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| **School Improvement Plan (Numeracy )** |
| **This plan was written by the Staff of St. Colman’s B.N.S. at a meeting in June 2015****Baseline Data****Pupils Attitude to Maths –**70% of the pupils in St Colman's BNS like Maths. 90% of the pupils feel they are good at Maths. 95% say they find it easy to learn their Tables. 77% like to play Maths Games on the computer. 81% like to play Board Games. 72% like to play cards.When the pupils were asked what they found difficult in Maths this is what they said : When doing a Maths Problem in school some find it difficult to decide what to do, know where to start, understand the language and figure out what method to use.**Learning Experiences of Pupils –** Each classroom is fitted with an interactive whiteboard to facilitate the pupils Learning of Maths. The pupils are stimulated and enjoy using ICT in the classroom. All classes use ICT for reinforcing the Learning of Tables. 6th Class also use Khan Academy and use ICT to take part in the Mathletes Challenge in Term 2. The school environment is used to provide opportunities for Mathematical Problem Solving and creating an awareness of number – eg. clocks, Maths Posters in the Classrooms, Maths Corners, Maths Problem of the Week ... The school actively encourages ‘Maths all around us’ and is continually encouraging the pupils to see maths all around their environment and not just in the classroom at a certain time each day. Maths Trails take place in each classroom at least once in the year. Each class takes part in Maths Week, the Senior Classes sharing Daily Maths Brain Teasers on twitter, the Junior Classes playing Board Games.**Teaching approaches –** Teachers prepare thoroughly for their lessons, have a clear vision of expected learning outcomes and ensure that the appropriate resources are in place. However Senior Teachers stated that pupils are rarely given the opportunity to work in pairs or small groups or use concrete materials. The Junior Teachers stated that they do group work and use concrete materials when introducing a new topic. In all classes Problem Solving is usually taught at the end of a unit and not as a standalone lesson. Teachers noted that children found Problem Solving challenging and were not willing to persevere with them.**Assessment:** Our Sigma attainment levels are well above average of the national norm. These attainment levels have been analysed, graphed and evaluated. There is a Problem Solving Page at the end of each topic covered. |
| **Summary of Main Areas Requiring Improvement.** | **Pupils attitude to Numeracy:** * We hope to promote a Love of Maths for all children.
* We hope to Improve Problem Solving Skills for all children.
* On being presented with a problem, we hope that the children will be confident to attempt solving it partially / totally.

**Learning experience of pupils:** * We hope to encourage more group work & more active and collaborative learning.
* We hope to continue to use ICT to enhance Pupils' learning. On our School Website under the Maths Theme Page we hope to add to the list of ICT / Websites / Apps suitable for the various Strands in Maths.

**Teaching Approaches:** *When the pupils were asked what they found difficult in Maths this is what they said : When doing a Maths Problem in*  *school some find it difficult to decide what to do, know where to start, understand the language and figure out what*  *method to use.* * We hope to address this problem by teaching Specific Problem Solving Strategies throughout the school. We hope to use the Strategy ROSE - Read - Organise - Solve - Evaluate - throughout the school, when teaching Problem Solving.
* We hope to have Specific Problem Solving Lesson each week on a Friday and for each child to have a specific copy / folder for Problem Solving.
* We hope to make more use of concrete materials in our Teaching of Maths.

