



Jockey Club Sarah Roe School
賽馬會善樂學校

Policy on Mathematics

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Policy on Mathematics

Mathematics learning helps students how to make sense of the world around them through developing a student's ability to calculate, to reason and to solve problems.

Rationale

Numeracy is a proficiency which involves confidence and competence with numbers and measures. It requires an understanding of the number system, a repertoire of computational skills and an inclination and ability to solve number problems in a variety of contexts. Numeracy also demands practical understanding of the ways in which information is gathered by counting and measuring, and is presented in graphs, diagrams, charts and tables(*National Numeracy Strategy 1999*).

Aims

In our school students at all levels are given opportunities throughout their study of Mathematics to develop and apply their knowledge and skills in the following areas:- Number and the Number system, Shape, Space & Measures, Using and Applying and Data Handling. The aims of the Mathematics Learning are to:-

- encourage students to contribute their own ideas to mathematical discussions.
- acquire and develop mathematical skills and knowledge in a way, which encourages confidence, independence, satisfaction and enjoyment of the subject.
- promote confidence and competence with numbers and the number system;
- develop the ability to solve problems through decision-making and reasoning in a range of contexts;
- develop a practical understanding of the ways in which information is gathered and presented;
- develop an ability and confidence to comprehend basic mathematical concepts and apply mathematics in practical everyday situations.
- explore features of shape and space, and develop measuring skills in a range of contexts;
- give students confidence in using mechanical and technological tools efficiently.
- provide stimulating and appropriate mathematical activities for all pupils chosen from a broad and balanced curriculum.

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Objectives

In line with the aims of the Mathematics Learning to be achieved, the objectives of the teaching and learning of Mathematics in the school will be achieved as below:

- Provide practical training and support which gives all staff the skills to teach mathematics effectively and appropriately across the school. This may involve teaching students who have a variety of special needs such as, physical, sensory, behavioral or emotional difficulties.
- Match materials and context to the student's ability, interests and experiences.
- Provide a broad range of mathematical experiences.
- Encourage students to apply mathematical knowledge to investigative work, and help solve everyday problems.
- Encourage students to use and apply mathematical knowledge and skills across the curriculum. The teachers need to identify these possibilities at the planning stage.
- Provide opportunities for the students to collaborate in mathematical activities.
- Give students opportunities to develop skills in handling information technology in support of mathematical materials.

Teaching and Planning Arrangement

- The staff uses a variety of teaching strategies and learning styles in mathematics lessons.
- To develop students' knowledge, skills and understanding in mathematics through a daily lesson on group and individual bases.
- All students are entitled to a spiral broad and balanced mathematics curriculum and therefore our children will access mathematics at either the 'P' or National curriculum Levels.
- Students have the opportunity to use a wide range of resources to support their work. Students with physical or sensory disabilities may need materials, equipment and furniture adapted. Specialized technological aids may also be required.
- Primary students are in mixed age classes which are grouped by general ability.
- Secondary students are taught in classes which are grouped by age.

- In all classes they may have students of differing mathematical ability. Students are provided with appropriate learning opportunities by matching the challenge of the task to the ability of the students. A range of strategies are used in some lessons through differentiated group work and in other lessons by organizing the students to work on individual basis.
- Students use ICT in Mathematics lessons where it will enhance their learning, as in modeling ideas and methods.
- Mathematics will be delivered in the style of “stand alone” in the PYP framework. However, teachers will try to incorporate Mathematical key targets into each PYP units of inquiry where appropriate.
- In each class there will be a teacher, education assistants and possibly one or more parent funded education assistants. The teacher will be responsible for providing the work for the class while the classroom assistant and learning support workers will work with individuals and groups as organized by the teacher.
- Teacher will develop the expected Mathematical targets to be achieved and included in the IPPs for each term.
- Mathematics lessons are taught with differentiated activities and learning outcomes.

Teacher Planning

Mathematics is a core subject in JCSRS and is implemented as both a stand alone subject and an inquiry based subject through our PYP curriculum. Through the use of B2, teachers set targets for numeracy. Teachers use the UK National Curriculum, the National Numeracy Strategy as reference for teaching content and teaching activities.

