

# Pioneers of COMPUTER

**Level 5**



**Dr. Basem Al-Ja'bari**



  
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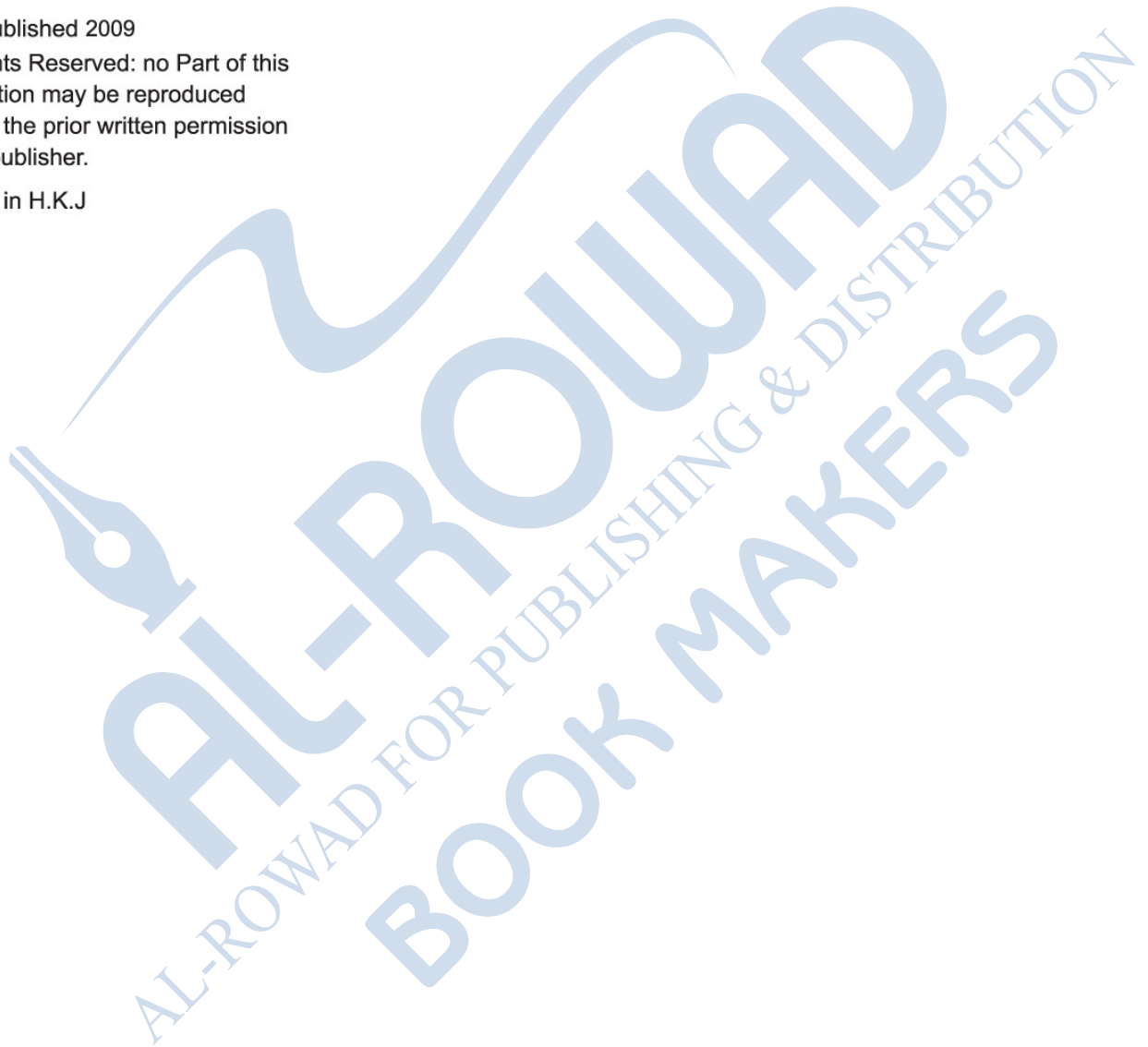
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## Introduction

