

## White Rose teaching of Maths at St Andrew's

### Intent

St Andrew's has been following the Hamilton Maths scheme since 2014; this scheme was brought in to ensure consistency and continuity in progress of mathematical skills and knowledge through the school. This scheme was supplemented by White Rose (and other resources) for greater depth challenge, problem solving and reasoning particularly, by many teachers. In 2019, Reception started to use White Rose, as the scheme and objectives fitted with Hamilton, but had greater emphasis in securing the number knowledge to 5 before moving on to 10. This now fits in well with the changes to ELG: Number and ELG: Numerical Patterns learning goals. In 2020, Key Stage 1 brought in White Rose, to address the gaps in learning identified in the KS1 children, following lockdown in March 2020. White Rose was then a very effective method of delivering home learning in the lockdown of January to March 2021. The initial move to Hamilton, followed by moves of Reception and KS1 to White Rose have been led by identified children's needs, following analysis of gaps in learning and data.

In addition to teachers adapting their planning to meet the learning needs of pupils (curriculum driven), data was also driving decisions. KS1 in 2019, 75% met Reading age-related expectation, 70% met Writing age-related expectation and 76% met Maths age-related expectation; in KS2 in 2019, 73% met Reading age-expectation, 78% met Writing age-related expectation and 79% met Maths age-related expectation. The question raised is why are St Andrew's significantly above National average in Reading, but not in Writing and Maths? Maths, in St Andrew's whole school data, is not above the National average as with the other subjects. 2019 was the last National data set, but internal testing has occurred in 2020 and 2021, with an unusual cohort in 2021 Year 6 gaining 96% age-related in Maths (with 39% GDS) and Year 2 gaining 70% age-expected in Maths (with 40% GDS).

At St Andrew's, it is our intention to constantly assess the needs of our learners (supported by data and professional judgement) and ensure that the teaching is meeting those needs, with clear progression of skills and knowledge to enable the embedding of mathematical concepts and knowledge. To ensure consistency and continuity, KS2 will join KS1 in 2021 by using the White Rose scheme.

### Implementation

During 2020/21, Maths focused staff meetings have explored White Rose and Hamilton as Maths schemes ([Maths Scheme Review](#)): looking at the order and delivery of content; considering the needs of our learners; evaluating the advantages and disadvantages of Hamilton and White Rose. As a result, White Rose has been selected as the scheme which St Andrew's will be using from Autumn 2021. To address concerns and issues with the disadvantages identified, St Andrew's will be using a particular approach to implementing this scheme.

### ***Dates for the roll-out of White Rose (2021/22)***

- All teachers will receive training on the White Rose Calculation Policy and the approach used of concrete to pictorial to abstract (*September 15<sup>th</sup> Staff Meeting*). The Calculation Policy is attached to this document ([addition and subtraction policy](#) & [multiplication and division policy](#))
- The Maths Coordinator will monitor the teaching of White Rose (lesson observations) and the recording of work (book scrutiny) and triangulate this with pupil voice and planning (*through the Autumn term*).

- The Maths Coordinator will share this monitoring with staff (*at the end of November*) and actions will be set moving forward.
- The Maths Coordinator will lead some workshops for parents about White Rose
- The Maths Coordinator will monitor the teaching of White Rose (lesson observations) and the recording of work (book scrutiny) and triangulate this with pupil voice and planning (*through the Spring term*), focusing on specific aspects from the previous monitoring.
- *In the summer term*, staff will self-evaluate the use of White Rose; the Maths Coordinator will analyse data. A staff meeting will be held to put in place steps for progressing with White Rose into the following academic year.

