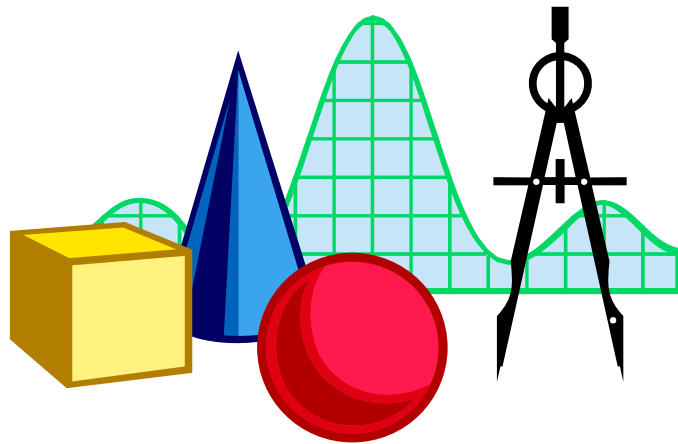


ST STEPHEN'S SCHOOL
CARRAMAR

FOUNDATIONS OF MATHEMATICS
2006



COURSE OUTLINE

Course Outline – Foundations of Mathematics SEMESTER ONE 2006 St Stephen’s School Carramar

Topic	Syllabus Objectives	Weeks	Assessment Items
Use of Formulae Chapter 1	3.12	Term 1 Week 1, 2 (1 ½ weeks)	
Using Algebra to Solve Problems Chapter 2	1.1 – 1.4, 3.12	Week 3, 4 (2 weeks)	Test 1 Wk 5 (5%) ML Chapters 1 & 2
Data Analysis I Chapter 3	4.1, 4.5 – 4.8	Week 5, 6, 7 (3 weeks)	EPW 1 Wk 7 (7%) CR
Right Angled Triangles Chapter 4	2.2, 2.4, 2.11	Week 8, 9, 10 (3 weeks)	Test 2 Wk 10 (6%) GP Chapters 3 & 4
Linear Relationships Chapter 5	1.1, 2.5 – 2.11, 3.1, 3.2, 3.10, 3.12	Term 2 Week 1 – 5 (4 ½ weeks) <i>Staff retreat – Week 5</i>	EPW 2 Term 2 Wk 3 (7%) ML Assignment 1 Wk 4 (2%) ML
Revision		Week 6	Test 3 Wk 6 (6%) CR
Revision and Exams		Week 7, 8 (1 ½ weeks)	Semester 1 Exam (15%) CR ML GP
Data Analysis II Chapter 6	4.1, 4.3, 4.4	Week 9, 10	

Course Outline – Foundations of Mathematics SEMESTER TWO 2006 St Stephen’s School Carramar

Topic	Objectives	Weeks	Assessment Items
Data Analysis II cont. Chapter 6	4.1, 4.3, 4.4	Term 3 Week 1	Test 4 Wk 2 (6%) ML
Quadratics Chapter 7	3.1 - 3.4, 3.6 – 3.8, 3.11, 3.12	Week 2 – 5 (4 weeks)	EPW 3 Wk 6 (7%) GP
Triangles that are not right angles Chapter 8	2.1 – 2.3, 2.11	Week 6, 7, 8 (3 weeks)	Test 5 Wk 8 (6%) CR
Data Analysis III Chapter 9	4.1, 4.2	Week 9, 10 (2 weeks)	
Other Relationships Chapter 10	3.1 – 3.3, 3.5 – 3.7, 3.0 – 3.12	Term 4 Week 2, 3, 4 (3 weeks) <i>Year 11 retreat – Week 1</i>	Test 6 Wk 3 (6%) GP Assignment 2 Wk 4 (2%) ML
Revision		Week 5 (½ week)	
Exams		Week 5, 6 (1½ weeks)	Semester 2 Exam (25%) CR ML GP

Term 1

Use of Formulae**Ch 1**

- 3.12 Solving Equations of the form
 $f(x) = c$ and
 $f(x) = g(x)$ using algebraic methods.

