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| **School Priority:** To improve approaches to the teaching and assessment of maths  |

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| **National Improvement Framework Priorities** | **HGIOS 4 & HGIOELC Quality Indicators** | **Integrated Children’s Services Plan Outcomes** |
| * Improvement in attainment, particularly in literacy and numeracy.
* Closing the attainment gap between the most and least disadvantaged children.
* Improvement in children and young people’s health and wellbeing.
* Improvement in employability skills and sustained, positive destinations.

Key drivers of improvement* School leadership
* Teacher professionalism
* Parental engagement
* Assessment of children’s progress
* School improvement
* Performance information
 | 1.1 Self-evaluation for self-improvement1.2 Leadership for learning1.3 Leadership of change1.4 Leadership and management of staff/ practitioners1.5 Management of resources to promote equity2.3 Learning teaching and assessment2.5 Family learning2.7 Partnerships3.1 Improving/ ensuring wellbeing, equality and inclusion*Specific to HGIOS 4*3.2 Raising attainment and achievement3.3 Increasing creativity and employability*Specific to HGIOELC*3.2 Securing children’s progress 3.3 Developing creativity and skills for life and learning | • All children reach appropriate development and social milestones through improved support in early years.• Support for disadvantaged and vulnerable children, young people and families is improved.• Health and wellbeing outcomes are improved for children and young people.• Raised attainment for all young people leading to positive Destinations. |

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| Progress: | A Numeracy Development Groups was set up after self-evaluation by parent representatives, staff and focus groups of children highlighted the need to improve approaches to teaching and assessment in numeracy. The following progress was made-* All Teaching staff completed further surveys which were devised by the Numeracy Development Group to evaluate the effectiveness of the Numeracy and Maths resources in the school. Most staff felt that some of the core textbooks for Numeracy were outdated. As a result, the Development Group arranged the purchase of additional Teejay resources to enhance the current range of resources in school and the reorganisation of core resources
* New mental maths CLIC resources were implemented and staff feedback highlighted that while these were useful they but would be better organised as laminated sets rather than printed each week for all children. All sets were subsequently laminated for every level. We organised the mental maths materials into magazine files according to the level of the CLIC challenge for ease of access.
* The lead member of the Numeracy Development Group had previously attended all workshops and training sessions in the local authority for the Numeracy Progression Framework. In September 2016 after the final section of the Framework had been finalised and the documents were in finalised format, the lead group member led a staff meeting to share the Numeracy Progression Framework with all staff. At this meeting, teachers were shown how to access the Numeracy Progression Framework and how to access each section within the framework to plan learning outcomes, differentiation, learning activities, resources and assessment using the framework. This was shared with staff in conjunction with the Significant Aspects of Learning and Numeracy Benchmarks to support staff in planning for progression in Numeracy and Maths. During collegiate time the lead member also shared resources and online teaching videos that are available to access through the Numeracy Hub.
* The lead member attended all Balfron Learning Community meetings throughout the year. The focus of the meetings has been on developing a model for assessment and moderation in Numeracy and Mathematics at ‘Learning Community level.’ Throughout this process, another small group of head teachers were in a QAMS group, devising a model for moderation. Following on from the local authority level work, it was decided that all staff in the learning community would be invited to a ‘coaching and mentoring for effective moderation’ workshop at Killearn Primary School. This session was led by Sean Nash. The workshop leader shared the GROW model of moderation. It was subsequently agreed to use this model for moderation from Term 4 onwards and into session 2017-2018. Following on from this, the lead group member attended a moderation meeting at Balfron High School with other learning community representatives to carry out Numeracy Moderation across Early to Third Level using the new formats devised together with the GROW model. The lead member gathered a bank of evidence for 2 learners and shared this at a learning community meeting. The lead member also took part in moderating numeracy and maths work from other schools. A moderation cycle for session 2017-2018 was agreed. The lead member held a staff meeting to share the ‘Moderation Cycle’ that was set up for session 2017-2018. The Learning Community Numeracy Group agreed and implemented a ‘Numeracy Transition Project’ from P7 to S1 to ensure smooth transition of learning. This was subsequently implemented in Term 4 in the P7 class and the transition work will continue in S1. As a result there is a smooth ‘transition of learning’ from P7 to S1.
* All members of the teaching staff contributed to a staff development workshop during one of the In-service Days. This half day event gave teachers the opportunity to share and discuss a wide range of teaching and learning strategies from Early Level to Second Level in Numeracy and Maths. The purpose of the session was to upskill all teachers and continue to improve the quality of teaching and learning in Numeracy and Maths as well as improve teacher confidence and a consistent approach across the school.
* Feedback from a teacher survey had indicated that the Numeracy and Maths Signpost assessments used in Strathblane Primary were valuable as another form of summative assessment but would benefit from being amended in order to make them more ‘child-friendly.’ The numeracy group entered discussion with staff about possible changes that staff would like on the assessment. Using this feedback, the Numeracy and Maths Group made the relevant changes to improve the signposts assessments. All requested changes included ; altering the font and text size, adding images, including a squared section for ‘working’ and changing some of the questions to make them ‘less wordy.’ All requested changes were made to each of the 6 Numeracy and Maths Signpost Assessments. Although these changes were welcome staff have indicated they would like to further review the use of the signposts in assessing individual, class and school needs.
* The Numeracy and Maths Group planned a Numeracy and Maths Day for all stages across the school. The group planned a range of activities which allowed for cross stage working, outdoor learning and promote enthusiasm and motivation for Numeracy and Maths.

