



Eden Park Academy
Every Pupil Achieves

Numeracy Curriculum Policy

The General Function of Eden Park Academy

Eden Park Academy provides education for learners with a range of complex needs, extensive gaps in earlier education and behavioural issues. These learners require more time to learn, and whilst we must accept that the goals of education should be the same for all learners; we must also ensure that the curriculum is differentiated and relevant to the individual needs of each learner.

Although the learners in our care are said to have complex needs (e.g. emotional, behavioural, social and any diagnosed medical conditions) and come from variety of backgrounds. The school has high expectations for all and ensure each pupil makes significant progress whilst on role with us.

Definition

Numeracy is a life skill. It is a proficiency that is developed not just in Mathematics but also across the whole curriculum. Numeracy involves students having the confidence and competence to use numbers and measures. It requires an understanding of the number system, recalling Mathematical techniques and an ability to solve problems in a variety of contexts. A practical understanding of graphs, charts, tables and diagrams is an important part of numeracy.

We believe that every child can become a numerate adult – with skillful teaching in school and encouragement at home. (Mathematics made to measure, Ofsted 2012)

A numerate student is able to

- Have a sense of the size of a number and where it fits into the number system;
- Recall mathematical facts confidently;
- Calculate accurately and efficiently, both mentally and with pencil and paper, drawing on a range of calculation strategies;
- Use proportional reasoning to simplify and solve problems;
- Use calculators and other ICT resources appropriately and effectively to solve mathematical problems, and select from the display the number of figures appropriate to the context of a calculation;
- Use simple formulae and substitute numbers in them;
- Measure and estimate measurements, choosing suitable units, and reading numbers correctly from a range of meters, dials and scales;
- Calculate simple perimeters, areas and volumes, recognising the degree of accuracy that can be achieved;
- Understand and use measures of time and speed, and rates such as £ per hour or miles per litre;
- Draw plane figures to given specifications and appreciate the concept of scale in geometrical drawings and maps;
- Understand the difference between the mean, median and mode and the purpose for which each is used;



- Collect data, discrete and continuous, and draw, interpret and predict from graphs, Diagrams, charts and tables;
- Have some understanding of the measurement of probability and risk;
- Explain methods and justify reasoning and conclusions, using correct mathematical terms;
- Judge the reasonableness of solutions and check them when necessary;
- Give results to a degree of accuracy appropriate to the context.

Aims

In adopting a whole school Numeracy Policy, Eden Park Academy are committed to developing the numeracy skills of our students, in the belief that it will support their learning, enabling them to access the whole curriculum and, in turn, raise standards for all. This whole school approach will encourage, promote and develop pupil **mathematical fluency, reasoning and problem solving**. It is important to recognise that **all teachers** are teachers of **numeracy**. It is the key for academic success and the long-term sustainable improvement in attainment.

- To adopt a whole-school approach to Numeracy across the curriculum in order to raise standards of attainment for all students.
- To recognise the importance of Numeracy in all subjects across the curriculum.
- To identify similarities and differences in Mathematical teaching in different curriculum areas and develop a common approach.
- To encourage staff to take responsibility for the development of numeracy in each subject area. To raise staff and student awareness of key Numeracy strategies through whole school Inset time.
- To encourage students to transfer Mathematical skills and apply them in everyday and unknown contexts.

Strategies for ensuring progress against these aims

- All subject leads, have a responsibility for identifying aspects of their schemes of work that contribute to raising standards of Numeracy and highlighting these aspects in their planning and making them explicit to students.
- All staff should encourage and promote the use of problem solving.
- Raise the profile of Mathematics throughout the school, promoting the use of numbers and measures whenever possible.
- Students identified as more able will be provided with opportunities to extend and develop their understanding.
- Students will undertake initial assessment to identify baseline Numeracy levels
- These students will then take part in an intervention programme to raise standards.

All Staff

- Adopt a consistent approach to teaching numeracy skills.
- Be familiar with and use strategies to equip students with numeracy skills for life.
- Indicate in schemes of work where numeracy skills are taught.



Teachers of Mathematics

- Encourage the use of mental work in the classroom and frequently ask students to explain their answers. Provide opportunities for students to discuss so enabling them to share and compare ideas.
- Question students on strategies undertaken and promote the use of problem solving.
- Discuss efficiency of calculations encouraging students to develop their own methods.
- Regularly ask students to consider 'rough' answers and invite them to estimate using these to provide a suitable check for their answers.
- Encourage the learning of facts and skills providing students with opportunities to practice times tables.
- Use diagrams and equipment to aid understanding when possible.
- Use Mathematical words often to familiarise students with their meanings and to develop their understanding.
- Support and encourage the use of the Numeracy policy throughout.

Appendix

General guidance

Below are some points to consider when addressing numeracy issues within curriculum areas. Whilst the list is not exhaustive, it is intended to highlight the different methods and approaches that can be used to promote numeracy and thinking skills.

Number and calculations

- Try to use the correct terminology associated with the calculation.
- Students should make estimates for the required answer before attempting to find the accurate answer, particularly for more complex calculations.
- Students should have opportunities to discuss the various methods of tackling problems.
- Students should be encouraged to work mentally when tackling simple calculations. (Give them time to think).
- Students should be encouraged to show their methods in multi-step calculations.
- Students should be encouraged to check if their answer makes sense, particularly where units and decimals are involved.
- Students should be encouraged to think about the accuracy required in all calculations.

Use of calculators

- It should be recognised that there are many calculations where the use of a calculator is the only reasonable way of approaching the problem. However, it should also be recognised that many students reach for a calculator before exploring other methods. Students, therefore, should be encouraged to work as much as is reasonable without a calculator.
- The use of the calculator function on mobile phones is not acceptable.

Measurement

- Estimation should be the first step to all measurement.
- There should be opportunities for students to select the measuring equipment appropriate to the task and learn to make accurate measurement.



- A clear link should be made between notation and measurement.
- Students should be encouraged to question the degree of accuracy required.
- The use of correct units should be emphasised when students record measurements.

Handling Data

- Students should have opportunities to:
 - i. Identify the type of data required;
 - ii. Collect data using frequency tables or questionnaires.
- Teaching should assist students when:
 - i. collating data;
 - ii. selecting and drawing appropriate graphs/diagrams/charts;
 - iii. giving reasons for the selected diagram;
 - iv. evaluating the appropriateness of their chosen diagram.
- Data/techniques used should be evaluated as to whether they have met the objectives for the task.

Conclusion

The role of the Mathematics Department is to ensure that the explicit teaching of basic numeracy and mental arithmetic skills, including those of number, calculations, measures and handling data are securely embedded in the Key stage 3 and 4 schemes of work. These skills are consolidated at whole class and individual student level by having the opportunity to apply these skills when solving real-life problems.

Each member of staff is responsible for promoting numeracy skills when they arise naturally within their subject. A whole-school commitment to numeracy will enhance the teaching and learning process in all curriculum areas.