### Dear Teachers,

I introduce in this book my humble contribution in order to help you cope with the latest developments in the second millennium, taking into consideration the needs of our dear students, who will be the leaders of the future and the new generation that will make the necessary changes for the interest of humanity. Therefore, I have adopted in my series the latest educational strategies based on ERFKE so as to create the proper educational environment, and build a generation that can be able to cope with information technology, and face the challenges imposed by the accelerating growth in the acquisition of information and skills, and to progress steadily toward employing technology in education. I do strongly believe that students have the abilities to promote progress in the country and achieve the aspirations of the nation by applying the up-to-date methods which support the student and make him or her the core of the educational process. Development processes require more efficient roles in preparing and planning in the field of education, and using various proper educational resources and aids, and giving the students, chances to express freely their opinions through democratic and independent channels.

### Dear Teachers,

Notice that the programs in the book are authorized in all publications and meet all specifications set by Microsoft. The materials included can be enriched by educational and recreational programs.

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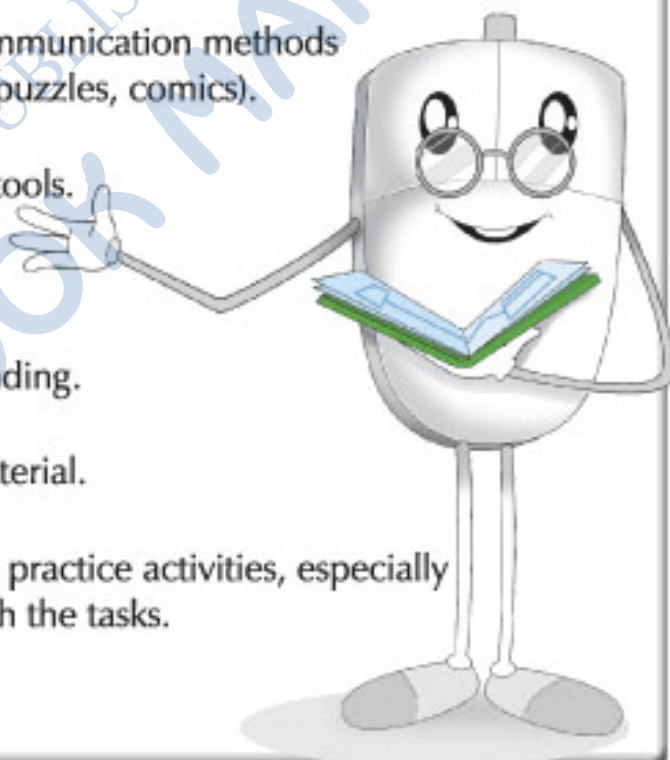


## Teacher's role in teaching processes ▶

- You're the leader.
- Listen to your student and let him express his own opinion.
- Encourage your student to participate, and ask him to try again when he makes a mistake.
- Encourage self-assessment.
- You're the guide. Let your students practice about 75% of the time of the lesson.

Encourage your students to use co-operative activities.

- Listen to your students. Vary your communication methods (Facilities, such as diagrams, figures, puzzles, comics).
- Use available technology as learning tools.
- Explain the lesson in short steps.
- Evaluate continuously their understanding.
- Use the work sheets to enrich the material.
- Give enough time to your students to practice activities, especially to students with special needs to finish the tasks.



# Unit 1

## Computer Culture



In this unit, you will be introduced to computer security risks that may damage your computer, or cause loss of data and information. You will also learn how to protect your computer from such dangers. In addition to that you will learn about the various applications of the computer in education, and cases where the computer's performance exceeds that of humans and vice versa.

### Expected outcomes ▶

#### Students will :

- Get acquainted with dangers that may threaten computer security, which cause loss of data.
- Identify viruses and detect them.
- Learn the steps to be followed to protect data and information from loss.
- Learn about anti-virus software.
- Learn how the computer is used in schools and universities.
- Be aware of where a computer might be more appropriate than a person for carrying out a task and where not.