Activities planned were:-P1 – Outdoor Treasure Hunt Numeracy Challenge with P7 Buddies  Beetle Drive with P2P2 – Numeracy Treasure Hunt Challenge with P3 Beetle drive with P1P3 – Murder Mystery Problem Solving with P4 Numeracy Treasure Hunt Challenge with P2P4 – Murder Mystery Problem Solving Challenge with P3 Multiplication Treasure Hunt with P5P5 – Problem Solving Treasure Hunt with P6 Multiplication Treasure Hunt with P4P6 – Problem Solving Treasure Hunt with P5 Murder Mystery Problem Solving with P7P7 – Outdoor Treasure Hunt Challenge with P1 Buddies P7 - S1 Transition Numeracy Project Murder Mystery Problem Solving with P6* The Numeracy and Maths Development Group devised and carried out a survey with both parents and staff to determine if a ‘Support Booklet’ would be a useful resource to help parents/carers support children with homework activities and provide pupils/parents with a guide outlining some suggested methods in Numeracy. Feedback from the survey had indicated specific areas where support would be beneficial. Using this data, the Numeracy Development Group devised a ‘Numeracy and Maths Support Booklet’. This completed booklet will now be available for use in school, at home and made available on the school website for session 2017-2018.
* The lunchtime Maths Surgery Club was continued this year. The purpose of the Maths Surgery is to support children with homework, provide a supportive environment where children can work with their peers to play maths games and give P7s the opportunity to lead maths games or support younger children in developing maths skills. The Maths Surgery Club has been very well attended and children report it really helps to have a safe place to go and ask questions.
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| Impact: | * Evidence form assessment data and quality assurance indicates that confidence in numeracy has improved for almost all children as a result of the work to improve teaching approaches and assessment.
* Staff have reported that the materials are more suited to CfE and give students the opportunity to develop their knowledge, understanding and skills across Numeracy and Maths.
* Children have reported that the new resources are more motivating.
* The mental maths CLIC challenges have proved very effective in developing and assessing children’s mental maths skills. Staff comments included:

*“I have used clics, beat maths and safe challenges consistently throughout this year and children have really benefitted. It has had a huge impact on their mental maths and basic maths skills.”**“Children have benefitted from the repetition and knowing exactly what they need to do to achieve the next level.”**“I have really liked using the laminated CLIC cards and would be happy if a set of laminated safes and beat maths sets were made up if other people would use them too.”** As a result of sharing the Numeracy and Progression Framework as well as the Numeracy Hub resources, teachers are using the Numeracy Progression Framework and Benchmarks effectively to plan good quality learning and teaching across Numeracy and Maths. Teachers reported that the links to resources/methodology were particularly valuable. Teachers have reported that Numeracy Hub resources are useful for reviewing teaching strategies and have helped improve their confidence in teaching numeracy and maths..
* As a result of working in partnership with The Balfron Learning Community Numeracy and Maths Group, there is a shared vision for assessment and moderation in Numeracy and Maths. There is a clear detailed plan for effective moderation, which will include all teaching staff working within trios to carry out moderation in order to reach consistency in assessment and promote teacher confidence in forming professional judgements on ‘achievement of a level.’
* As a result of staff participation in the ‘Sharing Teaching Strategies and Resources,’ all teachers have had the opportunity to review and reflect on their own practice. Teachers have improved the quality of teaching and learning and there is greater consistency in approaches across the school. Teachers have been able to try out new ideas and develop problem solving strategies.

