St. Andrew's N.S.

A Whole School Plan for Mathematics

This policy should be read in conjunction with all other school policies.

Policy Ratified	July 2010
	February 2012
	January 2017
	January 2020

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Introductory Statement

Following both pre-service and in-service training and professional collaboration at staff meetings, the following plan was agreed in July 2010 and subsequently updated in 2012 following further collaboration with parents and colleagues.

Rationale

This plan is a record of whole school decisions in line with the Primary Curriculum, (1999). It is intended to guide teachers in their individual planning and to inform parents as to the school's approach to teaching and learning for this curricular area.

Vision

This plan focuses on meeting the needs of our pupils in the area of Mathematics. We aim to equip pupils with the necessary knowledge and skills that they will use and apply to a broad range of mathematical concepts, with a view to them achieving their full potential. Parental involvement is actively encouraged to support pupils' learning in this area. This plan also informs teachers of School Policy and planning in the area of Mathematics.

Aims

We endorse the aims and objectives of the Primary Curriculum in Mathematics as set out on page 12 of the Mathematics Curriculum documents. These aims and objectives:

- Develop a positive attitude towards mathematics and an appreciation of its practical and aesthetic aspects in making mathematics challenging, exciting, creative and relevant.
- Develop problem solving abilities.
- Enable the pupil to use mathematical language effectively and accurately.
- Enable the pupil to acquire an understanding of mathematical concepts and processes relevant to their ability and development.
- Enable the pupil to acquire proficiency in fundamental mathematical skills and in recalling number facts.

Curriculum Planning

Strands and Strand Units

The curriculum objectives used for each class are those as laid out in the Mathematics Curriculum documents. These strands are:

- Early Mathematical Activities (Infants only)
- Number
- Algebra
- Shape & Space
- Measures
- Data

For fully comprehensive details of these strands and their strand units, the curriculum document is available on www.ncca.ie. For a summary of strands and strand units cover please refer to the link below:

https://pdst.ie/sites/default/files/Maths%20all%20strand%20units_0.pdf

Approaches and Methodologies
The following approaches and methodologies will be used throughout the year:

The Use of Manipulatives
All pupils will have access to and use a broad range of mathematical equipment during lessons. Some resources are available in each classroom and more are available in the Mathematics resource cupboard.

Talk and Discussion
Recognising the importance of the development of mathematical language, teachers support the pupils in this regard by giving instructions clearly, explaining ideas carefully, posing questions skilfully as well as providing and repeating key vocabulary. This is supported through displaying mathematical terms, symbols and diagrams/charts clearly in the classroom as appropriate. By engaging the pupils in discussion, we develop their ability to express and clarify thinking. We also support those with language difficulties and pupils where English is an additional language. Mathematical problems, processes and activities are discussed with the teacher, groups and other individual pupils.

Active Learning /Guided Discovery
Concrete materials are used at all levels in all strands and strand units of the curriculum - from Junior Infants to Sixth Class. Practical work is accompanied by careful dialogue to guide the pupils in:

1. making connections between the practical and the abstract
2. encouraging the acquisition of concepts
3. developing mathematical strategies for solving problems
4. developing self-motivation in mathematical activities

Using the Local Environment
Pupils are learning all the time from their peers, adults and their everyday environment. In our teaching we look, for example, to the:

1. classroom
2. corridors
3. playground
4. school hall
5. locality of the school
6. pupils' homes
7. wider world

These environments provide a rich source for engaging in problem solving, measurement, shape and space. They also afford us more opportunities to make mathematics more relevant, interesting and fun. Mathematical trails both within the school grounds and the local environment may also be used for this purpose.

Data
Pupils are encouraged to collect real data i.e. Infant Classes collect personal information and represent it on a pictogram. Older pupils create and interpret bar charts and pie charts. Pupils may conduct surveys on topics of their choice and represent their findings on graphs (appropriate to their class level).