## Computer Security Risks

The computer's great potentialities in storing and processing data makes it one of the most prominent feature of great advances of modern information technology in our time. It is well-known that scientific knowledge stored in the computer is the result of huge scientific effort and research, on which new inventions are based. Countries, companies and institutions compete to acquire such knowledge for development. It happens that sometimes companies, governments and institutions resort to illegal methods and recruit experts specialized in hacking and cracking other's intellectual properties to win commercial and industrial competitions. It has become necessary for people working in the fields of industry and commerce to protect their technical knowledge, and experts are recruited for this purpose also.

### Loss of Data and Information ▶

- 1. Natural factors:** Such as earthquakes and volcanoes which may damage computer sets and their contents.
- 2. Theft and fire:** Some people try to steal the computers of other companies or institutions to get valuable information in them. Also fire that may occur in institution buildings may destroy computers and their contents.
- 3. Sudden power failure:** Repeated electricity cuts damage the hard disk which contains programs, data and information and cause their loss.
- 4. Viruses:** A virus is a small software prepared by people for the purpose of damaging information in other's computers. These harmful small programs make other programs operate incorrectly or spoil the computer's memory. Some of the symptoms that may be noticed in a computer infected by viruses are :
  - Programs take longer time to load into the memory.
  - Some programs stop functioning.
  - Storage capacity of the hard disk decreases as virus attaches itself to many files.
- 5. Intruders such as Hackers and Crackers who can illegally get access to the computer without one's knowledge for the purpose of damaging data stored in it.**
  - Hackers aim at just having access to the data and information in one's computer without intention to damage them.
  - Crackers aim at damaging or deleting stored information.



Activity

## (1-1) Loss of Data and Information

**Which in your opinion are more dangerous, Hackers or Crackers? Why?**

.....

.....

.....

### Measures to be Taken to Deal with the Loss of Data

**To protect your data from loss you can take the following measures:**

#### 1. Backup:

This means making an additional copy of your data and programs on floppy disks or light disks in case your computer is lost as a result of theft or damage by fire. Such additional copies should be kept in a safe place away from dangers.

#### Types of Backup

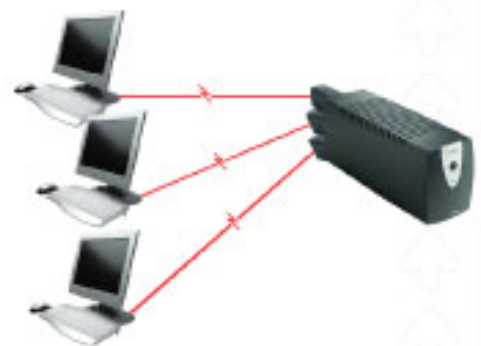
**-Incremental Backup:** A copy is made of latest new data at the end of the day, then making a copy of the whole new data accumulated in a week or month.

**-Full Backup:** Copy all the data in the computer on diskette.

#### 2. Using UPS (uninterruptible power supply):

This is used to provide emergency power in case of power failure so as to save the data and close the computer in a proper way.

In this way, the hard disk is protected from damage and data will be safe.



### 3. Protection from Viruses:

There are several ways to protect the computer from viruses:

- Use anti-virus software such as:  
**Norton Anti-virus, Kasper Sky, MacAfee VirusScan.**
- Use original copies of programs.
- Don't open e-mail from unknown sources.
- Protect your computer from Hackers and Crackers by:
  - a. Firewall.
  - b. Password to have access to the computer.

Activity

#### (1-2) Measure to Deal with loss of Data

Complete the following table:

Dangers Causing loss of Data	Protection
Natural accidents such as earthquakes	1-
Theft	1-
Viruses	1- 2- 3-
Hackers and Crackers	1- 2-

### Questions

1. What is the importance of Backup?

.....  
.....

2. Mention three antivirus programs.

.....  
.....

