

**Scoil Chormaic**  
COMMUNITY NATIONAL SCHOOL  
*SCOIL NÁISIÚNTA POBAIL*



Castlemill, Balbriggan, Co. Dublin  
*Muileann an Chaisleáin, Baile Brigín, Co. BÁC*

**School Self-Evaluation:  
Numeracy  
June 2015  
Detailed Report for the  
School Community**

## 1. Introduction

### 1.1 The focus of the evaluation

A school self-evaluation of teaching and learning in Scoil Chormaic CNS was undertaken during the period September 2014 to June 2015. During the evaluation, teaching and learning in mathematics (numeracy) was examined. Given the diverse community represented in Scoil Chormaic CNS, the **language of mathematics** received particular attention.

This period of evaluation follows self-evaluation of literacy in the school year 2012/2013, and the subsequent implementation of the literacy school-improvement plan.

The consultation received considerable input from all members of the school community, namely pupils, parents, teachers and management. It was coordinated by the Special Duties Teacher with responsibility for mathematics (Patrick Burke).

### 1.2 School context

Scoil Chormaic CNS was established in 2010, to provide school places for a rapidly growing school-going population in Balbriggan, and to provide further diversity in school patronage. It was the third school in the new Community National School model. The school is under the patronage of Dublin Dún Laoghaire Education and Training Board. A Community National School is one where:

- The school becomes a centre of the local community.
- Pupils are encouraged and supported in living their lives to the full
- High standards are the goal in teaching and learning
- Everybody is valued and treated with respect
- Respect for plurality of faiths and beliefs is seen as integral to the daily routine of the school
- A programme aimed at nurturing the faiths/beliefs of all the children in the school is part of the curriculum delivered during the school day.

The diversity of our school community is represented in the following:

- Upwards of 60% of our pupils are learning English as an Additional Language. We currently have children from over 40 countries in our school.
- In 2014/2015 the school has an allocation of two full time resources teachers and three SNAs to cater for children with low incidence special needs.

The school caters for a social context that would, previously, have merited inclusion in the DEIS programme. Due to its establishment date, it caters for a diverse community of learners without the resources a DEIS<sup>1</sup> school would expect.

## 2. Findings

Data was collected in a variety of ways with each section of the school community:

- Pupil questionnaire
- School-designed mathematical language inventory: pupils were presented with a variety of maths questions and their responses were recorded.
- Parent online questionnaire

---

<sup>1</sup> DEIS stands for *Delivering Equality of Opportunity of in Schools*. It typically grants schools increased funding, access to specific educational programmes and favourable teacher allocations.

## School Self-Evaluation Report: Numeracy FOR THE SCHOOL COMMUNITY

- Parent focus group
- Teacher class-level survey
- Teacher practices online survey
- Staff discussion

### 2.1 Learner Outcomes

#### Standardised Tests

- Taken as a whole school, SIGMA-T results from May 2015 from first to third class are above national averages; the school's average percentile is 55.7, STen 5.4. See figure 1 for a bell curve distribution.

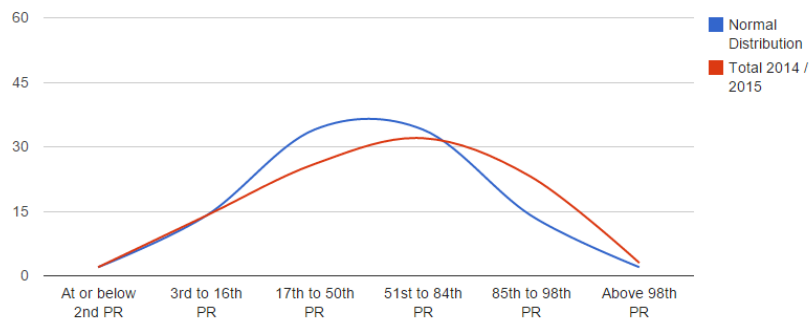


Figure 1: School distribution of percentiles versus a normal distribution

#### Communicating and expressing using mathematical language

- According to results in the school-designed maths language inventory conducted with all classes, a majority of children can use some correct language accurately and consistently, or can fully use the language expected of their class level to provide thorough explanations of answers.
- The following language was used to describe operations:
  - All pupils from Senior Infants upwards could use at least one way to describe an addition sentence. Higher order vocabulary like 'total' and 'sum' was used by few pupils.
  - 'Minus' was most frequently used to describe subtraction. Only one pupil produced less common subtraction language like 'difference'.
  - In third class 'times' was most commonly used to refer to multiplication, while 'divided by' was most commonly used to refer to division.
  - The majority of pupils knew two ways of describing each operation. A minority knew more than three.
  - Pupils at some class levels had great difficulty explaining how or why they got an answer beyond 'because that's it' or 'I used my head'.
- The majority of pupils relied on vertical addition/subtraction strategies for dealing with the operations presented in the inventory tasks.

#### Teachers' View of Learners' Outcomes

- 45.5% of teachers felt that the pupils in their class were confident or very confident at understanding the language of *oral* word problems, while the corresponding figure for *written* word problems was 18.2%
- 54.6% of teachers report that the pupils in their class are confident or very confident at explaining their answers, while 81.8% of teachers report that children in their class

are either not confident or only reasonably confident at understanding the language used in word problems. The latter figure dropped to 54.6% when problems are presented orally/aurally.

## 2.2 Learner Experiences

### Pupils' views of their learning

- 96% of pupils surveyed indicated they liked maths.
- 90% stated that they were good at maths.
- 85% of liked doing their maths homework.
- 75% of pupils said that maths was easy, while 56% of pupils were able to identify an aspect of maths they found difficult.
- The number strand was almost universally indicated as the area of maths that caused the most difficulty.

