THE REVISED SYLLABUS

A: NUMBERS, NUMBER PATTERNS AND PLACE VALUE

Place value is significant due to the fact that it helps you understand the meaning of a number. Thus, we can say that understanding of place value is central to developing number sense. It is also the basis for the four fundamental operations on numbers. Consequently, place value connects to many other important concepts.

YEAR 5

LEARNING OUTCOMES Children will be able to:		KEY VOCABULARY	OPPORTUNITIES Children should be given a range of opportunities such as:
A.5.1	read and write whole numbers in figures and words, and know what each digit represents.	one…..ten thousand thousand (Th) hundred (H) tens (T) units (U) (place) value number line/grid nearest ten nearest hundred rounding round up/round down greater/less than approximate odd/even digit total	• using place value to multiply/divide by 10/100/1000. • using a number line to help find the nearest ten, hundred or thousand to a number. • using interlocking cubes base ten material and coins. • reading and recognising five digit numbers. • working out what is one more/less than a number such as 9,999 or 4,000. • saying the number which is exactly halfway between: two tens, two hundreds or two thousands. • identify the pattern for the units digit in odd numbers (1, 3, 5, 7 or 9) and the pattern for the units digit in even numbers (0, 2, 4, 6 or 8). • investigating the total of two numbers when both are even, both are odd and when one is even and one is odd. • working with sequences to better understand that a sequence is a string of numbers made by counting in steps for equal size/pattern. • sequencing square numbers: 1, 4, 9, 16, 25, ……
A.5.2	recognise odd and even numbers up to 1000 and identify some of their properties ~~including the outcome of sums or differences of pairs of odd/even numbers.~~		
A.5.3	explore and understand square numbers.		
A.5.4	recognise and extend number sequences formed by counting from any number in steps of constant size (including square numbers).		

A.5.5	round any integer up to 10,000 to the nearest 10, 100 or 1000.	sequence multiplication square row/column square number less than (<) greater than (>) is equal to (=)	• exploring number patterns including multiples and trying to describe them. • solving mathematical problems or puzzles, recognising and explaining patterns and relationships, generalising, predicting and suggesting extensions. • making and investigating a general statement about familiar numbers by finding examples that satisfy it. • explaining a generalised relationship (formula) in words. • making and justifying estimates up to about 250, and estimating a proportion.
A.5.6	compare and order numbers. Include symbols such as <, >, =.		
A.5.7	give one or more numbers lying between two given numbers		
A.5.8	estimate and approximate.		

B: ADDITION AND SUBTRACTION

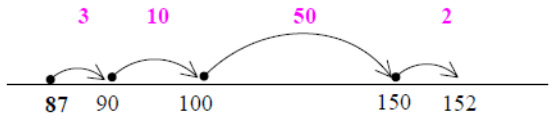
Addition and subtraction are basic operations in mathematics and are inversely related. These are powerful foundational concepts in mathematics with applications to many problem situations and connections to many other topics. Undoubtedly, their importance extends to real-life situations.

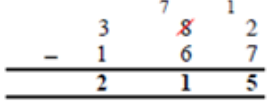
YEAR 5

LEARNING OUTCOMES Children will be able to:		KEY VOCABULARY	OPPORTUNITIES Children should be given a range of opportunities such as:
B.5.1	derive quickly: • decimals that total 1 or 10; • all 2-digit pairs that total 100; • all pairs of multiples of 50 with a total of 1000.	digit doubles thousands hundreds tens units subtract/subtraction take away	• choosing and using appropriate number operations and appropriate ways of calculating (mental, mental with jottings, pencil and paper) to solve problems. • explaining methods and reasoning about addition and subtraction, orally and in writing. • solving mathematical problems or puzzles, recognising and explaining patterns and relationships in addition and subtraction, then generalising and predicting.
B.5.2	consolidate understanding of		

	relationship between + and –. Understand the principles (not the names) of the commutative and associative laws, as they apply or not, to addition and subtraction.	add/addition
		total
		difference
		multiple
		nearest multiple
		count on
		next ten
		next hundred
		estimate
		vertically
		round up
		smaller
		larger
		nearest ten
		nearest hundred
		decimal number
		decimal point
		tenths
		hundredths
		number facts
		column
			• use and explore different strategies such as:
			  • adding two 3-digit numbers using informal method (Example 14).
			  • adding three 3-digit numbers using vertical written column methods (Example 15).
			  • subtracting TU from HTU and HTU from HTU using informal written methods (Example 16).
			  • subtracting TU from HTU and HTU from HTU using standard written methods (Example 17).
			(Children should be given the opportunity to discover and experiment with other strategies related to addition and subtraction).
			• solving word problems involving 'real life', money or measures, numbers and quantities, using one or more steps.
			• investigating addition and subtraction through games including card games, number cards, number grid and board games.
			
