



# My Book Of Computer

3

***Teacher's  
Resource Book***

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## Lesson 1: History of Computers

### Aim of the lesson:

In this lesson student will realize the account of scientists for the development of computer. It also helps them understand the problems associated with the early computer which led to the modernity in it. This lesson aims to educate our children to remember the efforts of our scientists for our ease. This history starts with first calculating device abacus and enters the present-day's laptops, tablets and Smartphone.

### Learning objectives:

This lesson tells about:

- The journey of calculating devices
- History of first counting device, the Abacus
- First device for multiplication and division, the Napier's bones
- The first mechanical calculator for addition only, the Pascaline
- More functional early calculator, the Stepped Reckoner.
- Punch cards

### Teacher support:

As a teacher support material, we have provided you general **"How-to-teach" techniques** in the TRB. Through this TRB you can easily give the concepts to your students. To get the detail on learning objectives, you may follow given sites.

Visit:

<http://en.wikipedia.org/wiki/Abacus>

[http://en.wikipedia.org/wiki/History\\_of\\_computing\\_hardware](http://en.wikipedia.org/wiki/History_of_computing_hardware)

<http://en.wikipedia.org/wiki/Computer>

We always encourage you to have ample information of the topic and command on **learning objectives**.

### Warm-up:

History is the account of past events and is theoretical which is mostly considered hard to memorize. It is your skill how you make it interesting for your students.

Write the word **"History"** on the board and ask your students what they remember, e.g.

- What was your uniform in kindergarten?
- What was the color of your bag in Montessori and Grade 1?
- How did you celebrate your last year birthday?
- Do you have Abacus in your homes? (You may also ask about Abacus, calculator or mechanical counters (tasbeeh). They may have them)

Keeping the topic in your mind you may write on board the timeline of their yesterday's work in home.



**Discussion:**

After the lesson stimulus, you can tell them that the events of the past you told, is called a history, which cannot be changed. Ask them, can you go to your past to celebrate your first birthday?

Computer also has its history. Computer history tells us that

- How the early computers used to be.
- What functions did the early computer do?
- What was the first calculating device that led to the computers?

This is very important that students see primitive devices and their functions through internet.

You can show picture charts of abacus, Napier's Bones, Pasuline, Stepped Reckoners, and punch cards.

Explain their structure and how they worked, and what specific functions they had. e.g.

- Abacus was used only for counting
- Pasuline was used only for addition etc.

Show them the pictures of scientists and their calculating devices.

**Visual aid is always effective for active learning and long-term memory.**

In class, write the timeline of the devices with the name of scientists. Then derange the time line and ask them to tell you the right order.

**Read aloud the following terms:**

Keywords	Common words
Abacus	Calculating device
Napier's Bones	Ancient
Pascaline	Toy version
Stepped Reckoners	Non-digital
Punch Cards	pattern

It will enhance their vocabulary as well as reading skills.

**Let students read the book with more understanding and mark difficult words as well as the key words.**

**Summary:**

- Abacus was one of the first adding machines only used for counting.
- It was made of a wooden frame, metal rods, and wooden beads.
- It is still used as a counting toy for children.
- **Napier's bones invented by** John Napier. It used for calculations only
- Slide rule used for multiplication and division.
- Stepped Reckoner used for DMAS.

**Assessment:**

Once explanation is completed, find if any of the students have any problem in identifying the pre-calculating devices. You should check the understanding of every student. If any of the students is still confused, you may give extra time to your student. (You can also contact us for further help.)

Split all the discussion in questions. Make very simple questions, which are very easily answered. This way will help students grasp a concept. You may ask:

- Which device comes first in the history of a computer?
- Which calculating device is still used in the present years?
- Can you draw Napier's bones?

#### Assignment:

You may give them task to do in the lab and home.

- Make a timeline of first calculating devices.
- Draw Abacus and write note on it.