## Lesson 2

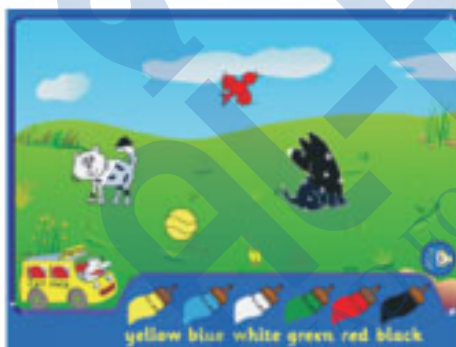
### Computer in Education

Computer plays an important role in all fields of life. It is used in home, in office and in school, and its usage covers all aspects of life, especially in science and communication. Actually it has become part and parcel of the web of our life that daily life now seems impossible without it. One of its major applications is in schools and universities where it is used to perform various types of tasks especially in education and administration.

Examples of such tasks are:

#### 1. Computer-Based Training (CBT)

Various educational programs covering all fields of science and knowledge are produced by educationalists in the CDs which are easy to use at any time, day and night, thus making education available for all people without the need for a teacher or a school, and with little cost. Now the computer, in many cases, has replaced the teacher in presenting the material and activities of a lesson, and in administering tests and correcting them, after which learners move to the next step of learning. Here under is an example of such educational programs.

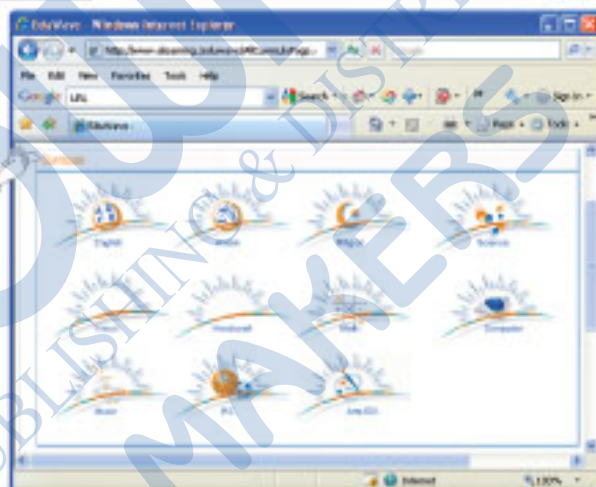
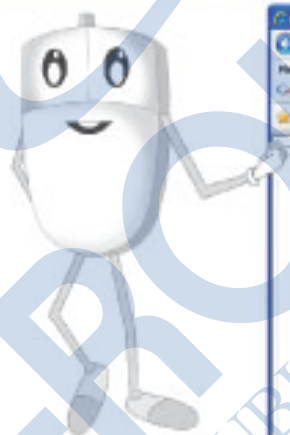
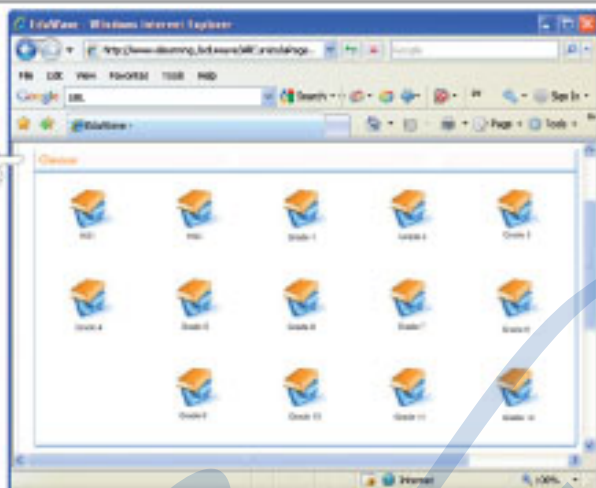


Some countries computerized education and curricula in schools.

School curricula have been computerized and the following e- education systems have been introduced:

- E-books
- Working papers
- Presenting material in a computerized way using multimedia.