			Example 14
			436 + 160
			436 = 400 + 30 + 6
			160 = 100 + 60
			500 + 90 + 6
			or
			4 3 6 + 1 6 0 = 5 0 0 / 9 0 / 6 = 5 9 6
			4 3 6 + 1 6 0 = 6 / 9 0 / 5 0 0 = 5 9 6
			∴ 436 + 160 = 596
			
			Example 15 364 + 123 + 255
			H T U
			3 6 4
			1 2 3
			+ 2 5 5
			7 4 2
			1 1
			1. **Add units in units column**
			4 + 3 + 5 = 12
			Write units part (2) in units column and tens part (1) below in tens column.
			2. **Now add the tens in the tens column.**
			6 tens + 2 tens + 5 tens and 1 more ten is 14 tens i.e. one hundred and forty.
			We write the tens digit (4) in the tens column and the hundreds digit (1) below in the hundreds column.
			3. **Now add the hundreds in the hundreds column.**
			3 hundreds + 1 hundred + 2 hundred and 1 more hundred i.e. 7 hundreds.
			We put the 1 *below* in the tens column because 12 is 1 ten and 2 units; ∴ we write the 1 close to the 2 to signify 12.
			∴ 364 + 123 + 255 = 742

B.5.3	partition into H, T and U, adding or subtracting the most significant digits first.		
B.5.4	use column addition and subtraction for HTU ± TU and HTU ± TU where the calculation cannot easily be done mentally and extend to 10,000.		
B.5.5	~~identify near doubles such as 1·5 + 1·6 or 31 + 32.~~		
B.5.6	extend written methods to addition or subtraction of a pair of decimal fractions, both with one or with two decimal places.		
B.5.7	add or subtract the nearest multiple of 10 or 100, then adjust.		
B.5.8 **i**	**use the following Mental Strategies:** finding differences mentally by counting up through the next multiple of 10, 100, or 1000.		

ii	adding or subtracting the nearest multiple of 10 or 100, then adjust.		
iii	adding several numbers , e.g. four or five single digits or multiples of 10 such as 40 + 50 + 80.		
iv	using known number facts and place-value for mental addition and subtraction.		***Example 16*** 152 – 87 = (Record the *hops* vertically and then add all the *hops* together)  152 – 87 3 → 90 10 → 100 50 → 150 + 2 → 152 65 ∴ 152 – 87 = 3 + 10 + 50 + 2 = 65 ***Example 17***



			DO NOT USE THE WORD '*BORROWING*' The term 'borrowing' implies 'giving back'. Use instead the terms '*changing*' or '*swapping*'

C: MULTIPLICATON AND DIVISION

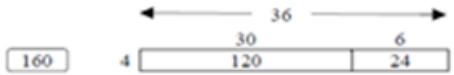
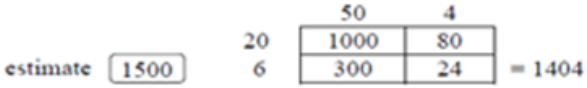
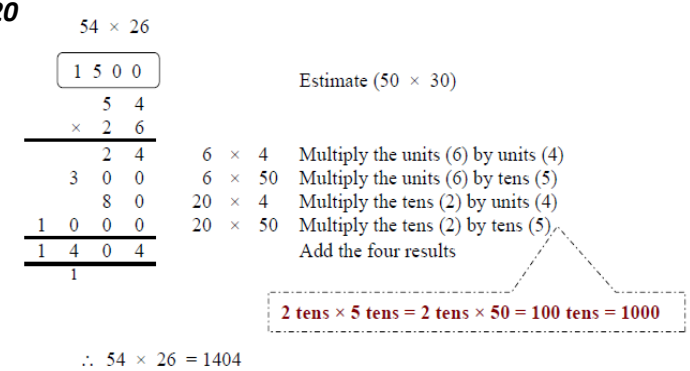
Multiplication and division are also basic operations in mathematics and are inversely related. These are powerful foundational concepts in mathematics with applications to many problem situations and connections to many other topics. Undoubtedly, their importance extends to real-life situations.