#### Activity:

Take the printouts of the pictures and paste them on a chart, label them and write 2 lines about each of them for class presentation.

#### Guide your students to do online activity.

Visit:

<http://activities.macmillanmh.com>

#### Helping tools:

As a support material, you should tell them about the information pools.

- **The Net Extra:**

As it has been mentioned, the Net Extra is especially designed for the teachers and the students. Here you can find not only the text material but also the related information, activities and exercises. You can guide your students to use net extra for more information.

Log on to net extra account at

[www.learningwell.pk](http://www.learningwell.pk)

- **Other links:**

Besides the Net Extra, here we give other sites also which are **educational computer games and activities** for elementary students to learn on the web.

**Visit:** <http://www.abcya.com/input.html>

#### Comprehension Assessment (Answers)

1. Journey of Computer began with the first calculating device called Abacus.
2. Pascaline was suitable for counters and for car odometers because it could do only addition.
3. Jaquard's loom weaved pattern on the cloth through punch cards.

## ***Lesson 2: The things inside your CPU***

### **Aim of the lesson:**

This lesson aims to go inside the brain of computer. The box shaped CPU comprises the whole world of action in it. This lesson tells how different parts inside the CPU are assembled. What are their structure and their purpose?

### **Learning objectives:**

In this lesson students will learn about:

- CPU and its components inside
- Motherboard and its purpose
- Processor and its features
- RAM and ROM
- Hard disk and cards, and
- The casing of CPU and its importance.

### **Teacher support:**

As we have already mentioned, before a class you must be well prepared. Get information on **learning objectives** and on **how-to-teach techniques** from TRB and from the following available resources:

Visit: [http://pcsupport.about.com/od/insidethepc/ss/howitfits\\_3.htm](http://pcsupport.about.com/od/insidethepc/ss/howitfits_3.htm)  
<http://www.hardwaresecrets.com/article/How-a-CPU-Works/209>  
<http://computer.howstuffworks.com/23-computer-tour-video.htm>

### **Warm-up:**

Warm-up is always done for brainstorming and the lesson stimuli. **Connecting with previous concept about CPU**, let students involve enthusiastically in creative thinking and thus in active learning. You may start up with the bunch of questions, e.g.

- What do you think, what is inside the CPU?
- Can you draw what is inside?
- Is CPU an empty box?
- If it is not an empty box, what other things are doing inside it?
- Do you know what computer does? (They have the concept of software etc.)

### **Discussion:**

In this lesson, you are going to explain them about the inside parts of CPU and their role. They know that CPU is the brain of computer, which performs all works. Tell them that as human brain consists of many parts inside which manage different tasks, similarly CPU has different parts inside to perform different works. Show the pictures of Motherboard, RAM n ROM, Hard disk and the casing to the students in lab. With the help of computer assistant, you may detach parts of computer from the CPU and then attach them back. They will see that a board carries all the components of the CPU and this board is a motherboard for other parts of the computer. Display all other parts, which are attached to the

motherboard and tell their functions too. Perform a task on a computer and tell your students that how every component is taking part in that task. Also, involve them in explaining the shape and structure of different parts. In class, you should write difficult words and terms of the topic on the board. It will enhance their vocabulary as well.

Let students read the book with more understanding and mark difficult words as well as the key words.

<b>Keywords</b>	<b>Common words</b>
Circuits, Connections	components
Motherboard	capability
Processor, Transistors	various
Clock speed, install	modified
Sound card	features
RAM and ROM	dependent
Hard Disk	collection
Clock speed	
Sound card	
RAM and ROM	
Cards, CPU casing	

#### Assessment:

The assessment can be done by oral or written test.

Once explanation and demonstration is completed, find if any of the students have any problem in identifying inside parts of a computer and explaining their functions.