Language and Agreed Methods

There is a strong link between language and concept acquisition. It is important to have a common approach to the terms used and the correct use of symbol names. Our school has agreed the following vocabulary for Mathematics:

Class	Symbol	Terms used
Junior Infants	**+**	and make more altogether
	=	same as is
Senior Infants	**+**	add plus
	−	take away left less than
First Class	**+**	addition total more than sum of
	=	equals answer is
	−	subtract
		place value – the word units will be used instead of 'ones'
		Swap/regroup will be used when regrouping
Second Class	**−**	subtraction from less than difference minus

Multiplication and Division

Class	Symbol	Terms used
Third Class	**✕**	multiplication times multiply
	÷	divide division split group share divided by shared between how many
Fourth Class		increase decrease product of
Fifth & Sixth Classes		Quotient square power of represents means

Place Value

In place value the word units will be used instead of ones. The words swap and regrouping will be used when regrouping.

Methods

Decimal Point

The <u>number</u> is the only component which moves. The decimal point should not have a box to itself in copybooks as it does not of itself have place value.

Written Methods

To ensure a common approach to the teaching of addition/subtraction with regrouping, addition/subtraction of fractions, long multiplication/division, we have agreed the following:

- *Addition*: top to bottom. Write the carried over numbers above the bottom line.
- *Subtraction***:** Vertical - use of transition boards and Dienes blocks. Start at the top using the words take away/subtract/minus Horizontal - read from left to right using the words take away/subtract/minus.
- *Long Multiplication:* when multiplying by the tens the small carried number will be written above the top row of numbers with the circle around them and then added in.

- *Fractions:* in addition and subtraction of fractions the fraction part is changed into equivalent fractions (by finding the common denominator). Add/subtract the equivalent fractions and then the whole number.
- *Long Division*: **i**n long division the steps of round, estimate, multiply, subtract and bring down will be followed where appropriate.

Pupils are provided with opportunities to verbalise and use manipulatives to represent each of these activities before using written symbols.

Tables

- Number facts up to twelve will be memorised.
- Addition and subtraction facts will be covered by the end of Term 2 in Second Class.
- Multiplication and division facts will be covered by the end of Third Class.

Both will be revised up to the end of Sixth Class. Subtraction and division tables will be learned as the inverse of addition and multiplication.

Memory techniques

Addition: + 0, + 1, + 2, doubles, near doubles and ten facts.
Multiplication: x 5, x 10, x 2, doubles, use of fingers for x 9 and counting in 2s, 3s, and 4s. Different methods will be used in different classes including drill, reciting tables, clock, interactive whiteboard etc.

Skills

The following skills will be acquired by the pupils through the study of the various strands in the curriculum:

- Applying and Problem Solving
- Communicating and Expressing
- Integrating and Connecting
- Reasoning
- Implementing
- Understanding and Recalling (number facts and formulae)
- Estimation

Every strand must provide opportunities for acquiring these skills. Opportunities are also given for the transfer of these skills to other curricular areas e.g. Geography, Music, Physical Education and Science.

Problem Solving

In recognising that Mathematics is most useful when it can be applied to particular situations and put to a meaningful use, problem solving skills are developed from Infants to Sixth Class and incorporated in all strands of the Mathematics programme. Pupils are encouraged to use their own ideas as a context for problem solving. Where possible we will use the local environment to develop these skills, e.g. Mathematics trails, Siopa Gaeilge. (See Appendix 1).

Problem-solving Strategies
With regard to problem solving pupils may use the following strategies:
- Look for a pattern
- Guess and check
- Write a number sentence
- Break the problem down and solve each part

- Draw a picture
- Make a chart or table of the information
- Use concrete materials
- Use easier numbers
- Work backwards
- Use a calculator
- Work with a partner/small group

Answering the problem
- Use all the important information
- Check your work
- Decide if the answer makes sense
- Write the answer
- Key Strategies
- Estimate
- Discuss or consider
- Measure or do
- Record or report

Estimation
Estimation will form part of most Mathematics lessons.