### Parent's views of children's learning

- 96% of parents indicated that their child liked maths.
- 58.4% of parents agreed that they got good information from their school about their child's progress in maths.
- 67% of parents agreed or strongly agreed that the maths their child learns is at the correct level of difficulty.

### Supports for children's learning

- Parents frequently referred to operations and tables as areas in which their child did well. Parents indicated that they would value an explanation of the steps and language used in process like adding tens and units.
- 58.4% of parents thought that they received good information from the school on their child's progress in maths.
- Many parents in the school are learning English as an additional language.2.3

## 2.3 Teacher Practices

### Resources for teaching

- Ready Set Go Maths is in use to teach number in the infant classes.
- Concrete materials for teaching number (e.g. Dienes) are available for older classes.
- Maths equipment is stored centrally since October 2014.
- Maths apps are available on the school iPads, and every classroom has an IWB for whole-class use.
- In-class support from the support team is used at some class levels to support the teaching of maths.
- All classes use Planet Maths, while First Class and on also use a mental maths book and tables book.

### Teaching Practices

- Pair work is conducted either regularly or all the time by 77% of classroom teachers. Group work is conducted either regularly or all the time by 38.5% of classroom teachers.
- 77% of classroom teachers always or regularly model the use of mathematical language.

School Self-Evaluation Report: Numeracy  
FOR THE SCHOOL COMMUNITY

- Textbooks are regularly used by 70% of teachers, and sometimes used by 30% of teachers.
- A majority of teachers spend up to 80% of time on a numeracy topic using concrete materials.

### **3. Progress made in previously identified targets**

As this is the school's first improvement plan in numeracy, this does not apply.

## **4. Summary of School Self-Evaluation Findings**

### **4.1 Strengths**

- School-wide standardised test scores (SIGMA-T) are above national norms. Given the diversity of the school population, this is an achievement.
- Considerable effort has gone into the organisation of materials for the junior classes, and teachers report that Ready Set Go Maths is having positive effects on pupil's learning.
- There is a high level of consistency *within* class levels regarding approaches to maths teaching and learning.
- An overwhelming majority of pupils enjoy mathematics, think they are good at it, and are able to self-assess (pinpoint areas that they find difficult).
- A majority of pupils can adequately explain mathematical processes and language when presented with class-level tasks.
- Parents recognise that their children like maths and a large majority are complimentary of the school's work and progress in mathematics.

### **4.2 Areas for improvement**

- While all pupils are able to use *some* correct mathematical language, they need to be able to draw on and produce a greater array of vocabulary for different operations.
- Some pupils have difficulty in fully explaining how they arrive at answers when presented with simple number sentences or mathematical problems. They also have difficulty explaining why they chose a certain operation.
- A sizeable amount of parents are unfamiliar with the type of language expected of their children, and are unaware of the strategies and approaches used for different operations.
- A greater level of consistency is required across class levels, in the form of an agreed school plan.
- Pupils need to have more experience of pair work, group work, trails and projects.
- An agreed approach to problem solving is needed.
- Pupils are over-reliant on vertical strategies for adding and subtracting.

## 5. References

The following pedagogical and academic sources informed the development of this report:

- Adoniou, M. & Qing, Yi (2014). Language, mathematics and English language learners. *Australian Mathematics Teacher*, 70(3), 3-13.
- Alt, M., Arizmendi, G.D., & Beal, C.R. (2014). The relationship between mathematics and language: Academic implications for children with specific language impairment and English language learners. *Language, Speech and Hearing Services in Schools*, 45, 220-233.
- Department of Education and Science (1999). *Primary School Curriculum: Mathematics*. Dublin: Government Publications.
- Department of Education and Science (1999). *Primary School Curriculum: Mathematics Teacher Guidelines*. Dublin: Government Publications.
- Inspectorate, Department of Education and Skills (2012). *School Self-Evaluation Guidelines for Primary Schools*. Dublin: Author.
- Inspectorate, Department of Education and Skills (2014, no month). *School-Self Evaluation: Primary Schools*. Available online at: [www.schoolself-evaluation.ie](http://www.schoolself-evaluation.ie)
- Mallet, D.G. (2011). Walking a mile in their shoes: Non-native English speakers' difficulties in English language mathematics classrooms. *Journal of Learning Design*, 4(3), 28-34.
- Morin, J.E. & Franks, D.J. (2010). Why do some children have difficulty learning mathematics? Looking at language for answers. *Preventing School Failure*, 54(2), 111-118.
- Pitt, E. (2000). *Ready, Set, Go - Maths*. Belfast: CCEA.
- Professional Development Service for Teachers (2014a). *Mental Maths: Addition and Subtraction*. Dublin: Author.
- Professional Development Service for Teachers (2014b). *Mental Maths: Multiplication and Division*. Dublin: Author.
- Professional Development Service for Teachers (2015, no month). *SSE Tools*. Available online at: <http://www.pdst.ie/SSE-Tools>
- Van de Walle, J., Karp, K.S. & Bay-Williams, J.M. (2014). *Elementary and Middle School Mathematics: Teaching Developmentally* (Eight International Edition). Essex: Pearson.
- Warren, E., Harris, K. & Miller, J. (2014). Supporting young ESL students from disadvantaged contexts in their engagement with mathematics: Teachers' pedagogical challenges. *International Journal of Pedagogies and Learning*, 9(1), 10-25.
- Wright, R.J., Ellemor-Collins, D., & Tabor, P.D (2012). *Developing Number Knowledge: Assessment, Teaching and Intervention with 7-11 Year Olds*. London: Sage.
- Wright, R.J., Stanger, G., Stafford, A.K. & Martland, J. (2006). *Teaching Number in the Classroom with 4-8 year olds*. London: Sage.