YEAR 5

LEARNING OUTCOMES Children will be able to:		KEY VOCABULARY	OPPORTUNITIES Children should be given a range of opportunities such as:

C.5.1	understand the effect of and the relationship between the four operations, ~~and the principles (not the names) of the arithmetic laws as they apply to multiplication and to use brackets.~~
	~~e.g. 4 × 46~~
	~~= 4 × 40 and 4 × 6~~
	~~= (4 × 40) +(4 × 6)~~
		multiplication
		multiply
		multiple
		division
		divide by
		addition
		subtraction
		times table
		double/doubling
		half/halving
		digit/tens digit/units digit
		multiplication square
			• using the multiplication grid to observe and identify patterns for new multiplication tables such as 6 times-table is double 3 times-table and/or develop the ×6 table from the ×4 and ×2 tables.
			• using multiplication grid to identify factors.
			• rehearsing multiplying by zero: know that a number of zeros altogether is zero.
			• using place value cards and mats to multiply and divide by 10/100.
			• deriving strategies from known x 10/100 facts:
			  ◦ to multiply by 25, multiply by 100 then divide by 4.
			  ◦ to multiply by 9 or 11, multiply by 10 and adjust.
			  ◦ to multiply by 19 and 21, multiply by 20 and adjust.
			• rounding up or down after division, depending on the context.

C.5.2	develop and refine estimation and written methods for:		

	• TU × U • HTU × U • ~~TU × TU~~ • U·t × U • HU·t × U • TU ÷ U • HTU ÷ U • multiplying and dividing by 10/100, shifting the digits one/two places to the right/left.	grid row column thousands hundreds tenths estimate remainder (r) round up/down fraction decimal numbers decimal point number facts bracket change	• checking results of calculations with inverse operation, approximation (round to nearest 10 or 100) and/or equivalent calculation. • exploring any/all of the calculation strategies below: ***Example 18*** $36 \times 4 = 4 \times 36$ $= 4 \times (30 + 6)$ $= (4 \times 30) + (4 \times 6)$ $= 120 + 24$ $= 144$  ***Example 19*** 54 × 26  ∴ 54 × 26 = 1404 ***Example 20***  ∴ 54 × 26 = 1404
C.5.3	identify all pairs of factors of any number up to 100.		
C.5.4	identify remainders after division and express a quotient as a fraction, or as a decimal up to two decimal places.	horizontal vertical	
C.5.5	**know by heart all**: • multiplication/division facts up to 10 × 10.		

C.5.6	**derive quickly:** • doubles of all whole numbers 1 to 100 and their corresponding halves. • doubles of multiples of 10 to 500 and their corresponding halves. • doubles of multiples of 10 to 1000 and their corresponding halves. • doubles of multiples of 100 to 5000 and their corresponding halves. • doubles of multiples of 100 to 10 000 and their corresponding halves.		***Example 21*** e.g. $9 \times 4{\cdot}7$ 45 $9 \times 4{\cdot}7 = 9 \times 4{\cdot}0 = 36{\cdot}0$ Split 4·7 into units and tenths Multiply the units by 9 (9 lots of 4 units). $9 \times 0{\cdot}7 = 6{\cdot}3$ Multiply the tenths by 9 (9 lots of 7 tenths). $42{\cdot}3$ Add the results **63 tenths = 6 units and 3 tenths = 6·3** $\therefore 9 \times 4{\cdot}7 = 42{\cdot}3$

C.5.7	**use the following Mental Strategies:**		
i	using doubling or halving, starting from known facts.		
ii	finding quarters by halving halves.		
iii	using known number facts and place-value to multiply and divide mentally.		
iv	using closely related facts such as: • to multiply by 9 or 11, multiply by 10 and adjust. • to multiply by 19 or 21, multiply by 20 and adjust.		
v	partitioning and using the distributive law: e.g. $23 \times 4 = (20 \times 4) + (3 \times 4)$		

Example 22 $84 \div 6$

$$
\begin{array}{r|l}
 & 12 \\
6\,\overline{)\,8\;4} & \\
-\,6\;0 & 10 \times 6 \quad \text{Are there ten sixes in 84? Yes} \\
\hline
2\;4 & \\
-\,2\;4 & 4 \times 6 \quad \text{How many sixes in 24?} \\
\hline
0 & 14 \times 6
\end{array}
$$

$\therefore\ 84 \div 6 = 14$

D: FRACTIONS, DECIMALS, PERCENTAGES AND PROPORTION

Fractions, percentages, decimals and proportion are closely related. A fraction is any part of a group, number or whole. A decimal is a number containing both an integer part and digits separated by the decimal point, while a percentage is a quantity out of 100. Proportion is a comprehensive concept and it is imbedded in fractions, percentages and decimals.