Strategies
Pupils will be encouraged to use each of the following strategies selecting the most appropriate for the task in hand.
- Front-ended strategy – used best in addition. The left-most digits are the most significant in forming an initial estimate and can be used on their own to establish a rough estimate.
- Clustering strategy - best suited to groups of numbers that 'cluster' around a common value, (e.g. 425, 506, 498, 468, 600 – 500).
- Rounding strategy - round up/down. Used with the four operations but best in division
- Special numbers strategy - looks for numbers that make patterns, 3 + 5 + 7 + 4 + 6 3 and 7 = 10, 6 + 4 = 10 that is 20 + 5 = 25

Please see pages 32 – 34 of the Teacher Guidelines for Mathematics.

Staff members are also committed to the ongoing use of peer tutoring/cooperative learning as well as team/station teaching in both mathematics and other curricular areas.

Assessment and Record Keeping
Assessment is used by teachers to inform their planning, selection and management of learning activities so that they can make the best possible provision for meeting the varied mathematical needs of our pupils. Teachers use various methods of assessment from the following approaches:
- Teacher observation of knowledge, skills development, and participation in activities to include completion of standardised tests.
- Standardised tests, e.g. Sigma-T Mathematics test.
- Teacher designed tests and tasks.
- Work samples.
- Self-assessment by pupils.

Teacher Observation

Teacher observation can be used as a means of building a broad understanding of a pupil's strengths and difficulties. Teachers will note anything important in relation to the pupil's progress or learning needs in Mathematics.

Observations may include the following:

- The level and manner of engagement in or attention to activities including standardised tests.
- Strengths and concerns in relation to written work.
- Involvement in discussion.
- Response to and initiation of questioning during class/group work.

In St. Andrew's N.S. it is school policy that when standardised tests are being conducted, the support teachers and class teachers monitor and record pupils' approaches and responses in completing these. Tests are also corrected in a collaborative manner as a means of verifying and validating test results.

Teacher designed tasks and tests

The following are used throughout the school to help inform the class teacher of each pupil's progress in Mathematics:

- Oral tests to include tables, continuation of number patterns.
- Written tests of numerical competence.
- Problem solving exercises using a variety of mathematical skills.
- Compilation of data or drawing a diagram.

Standardised Testing

We in St Andrew's N.S. recognise the wealth and quality of information which can be provided by the pupil's completion of these tests and also the teacher observation of these tasks. Also, each individual test is analysed and recorded using the school's Aladdin system. These tests may be used to inform class teachers of learning needs within each class and in the identification of pupils for learning support.

The following procedure is used for norm-referenced tests (tests where the pupil's performance in these is measured in comparison to children of a similar age throughout the country):

- Pupils from 1st to 6th are formally assessed by means of the *Sigma-T Standardised Mathematics Tests* in the final term of each academic year.
- The results of each pupil's tests will be kept in their file and stored in the school office.

Test results are communicated to parents at parent-teacher meetings and on the pupil's annual school report. Results are communicated to parents in June using STen scores. All standardised test results should be uploaded, by the class and support teacher, onto the school's Aladdin system.

These results are highly confidential and should be treated as such under the Data Protection Act.

Standardised tests can be shown to parents but cannot be given to parents or other non-professionals. This is a condition of their distribution and use by schools. They remain the property of the school.

- In line with the school's policy on record keeping, school files are maintained until the pupil reaches the age of 24.
- To ensure objectivity and consistency in administration and marking class teachers and support teachers mark tests in a collaborative manner. Teachers **must not** 'teach to the test' as this invalidates test results.

Diagnostic Tests

Tests are administered by the support teacher in consultation with the parents.
Sample list of possible tests or parts thereof which <u>may</u> be used:

- Drumcondra Early Numeracy Screening and Diagnostic Tests
- Mathematics Quest
- Basic Number Diagnostic test
- Early Mathematical Skills checklists (NCCA, NCSE)
- Westwood (2009) Checklists
- Teacher Designed Tests
- Checklists based on the Maths Curriculum strand unit targets

<u>Pupils with Different Needs</u>

The mathematics programme aims to meet the needs of all the pupils in the school. This will be achieved by teachers differentiating their teaching approaches/methodologies for example through varying the:

1. pace
2. content
3. teaching strategies

To ensure that all pupils benefit to the maximum degree from the lesson content.
Pupils who attain scores at or below 12th Percentile on standardised tests will have priority in attending learning support for supplementary help in Mathematics. Availability of supplementary teaching will depend on the caseload of the support teacher (selection criteria, as determined by DES are applied). Pupils with additional needs will be taken into consideration when planning lessons and field trips. The school may also purchase extra resources where possible.