You may ask questions differently about a lesson showing pictures;

- Why the large board inside the CPU is called a motherboard?
- Inside the CPU, which part functions as a brain?
- What does RAM stand for and what is the function of it?
- Which is the permanent memory of the computer?
- Which component of the CPU stores all files?
- What is the cover of the CPU called and why it is important?
- How can we enhance our computer skills?

#### Summary:

- Motherboard is the main board inside the CPU. All components of CPU are attached to it.
- Processor is the brain of the computer. It manages all the functions of the computer.
- The main memory of the computer is called RAM. It stands for Random access Memory.
- ROM stores the information of the computer. It is the permanent memory.
- Different cards can be used in computer to increase the efficiency of computer.e.g. Graphic card enhances the video processing power of c computer.
- Casing is the cover of the computer. it protects CPU and its parts. It has power supply unit to supply power to all components.

- Ports connect hardware to the computer.

Once your student has clear concepts of the related topic, it's time to do creative work.

### Assignment:

**Skill development** is the core objective of the assignment. Enhance students' creative writing, thinking and speaking. Build their confidence and boost their progress.

- You may ask them to draw different parts of the computer and state their function.
- You can ask them to jot down points get them ready for demonstration in the computer lab
- You may ask them for a class presentation.
- You may also ask them to do assignment on a computer.

### Activity:

- Maintain a personal dictionary.
- Watch this online demonstration in the lab:  
<http://computer.howstuffworks.com/23-computer-tour-video.htm>
- Guide your students to do online activity:  
<http://activities.macmillanmh.com>

### Helping tools:

As a support material, you should tell them about the information pools.

- **The Net Extra.**

The Net Extra is especially designed for the teachers and the students. Here you can find not only the text material but also the related information, activities and exercises. You can guide your students to use net extra for more information.

Log on to net extra account at  
[www.learningwell.pk](http://www.learningwell.pk)

- **Other links:**

Besides the Net Extra, here we give other sites also which are **educational computer games and activities** for elementary students to learn on the web.

**Visit:** <http://www.abcya.com/input.html>

### Comprehension Assessment (Answers)

- 1: Transistors and the speed clock are the most important parts of the Processor.
- 2: Graphic Card increases the video capability of the computer.
- 3: CPU casing covers all the components and supplies power to them through its power supply unit.



### **Lesson 3: Embedded Computers**

#### **Aim of the lesson:**

This lesson aims to reveal the importance of embedded computers. We can put these tiny computers into all sorts of systems (door locks, airplanes, pacemakers, gas/petrol pumping machine, etc)

The scope and dependency embedded systems are continually expanding. For instance, there were around 8 billion embedded computers worldwide which has been double by 2010 or in other words there are 3 embedded computers per person on this Earth. Any failure in embedded system may result into critical consequences including the loss of life, thus, precision and reliability are vital.

#### **Learning objectives**

In this lesson students will learn:

- Embedded computer system
- Where it is used and
- Its function

#### **Teacher support:**

As we have already mentioned that before a class, you must be well prepared. Get information on **learning objectives** and on **how-to-teach techniques** from TRB and from the following available resources:

Visit:

[http://en.wikipedia.org/wiki/Embedded\\_system](http://en.wikipedia.org/wiki/Embedded_system)

<http://moneyterms.co.uk/embedded-computers/>

[http://www.webopedia.com/TERM/E/embedded\\_system.html](http://www.webopedia.com/TERM/E/embedded_system.html)

#### **Warm up:**

In previous grades n lesson, students have learnt that computers are used at many places. They know that in petrol pumps, aircrafts, in different machines like washing machine, etc, computer is used. Start your discussion with the warm up questions.

You may ask e.g.

- Where are computer used?
- Do we use computer in hospital, airports, etc?
- Do we use computers in petrol pumps and cars?
- Can you tell where do you see computer in the petrol pump? etc.

