SPALDING HIGH SCHOOL

MATHEMATICS ACROSS THE CURRICULUM POLICY

HEADMISTRESS:	**Mrs M K ANDERSON**
MATHEMATICS HEAD OF DEPT:	**Ms S CHALCRAFT**
LINK GOVERNOR:	**Mrs C CUNNINGTON.**
DATE AGREED:	**MARCH 2018**
REVIEW FREQUENCY:	**BI-ANNUAL**

Executive Summary:

The development of mathematical skills across the curriculum is essential to equip our students with the necessary transferable skills in order to facilitate learning in other subjects and therefore regarded as the responsibility of all teachers. Mathematics is much more than just knowing about numbers and number operations. It requires practical understanding and encourages the inclination to problem solve. Mathematics develops and enhances an analytical approach in dealing with, managing and responding to the mathematical demands of life.

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Chair of Governors **Date**

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Headmistress **Date**

SECTION 1: Key Principles at SHS:

1.1 Mathematics should be promoted as:

- functional
- about identifying and addressing 'missed opportunities'
- about using **correct** rather than **consistent** methods

1.2 An effectively implemented Mathematics across the Curriculum Policy will:

- ensure that students receive positive messages about mathematics when used across the curriculum
- develop, maintain and improve standards of mathematics across the school
- ensure usage of correct methods, vocabulary and notation
- indicate areas for collaboration between subjects and facilitate that collaboration
- assist the transfer of students' knowledge, skills and understanding between subjects
- provide a basis against which progress can be judged

SECTION 2: Assessment:

2.1 Where appropriate, departments will comment on mathematical skills demonstrated by students as part of on-going formative and summative assessment. Relevant success criteria will be made explicit to students.

2.2 Where appropriate, departments will take students' mathematical skills into account when giving feedback to parents.

2.3 Where appropriate, assessment of students' mathematical skills will be part of future planning

SECTION 3: Responsibilities:

3.1 The School will:

- promote mathematics across the curriculum and ensure it has a high profile
- support a mathematics across the curriculum coordinator
- liaise with the above when monitoring impact

3.2 The mathematics across the curriculum coordinator and Head of Department, will:

- monitor provision, determine priorities and plan strategy
- ensure effective development of whole school policy and practice
- establish communication and liaison between curriculum areas and opportunities to develop and share good practice
- monitor and evaluate the effectiveness of mathematical work across the school
- facilitate CPD in liaison with Assistant Head with CPD responsibility

3.3 Departments and teachers across subject areas will:

- ensure they are familiar with correct mathematical language, notation, conventions and techniques, relating to their own subject, and encourage students to use these correctly
- be aware of appropriate expectations of students and difficulties that might be experienced with mathematical skills
- provide information for mathematics teachers on the stage at which specific mathematical skills will be required for particular groups
- provide resources for mathematics teachers to enable them to use examples of applications of mathematics relating to other subjects in mathematics lessons

3.4 Teachers of mathematics will:

- be aware of the mathematical techniques used in other subjects and provide assistance and advice to other departments, so that a correct but not necessarily consistent approach is used in all subjects
- provide information to other subject teachers on appropriate expectations of students and difficulties likely to be experienced in various age and ability groups *[See appendix 1]*
- through liaison with other teachers, attempt to ensure that students have appropriate mathematical skills by the time they are needed for work in other subject areas.

- take opportunity to encourage the use of the real-world applications of mathematics, to motivate pupils in the study of mathematics beyond the curriculum and to inspire and enthuse pupils to study beyond 6th form
- seek opportunities to use topics and examination questions from other subjects in mathematics lessons.

3.5 Parents will:

- encourage their children to use the range of strategies they have learned

3.6 Students will:

- take increasing responsibility for recognising their own strengths and areas for development and identify the next steps for improvement

Section 4: The Use of Calculators and ICT:

4.1 Students should have the required skills to use the basic facilities of a calculator effectively, for example, the order in which keys are used the use of the constant and memory facilities etc.

4.2 Students should preferably become familiar with their own calculator, for example, how it handles the input of multi-step calculations.

4.3 The school expects each pupil to bring and use their own scientific calculator.

4.4 Students should be encouraged to estimate the approximate answer first and then use the calculator to check the reasonableness of their answer.

4.5 Students need to interpret calculator answers sensibly.

4.6 Calculators may be used when working with real data, possibly involving very large, small or decimal numbers, which might otherwise restrict their progress in a lesson.

4.7 In all areas of the curriculum the use of calculators can be encouraged where they enhance the learning taking place, however, it is important that students do not develop a reliance on the use of a calculator to solve problems where mental and/or written methods can be used.

4.8 The use of graphing and geometrical software will be used to enhance understanding of proof, to enhance reasoning and for modelling mathematically when and where appropriate.

4.9 This general rule should be followed: BRAIN, PEN, CALCULATOR

Section 5: The Key Stage 3 Curriculum:

5.1 Across the Key Stage 3 curriculum students should have the opportunity to:

- build a sense of the size of number and where it fits into the number system
- recall mathematical facts
- 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 efficiently 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 into 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