Using Algebra to Solve Problems**Ch 2**

- 1.1 Explore patterns and derive simple formulas
- 1.2 Test conjectures empirically and understand the role of counter examples
- 1.3 Carry out trial and error methods in a systematic way
- 1.4 Present results in an orderly and appropriate way
- 3.12 Solving Equations of the form
 $f(x) = c$
 $f(x) = g(x)$
 $y = f(x)$ and $y = g(x)$

Data Analysis I**Ch 3**

- 4.1 Draw and interpret tables and graphs of univariate data considering relative frequencies
- 4.5 Use techniques of sampling, including simple random sampling and stratified random sampling.
- 4.6 Collect bivariate data, organize it into tables and scatter graphs, and draw lines of best fit by sight
- 4.7 Make inferences from tables, scatter graphs and lines of best fit.
- 4.8 Interpret two-way tables.

Right Angled Triangles**Ch 4**

- 2.2 Solve triangles in two and three-dimensional contexts
- 2.4 Determine arc length on a circle and find distances along circles of constant latitude or constant longitude on the surface of the earth.
- 2.11 Solve problems which involve aspects of measurement and relate simple dimension analysis to formulas and units

Linear Relationships

Ch 5

- 1.1 Explore patterns and derive simple formulas.
- 2.5 Determine the distance between points in the plane.
- 2.6 Determine the midpoint of a line segment in the plane
- 2.7 Determine the gradient of a line in the plane
- 2.8 Determine conditions for parallelism or perpendicularity of pairs of lines in the plane.
- 2.9 Determine the equation of a line in the plane given one point and the gradient, or two points.
- 2.10 Apply methods and results from objectives 2.5 to 2.9 above to solve problems.
- 2.11 Solve problems which involve aspects of measurement and relate simple dimension analysis for formulas and units.
- 3.1 Model a situation by means of a Cartesian graph.
- 3.2 Describe situations displayed on a graph.
- 3.10 Determine the domain and range of a function from its graph.
- 3.12 Solve equations of the form $y = f(x)$ and $y = g(x)$ using algebraic, graphical and simple systematic numerical methods as appropriate.

Data Analysis II

Ch 6

- 4.1 Draw and interpret tables and graphs of univariate data considering relative frequencies, cumulative frequencies and percentage cumulative frequencies, using appropriate class intervals where required
- 4.3 Determine and use measures of central tendency (mean, mode, median) for ungrouped data, and examine the effect of changes of origin and scale on each.
- 4.4 Determine and use measures of dispersion (range, mean deviation, standard deviation, variance) Weighted means.

Quadratics

Ch 7

- 3.1 Model a situation by means of a Cartesian graph.
- 3.2 Describe situations displayed on a graph.
- 3.3 Sketch graphs of standard functions defined by power $y = x^n$, $x = 2$
- 3.4 Investigate the effects of varying a , b , c and d on the graph of: $y = aF[b(x - c) + d]$ where F is a standard function.
- 3.6 Identify quadratic functions from graphs.
- 3.7 Determine the defining rule of a function from its graph.
- 3.8 Determine the line of symmetry and turning point of a quadratic function.
- 3.11 Solve applied problems involving functions and graphs.
- 3.12 Solve equations of the form $f(x) = g(x)$ and $y = f(x)$ and $y = g(x)$

Triangles that are not right angles

Ch 8

- 2.1 Use the sine and cosine rules
- 2.2 Solve triangles in two and three-dimensional contexts
- 2.3 Establish and use the formula for the area of a triangle.
- 2.11 Solve problems which involve aspects of measurement and relate simple dimension analysis to formulas and units

Data Analysis III

Ch 9

- 4.1 Draw and interpret tables and graphs of univariate data considering relative frequencies, cumulative frequencies and percentage cumulative frequencies, using appropriate class intervals where required.
- 4.2 Determine and interpret measures of location (median, quartiles, deciles, percentiles) from a percentage cumulative frequency polygon.
Box and whisker plots

