such as those in the NRICH task: National Flags (https://nrich.maths.org/7749).</p> <p>Then give learners some incomplete symmetrical patterns and ask them to shade a number of squares to complete them. For example:</p> <p>Shade two more squares so that this pattern has 4 lines of symmetry.</p>
10.2	Reflect 2D shapes in both horizontal and vertical mirror lines to create patterns on square grids.	<p>Give each learner a square grid, divided into four equal sections by a horizontal and vertical line. In one of the four sections shade a shape or pattern.</p> <p>For example:</p>
10.3	Reflect 2D shapes in both horizontal and vertical mirror lines to create patterns on square grids	<p>Give each learner a square grid, divided into four equal sections by a horizontal and vertical line. In one of the four sections shade a shape or pattern.</p>

WEEK	TOPIC	TOPIC DETAILS
10.4	Translate 2D shapes, identifying the corresponding points between the original and the translated image, on square grids.	Give each learner a square grid, on which a shape is plotted. For example:
11.1	Translate 2D shapes, identifying the corresponding points between the original and the translated image, on square grids.	Give each learner a square grid, on which a shape is plotted. For example:
11.2	Translate 2D shapes, identifying the corresponding points between the original and the translated image, on square grids.	Give each learner a square grid, on which a shape is plotted. For example:
11.3	Use the language associated with likelihood to describe and compare likelihood and risk of familiar events, including those with equally likely outcomes.	<p>Draw a likelihood scale labelled at either end with impossible and certain on the board:</p> <p>Ask learners: What other language associated with likelihood do you know? Where should these words be positioned on the likelihood scale?</p>

WEEK	TOPIC	TOPIC DETAILS
11.4	Use the language associated with likelihood to describe and compare likelihood and risk of familiar events, including those with equally likely outcomes.	<p>Draw a likelihood scale labelled at either end with impossible and certain on the board:</p> <p>Ask learners: What other language associated with likelihood do you know? Where should these words be positioned on the likelihood scale?</p> <p>Know the relationship between the units. E.g. Write these in order of length, starting with the shortest: 11.7 km; 353 cm; 1049 metres; 11495 cms; 1864 millimetres; 1009 metres.</p> <p>Round decimal measurements to the nearest whole unit.</p> <p>Use for all areas of measure.</p>
12.1	Recognise that some outcomes are equally likely to happen and some outcomes are more (or less) likely to happen, when doing practical activities.	<p>Show learners the following information:</p> <p>Mia is playing a game where she wins a prize if the spinner stops on yellow. She has a choice of two spinners:</p> <p>Mia says it does not matter which spinner she chooses, because they both have one red, one blue and one yellow section.</p>
12.2	Recognise that some outcomes are equally likely to happen and some outcomes are more (or less) likely to happen, when doing practical activities.	<p>Show learners the following information:</p> <p>Mia is playing a game where she wins a prize if the spinner stops on yellow. She has a choice of two spinners:</p> <p>Mia says it does not matter which spinner she chooses, because they both have one red, one blue and one yellow section.</p>

WEEK	TOPIC	TOPIC DETAILS
12.3	Recognise that some outcomes are equally likely to happen and some outcomes are more (or less) likely to happen, when doing practical activities.	<p>Show learners the following information:</p> <p>Mia is playing a game where she wins a prize if the spinner stops on yellow. She has a choice of two spinners:</p> <p>Mia says it does not matter which spinner she chooses, because they both have one red, one blue and one yellow section.</p>
12.4	Recognise that some outcomes are equally likely to happen and some outcomes are more (or less) likely to happen, when doing practical activities	<p>Show learners the following information:</p> <p>Mia is playing a game where she wins a prize if the spinner stops on yellow. She has a choice of two spinners:</p> <p>Mia says it does not matter which spinner she chooses, because they both have one red, one blue and one yellow section.</p>
13.1	Conduct chance experiments or simulations, using small and large numbers of trials, and present and describe the results using the language of probability.	<p>Ask learners: What could happen when I flip a coin?</p> <p>Establish that there are two possible outcomes, heads or tails, and each outcome is equally likely, so both have an even chance.</p> <p>Then give each pair of learners a coin and ask them to flip the coin 20 times and record the results. Ask learners: Are the results as you expected?</p>
13.2	Conduct chance experiments or simulations, using small and large numbers of trials, and present and describe the results using the language of probability.	<p>Ask learners: What could happen when I flip a coin?</p> <p>Establish that there are two possible outcomes, heads or tails, and each outcome is equally likely, so both have an even chance.</p> <p>Then give each pair of learners a coin and ask them to flip the coin 20 times and record the results. Ask learners: Are the results as you expected?</p>

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14.1	Conduct chance experiments or simulations, using small and large numbers of trials, and present and describe the results using the language of probability	<p>Learners work in small groups for this activity. Give each group of learners an opaque bag with the same number of colour counters, for example, 3 red, 4 blue, 2 green and 1 yellow. Ask learners to choose a counter from the bag, record their result and then put it back in the bag. They should repeat this 10 times.</p> <p>Ask learners: Which colour counter did you choose most often in your trial? Predict which colour there is most of in the bag.</p>
14.2	Conduct chance experiments or simulations, using small and large numbers of trials, and present and describe the results using the language of probability	<p>Learners work in small groups for this activity. Give each group of learners an opaque bag with the same number of colour counters, for example, 3 red, 4 blue, 2 green and 1 yellow. Ask learners to choose a counter from the bag, record their result and then put it back in the bag. They should repeat this 10 times.</p> <p>Ask learners: Which colour counter did you choose most often in your trial? Predict which colour there is most of in the bag.</p>

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