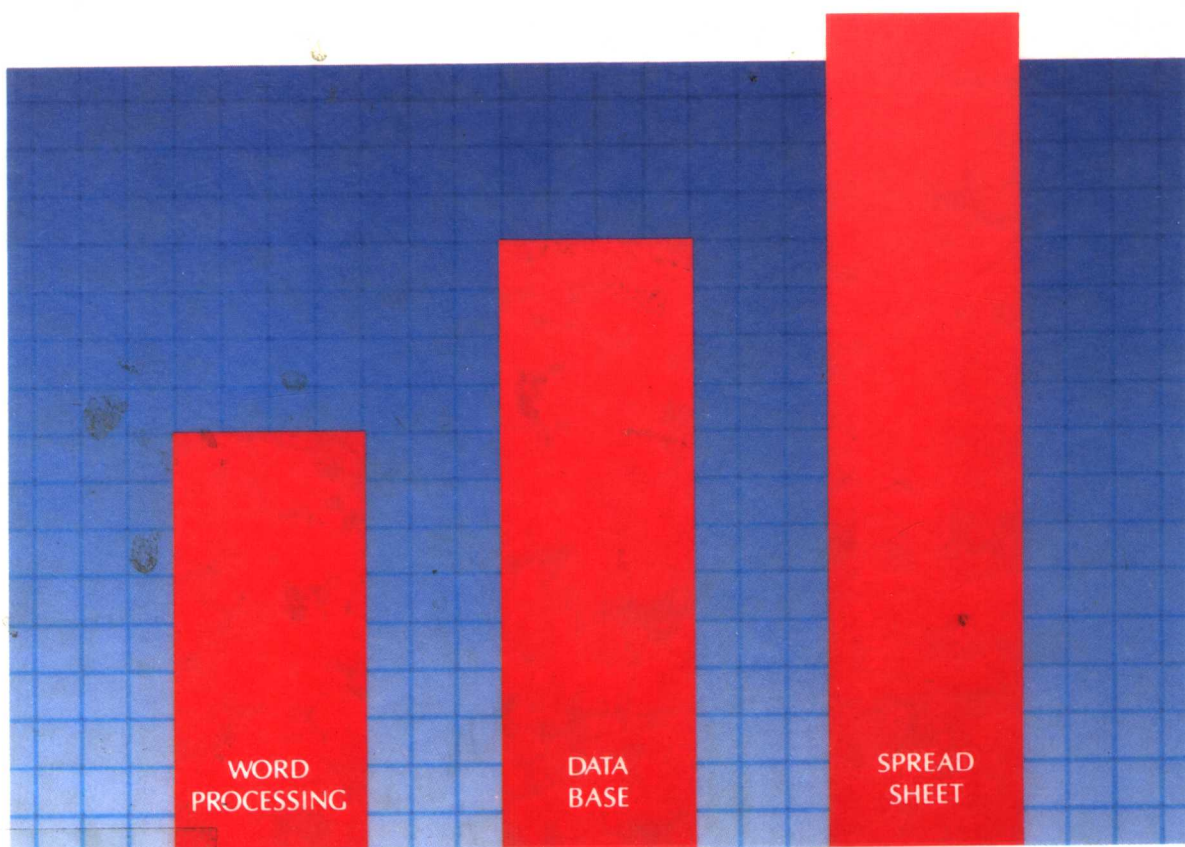


AN INTRODUCTION
TO COMPUTING USING

MICROSOFT WORKS

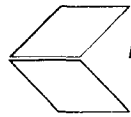


Version 2
for IBM PC
and Compatibles



 **Lawrenceville
Press**

Bruce Presley
William Freitas



**Lawrenceville
Press**

An Introduction to Computing Using Microsoft Works

Version 2.0

Bruce Presley
William Freitas

First Edition published 1991
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First Edition

ISBN 0-931717-90-6 (softcover)
ISBN 0-931717-91-4 (hardcover)

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Printed in the United States of America

All orders including educational, Canadian, foreign,
FPO and APO addresses may be placed by contacting:

Lawrenceville Press, Inc.
P.O. Box 704
Pennington, NJ 08534-0704
1-609-737-1148

This text is available in both hardcover and softcover editions.

