

Understanding Maths at Ravens Academy

Background

At Ravens Academy we believe that every child has the right to maximise their full potential in maths. To achieve this we believe that all our pupils should receive a sound conceptual mathematical foundation in the subject, which is delivered to them with enthusiasm, confidence and flair. We want them to come to view the subject in a positive and enjoyable way, while also maximising their attainment. Our belief is that we have a key role in building mathematicians for life.

Previously the introduction of The National Numeracy Strategy, and later the Primary Maths Framework, led to a growth in mental maths skills, but there has been less growth in enhancing mathematical skills and understanding. The program of study that we follow, Maths Enhancement Program (MEP), was designed to address this issue. MEP was compiled after researchers visited the countries around the world that consistently score well in International Maths comparisons, to observe how maths is taught there. From those studies they identified best practices and used these to formulate the MEP program of study. Additionally MEP also supports the aims of the new curriculum (beginning in September 2014) for Numeracy.

MEP aims

What the scheme encourages through its approach to maths teaching and learning is

- Putting the interaction between teacher and pupils as the main focus for learning
- Encouraging correct, precise, orderly spoken and written maths
- A bigger emphasis on whole class interactive teaching with a different approach to differentiation through providing extra activities
- Excellent mental maths skills

Like other schemes it also comes with lesson plans, copy master slides and work sheets, but there is a huge difference in the approach then to how these are used.

Key features of MEP

- There is a Spiral Curriculum approach with continual revision, learning by heart, and progression in small logical steps. Consolidated learning, with a deeper conceptual understanding before moving on, is at the absolute heart of the MEP program-this is often done using small numbers to develop understanding of ideas rather than the usual approach of simply making numerical values bigger and bigger

- The teaching is fast paced and varied. The activities relate to the concept being taught with time limits being set. Within this, time is allowed for explanation and whole class discussion
- Whole class interactive teaching predominates with planned episodes of paired and individual work. All pupils have a task to do and the opportunity to demonstrate, answer, explain, suggest, criticise. Etc
- There is a friendly atmosphere in which children have fun and support each other. Mistakes are used as teaching points. Pupils are encouraged to share their own good work.
- Visual and kinaesthetic approaches are used enormously, especially in the early years
- Reviewing and marking is interactive with the pupils expected to provide the solutions and agree/disagree upon their validity and also to suggest alternative solutions and methods. The Teacher provides hints only if the whole class are stuck. The pupils also cross out any wrong answer and write the correct one in using green pencil.
- There is always an extra challenge or extension activity for the more able pupils ensuring that no one should be inactive.
- Modelling is used constantly through demonstrating new methods or concepts or adding clarity to a pupil's work.

Advantages of MEP

To achieve good maths teaching and learning you need a culture of discussion, questioning and challenge. MEP provides all three of these. Where it has been adopted schools have seen achievement levels rise, often dramatically. Pupils are also more able to show that they can transfer their knowledge and understanding more readily to new situations.

We firmly believe that while it would have been easy to buy a scheme "off the shelf" this would probably not provide the best outcomes for our children. We want to develop mathematical thinkers, believing that this will make their learning much more sustainable and we feel that MEP is currently the best route available towards achieving this.

Conclusion

We are already seeing many pupils making rapid progress in a subject that they are beginning to have a much better understanding of. Increasingly, as the children go through the full program, we expect our levels of maths achievement to grow to a point where they will be consistently excellent, because our children will have an enhanced understanding of maths.

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