**Assessment:** * We hope to have Measured Improvement in the Problem Solving Section of the Sigma T Tests as a result.
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| **Summary of Main Strengths as identified from evidence gathered from Pupils, Parents and Staff.** |
| **Improvement Targets** | **Required Actions** | **Success Criteria/****Measurable Outcomes** | **Persons Responsible** | **Timeframe for Actions** |
| * To develop the Language of Problem Solving ensuring that there is progression through the school specifically in relation to Addition, Subtraction, Multiplication and Division.
* To Improve children’s Problem Solving Skills by teaching the Strategies for dealing with problems. We hope to use the ROSE Strategy throughout the school. ( Read - Organise - Solve - Evaluate)
* To teach a specific Problem Solving lesson each Friday
* To keep a Problem Solving Copy / Folder for each child
* Carry out a Maths audit of school resources with a view to providing more Resources for problem solving.
* To acquire more Problem Solving Resources, including the use of ICT for Problem Solving.
* To ensure that Group work is utilised in all classrooms in the delivery of the Maths Curriculum -groups of 2/3 working together to solve problems.
* To ensure that Concrete Materials are used in all Classes when introducing a new topic.
 | **Teaching:** * Teachers to familiarise themselves with the ROSE strategy in the Teaching of Problem Solving.
* Teach estimation strategies – eg rounding, clustering, front-end, special numbers, etc
* Teach and display the language of Maths
* Teachers to Link with real-life problems e.g. Receipt trails using real receipts /Catalogues
* Teachers to Prepare a resource folder of problems in each classroom. Using / Buying of Mad 4 Maths series (Problem Solving Books) from 2nd - 6th.
* Teachers to engage in internal and external C.P.D. in areas of Problem Solving through N.C.C.A. and PDST websites.eg INTO CPD
* A Specific Problem Solving Lesson to be taught each week in addition to the problems at the end of each Unit.
* Carry out a Maths audit of school resources with a view to providing more Resources for problem solving. These new resources will include the use of ICT for problem solving and keeping a problem solving folder in each Classroom.

**Learning:*** Pupils to use the ROSE Strategy in their approach to Problem Solving.
* To Become familiar with the Language of Problem Solving. eg Addition Words - Altogether - Sum - Total.
* Introduction of Specific Problem Solving Copies & Folders.
* Fortnightly Maths Puzzles / Problems to be displayed for each Class Grouping. Children to attempt these puzzles on their own or in groups using the ROSE Strategy .
* Children will work in small groups of 2/3 to solve problems. Get children to revoice - record - report the stages they went through to solve problems.
 |  * Children will demonstrate more positive attitude to Problem Solving.
* Pupils will be encouraged to self-assess their own progress in their copies. - 2 stars and a wish(Senior pupils) -Symbols for Junior Pupils.
* A noticeable improvement in Problem Solving in the Sigma Tests.
 | * All staff responsible – Engaging in Specific Problem Solving Lessons
* Staff to engage in the Analysis of progress in Problem Solving in Class Testing, Fortnightly Puzzles & in the End of Year SIGMA Results.
 | * Each week Specific Problem Solving Lessons to be taught
* Each fortnight Class Puzzles to be put on the Notice Board.
* Class Testing to take place termly.
* Sigma Testing to take place in early June each year.
* Fortnightly / Monthly review of the Problem Solving Copy.
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| **Appendix A** **This plan was reviewed in Sept 2018**1. **ROSE Strategy** - Continue developing the language of Problem Solving. Some teachers prefer to use RUDE – Read Underline Draw Evaluate –Both to be used.
2. **Specific Problem Solving Copy -** It was agreed that the children would no longer use a specific problem solving copy. Problem Solving is done on a daily basis.
3. **New Wave Mental Maths** by Prim Ed has a specific random Problem each day and this is to be done by all classes on a daily basis.
4. **Concrete Materials**  to be continued to be used and more to be bought if necessary. .
5. **Group work** to be encouraged when tackling Problems.
6. The Senior Classes to continue to engage with **ICT for Problems.** Eg Some classes share Friday Problems on Twitter. Also during Maths Week Daily Problems are shared on Twitter.
7. **Maths Week Activities** to be encouraged. Using Maths Eyes. Maths Trails. Board Games. Card Games
8. **Maths Station Teaching** to take place in 4th Class. Below are the Strands and Strand units that will be covered during the 5 weeks of Maths Stations with special emphasis on Problem Solving at one of the stations. .

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| **Strand:** | **Strand units:** |
| Number | Fractions |
| Number | Decimals |
| Measures | Money |
| Measures | Time |
| Shape and Space | Lines and Angles |

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| **Appendix B** **This plan was reviewed in Jan 2019*** Continue with all that’s working well in Appendix A.
* **Station Teaching** worked well. Plan to do Station Teaching in Maths again in Term 2.
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