16 15 14 13 12 11 10 9 8

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PREFACE

We believe the best way to introduce students to computing is with an introductory course that covers a brief history of computing, applications software (word processing, database and spreadsheet), and a discussion of the role computers play in modern society. These goals are accomplished by this text which is designed to serve both the needs of students who will complete only an applications course, as well as those who will go on to take subsequent computer courses. The emphasis of this text is on the concepts of computing and problem solving using Works so that students learn how computers can be applied to a wide range of problems. The text is written for a one or two term course for the high school or college student. No previous computer experience is assumed.

Designs and Features

FORMAT	Each chapter contains numerous examples and diagrams printed in a two color format to help students visualize new concepts.
OBJECTIVES	An outline of the significant topics that should be emphasized is presented at the beginning of each chapter.
CONCEPTS of APPLICATION	Each of the application areas begins with an introductory section which describes the application and its uses. In this way, students are taught the purpose of the application without being overly concerned with the specific software. If the student then goes on to use another software package, he or she will fully understand the general concepts behind each application.
HANDS-ON PRACTICE	In the applications chapters each new concept is presented, discussed and then followed by a hands-on practice which requires the student to test newly learned skills on the computer. The practice sections also serve as excellent reference guides to review applications commands.
CHAPTER SUMMARY	At the end of each chapter is an outline that briefly discusses the concepts covered in the chapter.
VOCABULARY	A vocabulary section which defines the new terms used is given at the end of each chapter.

REVIEW PROBLEMS	Numerous review problems are presented for each section of the chapter, providing immediate reinforcement of new concepts. Answers to all review problems are included in the Teacher's Resource Package described below.
EXERCISES	Each of the applications chapters includes a set of exercises of varying difficulty, making them appropriate for students with a wide range of abilities. Answers to all exercises are included in the Teacher's Resource Package described below.
HISTORY of COMPUTING	Before learning to use the applications software, Chapter 1 introduces students to a history of computing and covers the vocabulary needed to understand the concepts presented in later chapters.
PROGRAMMING	Chapter 10 offers an introduction to programming in BASIC. This introduction is sufficient to illustrate the problem-solving concepts involved in writing a computer program.
SOCIAL and ETHICAL IMPLICATIONS	Because computers play such an important role in modern society, Chapter 11 discusses the social and ethical consequences of living in a computerized society. Advances in computer-related technology that will impact on the student's world are also discussed. Telecommunication is explained and the Works Communications application introduced.
CAREERS in COMPUTING	It is hoped that many students will become interested in careers in computing based upon their experience in this introductory course. A section in Chapter 11 outlines different computer careers and the educational requirements needed to pursue them.
APPENDICES	Summaries of Works and DOS commands and keyboarding skills are presented in appendices at the end of the text for easy reference.

Teacher's Resource Package

When used with this text, the Lawrenceville Press Teacher's Resource Package provides all the additional material required to offer students an excellent introductory computer applications course. These materials, along with the text, place a strong emphasis on developing student problem-solving skills. The Package divides each of the chapters in the text into a series of lessons which contain the following features:

- **ASSIGNMENTS** - Reading and problem assignments are suggested for each lesson.
- **DISCUSSION TOPICS** - Additional material is provided which supplements the text and can be used in leading classroom discussions. Often this includes explanations of more advanced commands or concepts not covered in the text.

- **TRANSPARENCY MASTERS** - Most lessons contain transparency masters which often present diagrams of the different applications screens.
- **WORKSHEETS** - Included in each lesson is a worksheet containing problems which are meant to be completed in the computer lab. These problems supplement those in the text, giving students additional reinforcement of the concepts they have just learned. Many of these problems make use of the data files included on the Master Diskette described below.
- **MASTER DISKETTE** - A Master Diskette that contains files to be used in conjunction with text problems and worksheets is included in the Teacher's Resource Package. These files are especially helpful in allowing students to work with large amounts of data without first having to type it into the computer. Student diskettes can be easily made by following the directions included with the Master Diskette. The Master Diskette is available in either 5 ¼" or 3 ½" formats.

In addition to the material in the lessons, the following features are found at the end of each chapter:

- **TESTS** - Comprehensive end of chapter tests are provided as well as a mid-term and final examination. A full set of answers and a grading key are also included.
- **ANSWERS** - Complete answers are provided for the Review and Exercise problems presented in the text. Where appropriate, answers have also been included on the Master Diskette.

As an added feature, the above material is contained in a 3-ring binder. This not only enables pages to be removed for duplication but also for the insertion of additional teacher notes.