In everyday situations, we continuously move from one form to another and then back again. Despite their strong relationship we must also know when we need to use one form among the others.

A good grasp of fractions, decimals, percentages and proportion will help you: evaluate offers, calculate fuel consumption, read a recipe, build a scale model of a car or of an aeroplane and understand a news item or the results from a survey for example.

The above is only a basic representation of the importance of fractions, decimals, percentages and proportion. Helping our children understand and appreciate this may be fruitful.

YEAR 5

LEARNING OUTCOMES Children will be able to:		KEY VOCABULARY	OPPORTUNITIES Children should be given a range of opportunities such as:
D.5.1	understand and use simple fractions and mixed numbers.	half quarter third eighth tenth three quarters hundredth fraction matching fractions equivalent number line numerator	• identifing two simple fractions with a total of 1. • exploring equivalent fractions including hundredths to tenths. • using a number line to show the position of a fraction and to compare fractions. • deciding whether fractions are greater, less or equal to one half. • ordering a set of simple fractions and/or mixed numbers and position them on a number line. • using < and > and = to compare fractions. • understanding that if they know $\frac{1}{6}$ of a quantity than it is easier to find $\frac{2}{6}, \frac{3}{6}$, ….. of a quantity.
D.5.2	~~change an improper fraction to a mixed number and vice versa.~~		
D.5.3	relate fractions to division and find simple fractions of numbers and quantities.		
D.5.4	use decimal notation for tenths and hundredths (i.e. up to two decimal places) and know what each digit represents.		

D.5.5	round a number with one or two decimal places to the nearest integer (whole number).	denominator
		division/divide by
		equal
		decimal number
		decimal point
		whole number
		round up/down
		nearest
		estimate
		proportion
			• realising that the decimal point separates whole numbers and tenths and hundredths.
			• knowing that 3.0 is the same as 3.
			• recalling decimal addition pairs to 1 and 10.
			• recognising what must be added to a decimal number to make the next whole number.
			• knowing that when something is divided into ten equal parts, each part is one tenth or zero point one.
			• understanding that whole numbers and tenths can be written in two different ways such as $3\frac{2}{10}$ = 3·2 (three point two) and 3 $\frac{45}{100}$ = 3·45 (three point four five) .
			• ordering decimal numbers to better understand that they first need to look at the number of units (whole), then the tenths, then the hundredths.
			• using a number line to help order decimals.
			• using < and > and = to compare decimal numbers.
			• recognising that between two adjacent tenths, there are another ten equal divisions called hundredths.
			• recognising that: $\frac{1}{2}$, $\frac{5}{10}$, $\frac{5}{100}$ and 0.5; $\frac{1}{4}$, $\frac{25}{100}$ and 0.25; $\frac{3}{4}$, $\frac{75}{100}$ and 0.75 are equivalent.
			• rounding a decimal number to its nearest whole number to better understand that they have to:
			  • decide between which whole numbers it lies, then which is the nearer.
			  • round down if the number of tenths is less than 5, and round up if it is 5 or more.
			• understanding that a proportion is a part of a whole and can be expressed in different ways, e.g. 4 parts out of a whole 5 parts can be

D.5.6	compare and order: • a set of simple fractions. • a set of mixed numbers. • a set of decimal numbers (including measurements).		
D.5.7	recognise the equivalence between the decimal and the fraction forms for halves, quarters and tenths.		
D.5.8	use simple proportion to solve simple problems.		

			expressed as 4 in 5, 4 out of 5, $\frac{4}{5}$. • understanding that proportion can be simplified in the same way as a fraction, e.g. a proportion of 6 out of 8 can be simplified as 3 out of 4.

E: MASS (WEIGHT)

Weight is a quantity. Measuring and understanding weight is of utmost importance. Undoubtedly, you have experienced the measurement of weight many times, such as at the time of physical health check-ups. Or perhaps you may have asked yourself: Is that object too heavy to pick up by myself or do I need something to lift it?

