On Track 3
Mathematics Workbook

W. Geldof

Written for middle band Year 11 students aiming to achieve
Level 1 NCEA Mathematics and Statistics standards

2nd Edition

AS 1.1 - Numeric Reasoning
Internally Assessed - 4 credits

AS 1.2 - Algebraic Methods
Externally Assessed - 4 credits

AS 1.4 - Linear Algebra
Internally Assessed - 3 credits

AS 1.5 - Measurement
Internally Assessed - 3 credits

AS 1.7 - Right-Angled Triangles
Internally Assessed - 3 credits

AS 1.7 - continued

AS 1.8 - Geometric Representations
Internally Assessed - 3 credits

AS 1.9 - Transformation Geometry
Internally Assessed - 2 credits

AS 1.10 - Investigating Multivariate Data
Internally Assessed - 4 credits

* Pages 123-127 cover work required for both AS 1.10 and 1.11.

AS 1.11 - Investigating Bivariate Data
Internally Assessed - 3 credits

* Pages 123-127 cover work required for both AS 1.10 and 1.11.

AS 1.12 - Chance and Data
Externally Assessed - 4 credits

AS 1.12 - continued

* Pages 148-150 cover work required for both AS 1.12 and 1.13.

AS 1.13 - Investigating Chance
Internally Assessed - 3 credits

* Pages 148-150 cover work required for both AS 1.12 and 1.13.

Spreadsheet Data Available on Sigma's Website

In this workbook you will be asked to investigate tables of data. You could choose to enter the data into a spreadsheet yourself or you could save time by downloading the complete data set from Sigma's website. To download these spreadsheets you require a computer with internet access and the microsoft spreadsheet program Excel. Download instructions :

1] Go to Sigma's website at www.sigmapublications.co.nz and click on *'Secondary Maths Books'* in the side panel menu.

2] Click on the cover picture of *'On Track 3'* at the bottom of the page.

3] At the bottom of the book page for 'On Track 3' you will find a list of the downloadable spreadsheets.

4] To download the data, click on the spreadsheet you require.

About this Book

This mathematics workbook *'On Track 3'* prepares mid-band students to achieve NCEA Level 1 Achievement Standards. The work is drawn from levels 5 and 6 of the New Zealand Mathematics and Statistics curriculum.

There are 13 Achievement Standards in NCEA Level 1 Maths. It is expected that a full-time Level 1 student will study between 5 and 7 of these standards (about 18 - 22 credits). The selection should cover the three strands of the curriculum : Number and Algebra, Geometry and Measurement, and Statistics.

Most schools will select standards based on the ability and interests of their students. After consultation with Maths teachers, I decided to leave out two of the externally assessed achievement standards, AS 1.3 and AS 1.6, since schools won't offer these to their mid-band students.

Achievement Standards included in this book are :

Number & Algebra :	AS 1.1	- Numeric Reasoning
	AS 1.2	- Algebraic Methods *
	AS 1.4	- Linear Algebra
Geometry & Measurement :	AS 1.5	- Measurement
	AS 1.7	- Right-Angled Triangles
	AS 1.8	- Geometric Representations
	AS 1.9	- Transformation Geometry
Statistics :	AS 1.10	- Multivariate Data
	AS 1.11	- Bivariate Data
	AS 1.12	- Chance and Data *
	AS 1.13	- Investigating Chance
	(*externally assessed standards)	

[An abbreviated version of the full Achievement Standards can be found on pages A18 - A21 at the back of this book]

Some of these standards cover the same parts of the curriculum. For instance both AS 1.10 and AS 1.11 are based on the statistical enquiry cycle. You will find that some of the same pages will need to be completed whether you are aiming to sit AS 1.10 or AS 1.11. See the contents pages for details.

Whenever possible students should practise their mental strategies in arithmetic. Developing algebraic skills is important, you will find applications in measurement, geometric reasoning, trigonometry and any other science subject you are studying.

It is expected that students use technology (calculator, graphic calculator, spreadsheet) throughout the year. This book includes some basic instructions for the *Casio fx9750* graphic calculator and *Excel* spreadsheet. However, these explanations are brief and more detailed information can be found in the graphic calculator's instruction booklet and in Excel's help menu.

Wiesje Geldof