Acknowledgments

The authors would like to thank the following people whose talents contributed to the production of this text.

For their careful review of the text while it was being written we are especially grateful to Arlene Yolles of Ridgefield High School in Ridgefield, Connecticut, Clyde Knowlton of the Horseheads Central School District in Horseheads, New York, Pat Reisdorf of the Foxcroft School in Middleburg, Virginia, Eric Neuffer of the Hun School in Princeton, New Jersey and Carroll Melnyk of the Lubbock Independent School District in Lubbock, Texas. Many of their suggestions have been incorporated in this text.

The imaginative graphics designs were produced by Gregg Schwinn, Elizabeth Dole, Alan Chin-Lee and Marge Vining. Alma Reinke prepared the computer-based layout of the text. We very much appreciate both their effort and willingness to work under demanding deadlines.

Thanks are due Art Rogers and Jeri Monastero at SuperType of the Palm Beaches and Heffernan Press, Inc., especially Bill Daley who supervised the printing of the text. For their help with the Works software we wish to thank Ellen Mosner, John Neilson and Robert Orndorf of the Microsoft Corporation.

The success of this and many of our other texts is due to the efforts of Heidi Crane, Vice President of Marketing at Lawrenceville Press. She has developed the promotional material which has been so well received by schools around the world.

We would like to thank the St. Andrew's School for allowing us the flexible schedules to produce this text. A very special note of appreciation is due our colleague in the Computer Science department and friend, Ruth Wagy, who has generously shared with us materials developed in her applications courses. She has also helped test this text in her classes and has offered many valuable suggestions on ways in which it could be improved. David Attis, one of our most talented students, and Brien Muschett our intern from Florida Atlantic University were especially helpful in reviewing the Practices, Reviews and Exercises.

Finally, we would like to thank our students, for whom and with whom this text was written. Their candid evaluation of each lesson and their refusal to accept anything less than perfect clarity in explanation have been the driving forces behind the creation of *An Introduction to Computing Using Microsoft Works*.

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Table of Contents

Chapter One - An Introduction to Computers	1.1	What is a Computer?	1-1
	1.2	Ancient Counting Machines	1-2
	1.3	Arabic Numerals	1-2
	1.4	The Pascaline	1-2
	1.5	The Stepped Reckoner	1-3
	1.6	Jacquard's Loom and the Punched Card	1-3
	1.7	Babbage's Difference and Analytical Engines	1-4
	1.8	The Electronic Tabulating Machine	1-5
	1.9	The Electromechanical Computer	1-6
	1.10	ENIAC, the First Electronic Computer	1-6
	1.11	The Stored Program Computer	1-7
	1.12	The Transistor	1-8
	1.13	Integrated Circuits	1-9
	1.14	The Microprocessor	1-9
	1.15	Mainframe, Mini and Microcomputers	1-9
	1.16	How Computers Work	1-11
	1.17	The Components of a Computer	1-11
	1.18	Advantages of a Computer	1-12
	1.19	Hardware and Software	1-12
	1.20	Memory	1-12
	1.21	Central Processing Unit	1-13
	1.22	How the Computer Stores Data	1-13
	1.23	Bits and Bytes	1-14
	1.24	Applications Software	1-14
		Chapter Summary	1-15
		Vocabulary	1-16
		Reviews	1-16

Chapter Two - Introducing the Word Processor	2.1	What is a Word Processor?	2-1
	2.2	Using Disks	2-2
	2.3	How To Use This Text	2-2
	2.4	Starting the Computer	2-3
	2.5	Starting Works	2-4
	2.6	The Word Processor Screen	2-5
	2.7	The Computer Keyboard and Word Processing	2-6
	2.8	Using Menus	2-8

2.9	Saving a Document on Disk	2-9
2.10	Exiting Works	2-10
2.11	Word Wrap	2-12
2.12	Loading a Previously Saved File from the Disk	2-14
2.13	Printing a Document	2-16
2.14	Screen Scroll	2-18
2.15	Using the Mouse	2-20
	Chapter Summary	2-23
	Vocabulary	2-24
	Reviews	2-25
	Exercises	2-29