Other Relationships

Ch 10

- 3.1 Model a situation by means of a Cartesian graph.
- 3.2 Describe situations displayed on a graph
- 3.3 Sketch graphs of standard functions defined by:
 - power - $y = x^n$
 - reciprocal - $y = \frac{1}{x}$
 - trigonometric - $y = \sin x^\circ, y = \cos x^\circ, y = \tan x^\circ$
 - exponential - $y = a^x$, where a is a positive integer
- 3.5 Sketch piecewise defined functions.
- 3.6 Identify linear, quadratic, reciprocal, trigonometric and exponential functions from their graphs.
- 3.7 Determine the defining rule of a function from its graph.
- 3.9 Determine the amplitude and period of a trigonometric function from its equation or graph.
- 3.10 Determine the domain and range of a function from its graph.
- 3.11 Solve applied problems involving functions and graphs.
- 3.12 Solving Equations of the form
 - $f(x) = c$
 - $f(x) = g(x)$
 - $y = f(x)$ and $y = g(x)$

2006 ASSESSMENT POLICY FOUNDATIONS OF MATHEMATICS

Assessment Weighting's

EPW's (x3)	21%
Tests (x6)	35%
Exams (x2)	40%
Assignments (x2)	4%

At the end of Year 11, each student will receive a mark out of 100 and a grade (A, B, C, D or E) based on the following:

1. The use of grade related descriptors for each level of achievement.
2. The final year score accumulated during the year.
3. Examination of student files by St Stephen's School staff or Curriculum Council moderators as may be necessary.

Every mathematics student is required to keep a "Student Assessment File" that must contain all assignment/project work, tests, extended pieces of work and Semester Exams.

That is, the file must contain every piece of work by the student that contributes towards the final mark.

Failure on part of a student to provide any given piece of assessment from the "Student Assessment File" may result in awarding a grade upon insufficient evidence.

St Stephen's School Assessment Policy

Refer to the Secondary School Assessment Policy contained within the Student Work Record.

A Progressive Record of Assessments is contained at the rear of the Student Work Record. Students are encouraged to use this to help monitor their academic progress across all their subjects.

D501 FOUNDATIONS OF MATHEMATICS (YEAR 11) – 2006

Rationale

Foundations of Mathematics and other subjects that lead to Year 12 TES subjects in Mathematics must fulfil a variety of needs. They should be both a satisfying continuation of the work of earlier years and an adequate preparation for tertiary studies. To do this these subjects must present mathematics as an organised body of useful knowledge and provide students with the skills and confidence necessary to apply this knowledge in practical situations.

These demands are met by offering a range of topics in modern mathematics. The topics have the potential for useful application and are within the capabilities of the more mathematically able students of this age group. Students graduating from secondary school with a knowledge of these areas will appreciate the power of mathematics to provide a systematic way of understanding and interpreting the world around them.

However, this subject does not include calculus, nor does it provide the probabilistic foundation for future studies of statistical inference. Foundations of Mathematics is intended, therefore, for students who wish to study mathematics in their final years at school and who may be preparing for entry to tertiary courses which do not have a strong mathematical requirement.

General Aims

Foundations of Mathematics aims to equip students with some useful applied mathematical tools and to foster an ability to solve problems and carry out mathematical investigations. These skills should prove to be highly useful to students after they leave school.

Educational Objectives

This subject seeks to present mathematics as an organised body of knowledge that will provide students with a sound basis for later work in mathematics and other subjects. In addition, the subject attempts to develop the following skills and attitudes.

Cognitive Objectives

Students will be expected to:

- recall mathematical facts and traditional terminology
- acquire mathematical concepts
- understand mathematical relationships
- acquire manipulative and computational skills
- use mathematical facts, traditional terminology, concepts, relationships and skills in routine ways
- comprehend information in oral and written forms, including graphical, diagrammatic and tabular presentations
- select and use appropriate forms for representing mathematical data and relationships
- recognise and extend patterns and make conjectures, predictions and inferences from information given in oral and written forms
- understand and use deductive reasoning
- apply suitable mathematical techniques and problem-solving strategies to both routine and non-routine situations
- select and use different technologies appropriately
- communicate mathematical ideas and results in both oral and written forms
- compare results with expectations and verify the suitability and reasonableness of a result.