Pupils who score in the well above average range on standardised tests are accommodated under the differentiated model of teaching within the classroom. They are also afforded opportunities to engage with more challenging materials within the team teaching model as resources permit. Parents are consulted regarding opportunities for their children, i.e. Centre for Talented Youth in D.C.U.

<u>Equality of Participation and Access</u>

All Pupils are provided with equal access to all aspects of the Mathematics Curriculum in accordance with their needs.

<u>Organisational Planning</u>

Timetable

The following time is allocated for Mathematics in the school:

- Infants: 3 hours 25 minutes per week
- First – Sixth Class: 4 hours and 10 minutes per week.

Timetables are based on the time allocation for this and other curricular areas. There is a discretionary time available each week which teachers use to support numeracy. Here all teachers include numeracy components in other areas of the curriculum e.g. S.E.S.E: Science, History and Geography.

Homework
The recommended timing for homework is set out in the School Booklet.
In this school we strive to ensure that:

- Homework is in line with the approaches set out in the Mathematics Curriculum.
- Homework should take account of the differing levels of ability in the class and should be a positive experience for all.
- Homework involves a mixture of number work, the current concept being taught and mental Mathematics.

Tables may also be given for homework, but pupils should be given an opportunity to begin learning these in class.
Practical activities should be given from time to time, e.g. measuring - bearing in mind the age and independence level of the pupils.
Time is allocated as part of the Mathematics lesson for correction of Mathematics homework and the review of any problems arising as this provides unique opportunities for pupil/teacher engagement as well as pupil learning and assessment.

Resources and Information Communication Technology (ICT)

Manipulatives
We acknowledge the importance of concrete materials in the development of mathematical concepts for pupils in all classes. Each class is provided with adequate equipment for the strands. Equipment is stored in Mathematics resource cupboards and in classrooms where appropriate.

Calculators
Pupils are permitted to use calculators from Fourth Class upwards for certain strands. They are useful in:

- handling larger numbers
- checking answers
- exploring the number system
- removing computational barriers for weaker pupils thus enabling them to focus on the structure of problem-solving questions at hand

It is important that the skill of estimation is developed along with the use of the calculator so that an incorrect calculation may be identified.

Calculators should meet the following requirements:

- The recommended calculator used in our school is Sharpe or similar. If children prefer to use an alternative calculator it is important that the calculator uses Algebraic Logic as opposed to Arithmetic Logic. Algebraic Logic uses priorities in sequences of operation which we call B.O.M.D.A.S. (brackets, of, multiplication, division, addition and subtraction).
- Keys should be of a reasonable size and have a positive click action.
- They must have a display of at least 8 digits.

- They should have a memory function.
- Calculators are stored in the Mathematics storage cupboard.

I.C.T.

In terms of hardware, interactive whiteboards, SMART boards, laptops, iPads, Chrome Books, visualisers, digital cameras and other electronic devices are used. The software used may include a variety of activities to develop pupils' conceptual knowledge and problem-solving skills as well as drill and practice activities. We also make extensive use of relevant online mathematical media and mathematical based websites.

In line with our policy on the use of IT staff will use the interactive whiteboards which have been made available in all teaching areas of the school, both the classrooms and support teaching areas. These as well as our iPads/ Chrome Books will be used to enhance both learning and teaching throughout the school. I.C.T. will also be used as an assistive technology with individual pupils where available and appropriate.

Textbooks / Workbooks

Textbooks are selected to reflect the objectives of the curriculum and are used as a teaching resource. They are supplemented through use of I.T. and other relevant resources. Extension material is used also. A table book is used throughout the school. Supplementary materials will be purchased when a teacher deems necessary.