#### **Discussion:**

In this lesson, you will know the use of embedded computers in our lives. As your students know that computers are everywhere, but at some places they cannot see them as they see in their homes and offices. These computers, which are hidden inside machine or deep rooted, are called **embedded computers**. Computers, which are used in our homes, schools and offices, are different from embedded computers used in different machines, like in washing machines, sewing machine, petrol pumping

machines, etc. They are different in size, structure, and function from desktop and laptops. Embedded computers work **automatically** inside the machines. Focus on the accuracy of the work also. Tell that they are designed to perform one task repeatedly that's why they are more reliable and accurate. Now give them different examples from daily life where embedded are used accordingly. Tell the advantages of these computers. Elaborate the embedded computer, which are used in petrol pumps and cars. You may display each embedded computer through internet.

In class, you should write difficult words and terms of the topic on the board.

Let students read the book with more understanding and mark difficult words as well as the key words. Make them read aloud.

Keywords	Common words
Embedded computers Anti-lock Braking system (ABS)	Reliable Instantly Effective Display

#### Summary:

- Embedded computers are different from the regular computer we see.
- They work automatically.
- They do not need any person to operate it.
- They are inside the machines and perform only one task repeatedly
- They are more reliable and accurate
- ABS is also the example of embedded computers in cars

#### Assessment:

Do assessment either by oral test or by the written test.

Once explanation and demonstration is completed, find if any of the students have any confusion about embedded computers.

You may ask questions differently about a lesson showing pictures;

- Which type of a computer doesn't need an operator?
- Name 5 places where embedded computers are used
- How many tasks does an embedded computer do at a time?
- Which computers have long life and are more reliable?

**(Note: there is more to ask)**

Once your students are able to give correct answers, you can assign them some work.

#### Assignment:

**Skill development** is the core objective of the assignment. In case of computer education, you should focus on computer skills of a child.

You may ask them to

- Jot down points on embedded computer for class presentation using internet.

- Take the print out of different machines that have embedded computers.
- Make a list of places where embedded and the normal computers are used.

**Activity:**

- Maintain a personal dictionary
- Watch this online demonstration in the lab
- Activity from the book, page no. 15

**Helping tools:**

As a support material, you should tell them about the information pools.

- **The Net Extra.**

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- **Other links:**

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Visit: <http://www.abcya.com/input.html>

**Comprehension Assessment (Answers)**

- 1: Embedded computers are used because they are very simple and reliable and do one task repeatedly without mistakes.
- 2: Embedded computers work by themselves as they have built-in information and perform automatically.
- 3: ABS brakes are the embedded computer in a car which can save lives.

**Lesson 4: What operating system does?****Aim of the lesson:**

In every succeeding lesson students are going in the depth of computer according to their age-level. The purpose of the lesson at this stage is to highlight the driver of the computer, Operating system. Students will be able to understand that OS is between applications and hardware. It gives resources to Applications, takes resources from Applications and also works for Protection and Security. It makes our lives better. Without an operating system we would not be able to use our computer.



### Learning objectives

In this lesson, students will learn:

- More about operating system
- How it links hardware and software
- How operating system manages RAM and controls file system
- What is device driver
- How users communicates with the computer

### Teacher support:

Get detailed information on **learning objectives** from the following links and **how-to-teach techniques** from TRB.

Visit:

[http://en.wikipedia.org/wiki/Operating\\_system](http://en.wikipedia.org/wiki/Operating_system)

<http://www.gcflernfree.org/computerbasics/2>

[http://www.tutorialspoint.com/operating\\_system/os\\_quick\\_guide.htm](http://www.tutorialspoint.com/operating_system/os_quick_guide.htm)

### Warm up:

In progression with operating system taught in Grade 2, start your discussion with the warm up.

You may ask e.g.

- What is command?
- How we give command to a computer?
- Do you remember what the software is?
- How many types of the software are there?
- Which system gets activated when we give command to a computer?
- When we turn on a computer, which software runs first? etc.

### Discussion:

In this lesson, students will know further details of the Operating system. You make it sure that they have clear concept of command, software, hardware, types of software and have the idea of operating system and programs. You may show a flow chart of operating system to your students.