When you go to the greengrocer to buy vegetables and fruit, for example, there will be tags attached that tell you the price per kilogram so you can compare the cost of one brand/item over another. Without a standard measure of weight, in this case a kilogram, you wouldn't know exactly what you are paying for.

Unlike other quantities, it is very difficult to measure weight in a visible way like length and size. Weight is difficult to judge visually. While you can always make an estimate of the weight of an object, you will need to use a measuring tool such as a measuring tape, a ruler or a trundle wheel to have an accurate measure in grams and/or kilograms. In order to do this, you need to be able to read a scale.

The above are only a few life situations where being able to read, measure and understand weight is important. Helping our children understand and appreciate this may be fruitful.

Note: The terms mass and weight are different, yet are used interchangeably throughout the Primary years.

YEAR 5

LEARNING OUTCOMES Children will be able to:		KEY VOCABULARY	OPPORTUNITIES Children should be given a range of opportunities such as:
E.5.1	use, read and write standard metric units of mass, including their abbreviations, and know and use the relationships between them.	weight gram (g) kilogram (kg) balance heavy / heavier light / lighter scales convert	• choosing an appropriate unit of measurement and measuring equipment to make a reasonable estimate and measure mass (weight). • recording estimates and readings from scales to a suitable degree of accuracy. • practising weighing and estimating the mass (weight) of familiar objects and developing their own benchmark for comparisons, for example, having a 1 kg weight or an object that weighs a certain
E.5.2	know the equivalent of one half, one quarter, three quarters and		

	one tenth of 1 kg, and convert weights in kilograms and grams to grams and vice versa.	difference compare	amount as a reference. • feeling real supermarket products with their mass (weight) hidden, estimating their mass (weight) and putting them in order from lightest to heaviest, then checking their actual mass (weight) using a balance. • converting a collection of mass (weight) labels shown on real products or in recipes from kilograms to grams and from grams to kilograms, and from fraction or decimal number to kilograms and grams and vice versa. • using the bathroom scales to measure their own mass (weight) and comparing their mass (weight) to other objects or persons. • solving (up to two-step) real-life problems related to the topic mass (weight) involving recipes, travelling by plane, at the supermarket, … and communicating the process adopted and/or their result/s. • investigating mathematical problems and communicating the process adopted and/or their result/s. • creating word problems related to mass (weight).

F: CAPACITY

Understanding capacity is especially important in the field of medicine or chemistry when one is dealing constantly with liquid measurement. Nonetheless, understanding capacity is also important in our everyday life.

When you are sick and your doctor prescribes medicine you need to take your medicine in the proper amounts. Your health will not benefit if you take too little or too much. Cooking also involves a lot of measurement such as: add 120 mℓ of water or 50 mℓ of olive oil. In fact, the kitchen is a good place, though not the only, to measure different capacities. Using a measuring jug you can check the capacity of different items such as cups, glasses, bottles and perhaps the capacity of a kettle. What is the capacity of the milk carton in your fridge? And do you have anything in your kitchen, in the cupboards or in the fridge, which has a capacity of 1 litre? Estimate and then check by reading the label on the container/s.

The above are only a few life situations where being able to read, measure and understand capacity is important. Helping our children understand and appreciate this may be fruitful.

YEAR 5

LEARNING OUTCOMES Children will be able to:		KEY VOCABULARY	OPPORTUNITIES Children should be given a range of opportunities such as:
F.5.1	use (measure and estimate), read and write standard metric units, including their abbreviations in order to refer to capacity.	estimate measure litres millilitres capacity scale divisions smaller larger more / the most less / the least equal to convert one half	• suggesting suitable units and measuring equipment to estimate or measure capacity of various containers and / or products. • recording estimates and readings from scales to a suitable degree of accuracy. • converting litres and millilitres into millilitres and vice versa. • practising comparing different containers which have the same capacity and observing how their shape can make it appear larger or smaller (refer to products we buy at the supermarket, etc) • estimating different capacities of containers or products by referring to a known 1 litre container as a benchmark (e.g. a large carton of milk is equal to 1 litre). • working on finding or reading the capacity on various measuring jugs having different divisions, e.g. 50 *mℓ* divisions, 100 *mℓ* divisions, and discuss how they should be read.
F.5.2	know the equivalent of one half, one quarter, three quarters and one tenth of 1 litre in *mℓ*.		

		one quarter three quarters one tenth	• estimating how many smaller containers are needed to make 1 litre. Trying out the same activity using other small containers with different capacities. • observing and comparing products having different capacities when shopping, such as at the supermarket, etc. Identifying the labels showing the capacity and comparing the prices to see how much money can be saved (if any) when buying products with larger capacities, rather than buying two smaller products. • solving various simple (up to two-step) real-life problems involving capacity and communicating the process adopted and/or their result/s. • investigating mathematical problems and communicating the process adopted and/or their result/s. • creating word problems related to capacity.