### ***Expectations for implementation of White Rose in St Andrew's***

#### 1. White Rose for the teacher

##### Planning & Teaching

- **Schemes of Learning are the basis for planning and teaching** Mathematics at St Andrew's: [Primary SOL | White Rose Maths | Primary Schemes of Learning](#)
- **The lesson objective is approached through the scheme of learning**, using the fluency, reasoning and problem solving questions as the basis for the teacher then planning the lesson.
  - The planning *may include watching the video in advance*, to ensure the method of calculation is understood (in line with a new calculation policy).
  - The planning *may include adapting the powerpoint* to deliver the lesson
- **The teaching delivered is pre-planned by the teacher** and may include using parts of the video and an [adapted powerpoint](#), if this is considered the best approach for that particular lesson. Equally, the lesson may be taught by the teacher using a flip chart or interactive whiteboard to ensure the objective is delivered.
- **The blocks need to be carefully considered in terms of length of a topic:** longer blocks can mean that concepts are embedded in the long term memory; longer blocks can mean that areas in Maths are not revisited.
- **Opportunities for rehearsal and revisiting topics** need to be planned
  - In KS1:
    - Continuous provision enables other areas of Maths to be accessed alongside the daily Maths lesson
    - Flash backs can be used & revisits at the start of each lesson
    - Story time can incorporate Maths books
    - Incidental learning can be specifically planned for counting and maths learning
    - Doodle Maths is a bespoke programme encouraged for home learning
  - In KS2:
    - Teachers may use a 4-day White Rose scheme and 1 day for arithmetic / calculation reinforcement
    - Where there is shared teaching, one teacher may cover a shape, space and measure block, whilst the other covers a number block
    - Early morning Maths books enable a variety of questions
    - Doodle Maths is a bespoke programme encouraged for home learning

## Recording

In KS2, this should be in books. In KS1, there will be a mixture of worksheets and books.

## Assessment & interventions

- **Assessment for learning** – questioning in class and feedback in books
- **Bronze, Silver and Gold** are part of the planning and language – children will understand this language and teachers will mark indicating Bronze, Silver and Gold.
- **Books reflect the progress and knowledge of the child** - Teachers need to consider how what is recorded shows the ability of the child (not all completing the same worksheet); books should reflect the fun, challenge and pride in presentation for learning Maths.
- **White Rose assessment points** – these can be used to check the progress of the pupils against each area of Maths
- **PUMA assessments** – the new PUMA assessments are in-line with the White Rose Maths, enabling teachers to assess against areas taught each term.
- **Pre-teaching and post-teaching / intervention** - Videos and powerpoints can be very useful for Teaching Assistants to ensure that the calculation policy is followed and to support those TAs who feel less confident in teaching Maths
- **Working walls are actively used to support the learning** in the class

## 2. White Rose for the learner (resources, recording and ownership of learning)

- **Recording work: in KS2, children should be recording in their Maths books; in Year 2, children should be beginning to record in Maths books.**
  - Worksheets can be useful when pictorial representation is needed to save time (e.g. some fraction work, the clock face in time) - where there is a need for ready-made models, images and stem sentences. This is more likely in KS1.
  - Display versions of worksheets are available, so the children can record into their books
  - Powerpoints have questions on the slide which can be used.
- **Manipulatives should be actively used in teaching**, with children knowing where to access manipulatives to support their understanding. White Rose is based on the children having the opportunity to build competency when introduced to a new concept, through use of concrete (concrete objects and manipulatives), pictorial (representations to help reason and solve problems) and abstract.
- St Andrew's children are familiar with bronze, silver and gold. Activities need to ensure that there is **challenge appropriately set for all children**. This could include intelligent practice, where there are 3- 5 questions at a bronze level and then a step of progression to access the questions at silver level and then again to gold level. Reasoning and problem-solving questions are given to all children, to deepen their understanding.

## Impact

Maths is celebrated in St Andrew's: the children are actively engaged, enjoy learning, make independent choices to support their learning and take pride in their work; books show the challenge and progression which is well-tailored to the needs of the learner; working walls and displays reflect the important place of Maths. Data will show improved progress and attainment across both Key Stages.

As a result, Mathematical concepts are securely understood and knowledge is embedded in the learning, leading to progress and attainment in Maths are high across both key stages.