You may say that the OS provides a way to work on computer.

The OS is the most important part of the computer, which controls the computer and manages all other programs to run. It is like **a driver of an auto**, which follows our orders and takes us to the destiny. It also controls the vehicle.

You can show the steps on chart, like

We give Commands  $\implies$  Operating system sends our commands or order to the Program  $\implies$   
 Program gets started  $\implies$  Program then uses memory of the computer  $\implies$  then  
 communicates the output of the programs back to us using the monitor screen. The OS keeps  
 different programs running while the computer is powered on.

Guide your students that how OS is the bridge between the hardware and the software.

You should write difficult words and terms of the topic on the board.



Let students read the book with more understanding and mark difficult words as well as the key words. Make them read aloud.

Keywords	Common words
Operating system	Communicate
User Interface	Intermediary
Hardware, Software	Infringing
RAM, Device Drivers	
Data, Files	

**Summary:**

- Operating system depends on our command. It controls computer programs
- OS connects the hardware to the programs and Applications.
- OS manages all the programs of the computer
- OS manages RAM and the file system.
- It communicates with us through Monitor and the speaker.

**Assessment:**

Do assessment either by oral test or by the written test.

You may ask questions differently about a lesson showing pictures;

- What is OS stand for?
- What if there is no operating system?
- How operating system control all devices?

**Assignment:**

In computer education, computer skills and their understanding are the core objective.

You may ask them to

- Jot down points on operating system for class presentation using internet.
- Make an explanatory chart of the operating system and display in the class soft board.

**Activity:**

- Maintain a personal dictionary. Give them initial words to write and ask them to write their meanings.
- Activity from the book, page no. 19

**Helping tools:**

As a support material, you should tell them about the information pools.

• **The Net Extra.**

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Log on to net extra account at  
[www.learningwell.pk](http://www.learningwell.pk)

- **Other links:**

Besides the Net Extra, here we give other sites also which are **educational kids computer games and activities** for elementary students to learn on the web.

**Visit:** <http://www.abcya.com/input.html>

### Comprehension Assessment (Answers)

- 1: We need Operating system because it controls and manages all the functions and programs of the computer.
- 2: Computer is an electronic machine which can save so many files according to their type, size, time etc and open them for us within seconds. This is why it does better job than us.
- 3: Operating system is responsible for managing RAM because it provides memory to the program and not let the other program use this memory.

### Lesson 5: Understanding windows

#### Aim of the lesson:

Students have learnt about Operating system in previous lesson. This lesson reveals the importance of windows Operating system and its user friendly nature.

#### Learning objectives

In this lesson, students will learn:

- Windows desktop
- Features of Windows
- Icons of Windows
- Use of Shortcuts
- Use of Start button

#### Teacher support:

Get detailed information on **learning objectives** from the following links and **how-to-teach techniques** from TRB.

Visit: [http://en.wikipedia.org/wiki/Operating\\_system](http://en.wikipedia.org/wiki/Operating_system)  
<http://windows.microsoft.com/en-us/windows/windows-basics-all-topics#1TC=windows-7>  
[http://www.tutorialspoint.com/operating\\_system/os\\_quick\\_guide.htm](http://www.tutorialspoint.com/operating_system/os_quick_guide.htm)

#### Warm up:

In progression with operating system taught in Grade 2, start your discussion with the warm up. You may ask e.g.



- What is command?
- How we give **(Note: there is more to ask)**

**Discussion:**

Students learnt about Operating system in previous lesson. They know OS is the interface between Hardware and Software. You also taught them that without OS, Computer or its Programs cannot work. **Windows** is the example of Operating system, developed, marketed, and sold by Microsoft Company.

Whenever we open a program, file, or folder, it appears on our screen in a box or frame called a **Window** (name reflects). Guide your students that how OS is the bridge between the hardware and the software. As this lesson focuses on the Windows Desktop Icon. Let them see and understand them.