Individual Teachers' Planning and Reporting

Teachers should base their long term (yearly/termly) and short term (monthly, fortnightly/weekly) plans on the approaches as set out in the whole school plan for Mathematics.

Staff Development/ Sharing Professional Expertise

Teachers are made aware of any opportunities for further professional development through participation in courses available in Education Centres or other venues. Expertise within the school is shared and developed through input by colleagues at staff meetings.
Since 2003 St. Andrew's N.S. has been actively involved in the mentoring of newly qualified teachers in a structured and formal manner. Since the 2013-2014 school year this has been further developed in St. Andrew's N.S. under the Droichead Pilot Project to support the induction of newly qualified teachers in the school into the teaching profession. A key element of this involves staff members observing each other's practice and engaging in professional conversations on an individual and whole staff basis.

Parental Involvement

Communication between teachers and parents as partners in the child's learning in Mathematics is crucial. For example:

- Through helping their children informally by encouraging the correct use of mathematical language and use of number, estimation and mental strategies in everyday life.
- Through engaging in play for young children and exploration with, for example sand, water, bricks or blocks can be highlighted.
- Through providing useful information for the teacher about the child's early number or mathematical experience.
- Facilitating the teacher's understanding of the child's attitudes to mathematics and his/her use of mathematics in daily life. This can be achieved through school surveys or during individual parent teacher or whole class meetings.

Success Criteria
The success of this plan will be measured by the following criteria:
- Curriculum and policy implementation will be evident in both teacher planning and class work.
- Continuity of content and methodology will be evident in teachers' preparation and monthly reports.
- On-going assessment, formal and informal, will show that pupils are acquiring an understanding of mathematical concepts and proficiency in mathematics skills appropriate to their age and ability.
- Feedback from both pupils and parents as to the children's learning and overall attitude to mathematics teaching.

Implementation
Roles and Responsibilities:
The class teacher is responsible for the implementation of the mathematics programme for their own class and ensuring that the Primary School Curriculum 1999 has been implemented in full. The In-School Management (I.S.M.) post holder for Mathematics is responsible for disseminating information, policy review/update and purchase of mathematics' resources.

Review
This policy will be reviewed as deemed necessary.

This policy was discussed, evaluated and approved by the School's Board of Management (B.O.M.) on Wednesday 16th January 2021.
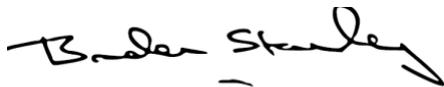
Signed:

Chairperson

Date: 16th January 2021

APPENDIX 1: Mathematical Trails (examples)

Junior/Senior Infants (classroom based)

NAME: _____   **DATE**: _____

1)	How many groups in your class?	
2)	How many children in your group?	
3)	How many boys and girls in your group?	
4)	How many children are absent today?	
5)	How many legs on your table?	
6)	How many legs on your chair?	
7)	How many fingers have you on each hand?	
8)	How many fingers have you altogether?	
9)	How many circular shapes can you see?	
10)	How many square shapes can you see?	
11)	How many rectangular shapes can you see?	
12)	How many triangular shapes can you see?	
13)	How many legs altogether have the girls in your group?	
14)	How many legs altogether have the boys in your group?	
15)	How many more boys than girls in your group?	
16)	How many less in your group than in the group beside you?	
17)	Name the boys/girls in your group that are taller/smaller than you?	
18)	What shape is the clock? (circle/square/triangle/rectangle)	
19)	How many children in your group have black hair?	
20)	How many children in your group have brown hair?	
21)	How many children in your group have fair hair?	
22)	How many windows in your classroom?	
23)	What shape are the windows in your classroom?	
24)	Did you come to school in the morning, the evening or the night?	
25)	Name something in your class, which is shorter than your pencil?	
26)	Name something in your class, which is longer than your pencil?	

First/Second Class (classroom based)

Name: _____ **Date:** _____

1) How many boys and girls in your class?

_____

2) How many children altogether in your class?

_____

3) How many children altogether in First/Second class in the school?