G: LENGTH, PERIMETER AND AREA

Learning how to measure length is an important life skill. Measurements in millimetres, centimetres, metres and kilometres are also very much present in sports and not only. Sometimes, measurements need to be accurate, however many times we simply need to make estimates.

Measuring length is also essential for calculating perimeter and area: two important and fundamental mathematical topics. They help you to measure physical space. Perimeter is a measurement of the distance around a shape and the area gives us an idea of how much surface the shape covers. Knowledge of perimeter and area is applied practically by people on a daily basis, such as architects, engineers, and graphic designers… it is mathematics that is very much needed by people in general. Understanding how much space you have and learning how to fit shapes together exactly will help you when you paint a room, buy a home, remodel a kitchen or build a deck.

The above are only a few life situations where being able to read, measure, calculate and understand length, perimeter and area is important. Helping our children understand and appreciate this may be fruitful.

YEAR 5

LEARNING OUTCOMES Children will be able to:		KEY VOCABULARY	OPPORTUNITIES Children should be given a range of opportunities such as:
G.5.1	use, read and write standard metric units including their abbreviations.	length distance height centimetres (cm) millimetres (mm) metres (m) kilometres (km) area square centimetre/ cm^2 length/ breadth perimeter	• recognising that we use different units depending on what we are measuring. • understanding that 10 mm = 1 cm, 100 cm = 1 m, 1000 m = 1 km and explore other relationships. • converting from one unit of measurement to another, e.g. converting up to 1000 cm in metres and vice versa. • recognising and read cm^2 as square centimetres. • understanding that area is not a measurement of length but the amount of ground covered. • working out the area of a 2-D (flat) object by covering it with flat objects and counting how many are needed; the units must all be the same size. • understanding how to use length × breadth to calculate the area of a rectangle.
G.5.2	know the equivalent of one half, one quarter, three quarters and one tenth of 1 m in cm.		
G.5.3	suggest: • suitable units to estimate. • measuring equipment to estimate or measure		

	length.		• understanding that perimeter is a measurement of length and is the distance all the way around an object.
G.5.4	understand, measure and calculate the perimeter and area of rectangles and other simple shapes using non-standard units, counting methods and standard units (cm, cm^2)		• recording estimates and readings from scales to a suitable degree of accuracy. • measuring and drawing lines to the nearest millimetre. • solving up to two-step word problems and communicating the process adopted and/or their result/s. • investigating mathematical problems and communicating the process adopted and/or their result/s. • creating word problems related to length, perimeter and/or area.
G.5.5	understand and use the formula in words,' length times breadth' for the area of a rectangle.		

H: TIME

Being able to tell time is a functional mathematical skill. Being punctual is important: whether at school or whether you are meeting your friends. When you grow up you would want to be punctual at work too. Moreover, being able to tell time will help you catch a bus or a flight on time. Usually it is suggested to be at the airport two hours before the departure of our flight. On the other hand if you park your car in a 150 minute parking space, you will need to be careful not to get a ticket.

Being able to tell time will further help you not to miss your favourite television programme. And what if you are baking a cake and on the recipe it says that bake time is 45 minutes, you would want to know how to keep the time on your analogue watch or on the digital time display on your oven. Likewise, if your favourite football team is winning 2 – 1, you would want to be able to know how many minutes are left to end of the match. And in order to remember to prepare a birthday card for your best friend you need to be able to read a calendar.

The above are only a few life situations when being able to tell time is important. Helping our children understand and appreciate this may be fruitful.