Affective Objectives

It is highly desirable that students:

- develop an interest in mathematics and acquire a positive attitude towards its use and power
- show a willingness to participate and persevere in the learning of mathematics
- develop confidence in their ability to use mathematics effectively
- appreciate the benefits of using technology in mathematics
- display responsibility for their organisation, presentation and learning of mathematics
- interact in a constructive and cooperative manner with peers and teachers and respond constructively to advice.

Recommended Preparation

A desirable preparation for this subject is a sound background in algebra and trigonometry.

Successful completion of Foundations of Mathematics provides suitable preparation for the Year 11 subjects Introductory Calculus or Geometry and Trigonometry, and for the Year 12 subject Discrete Mathematics.

Students will not normally study any other mathematics subject concurrently with Foundations of Mathematics.

A set of *Counselling Notes* outlining the subject options

in the mathematics area for Year 11 and Year 12 students may be obtained from the Curriculum Council.

Teaching – Learning Program

The topics, or objectives within topics, can be taught in any order in keeping with the needs of teachers and students.

Foundations of Mathematics has sections entitled Projects, Problem-solving and Investigations, Space and Measurement (including trigonometry and analytical geometry), Function (including graphs and equations) and Data Analysis.

There is also an emphasis on problem-solving and mathematical investigations which do not necessarily relate to the content areas listed in this syllabus. In this way students can concentrate on the processes of mathematics using content with which they are already familiar.

1. Projects, Problem-solving and Investigations (20 hours)

There is an emphasis on an investigative and problem-solving approach throughout this subject. However, it is appropriate to provide opportunities for further problem solving and mathematical investigation where the students can concentrate on the processes of mathematics using content with which they are already confident and competent.

- 1.1 Explore patterns and derive simple formulas.
- 1.2 Test conjectures empirically and understand the role of counter examples.
- 1.3 Carry out trial and error methods in a systematic way.
- 1.4 Present results in an orderly and appropriate way.

Notes:

- This work is intended to provide students with experience in using their mathematical knowledge in creative ways to solve non-routine problems, as well as an opportunity to develop mathematical skills and concepts.
- Problem solving involves the non-routine use of mathematical algorithms and strategies to solve unfamiliar problems. Problems may be stated:
 - in mathematical terms, and require the creative use of mathematical knowledge and skills in their investigation and solution, or
 - in terms which require the setting up of a mathematical model, which then requires description and analysis.
- Projects and investigations provide opportunities for students to develop and use their mathematical knowledge to carry out extended and independent investigations of problems, situations or issues.
- In reporting upon particular tasks, students may be expected to include some or all of:
 - any assumptions made or extra conditions imposed to simplify the problem

- analysis of any relevant data obtained
- calculations, mathematical explanations, or other evidence to support hypotheses, and
- worked examples to illustrate general cases.

2. Space and Measurement (25 hours)

The geometrical approach to problem solving exploits the strong visual appeal of diagrams. The aim of this section is to foster a ‘feel’ for geometric descriptions and methods, and to be able to use them to model and thus comprehend real-life situations. The topics used to achieve this include trigonometry and analytical geometry.

Trigonometry

This topic is an extension of the Measurement strand in the lower secondary school. The emphasis is on providing geometric descriptions of real situations such as navigation and construction. Applications in both two and three dimensions are included. Simple three-dimensional problems are included because of their relevance and the increased emphasis given to three-dimensional drawing skills in the lower school Space strand.

Analytical Geometry

Analytical Geometry combines the manipulative power of algebra with the visual appeal of geometry. On the one hand algebraic relationships can be shown on a diagram, giving them an immediate visual impact. On the other, if a practical problem can be formulated in geometric terms, it may be possible to solve it algebraically or numerically.

