



Intent

At Penryn Primary Academy, we believe everyone can achieve in maths, by following a mastery curriculum. Our vision and aim is to instil a love for maths in children and provide them with an environment where they can achieve their full potential, making cross-curricular and contextual links with maths and the real world. Every child will develop a sound understanding of maths, equipping them with the skills of fluency, reasoning and problem solving that they need in life beyond school. We have a consistent approach to maths, where teachers embed fluency, reasoning and problem solving in to their daily lessons. In lessons, children receive quality input from teachers and then answer small step questions in a paper strip format. Children use manipulatives to support their mathematical understanding and use a variety of different resources.

Every Monday, children receive an arithmetic session, where they can focus on the fundamental elements of maths. The teachers strive to improve the children's confidence and competence with completing arithmetic quickly, increasing rapid recall facts and ensuring the children have a deeper understanding of the mathematical concept by adhering to the three aims. This guarantees that children will be able to progress and transfer their mathematical skills in to their long term memory. At Penryn, we follow the National Curriculum and EYFS development matters and endeavour to fuel our children with a love for maths and support them in their next step in their education.

Mathematics makes a significant contribution to modern society;

- the basic skills of mathematics are vital for the life opportunities of our children;
- mathematics develops the mind and those highly valued cognitive skills.
- To foster positive attitudes, fascination and excitement of discovery through the teaching and learning of mathematical concepts.
- For our children to develop a 'can do' attitude and perceive themselves as mathematicians.
- To broaden children's knowledge and understanding of how mathematics is used in the wider world.
- For our children to use and understand mathematical language and recognise its importance as a language for communication and thinking.

At Penryn Primary Academy we have a mastery approach to mathematics teaching:

- An expectation that all children can succeed in maths
- Giving children a secure and sustainable understanding of mathematical concepts by developing consistent models and images throughout, known as the concrete, pictorial and abstract approach
- Ensuring children are fluent in mathematical procedures and number facts by rehearsing these in systematic ways
- Children who master a concept easily are expected to deepen their understanding, for example by applying it to solve problems embedded in mathematical investigations or more complex contexts
- Children who do not master an objective with the rest of the class should be supported to enable them to gain more experience and achieve mastery, for example through same-day intervention, pre-teach or longer-term help if necessary.

Foundation Stage

In the Foundation Stage (FS), Fluency, Reasoning and Problem Solving is taught through adult led sessions/activities and accessed through our carefully planned continuous provision and daily routines. There are at least three adult lead maths sessions a week where we focus on an aspect from Development Matters. On a Monday, we use Numberblocks to help develop the children's understanding of number. Alongside the episode we use the NCETM support materials which are designed to confidently move the children on from an episode, helping children to bring the numbers and ideas to life in the world around them. One a Tuesday, we then use our number focus from the previous day to complete our subitising board. We embed new learning through an activity and in our continuous provision and daily routines where daily opportunities to informally develop mathematical understanding can be capitalised on. To be consistent with the rest of the school, Reception plan using White Rose Reception Planning as a guide. In our termly topics, maths is also identified.

Planning

The school delivers the requirements of the national curriculum primarily through the White Rose maths scheme. White Rose is a unique maths programme that's carefully crafted to ensure small step progression and help every



child master the maths curriculum ensuring the correct coverage. Staff are expected to follow the White Rose long term plan and use their small step progression objectives. Furthermore, staff skilfully craft maths into cross-curricular lessons, where it is used to enhance their knowledge.

At Penryn, we see the important value in having well-tailored and bespoke slides for our children in every maths session. As these slides are in detail, teachers do not provide written planning and instead, focus on creating well prepared lessons using a variety of resources from NCETM, Nrich, I see reasoning and many more.

Daily structure

Every Monday in both KS1 and KS2, the children take part in an arithmetic session where they are able to go over basic concepts and focus on fluency and enhance their arithmetic skills. In Year 3 and Year 4, children begin by focusing on consolidating their multiplication knowledge and being able to apply them to questions.

At the beginning of every maths session, each child is given five fluent in five questions to complete. These questions will vary in style. As we follow a block curriculum, we find it is paramount to revisit prior learning, to ensure it is embedded. To ensure lesson pace, the children are given a short period of time to complete these questions and then the teacher will choose a question to cover in depth with the class. We encourage a range of responses to be given.

During the main input, teachers will recap and introduce new and useful vocabulary in order to prevent any potential barriers with their learning. This enables the children to broaden their mathematical vocabulary. Teachers will assess the class and pose different fluency, reasoning or problem-solving questions. This may be through hinge questioning or a mastery style question. Children use reasoning stem sentences in order to articulate a well-structured answer.

When children are ready to work independently, they start working out mathematical questions on a 'strip'. As we foster an independence ethos, some children may start on a support strip. All children will answer questions at the appropriate level for their learning. The child's competency will determine how they travel through their mastery journey and what questions they begin on.

Children also have the opportunity to go onto Timestable Rock Stars. This programme uses an algorithm to set times tables at their appropriate level. This sequenced programme allows children to practice their times table and work on their recall speed. As a school, teachers are able to track children and use the data bolt on to assess the children.

Marking

At Penryn, we endeavour to give children immediate verbal feedback on their work and move their learning forward by setting them 'next steps' in the session. If a student gets a question incorrect, then a teacher identifies this with a green dot. If a child needs further support on a concept, then the teachers will write 'NS' and a short comment may be made next to the question. The child will then respond in purple.

See our marking and assessment policy for more information.

Intervention

Specific children are identified through assessment by the teacher to attend pre-teach on a Monday morning. These sessions allow children to have a head start on a mathematical concept and to deepen their knowledge before attending a maths lesson to ensure they are able to work independently. Year groups prioritise groups of children varying from SEN, PP, WTS-EXP and GDS.

During specific afternoons, if children receive a yellow highlighted WALT or need an extra session on a mathematical concept, then they are given an opportunities to address any misconceptions and deepen their understanding with an adult. This ensures children are able to go along the mastery maths journey at a similar pace.

Monitoring procedures

The Heads of School, phase leaders and maths subject leader play a central role in the monitoring and evaluation of the quality of teaching and learning in the school. Monitoring includes: book scrutiny, pupil conferencing, pupil progress meetings, Aspire monitoring visits and Learning walks.

Date reviewed: 07/09/2020

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