YEAR 5

LEARNING OUTCOMES Children will be able to:		KEY VOCABULARY	OPPORTUNITIES Children should be given a range of opportunities such as:

H.5.1	use, read and write the vocabulary related to time.	Seconds
		minutes
		hours
		use of abbreviations **h** and **min**
		days
		weeks
		months
		year
		leap year
		calendar
			• using an analogue and a 12-hour digital clock.
			• connecting time to real life events.
			• drawing hands on the clock face to show time (using a ruler).
			• measuring time in hours and minutes.
			• using a calendar (exclude: the leap year).
			• converting from:
			  • hours to minutes, and vice versa.
			  • hours and minutes to minutes, and vice versa (exclude use of fractions to represent to minutes e.g. 2 ½ hour).
			  • hours to days, and vice versa.
			  • days to weeks, and vice versa.

H.5.2	estimate and calculate times using seconds, minutes, hours.		
H.5.3	read and show the time: • ~~from an analogue clock to the nearest minute.~~ • ~~to the nearest minute, from a 12-hour digital clock.~~ I can read and write time (from analogue and digital clock) to the		

	hour/half hour/quarter hour using terms 'o'clock', 'half past', 'quarter past' and 'quarter to'.	past to half past quarter past quarter to o'clock a.m. p.m. later earlier How long…?	• months to days, and vice versa. • using a timetable (include: the use of real timetables). • creating and using a timeline to: • calculate and compare durations of events. • calculate the starting time and/or the finishing time. • calculate the time a number of hours and /minutes earlier/later than a given time. • solving up to two-step word problems and communicating the process adopted and/or their result/s. • investigating mathematical problems and communicating the process adopted and/or their result/s. • creating word problems related to time.
H.5.4	use a.m. and p.m. and the notation 9:45.		
H.5.5	use a calendar.		

I: MONEY

Being able to compare offers, read and understand receipts and pay bills at the supermarket, at a restaurant or at our favourite toy shop is very important. Then, you would want to make sure that you have received the correct change if you pay by cash and you do not have the exact amount. However, when you grow older you can also pay by cheque or card.

Equally important is being able to make plans related to money. This is what we refer to as budgeting. If you are saving to buy something special, you would want to be able to calculate how much more you need to save and also to know how long it will take you to save up for it.

If you or someone within your family have saved up to go on a family holiday, make sure to check the currency used in the country you are travelling to. The euro is the currency used in 18 of the 28 member states of the European Union.

The above are only a few life situations when being financially literate is important. Helping our children understand and appreciate this may be fruitful.

YEAR 5

LEARNING OUTCOMES Children will be able to:		KEY VOCABULARY	OPPORTUNITIES Children should be given a range of opportunities such as:
I.5.1	work out totals up to €10,000 (ten thousand euro).	coin/s notes cent (c) euro (€) how much? cost/s total change	• handling money in real life contexts such as helping with outing money collections and school fund raising activities • integrating this topic with weight and capacity as they calculate the cost of certain ingredients of a recipe. • playing board games involving the handling of money. • planning an activity such as a party, a meal or an outing with a given budget. • using junk mail, menus, price list, receipts and shop loyalty cards to investigate and solve situations involving money. • using tickets, travel brochures and any of the above to plan and
I.5.2	give change.		
I.5.3	work out which notes and coins are needed to pay.		
I.5.4	convert euro to cent and vice versa.		

			budget for family or school trips. • solving up to two-step word problems involving money and communicating their result/s and/or the process adopted. • solving and investigating up to two-step word problems involving money and communicating their result/s and/or the process adopted. • creating word problems related to money.

J: SHAPES AND SYMMETRY

There is evidence of geometry everywhere. Buildings, planes, cars and maps all use geometry. For example, the home you live in is made of basic geometry shapes and some skyscrapers have windows made of rectangles and squares. Very often these structures are also symmetrical.

Symmetry can be seen almost everywhere in daily life. The human body is an example of symmetry: the kidney, the lungs the brain and to some extent even the face is.

Being able to understand the basic properties of 2-D and 3-D shapes, to draw shapes and to create your own patterns, whether symmetrical or not, will help you appreciate better the world we live in and will probably help you in your future career should you wish to become an engineer, a doctor, a scientist, a designer or a mechanic. However there are many other occupations that entail competence in geometry.

The above are only a few life situations where understanding of shapes and symmetry is important. Helping our children understand and appreciate this may be fruitful.