**Computer Icon:** shows list of hard drives, External storage devices, attached cameras and mobile phones. ( see textbook page 21)

**Recycle Bin:** It is a wastepaper Basket of computer. Files of no use are kept here and can be restored. Deleting from the Recycle bin is the permanent deletion. (See Textbook Page 21)

**Start button:** located at the left bottom of the screen. Contains menu. (See page no. 22)

For their ease tell them here how to make Shortcuts of files or folders.

You should write difficult words and terms of the topic on the board.

Let students read the book with more understanding and mark difficult words as well as the key words. Make them read aloud.

Keywords	Common words
Operating system	organizing information
GUI	display graphics
Computer Icons	installed
Start button	permanently delete
Recycle Bin	
Shortcuts	

**Summary:**

- Windows is the user friendly Operating system due to its being GUI.
- Windows appears first on the screen
- Main display of the windows is Desktop.
- Desktop has many Icons including the most important Computer Icon, Recycle Bin, Start Button, etc
- A shortcut helps us direct step-in the file or folder.

**Assessment:**

Do assessment either by oral test or by the written test.

You may ask questions differently about a lesson showing pictures;

- Why Windows operating system is user friendly?
- What is the main display of the Windows?
- What are mostly used Icons of the Desktop?

**Assignment:**

- Make a chart of the Windows operating system, label the icons and display in the class soft board.

**Activity:**

- Activity from the book, page no.23

**Helping tools:**

As a support material, you should tell them about the information pools.

- **The Net Extra.**

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- **Other links:**

Besides the Net Extra, here we give other sites also which are **educational kids computer games and activities** for elementary students to learn on the web.

**Visit:** <http://www.abcya.com/input.html>

**Comprehension Assessment (Answers)**

1. Shortcut is the shortest route to any file or folder.
2. Yes, Recycle Bin has all the we have ever deleted.
3. We can have shortcuts of Word files, Paint files, pictures, etc

**Lesson 6: Program for Imaging****Aim of the lesson:**

In the era of media-saturated culture, people want to create some of that media and Adobe Photoshop is hands down, is the required tool for that , the most renowned Program for creating and editing images for the websites. It is the first showing image manipulation tool for web design, Photography and print design.

**Learning objectives**

This lesson focuses on:

- Photoshop
- Steps of editing using Photoshop.



**Teacher support:**

To get the detail on learning objectives, you may visit given site.

[http://www.ehow.com/about\\_6133193\\_purpose-photoshop\\_.html](http://www.ehow.com/about_6133193_purpose-photoshop_.html)

<http://www.adobe.com/inspire/2012/08/ten-steps-photoshop-cs6.html>

[http://en.wikipedia.org/wiki/Adobe\\_Photoshop](http://en.wikipedia.org/wiki/Adobe_Photoshop)

**Warm up:**

You may ask:

- Which Program will you use for painting and drawing?
- Do you know how to make changes in pictures?
- Do you see your elders make changes in pictures?
- Who enjoys painting on MS Paint in home?

**Discussion:**

Photoshop is all about editing of pictures. Ask your students if they know how to change background of the picture and picture itself. Can you change color and shape of the picture to make it beautiful or do you elders change the looks of the photographs on computer? It would be appreciating if you take a picture of your any student and edit it using Photoshop tools.

Tell that all changes in pictures are done by Adobe Photoshop. This is the graphics editing program developed Adobe Systems which is an American Software company.

Photoshop can crop (removing unwanted areas from pictures), balance colors and tones, and format the picture. The steps are easy to understand for students if they see in computer lab. They are generally used to applying these tools in home with their elders.