- 2.1 Use the sine and cosine rules.
- 2.2 Solve triangles in two- and three-dimensional contexts.
- 2.3 Establish and use the formula for the area of a triangle:
$$\text{Area} = \frac{ab \sin C}{2}$$
- 2.4 Determine arc length on a circle and find distances along circles of constant latitude or constant longitude on the surface of the earth.
- 2.5 Determine the distance between points in the plane.
- 2.6 Determine the midpoint of a line segment in the plane.
- 2.7 Determine the gradient (slope) of a line in the plane.
- 2.8 Determine conditions for parallelism or perpendicularity of pairs of lines in the plane.
- 2.9 Determine the equation of a line in the plane given one point and the gradient, or two points.
- 2.10 Apply methods and results from objectives 2.5 to 2.9 above to solve problems in a context.
- 2.11 Solve problems which involve aspects of measurement and relate simple dimension analysis to formulas and units.

Notes:

- Radian measure is not required.
- Examples of suitable problems for objective 2.10 might involve distance-time graphs, velocity and distance travelled, linear variation and conversion equations.
- Simple dimension analysis referred to in objective 2.11 might include discussion of why any expression containing the product of exactly two factors which are measures of length must be a formula for an area.

3. Function (40 hours)**Graphs**

Graphical representation of mathematical relationships is a major field of application of mathematics. The graph of a function displays its principal features clearly and economically. This section concentrates on the simplest and most useful functional relationships.

The transformational approach to the graphing of functions is emphasised. For example there is only one parabola, apart from scale changes, translations and rotations. Similarly, the graphs of functions that are inverse to each other are reflections in the diagonal $y = x$. This approach is valuable for understanding functional relationships.

Equations

Many applications of mathematics lead to equations which need to be solved. For this reason the ability to solve equations is an important mathematical skill. Students will be encouraged to choose appropriately from the available algebraic, graphical and numerical methods.

- 3.1 Model a situation by means of a Cartesian graph.
 3.2 Describe situations displayed on a graph.
 3.3 Sketch graphs of standard functions defined by:

power –

$$y = x^n, \quad n = 1, 2, 3 \text{ and } \frac{1}{2}$$

reciprocal –

$$y = \frac{1}{x}$$

trigonometric –

$$y = \sin x^\circ$$

$$y = \cos x^\circ$$

$$y = \tan x^\circ$$

exponential –

$$y = a^x \quad \text{where } a \text{ is a positive integer.}$$

- 3.4 Investigate the effects of varying a , b , c and d on the graph of: $y = aF[b(x-c)+d]$ where F is a standard function.
 3.5 Sketch piecewise defined functions.
 3.6 Identify linear, quadratic, reciprocal, trigonometric and exponential functions from their graphs.

- 3.7 Determine the defining rule of a function from its graph.
 3.8 Determine the line of symmetry and turning point of a quadratic function.
 3.9 Determine the amplitude and period of a trigonometric function from its equation or graph.
 3.10 Determine the domain and range of a function from its graph.
 3.11 Solve applied problems involving functions and graphs.
 3.12 Solve equations of the form:

$$f(x) = c$$

$$f(x) = g(x)$$

$$y = f(x) \text{ and } y = g(x)$$

using algebraic, graphical and simple systematic numerical methods as appropriate.

The functions of f and g are restricted to those given in 3.3.

Notes:

- Examples of suitable situations for objectives 3.1 and 3.2 include:
 - the volume of a cylinder of constant height as the radius changes
 - the speed of a car as it travels around a racing circuit
 - the height of water in a conical flask which is under a dripping tap.
- The transformations investigated in objective 3.4 are translations and scale changes in both the horizontal and vertical directions. No more than two of these are to be included in any one example. Furthermore, horizontal shifts are to be restricted to the quadratic function. For other functions $c = 0$, and in particular, phase shifts in trigonometric functions need not be considered.
- Examples of transformations required in objective 3.4 are:

$$y = x^2 \text{ to } y = x^2 + 1 \text{ or } y = (x-2)^2$$

$$\text{or } y = (x-2)^2 + 1$$

$$y = \frac{1}{x} \text{ to } y = \frac{1}{x} + 2 \text{ or } y = \frac{3}{x}$$

- Travel graphs and step functions such as those describing costing by weight or payment by the hour may be considered as examples of piecewise defined functions in objective 3.5.
- Factors such as slope, intercepts on axes, position and orientation should be considered in objective 3.7.
- For objective 3.11 problems involving distance-time graphs, velocity-time graphs and distance travelled, linear variation and conversion equations may be considered.