**Chapter Three -
Manipulating Text
with the Word
Processor**

3.1	The Show All Characters Command	3-1
3.2	Tabs and Tab Stops	3-2
3.3	The Ruler	3-2
3.4	Setting Individual Tab Stops	3-3
3.5	Opening and Closing Files	3-6
3.6	Formatting Text	3-6
3.7	Setting Margins	3-7
3.8	Headers, Footers and Page Numbers	3-9
3.9	Indents	3-11
3.10	Double and Single Spacing	3-12
3.11	Paragraph Alignment	3-13
3.12	Undo	3-14
3.13	Selecting and Deleting Blocks of Text	3-16
3.14	Faster Block Selection Using F8	3-16
3.15	Formatting a Block	3-17
3.16	Pagination	3-17
3.17	Character Formats - Bold, Italic and Underline	3-19
3.18	Moving a Block	3-20
3.19	Copying a Block	3-21
3.20	Searching For Text in a Document	3-22
3.21	The Go To Page Command	3-23
3.22	Replacing Text	3-24
3.23	Using the Spelling Checker	3-26
3.24	Using the Thesaurus	3-28
3.25	Superscripts and Subscripts	3-30
3.26	Where can you go from here?	3-32
	Chapter Summary	3-32
	Vocabulary	3-34
	Reviews	3-35
	Exercises	3-37

**Chapter Four -
Introducing the Data
Base**

4.1	What is a Data Base?	4-1
4.2	Computerized Data Bases	4-2
4.3	Data Base Terminology	4-2
4.4	Field Names and Types	4-3
4.5	A Simple Data Base	4-4

4.6	Common Data Base Operations	4-5
4.7	Planning a Data Base	4-8
4.8	Planning Records and Fields	4-9
4.9	Choosing Field Names	4-10
4.10	Form Design	4-10
4.11	Viewing Records	4-11
	Chapter Summary	4-12
	Vocabulary	4-13
	Reviews	4-14
	Exercises	4-17

**Chapter Five -
Creating a Works Data
Base**

5.1	Creating a New Data Base	5-1
5.2	Creating the Data Base Form	5-1
5.3	Entering Records in a New Data Base	5-4
5.4	Saving a Data Base on Disk	5-4
5.5	Changing the Data Stored in a Field	5-6
5.6	Modifying the Record Form	5-8
5.7	Searching for Text in a Record	5-10
5.8	List View and Form View	5-12
5.9	Modifying the List View Screen	5-13
5.10	Printing a Data Base	5-15
5.11	Using Queries	5-17
5.12	Using Ranges to Create Complex Queries	5-19
5.13	The Search Command's All Records Option	5-21
5.14	Updating Data in a Record	5-22
5.15	Adding Records	5-23
5.16	Deleting Records	5-25
	Chapter Summary	5-25
	Vocabulary	5-26
	Reviews	5-27
	Exercises	5-29

**Chapter Six -
Manipulating Data
with the Data Base**

6.1	Sorting Records in a Data Base	6-1
6.2	Report Sections	6-3
6.3	Creating a Report Format	6-4
6.4	Modifying a Report Format	6-6
6.5	Planning a Report	6-8
6.6	Viewing Reports on the Screen	6-8
6.7	Adding Information to Reports	6-9
6.8	Using and Renaming Multiple Report Formats	6-12
6.9	Using Queries with Reports	6-14
6.10	Copying and Deleting Report Formats	6-14
6.11	Adding Summaries to Reports	6-16
6.12	Calculated Fields in a Data Base	6-18
6.13	Where can you go from here?	6-20
	Chapter Summary	6-21

Vocabulary	6-22
Reviews	6-22
Exercises	6-25

**Chapter Seven -
Introducing the
Spreadsheet**

7.1	What is a Spreadsheet?	7-1
7.2	Cells, Labels, and Values	7-2
7.3	Creating a New Spreadsheet	7-3
7.4	Entering Data into a Spreadsheet	7-4
7.5	Using the Mouse	7-5
7.6	Saving a Spreadsheet on Disk	7-5
7.7	Using Formulas to Perform Calculations	7-7
7.8	Editing Entries	7-9
7.9	Clearing Cells	7-9
7.10	Using Functions to Perform Calculations	7-12
7.11	Planning a Spreadsheet	7-14
7.12	Printing a Spreadsheet	7-16
7.13	The ROUND Function	7-17
	Chapter Summary	7-19
	Vocabulary	7-21
	Reviews	7-21
	Exercises	7-25