You should focus the following steps: **(also see textbook page26)**

Selection of part of a picture to edit,

Layers separate different elements of an image

Brightness and contrast adjustment of the picture

Cropping to remove unwanted elements

Perspective control and distortion

Sharpening and softening images

Selecting and merging images

Selective color changes

Giving special effects and

Color adjustment

You should write difficult words and terms of the topic on the board. Read aloud the following terms

Let students read the book with more understanding and mark difficult words as well as the key words

Keywords	Common words
Photoshop	Imaging, published
Pixels, Layers	Prevent, fundamental
Distortion, harpening and softening images	Remove, visuals brightness
Merging images	transform
Special effects	skewed

**Summary:**

- Photoshop was released by Adobe system, an American Company, for Macintosh computers.
- For editing, Images are stored in computer in the form of Pixels.
- Storing in Pixel form helps in editing particular area without affecting others.
- Layers in Photoshop help in the placement of the element on each other without affecting them. It gives flexibility to the users.
- Brightness and contrast is another famous tool of Photoshop
- Clone tool of the Photoshop helps to remove unwanted area.
- User can also distort or transform the shape of the picture in Photoshop
- Photoshop can also sharpens and blur the picture according to the need.
- With the help of Photoshop, one or two images can also be merged.
- Many special effect can also be given including texture effects, geometrical transforms, artistic affects etc to create appealing, unusual effects

**Assessment:**

For assessment you may ask:

- Why do we need Photoshop?
  - What are pixels?
  - Which tool is required for working on particular area??
  - Why layers are used in Photoshop?
  - How can we remove an unwanted element from images
- (Note: there is more to ask**

**Activity:**

You can ask your students to paste pictures form the gallery and color them accordingly in the lab.

**Helping tools:**

As a support material, you should tell them about the information pools.

- **The Net Extra.**

As it has been mentioned that the Net extra is especially designed for the teachers and the students. Here you can find not only the text material but also the related information, activities and exercises. You can guide your students to use net extra for more information.

Log on to net extra account at

[www.learningwell.pk](http://www.learningwell.pk)

- **Other links:**

Besides the Net Extra, here we give other sites also which educational kids' computer games and activities are for elementary students to learn on the web.

**Visit:**

<http://www.abcya.com/input.html>



**Comprehension Assessment (Answers)**

1. Layers becomes a fundamental capability of Photoshop because placement one element of an image over another without affecting the layers below and above.
2. when we want to work only on a specific part of a picture without disturbing the whole picture we use selection.
3. These are:
  - Selection
  - Layers
  - Brightness
  - Sharpening and softening
  - Color adjustment
4. The picture with more pixels is better because it looks very clear.
5. Yes, it is possible. We will use
  - Selection
  - Layer
  - Merge
  - Color adjustment
  - Brightness

**Lesson 7: Understanding Word****Aim of the lesson:**

As mentioned earlier, MS Word is the most famous Program. It is used for word processing, designed to create documents using formatting tools. Students will learn how Word organizes, writes and edits documents more efficiently.

**Learning objectives:**

This lesson tells about:

- The MS word and its tools
- Tools and their functions

**Teacher support:**

To get the detail on learning objectives, you may follow given sites.

Visit: [http://www.erzincan.edu.tr/userfiles/files/word\\_2010\\_tutorial.pdf](http://www.erzincan.edu.tr/userfiles/files/word_2010_tutorial.pdf)  
[http://www.baycongroup.com/word2007/01\\_word2007.html](http://www.baycongroup.com/word2007/01_word2007.html)

**Warm-up:**

Students learnt about MS Word in previous grades. Generally they know the aim of it. You may ask few questions for their brainstorming like:

- Why do we use MS Word?



- How can you open Ms Word?
- What does Ribbon contain?
- What is meant by word processing?