YEAR 5

LEARNING OUTCOMES Children will be able to:		KEY VOCABULARY	OPPORTUNITIES Children should be given a range of opportunities such as:
J.5.1	classify polygons using criteria.	Polygons regular irregular two-dimensional three-dimensional pentagon	• describing and visualising 2-D (flat) and 3-D (solid) shapes. • using geoboards and square paper to create and draw polygons. • recognising that polygons can be both regular and irregular, e.g. a pentagon can be any shape having 5 straight sides. • constructing 3-D (solid) shapes by using their corresponding nets or templates.
J.5.2	visualise 3-D (solid) shapes from 2-D drawings ~~and identify simple nets of solid shapes.~~		
J.5.3	recognise equilateral and isosceles triangles.		

J.5.4	recognise simple examples of horizontal and vertical lines.	hexagon octagon straight side vertex / vertices edges faces base nets equilateral isosceles horizontal vertical diagonal fold line	• describing what a polygon is and identifying polygons from a given number of diagrams. • using paper folding and cutting to create equilateral and isosceles triangles. • working in groups and use technological equipment such as probots to create various polygons by giving a series of instructions. • comparing and contrasting the properties of equilateral and isosceles triangles. • creating diagrams and patterns using equilateral and isosceles triangles. • identifying horizontal and vertical lines in real life, e.g. on flags, furniture, doors and tiles. • using vertical and horizontal terms during art and craft activities, such as paper weaving craft.

K: Position, Direction and Angles

Being able to read a map to follow and/or give directions are functional skills. Distinguishing between left and right, between clockwise and anticlockwise turns and among the eight compass points will equip you with these skills. A pilot, a sailor, a fisherman, a policeman… and any driver need to have a good grasp of these skills. Furthermore engineers, architects, product designers use knowledge of angles daily.

The above are only some instances where position, direction and angles are important. Helping our children understand and appreciate these through their own experiences may be fruitful.

YEAR 5			
LEARNING OUTCOMES **Children will be able to:**		**KEY VOCABULARrouY**	**OPPORTUNITIES** **Children should be given a range of opportunities such as:**
K.5.1	recognise and use the eight compass directions.	direction/direction compass north/south/west/east north-east/north-west south-east/south-west halfway angle clockwise turn half turn quarter turn degree (45^0,90^0,180^0,270^0,360^0) clockwise grid/grid line	• using a compass. • using a map (e.g. describe points in relation to one another using the four-point compass). • knowing that a degree is another measure of an angle and the shorthand for 'degree' is '^{0}'. • investigating the relationship between right angles and degrees (e.g. 1 right angle = 90^0, half a right angle = 45^0, 3 right angles = 270^0.....) • investigating the size of the angle in degrees and right angles made by clock hands (e.g. 5 minute intervals). • using Pro-bot and/or Constructa-bot or other roamers to create angles. • planning and designing treasure/scavenger hunts using positional and/or directional vocabulary including angles.
K.5.2	know that angles are measured in degrees.		
K.5.3	make and measure clockwise and anticlockwise turns (in degrees and right angles).		
K.5.4	order angles less than 180^o.		

L: Data Handling

Data handling is an essential activities in which we engage in our everyday life. We are frequently presented with data in various contexts which we need to analyse and interpret. Data can be presented in a variety of forms such as bar charts or pictograms. We often look for patterns and generalities within them and analysis is often confined to identifying the most popular or least popular item. However, we need to engage in more critical thinking. For example, drawing on real data in 2014 NSO has reported that from 2004 to 2013, both rainfall intensity and variability of total rainfall from the climatic norm were the lowest in the past four decades. And in the End of Primary Benchmark, in mathematics, the mean score was 69·20. We can attempt to look deeper into this data.

The above are only two instances of data analysis. Helping our children understand and appreciate data handling through their own experiences may be fruitful.

Note: At Primary level mean and average are used interchangeably.

YEAR 5

LEARNING OUTCOMES Children will be able to:		KEY VOCABULARY	OPPORTUNITIES Children should be given a range of opportunities such as:
L.5.1	solve a given problem by collecting, representing and interpreting data in tables, charts, graphs and diagrams.	Sort label list table pictograph block graph frequency frequency table total pictograph title key most/least popular Carroll Diagram	• constructing and interpreting frequency tables. • completing or filling in a Carroll Diagram. • constructing and interpreting bar charts with intervals labelled in 2s, 5s, 10s, or 20s. • constructing and interpreting pictographs where the symbol represents 2, 5, 10 or 20.
L.5.2	discuss results.		