4. Data Analysis (25 hours)

Statistics is concerned with the collection, presentation, analysis and interpretation of numerical data. An understanding of statistics is an important asset for all students for the following reasons:

- Statistical methods are needed to solve policy questions in various areas such as business, industry and government, and hence play a major role in the efficient running of a modern society.
- Statistics presented in the media need to be examined critically.

This topic is an extension of the statistical ideas introduced and developed in earlier stages. The emphasis is to be on the interpretation of results which are meaningful to students.

Sources of data should be as wide as possible, including sport, medicine, physical science, biological science and social science.

- 4.1 Draw and interpret tables and graphs of univariate data considering relative frequencies, cumulative frequencies and percentage cumulative frequencies, using appropriate class intervals where required.
- 4.2 Determine and interpret measures of location (median, quartiles, deciles, percentiles) from a percentage cumulative frequency polygon.
- 4.3 Determine and use measures of central tendency (mode, median, mean) for ungrouped data, and examine the effect of changes of origin and scale on each.
- 4.4 Determine and use measures of dispersion (range, interquartile range, variance, standard deviation) for ungrouped data, and examine the effect of changes of origin and scale on each.
- 4.5 Use techniques of sampling, including simple random sampling and stratified random sampling.
- 4.6 Collect bivariate data, organise it into tables and scattergraphs, and draw lines of best fit by sight.
- 4.7 Make inferences from tables, scattergraphs and lines of best fit.
- 4.8 Interpret two-way tables.

Notes:

- For ungrouped data, the lower/upper quartile is the median of the scores to the left/right of the median
- Some calculators (both graphic and scientific) give statistics for a population and a sample, using the 'n' and 'n-1' formulas respectively. Use of the sample values to estimate the population values is beyond the scope of the course. Students will be expected to use only the 'n' (population) option.

Time Allocation

The subject has been designed to be completed through a structured education program of approximately 120 hours in any suitable contexts and series of learning experiences. Typically the subject will be studied over the period of one school year. For

administrative reasons schools wishing to vary this delivery pattern (e.g. over a shorter period or over a longer period up to two school years) are required to notify the Chief Executive Officer of the Curriculum Council.

Subject Completion

Students must complete the school's structured educational and assessment program for a subject in order to be eligible to receive a grade unless there are exceptional and justifiable circumstances.

In situations where the school considers that insufficient information has been gathered to justify the award of a grade for the subject, a result of U (for unfinished) should be allocated. The Curriculum Council offers the flexibility for the U to be converted to a grade after the final grades have been submitted. Further details on assessment and grading are provided in Volume I of the Syllabus Manuals.

Assessment Structure

Assessment structures are an integral part of all Accredited Subjects.

The structure specifies:

1. the components and learning outcomes to be included in assessment
2. weightings to be applied to these components
3. the types of assessment considered appropriate for the subject.

Table 1

Syllabus Content	Weighting percentage
Projects, problem-solving and investigations	15-20
Space and measurement	20-25
Function	35-40
Data analysis	20-25

Table 2

Learning Outcomes	Weighting percentage
Lower order cognitive objectives *	45-55
Higher order cognitive objectives **	45-55

* which include recall of skills, acquisition of concepts and routine use of mathematical knowledge.

** which describe processes such as generalisation, justification, deduction and the application of mathematical techniques and problem-solving strategies in non-routine ways.

Table 3

Types of Assessment	Weighting percentage
Extended pieces of work	15-30
Other forms of assessment	0-20
Tests and Examinations	50-75

The assessment program must provide students with the opportunity to demonstrate achievement of the requirements of the subject.

AND

Students must complete the requirements of the subject.

Supporting Notes

1. In the assessment program developed by schools, due attention must be given to the full range of educational objectives. It is recommended that, in order to assess achievement of the higher order cognitive objectives, **at least three (3)** extended pieces of work be included in the assessment program.
2. In many assessment tasks it is appropriate and desirable for students to work cooperatively and obtain help from various sources. However, assessment in mathematics should focus on the level of knowledge and understanding a student has attained, and not the manner in which the learning has taken place. In all cases where students can collaborate or obtain outside help for assessable work, schools must ensure that marks awarded are measures of the student's own knowledge and understanding. Accordingly, validation is regarded as an integral part of the assessment procedure.
3. Student performance in the subjects will be graded on a scale of A, B, C, D and E according to the degree to which students have achieved the stated objectives of the subject.