Some comments from teachers were all follows:*“I found the numeracy sharing session to be very beneficial.”**“It was good to share what resources people were using and to see some that I hadn't seen before. I think it's always good to get some new refreshed ideas.”**“Since this CPD I have been using a range of resources.”**“I have been using the N rich website.”**“I have been teaching more maths outdoors.”* *“I would definitely recommend this approach in future.”* *“I learned some strategies that allowed me to renew a focus on mental maths with my class. Many pupils can now speak of their own preferred strategies for estimating and simplifying calculations.”**“The pupils are more confident in speaking about how they worked out a particular calculation.”**“Events that facilitate opportunities to share effective resources and good teacher practice is valuable. Sharing resources and engaging in professional dialogue throughout the learning session has helped me both adapt my teaching to most effectively meet the needs of the learners within my class and has also provided me with an opportunity to share suitable resources with other professionals.”**“Since the session I have provided our early year’s teacher with visual number line templates and I have implemented a larger variety of active maths games into my lessons to consolidate the children’s learning.”**“Engaging in professional dialogue during this event also initiated new ‘maths buddies’ between Primary 2 and Primary 7 resulting in supportive one on one sessions to reinforce prior learning.”**“I found the maths sharing session very beneficial as it gave a very good picture of good practice across the school and also provided me with lots of new ideas for games and activities to do with my class.”**“I was able to implement some of the practical games used in the infants, (such a jump hoops outside) with a child in my class, which he enjoyed.  He was able to use visuals which helped his understanding.”**“I took on board some of the strategies shared for second level maths such as the distance speed time triangle to improve my knowledge of how to teach this concept.  I have also used some of the shared resources with more able pupils in my class to provide more challenge.”**“This sharing session was very successful. It gave us the opportunity to share approaches and ideas to ensure a consistent approach. I particularly liked some of the resources being used to teach Number across the stages.”** Staff were asked for specific changes that they would like to the maths signposts and all submitted suggestions were implemented in the amended signposts. After carrying out the newly adapted signposts with the classes, the Numeracy group asked for feedback from the teachers on the new versions. Teachers provided constructive feedback and also provided further suggestions for changes in session 2017-2018.

“*The space for working was helpful and pictures also made it more child friendly but would benefit from less problems on a page.”**“I think the signposts are too long for children meaning that more able children give up towards the end.”**“I liked the signposting as it helped me to identify gaps in the children's knowledge.”**“Most children completed the assessment in one session.”**“A few of the children found the volume (both on a given page and in total) a bit difficult to digest.”**“Overall, yes they are better than they were but I think it might still be worth discussing how they are presented to the kids. I think it might also be valuable to have a discussion about the weighting of the marks, standardising the time given and how the data is used.”**“I do agree that we should have a consistent method of assessing the children’s progress through and across the years and the Sign Posts are potentially a very useful tool in doing this.”**“I still find the signposts quite verbose/challenging for children in the lower school to complete, however it made a significant difference allowing the children to complete their signposts with their new P7 “Buddies”.”**“I think this is necessary for both Primary 2 and Primary 3 children, to allow them to complete the signpost in a shorter timeframe and with greater accuracy (having one-on-one support to read each question at their own pace).”** The Numeracy and Maths day was an effective way to promote cross stage working, motivation in learning in Numeracy and outdoor learning in maths. Children reported that they liked working in mixed groups with other stages and had benefitted from sharing their learning.
* The Numeracy and Maths Booklet will be issued to parents, pupils and staff in June 2017 with a view to sharing and implementing its use from session 2017-2018. Considerable time was spent creating the support document. It covers a range of areas in Numeracy and Maths and it is anticipated that it will be very positively received, particularly with those parents who had requested greater support in helping their children at home with homework.
* The Maths Surgery has been a very effective way to promote motivation, challenge and support in maths. Children have enjoyed working with other stages to do maths games during the club or support their peers. Some children have requested targeted support in certain areas of maths and this subsequent targeted support from the maths club leader or older children has been very useful in developing children’s learning. This year, attendance levels in the ‘drop in maths surgery’ have been high with some sessions having as many as 25 pupils ‘at any one time. Pupils have particularly benefitted from using this time to complete maths challenges. Part of the Scottish Maths Challenge was carried out during Maths Surgery sessions. Children felt the challenges gave them the opportunity for further challenge and developed their problem solving skills. Results from the Scottish Maths Challenge were very high. 13 pupils volunteered to participate in the challenge. 2 children achieved Bronze, 4 children achieved Silver, 7 children achieved Gold. 3 children were in the ‘Top 8’ in Scotland. One child achieved the highest possible score in Scotland.
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| Next steps: | 1. Continue to review teaching materials and resources, particularly those available for problem solving.2. Implement assessment and moderation cycle as agreed for session 2017-20183. Share Numeracy and Maths Support Booklet online with all parents.4. Review Numeracy assessments (including adapted signposts) and continue to adapt where necessary. |