## **Contents**

1 I	ntroduction	9
1.1	Use of a program that draws tessellations	10
1.2	Use of a program that draws number patterns	13
1.3	Making effective use of computers in teaching mathematics	24
1.4	Is it worth using a computer?	28
2 I	Programs that support the teaching and learning of mathematics	36
2.1	Programs that can be used in connection with exposition by the	
	teacher	37
2.2	Programs that provide practice for skills	47
2.3	Programs that offer games or pose problems	48
2.4	Programs that support mathematical investigations	63
2.5	Programs that can be used in connection with practical work	70
2.6	Programs that can be used to promote discussion	74
2.7	Programs that can be used in a variety of ways	79
2.8	Programs influenced by commercial games	81
3 1	Writing your own programs	85
3.1	Writing BASIC programs that manipulate numbers	86
3.2	Writing BASIC programs to be used in connection with the	
	learning of algebra	94
3.3	Writing BASIC programs that draw geometrical pictures	104
3.4	Modifying BASIC programs	110
3.5	Packages that allow the user to program	115
4 Programming in languages other than BASIC		122
4.1	Logo	123
4.2	Prolog	138
4.3	Other languages	157
5	The effect of the 'new technology' on the curriculum	160
5.1	Who is in control?	160
5.2	The implications of the 'new technology' for the primary-school	
	mathematics syllabus	164

## **Contents**

5.3	The implications of the 'new technology' for the secondary-		
,.5	school mathematics syllabus	170	
5.4	Epilogue	177	
A nn	oendix A – Evaluating software	180	
Appendix B - The programs mentioned in this book		182	
Appendix C - Publications		186	
Appendix D - Running BASIC programs			
Appendix E - Running Logo programs		190	
Appendix F - Running Prolog programs  Appendix F - Running Prolog programs		193	
Appendix G - Mastermind in Prolog		199	
Ind	lex of mathematical topics	203	
General index		205	