All teachers will decide medium-term plans which are based on levels and key stages.

Teachers will then use these to complete their weekly plans.

Long Term Plan

- The Key Stage 1 to 3 teachers will use the UK National Curriculum/ B 2 as reference to fit into the PYP curriculum framework.
- The Key Stage 4 and post sixteen students will follow the ASDAN Programme.
- Over the school year, each class will be introduced to work on the four different strands of mathematics. These are:

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- Number and the Number System
 - Shape, Space and Measures
 - Using and Applying
 - Handling Data
- Class teachers will follow the Long Term Plan (Whole School Mathematics Curriculum Overview) as to when the different strands are to be introduced. This will ensure that equipment/resources are readily available.

Medium Term Plans

Teachers will follow the Long Term Plan and develop appropriate targets for each term. The individual numeracy targets will be included in the IPPs if they are important for the particular student. Related key targets will also be incorporated into PYP units of inquiry and reflected in the unit planners.

Short Term Plans

A short term planner (weekly plan) will be completed by each class teacher, which should outline the objectives and activities being covered each week. These planners are to be handed into the Vice Principal at the beginning of each week.

Resources

- There is a range of resources to support the teaching of mathematics across the school.
- The teaching resources will be kept in the Learning Resource Centre where the equipment is arranged according to key numeracy strands.
- The resources included a range of educational toys, audio visual aids, books, references, a range of software and a variety of photocopiable resources.
- The resources will be kept up to date and in good condition. There will be an annual audit of resources and make available to staff.
- An annually updated list of mathematical resources will be available.

Monitoring and Review

Role of the Vice Principal

- The Vice Principal will be responsible for maintaining an overview of the whole curriculum.
- The Vice Principal will monitor the IPPs and also observe in the classroom, the curriculum presentation and content.

Role of the Mathematics coordinator

- The coordinator will monitor and evaluate curriculum policy implementation.
- The coordinator will be responsible for monitoring the coverage and achievement levels within the established framework.
- The coordinator will attend relevant training, provide training to support colleagues in the teaching of mathematics, be informed about current developments in the subject, and provide a strategic lead and direction for the subject in the school.
- The coordinator will be responsible for the Mathematics resources in school and keep an up to date inventory.

Role of the teacher

- The class teacher will be responsible for teaching Mathematics according to the Schemes of work, monitor the standards of students' work, evaluate their learning outcome and have high expectations of individual student.

Assessment and Recording

Effective assessment within the Mathematics curriculum will facilitate individual progress and attainment. It will also facilitate curriculum continuity and meet the needs of accountability.

The following issues are to be addressed when we consider assessment:-

- The unusual or unexpected response should be allowed for.
- The whole assessment should take account of process as well as product and context.
- Creating artificial conditions for assessment should be avoided.
- A variety of approaches and conditions should be used.
- Different members of staff should have the opportunity to contribute to assessment.
- Teachers should maximize feedback to the students through discussion.
- All assessments should be carried out with the utmost sensitivity.

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The procedure for assessment, recording and reporting will be in line with the school practice for the whole curriculum. Assessment will be formative and summative. Formative assessment will help to establish clear attainable targets and summative assessment will provide overall evidence of the achievement of students, what they know, understand, can do and have experienced. Current Mathematics assessments are obtained through in-class observation, base-line assessment, and the use of B2.

Cross Curricular Links

Students will be given many opportunities to apply their numeracy skills across the curriculum. The range of skills will encompass problem solving skills, from an awareness of cause and effect, through decision making, to investigative activities in which students learn from their experiences collaboratively.

Health and Safety

It is the responsibility of all staff and where possible students, to be aware of possible Health and Safety issues in relation to this curriculum area. This needs to be considered in relation to various environments and types of equipment and therefore eliminate foreseeable safety problems. It is fundamental to this subject that students will also develop positive attitudes to the safety of themselves, others, tools and equipment and an ethos is created where respect for our environment is developed. Any specific issues relating to health and safety which need immediate attention should be brought to the Vice Principal's notice.

Criteria for evaluating the success of the Policy

This policy will be reviewed every three years by the Coordinator after discussion with the teachers and School Council representative.