_____

4) How many children altogether in First and Second class?

_____

5) How many circular shapes in your class?

_____

6) How many square shapes in your class?

_____

7) How many rectangular shapes in your class?

_____

8) How many triangular shapes in your class?

_____

9) What shapes are on the floor?

_____

10) What time did school start today?

_____

11) What time will school end today?

_____

12) How many children altogether in the school?

_____

13) How many children are absent today in your class?

_____

14) How many children are in school today in your class?

_____

15) What is the length of your table in hands?

_____

16) What is the width of your table in hands?

_____

17) Find the length/width of your classroom in strides/feet?

_____

18) Estimate how many metres long your classroom is.

_____

19) Estimate how many metres wide your classroom is.

_____

20) How many centimetres long is your pencil?

_____

21) How many centimetres long is your Mathematics book?

_____

22) How many centimetres wide is your Mathematics book?

_____

23) Does your schoolbag weigh more than/less than a bag of sugar (1 kg.)?

_____

24) What coins would you use to pay for something costing 24c? Name 3 different ways of doing this.

_____

25) What coins would you use to give the exact amount for something costing €1.70?

_____

Third/Fourth Class Mathematics Trail

Name: _____   Date: _____

1)   How many children in your class?

2)   How many children in the whole school?

3)   What time did you leave for school this morning?

4)   At what time did school begin this morning?

5)   How many minutes from when you left home until class began?

6)   At what time is small break?

7)   What time is it 15 minutes after small break ends?

8)   What time is it 15 minutes before small break ends?

9)   At what time does big break (lunch) end?

10)   What time is it 20 minutes before school ends?

11)   How much did your pencil/rubber cost?

12)   If you bought 4 pencils, how much would they cost?

13)   What is the cost of a litre of 7-up in your local shop?

14)   How many biscuits in a packet of Digestive biscuits?

15)   Name 4 things in the class, which are longer than a metre?

16)   Name 4 things in the classroom, which are shorter than half a metre?

17)   What is your own height in metres and centimetres?

18)   What is your teacher's height in metres and centimetres?

19)   How much smaller/taller are you than your teacher?

20)   Estimate how many litres of water your classroom sink holds.

21)   How many metres long is the school yard?

22)   How many metres wide is the school yard?

23)   Estimate the area of the classroom in square metres.

24)   How many children in your class have brown hair?

25)   How many children in your class have black hair?

26)   How many children in your class have fair hair?

27)   If you throw a dice what is the likelihood of getting a 5?

28)   What is the likelihood of you watching T.V. tonight, likely, unlikely, definitely or never?

29)   Have you anything in your bag that is the shape if a hexagon?

30)   Name 4 items at home that are the shape of a cylinder?

31)   What 3-D shape do we associate with Egypt?

32)   Look at the clock, what time is it now?

33)   What sort of angle do the two hands of the clock make? (acute, obtuse, right-angle)

34)   Find a sphere in the halla?

35)   Name a chocolate bar that is in the shape of a triangular prism.

36)   Name 6 sets of parallel lines you can see in the classroom/school yards?

Fifth/Sixth Class Mathematics Trail

Name: _____Date: _____

1)   What numeral is over the door in the post-office?

2)   Is it a special number? (square, rectangular or triangular)

3)   Write down 3 rectangular numbers on your road/street?

4)   Write down 3 triangular numbers on your road/street?

5)   How would you find out many cars the supermarket car-park can hold?

6)   How many Fords/Toyotas/Opels are parked in the school car-park?

7)   Which is more likely to pass by your school gate at 11.00a.m.? – An articulated lorry or a tractor?

8)   Find the cost of a kg of sausages in the supermarket.

9)   What would the cost of 19kg of sausages be?

10)   Find the cost of a kg of fillet steak.

11)   What would the cost of ¼ kg of steak be?

12)   What would be the cost of 9kg of fillet steak?

13)   What shape are the tiles of the local supermarket's floor?

14)   What number is on your classroom door?

15)   What is the length of your classroom in metres?

16)   What is the width of your classroom in metres?