The following two figures show examples of curricula in e- education.



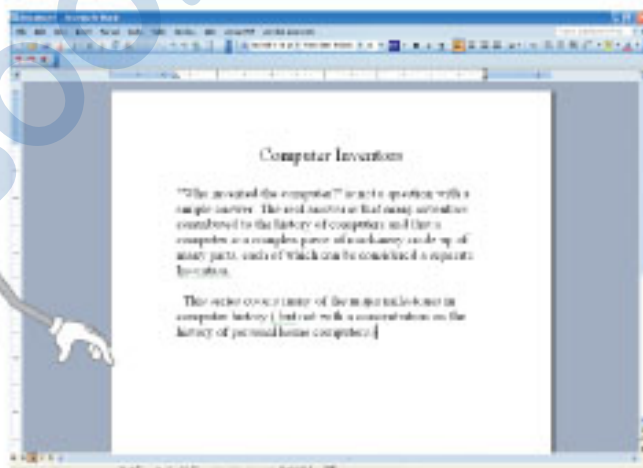
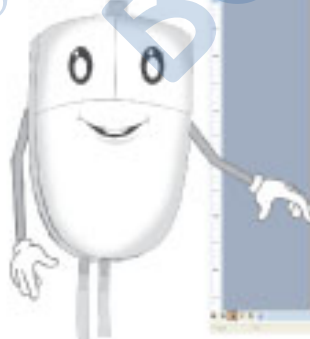
## 2. Scientific Research.

A student can use many programs in scientific research.

Example of these programs are:

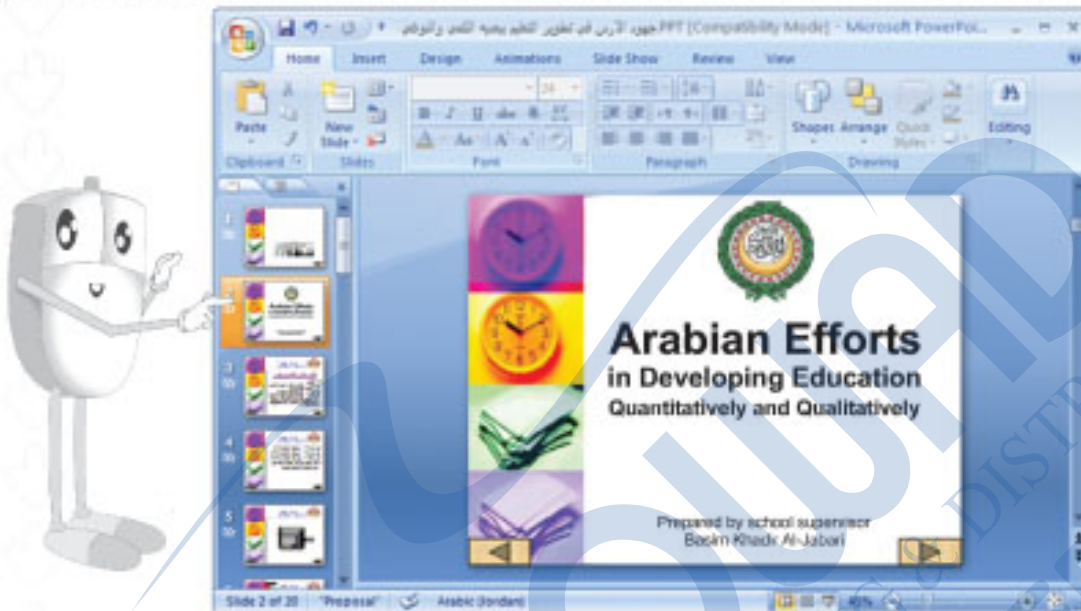
-MS Word Program:

for typing reports and researches as in the following example:



### - MS-PowerPoint Program:

This is used to present, electronically, lessons and researches on the computer screen.



In this program spreadsheets are used to enter numerical values and data for making calculations, graphs and statistical analysis as shown in the example here under.

