Draft Primary Mathematics Guidelines [Level 4 - Years 1 and 2]

Opportunities to do Mathematics within an Emergent Curriculum

Throughout the Early Years children should be provided with different learning opportunities based on their skills, needs and interests. While children are engaged in meaningful practices, mathematising shall be provoked and encouraged, thus stimulating their mathematical literacy.

Children should be provided with opportunities to:

- get acquainted with early mathematical language of measurement, shapes, space, position, numbers and patterns.

- develop and strengthen their number sense [use of number, numerosity].

- count and perform the basic number operations.

- classify, order and sort.

- learn through number rhymes and songs.

- become aware of conservation.

- explore and create number sequences and shape patterns.

- use positional words: e.g. in, on, outside.

- become familiar with the concept of time.

- recognise shapes in the environment.

- become aware of one-to-one correspondence.

- apply strategies to solve problems, argue, reason and communicate.

- work independently and collaboratively with peers and teacher.

- explore use of mathematics manipulatives, "loose parts" and digital technologies to do mathematics.

Furthermore, the National Curriculum Framework (2012, p.46) encouraged a "move away from emphasising specific subject content teaching in favour of pedagogies which enhance curricular links and thus facilitate learning processes."

A: Number (Value – Calculations - Patterns)

KEY VOCABULARY	LEARNING OPPORTUNITIES Children should be given a range of opportunities such as:
zero one … nine ten, twenty … hundred before, after next count count on/forward count back/backward How many? correct few/fewer/fewest more/most more/more than less/less than small/smaller/smallest large/larger/largest left over guess/estimate close/closer/closest order between ones, twos, threes, fives, tens is equal to (=) answer total number name How many … do you think? add, subtract take away units tens double	▪ counting reliably forward and backward up to 30 everyday objects. ▪ saying and using the number names in order in familiar contexts such as number rhymes, songs, stories, counting games and activities (first to five, then ten, then twenty and beyond). ▪ saying the value of each number from 1 to 10, then of each digit in any number up to 30. ▪ comparing and ordering numbers to at least 30, and position them on a number line. ▪ estimating the amount of objects [up to 30]. ▪ counting on and back in steps of 1s, 2s, 5s and 3s [up to 30] and in 10s [up to 100]. ▪ reading and writing numerals from 0 to 30. ▪ talking about, recognising and extending/recreating simple number patterns [constant steps]. ▪ using a number line and a number grid. ▪ saying a number which lies between two given numbers [up to 30]. ▪ using the = sign to represent equality. ▪ exploring all pairs of numbers with a total of 10; and their corresponding subtraction facts. ▪ adding doubles of all numbers to at least 5 [up to a total of 10]. ▪ adding up to 3 sets of concrete items [and relate to addition]. ▪ identifying the number that is 1 or 10 more or less than any given number within the range 0 to 30. ▪ Identifying the number that is 10 more or less than any given multiple of 10 [within 100] ▪ using the vocabulary involved in adding and subtracting [including take away, less, more].

B: Measures

KEY VOCABULARY	LEARNING OPPORTUNITIES Children should be given a range of opportunities such as:
mass heavy / light heavier than / lighter than weigh/s larger [est] / smaller [est] balance scales fill / pour full / half full / nearly full empty / half empty / nearly empty more / most / less / least full capacity holds more / the most / less the least length / height long / longer / short / shorter tall / taller / high / higher How long/tall… do you think…? compare measure furthest minute/s hour/s before / after night/day days of the week week/s the day before /after minute / hour hand clock face o'clock seasons coin/s cent euro How much does X cost? (total) cost/s change / left	- using language such as heavier or lighter to compare two quantities, then more than two, by making direct comparisons of masses. - measuring mass using uniform non-standard units. - using language such as more or less to compare two quantities, then more than two, by making direct comparisons and filling and emptying containers. - measuring capacity using uniform non-standard units. - measuring length using uniform non-standard units. - using language such as long/short and longer/ shorter… to compare two quantities. - using the vocabulary of time. - reading the time to the hour [on an analogue and digital clock]. - showing the time to the hour [on an analogue and digital clock]. - constructing a clock face. - ordering familiar events in time using a timeline. - measuring duration of time through experience. - saying the days of the week [in order] and the seasons of the year. - sorting, ordering and recognising euro coins including the one euro coin. - listening to stories, poems or songs that will give students the opportunity to reinforce understanding, allow for application and may also provide the opportunity for creation e.g. role play. - using coins to pay. - working out totals up to twenty cent. - working out change from twenty cent. - recognising notation € for euro and c for cent.

C: Space and Shapes

KEY VOCABULARY	LEARNING OPPORTUNITIES Children should be given a range of opportunities such as:
shape square circle triangle rectangle side corner straight cube cuboid cylinder cone pyramid face 2D / flat 3D / solid curved stack roll slide bigger/est smaller/est larger/est half line of symmetry	• recognising the square, the rectangle, the triangle and the circle in different orientations. • recognising the cube, cuboid, cylinder, cone and pyramid in different orientations. • putting sets of objects and shapes in order of size. • talking about, recognising and recreating patterns. • identifying symmetrical objects in the environment • comparing and contrasting 2D and 3D shapes. • completing the missing half of a symmetrical shape, picture or pattern using mirrors, shape construction kits, drawing. • recognizing and drawing the line of symmetry of familiar objects and shapes around them. • talking about 3D shapes [straight edges only] and their properties [e.g. the number + shape of faces, edges and corners].* • talking about 2D shapes [straight sides only] and their properties [e.g. the number of sides and corners.] * • making patterns and pictures with 2D shapes using construction kits, geoboards, playdough and other materials and describe them. • making models using various 3D shapes from real-life and describe them. • predicting and recognising hidden or partially hidden shapes (e.g. in feely bag or covered with a piece of cloth) by using the sense of touch. *Learning of properties by heart should not be encouraged.

D: Position, Direction and Angles

KEY VOCABULARY	LEARNING OPPORTUNITIES Children should be given a range of opportunities such as:
above, below in on outside, inside beside next to before, after up, down left, right between in front of	• following instructions about positions, directions and movement on grids [e.g. PE, games, online activities, Maths trails] • recognising and using the language of movement. • recognising and using the language of position. • recognising and using the language of direction. • recognising right and left. • recognising whole and half turns. • talkng about things that turn (e.g. clock hands, roamers, cars, themselves). • programming / giving instructions to someone else during games and other activities [inc. use of BeeBot]. • creating models and/or drawing using positional vocabulary.

E: Data Handling

KEY VOCABULARY	LEARNING OPPORTUNITIES Children should be given a range of opportunities such as:
sort label set list table tally	• solving a given problem by sorting, classifying and organising information in simple ways. • discussing and explaining results. • sorting objects or pictures in distinct categories [categories can be identified by teacher or by children themselves]. • sorting objects or pictures in a list or simple table. • reading and using tally marks to represent data collected in tables.

Draft Primary Mathematics Guidelines - Years 1 and 2

The only way to learn mathematics
is to
do mathematics.

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Draft Primary Mathematics Guidelines - Years 1