**Chapter Eight -
Manipulating Data
with the Spreadsheet**

8.1	Planning a Large Spreadsheet	8-1
8.2	Producing a Spreadsheet Layout	8-2
8.3	Entering Formulas	8-6
8.4	The Copy, Fill Right and Fill Down commands	8-7
8.5	Copying and Displaying Formulas	8-9
8.6	The Search and Go To commands	8-11
8.7	The MAX and MIN Functions	8-13
8.8	Expanding a Spreadsheet	8-13
8.9	Using the IF Function	8-16
8.10	Insert, Delete and Clear	8-17
8.11	Asking "What If?"	8-19
8.12	Charts and Graphs	8-21
8.13	Creating Charts	8-24
8.14	Adding Titles and Legends to Charts	8-26
8.15	Working with Multiple Charts	8-27
	Advanced Spreadsheet Techniques	8-30
8.16	The Choose and Vlookup Functions	8-30
8.17	Freezing Titles	8-32
8.18	Amortization Tables	8-34
8.19	Where can you go from here?	8-36
	Chapter Summary	8-37
	Vocabulary	8-38
	Reviews	8-38
	Exercises	8-43

Chapter Nine - Integrating the Word Processor, Data Base and Spreadsheet	9.1 Windows	9-1
	9.2 Removing Files from Memory	9-4
	9.3 Using Windows to Integrate Word Processed Documents	9-4
	9.4 Sharing Data between two Spreadsheets	9-6
	9.5 Sharing Data between two Data Bases	9-7
	9.6 Merging Spreadsheets with the Word Processor	9-8
	9.7 Merging Data Bases with the Word Processor	9-10
	9.8 Mail Merge and Form Letters	9-11
	9.9 Expanding Mail Merge	9-14
	9.10 Integrating the Data Base and Spreadsheet	9-15
	9.11 Inserting a Chart in a Document	9-17
	Chapter Summary	9-18
	Vocabulary	9-19
	Reviews	9-19
	Exercises	9-21
Chapter Ten - An Introduction to Programming in BASIC	10.1 Using Immediate Mode	10-1
	10.2 Writing a Program	10-4
	10.3 LIST	10-5
	10.4 System Commands	10-8
	10.5 Using Numeric Variables	10-9
	10.6 Using String Variables	10-11
	10.7 INPUT: a number	10-12
	10.8 INPUT: a string	10-14
	10.9 IF...THEN	10-15
	10.10 Comparing Strings	10-16
	10.11 FOR...NEXT Loops	10-17
	10.12 READ - DATA	10-19
	10.13 Learning More Programming	10-20
	Chapter Summary	10-20
	Vocabulary	10-22
	Reviews	10-23
	Exercises	10-27
Chapter Eleven - Telecommunications and the Future of Computing: Social and Ethical Implications	11.1 Telecommunications	11-1
	11.2 Electronic Bulletin Boards and E-Mail	11-2
	11.3 Telecommunicating with Works	11-4
	11.4 The Future of Computing	11-7
	11.5 Artificial Intelligence	11-8
	11.6 Expert Systems	11-9
	11.7 Natural Language Processing	11-11
	11.8 Robotics	11-12
	11.9 Careers in Computing	11-13
	11.10 The Social and Ethical Consequences of Computers	11-17
	11.11 The Right to Privacy	11-18
	11.12 Protecting Computer Software and Data	11-19

11.13 The Ethical Responsibilities of the Programmer	11-20
11.14 Computers and Biological Systems	11-21
11.15 Computing at Home	11-21
11.16 Networking	11-23
Desktop Publishing, Presentations and Graphics	11-23
11.17 Laser Printers and Output Devices	11-24
11.18 Desktop Publishing	11-24
11.19 Elements of Desktop Publishing	11-25
11.20 Graphics and Illustration Software	11-27
11.21 Desktop Presentations	11-28
11.22 How do we face the future?	11-29
Chapter Summary	11-29
Vocabulary	11-31
Reviews	11-32

**Appendix A - Works
Command Summary**

Word Processor Commands	A-1
Data Base Commands	A-5
Spreadsheet Commands	A-9

**Appendix B - Using
DOS Commands From
Works**

DOS Commands	B-1
The Importance of Backups	B-5
Creating Backups of Important Data	B-5

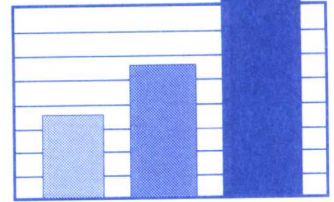
**Appendix C -
Developing
Keyboarding Skills**