A set of grade-related descriptors, which indicate the standard of student achievement required for each grade, is available for these subjects and should be used when grading student performance.

Notes on Table 3

Extended Pieces of Work: These are assessment tasks which allow students the opportunity to demonstrate higher order cognitive skills such as verification, justification, generalisation, deduction interpretation and application. Only tasks which meet these requirements can be included as EPWs. They may involve an in-class and/or out of class component and may be completed over an extended period of time. The intent is to set tasks that can be completed free from the pressures of time. Careful consideration of the time allocated to complete such tasks is therefore essential. Projects which involve higher order skills may be considered as EPWs.

Other Forms of Assessment: There are other forms of assessment that may be used to determine the extent to which students have achieved the objectives of the course. Assignments, projects, checklists, homework, teacher observation, and oral presentations should be included in this category.

Notes:

- While out of class assessment tasks at times allow (in fact may require) students to utilise resources beyond those typically available while being assessed under supervised conditions, it is expected that work finally submitted for

assessment should be both known to and understood by the students concerned.

- Schools are responsible for determining procedures which should be applied to eliminate the likelihood of cheating, plagiarism, collusion and the like.
- School-based initiatives to exercise some form of 'control' over out-of-class assessment tasks are considered desirable as a means of both protecting students and retaining the integrity of using school assessments for external purposes.
- The following are examples of 'controls' that may be legitimately used:
 - professional judgement
 - in-class supervised tasks with open access to notes and other resources
 - achievement on 'at home' tasks measured by a brief in-class test on key concepts
 - research done out of class with reports completed in class under supervised conditions
 - teacher/student interview
 - a combination of in-class and out-of-class components.

Grade-Related Descriptors

Grade-Related Descriptors describe the student performance standards that are used to award grades in this subject. Schools delivering this subject have been provided with a copy of the document. Additional copies may be purchased from the Curriculum Council.

**Mathematics Learning Area
St Stephen's School Carramar
January 2006**

**Extended Pieces of Work (EPW) Assessment Policy.
Year 11 and 12 TEE Mathematics Courses.**

To the student.

An extended piece of work is any assignment, problem solving activity, project or investigation that you are required to complete out of class. After you hand up the completed EPW to your mathematics teacher he/she will give you a validation or test to verify that the EPW is your work. Consequently an EPW consists of two parts. A "take home" component and the "in class" assessment or validation.

The out of class or take home component will be given a weighting of no more than 20% of the total EPW weighting. On the same day that the out of class component is due you will be required to sit the in class validation. When your validation has been marked, your result is added to the mark that you received for the out of class component. The mark allocated to the out of class component is predominantly an effort mark. If you complete this component in a neat, clear and concise format then you can quite easily obtain a perfect mark. While the validation aims to check that the EPW is your own work, it also tests your level of understanding of the content and processes pertained within the EPW. The validation is likely to extend you beyond the mathematical requirements of the out of class component.

For Example: Betty received a mark of 4 out of 5 for the take home part of her investigation. On the day that this was due she sat the validation and she received a mark of 16 out of 20. So her final mark for this investigation is $4 + 16 = 20$ out of a possible 25.

Your mathematics teacher may decide to give you an EPW at a designated time that does not contain a take home component. In this case the assessment is 100% weighted towards the in class component and marked similarly to a test.

If you hand up the out of class component late without an acceptable reason marks will be *deducted* at the rate stated in the St Stephen's Assessment Policy contained within your Student Work record. If you do not satisfactorily complete the out of class component you will receive a zero score for the EPW. You must show that you have rigorously attempted all questions.

These processes are in place to ensure the validity and fairness of student results for EPW in mathematics. If you have any questions please don't hesitate to ask myself or your mathematics teacher.

Stephen Corcoran
Head of Mathematics