17)   What is the area of your classroom in square metres?

18)   Is 1 square metre of tiles cost €24, how much would it cost to tile your classroom floor?

19)   What is the cost of a litre of unleaded petrol in the local garage?

20)   If a car holds 48 litres of petrol, what would it cost to fill the car with petrol?

21)   What change would you get from €100 if you filled the car with petrol?

22)   What is the cost of a litre of diesel?

23)   What would it cost a lorry driver to fill his lorry with 94 litres of diesel?

24)   If the lorry driver got a 10% discount, what did he actually pay for the diesel?

25)   What time did you leave home for school this morning?

26)   How long did your journey to school take you?

27)   What time did school start today?

28)   What time will school finish today?

29)   How long are you in school altogether each day?

30)   Excluding breaks, how long are you in school altogether?

31)   What is your favourite movie? How long does it last in hrs and mins (approx.)?

32)   Where is the closest cinema to Roscommon? How far away is it in kms?

33)   What is the cost of an adult and what is the cost of a child's ticket in this cinema?

34)   What would be the cost for a family of two adults and four children to go to this cinema?

35)   Where is your nearest fast food restaurant?

36)   How much does your favourite meal cost in this fast food restaurant?

37)   How much would it cost for you and your friend to eat the same meal?

38)   How much change would you get if you paid for the 2 meals with €20.00?

39)   If the restaurant offered a 5% discount to students, how much would your meal cost after the discount?

GLOSSARY

associative	an operation such as multiplication or addition is associative if the same answer is produced regardless of the order in which the elements are grouped, e.g.(2 +3) + 5 = 10, 2 + (3 + 5) = 10
cardinal number	a number denoting quantity but not order in a set
commutative	giving the same result irrespective of the order of the elements in addition and multiplication 6 + 2 =8 2 + 6 = 8, 5X7=35 7X5=35
composite number	a number with more than two factors that is not a prime number, e.g. 6, 10
denominator	the divisor in a fraction
diameter	a straight line connecting the centre of a circle with two points on the perimeter
distributive	the same result is produced when multiplication is performed on a set of numbers as when performed on the members of the set individually, e.g. 5 x 4 = (3 + 2) x 4 = (3 x 4) + (2 x 4)
dividend	a number or quantity to be divided by another number or quantity
divisor	a number or quantity to be divided into another number or quantity
equation	a mathematical sentence with an equals sign
hectare	a unit of area equal to 100 ares
line symmetry	a shape has line symmetry if one half of the shape can be folded exactly onto the other half
number sentence	an equation or statement of inequality e.g. 4 + x = 11, 4 x 2 < 12 or 2 + 5 = 7
numerator	the number above the line in a fraction
ordinal number	a number denoting relative position in a sequence, e.g. first, second, third
perimeter	the sum of the length of the sides of a figure or shape
prime factor	a factor that is a prime number
prime number	a whole number that has only two factors, itself and 1, e.g. 2, 3, 7

radius	a straight line from the centre of a circle to a point on the circumference; a radius is half the diameter
ratio	the relationship between two numbers of the same kind; e.g. the ratio of 2 kg to 6 kg is 2:6
subitise	tell at a glance, without counting, the number of items in a set
subtrahend	the number to be subtracted from another number, e.g. 10 - 4 (4 is the subtrahend)
tessellation	shapes tessellate if they fit together exactly, form a repeating pattern, and make an angle of 360 degree at the points of contact
variable	a letter or symbol that stands for a number, e.g. $y + 7 = 12$

B.O.M.D.A.S.	Brackets Order Multiplication Division Addition Subtraction
D.C.U.	Dublin City University
D.E.S.	Department of Education & Science
E.F.L.	English as a foreign language
I.C.T.	Information & Communication Technology
N.C.C.A.	National Council for Curriculum & Assessment
N.C.S.E.	National Council for Special Education
P.T.A.	Parent Teacher Association
S.E.N.	Special Educational Needs
S.E.T.	Special Education Teacher
S.N.A.	Special Needs Assistant
STen	Standard ten score
V.A.T.	Value Added Tax