Learning to Touch Type	C-1
Typing Lesson 1	C-2
Typing Lesson 2	C-3
Typing Lesson 3	C-4
Typing Lesson 4	C-4
Typing Lesson 5	C-5
Typing Lesson 6	C-6
Typing Lesson 7	C-7
Typing Lesson 8	C-8
Typing Lesson 9	C-9

Glossary	G-1
Index	I-1

Chapter

1



An Introduction to Computers

Objectives

After completing this chapter you will be able to:

1. Define what a computer is.
2. Discuss the history of computers.
3. Understand how computers work.
4. Name the components of a modern computer system.
5. Understand the advantages of using a computer.
6. Know what software and hardware are.

This text is about computers: their history, how they process and store data, how they can be programmed and the role they play in modern society. We will employ a popular computer program named Microsoft Works to teach you how to use the computer to word process and produce data bases and spreadsheets. Each of these applications will be explained as we proceed.

There are three reasons for learning how to use a computer. The first and most important is to develop problem-solving skills. This is done by learning how to analyze a problem carefully, developing a step-by-step solution, and then using the computer as a tool to produce a solution.

A second reason for learning about computers is to become acquainted with their capabilities and limitations. Because you are a part of a society which is becoming increasingly computerized, learning to use a computer is probably the best way to become familiar with one.

Finally, using a computer can be fun. The intellectual challenge of controlling the operations of a computer is not only rewarding but also an invaluable skill. The techniques learned in this class can be applied to your other subjects, and to your personal or business life as well.

1.1 What is a Computer?

A computer is an electronic machine that accepts information (called "data"), processes it according to specific instructions, and provides the results as new information. It can store and move large quantities of data at very high speed and even though it cannot think, it can make simple decisions and comparisons. For example, a computer can decide which of two numbers is larger or which of two names comes first alphabetically and then act upon that decision. Although the computer can help to solve a wide variety of problems, it is merely a machine and cannot solve problems on its own. It must be provided with instructions in the form of a computer "program."

A program is a list of instructions written in a special language that the computer understands. It tells the computer which operations to perform and in what sequence to perform them. In this text we will use a computer program called Microsoft Works.

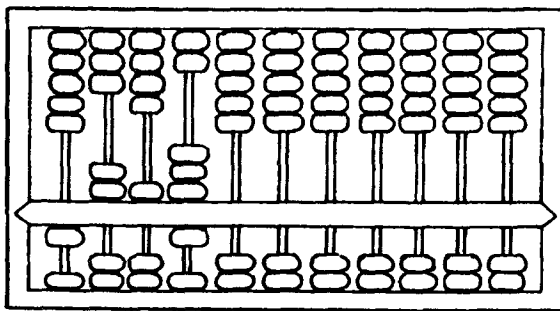
THE HISTORY OF COMPUTERS

Many of the advances made by science and technology are dependent upon the ability to perform complex mathematical calculations and to process large amounts of data. It is therefore not surprising that for thousands of years mathematicians, scientists and business people have searched for "computing" machines that could perform calculations and analyze data quickly and accurately.

1.2 Ancient Counting Machines

As civilizations began to develop, they created both written languages and number systems. These number systems were not originally meant to be used in mathematical calculations, but rather were designed to record measurements. Roman numerals are a good example of this. Few of us would want to carry out even the simplest arithmetic operations using Roman numerals. How then were calculations performed thousands of years ago?

Calculations were carried out with a device known as an abacus which was used in ancient Babylon, China and throughout Europe until the late middle-ages. Many parts of the world, especially in the Orient, still make use of the abacus. The abacus works by sliding beads back and forth on a frame with the beads on the top of the frame representing fives and on the bottom ones. After a calculation is made the result is written down.



The Abacus is a calculating device used in the Orient

1.3 Arabic Numerals

Toward the end of the middle ages, Roman numerals were replaced by a new number system borrowed from the Arabs, therefore called Arabic numerals. This system uses ten digits and is the system we still use today. Because the Arabic system made calculations with pencil and paper easier, the abacus and other such counting devices became less common. Although calculations were now easier to perform, operations such as multiplication and division were able to be done by only those few mathematicians who were well educated.

1.4 The Pascaline

One of the earliest mechanical devices for calculating was the Pascaline, invented by the French philosopher and mathematician Blaise Pascal in 1642. Pascal was employed in the recording of taxes for the French government, a tedious job that often kept him up until the