### Discussion:

This lesson aims to develop the word processing skills of students and for that student needs practice. Take your students to computer lab and review the MS Word. Ask them to open it and help them describe the features of Ms Word. They should tell what is in their minds about it. Then connecting to their correct answers elaborates the terms. Repeat the steps

**Start button** → **All Programs** → **Microsoft Office** → **Microsoft Word**

Focus on three main features; Home tab, Insert and the Page layout. (See Textbook page 30)

**Home tab** mostly involve in formatting and is sub divided into five sections; {Clipboard} {Font} {Paragraph} {Styles} {Editing}

**Insert tab** adds things to the document and is sub-divided into seven sections; {Pages}{Tables} {Illustrations} {Links} {Header & Footer} {Text} {Symbols}

**Page layout** controls the looks and is sub-divided into five section; {Themes}{Page Setup}{Page Background} {Paragraph} {Arrange}

Note: Show every function of every feature of Ms Word in the lab for better understandings.

You should write difficult words and terms of the topic on the board. Read aloud the following terms

Let students read the book with more understanding and mark difficult words as well as the key words

### Read aloud the following terms:

Keywords	Common words
Home tab	Section
Insert tab	Frequently
Page layout tab	Highlighting
Alignment	Horizontally
Centralized text	
Justified text	

### Summary:

- Word processing is the writing and formatting of the document
- Home tab is the most important basic tab consisting of tools for text formatting.
- Home tab consist of five sections; {Clipboard} {Font} {Paragraph} {Styles} and {Editing}.
- Insert tab, as the name suggests, insert or add objects in the text.
- Page Layout controls the looks of the document.

### Assessment:

You may ask question related to the concept given in the textbook. Like

- Why MS Word is important?
- How can you open Word?
- Which tools of Home tab are most frequently used?
- Why we use Insert tab?
- What is alignment?

**Assignment:**

You may ask your students to:

- Make flash card of tools of Word with little description at the back.

**Activity:**

Do activity form textbook, Page no: 35

**Helping tools:**

As a support material, you should tell them about the information pools.

- **The Net Extra:**

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Log on to net extra account at

[www.learningwell.pk](http://www.learningwell.pk)

- **Other links:**

Besides the Net Extra, here we give other sites also which are **educational computer games and activities** for elementary students to learn on the web.

**Visit:** <http://www.abcya.com/input.html>

**Comprehension Assessment (Answers)**

1. It is well designed, errorless and attractive than handwritten document.
2. Text formatting mostly needs Bold, Size and Style tool
3. We have different types of paragraph alignments to place text in starting, ending or centre position.
4. We can use date and time and signature line from the insert tab while writing a diary, as they are main components of a diary.
5. We should decide page layout at the beginning of the task because we don't change every time.

**Lesson 8: Working with Word****Aim of the lesson:**

In lesson # 7, students learnt how to use different tabs of Ms Word for text formatting. In lesson # 8, they will practice the basics carefully in order to organize their work on Word.

**Learning objectives:**

This lesson tells about:

- The MS word and its tools
- Writing and formatting text on Word

**Teacher support:**

To get the detail on learning objectives, you may follow given sites.

Visit:

[http://www.erzincan.edu.tr/userfiles/files/word\\_2010\\_tutorial.pdf](http://www.erzincan.edu.tr/userfiles/files/word_2010_tutorial.pdf)

[http://www.baycongroup.com/word2007/01\\_word2007.html](http://www.baycongroup.com/word2007/01_word2007.html)

**Warm-up:**

You may ask few questions for their brainstorming like:

- Why MS Word is famous in the world?
- Can we maintain a daily diary on Word?
- What are the important features of MS Word?
- Can we add shapes in the document? How?

**Discussion:**

Take your students to computer lab and open MS Word and review its tools.

Follow the step for writing and formatting a letter. Focus on:

- Inserting date and time before writing a letter
- Using underline and bold tools to emphasize a text
- Alignments
- Spacing
- Adding bullets in a list
- Creating new document with bullets and pictures

**See Textbook, Page: 36**

You should write difficult words and terms of the topic on the board. Read aloud the following terms

Let students read the book with more understanding and mark difficult words as well as the key words

**Read aloud the following terms:**

Keywords	Common words
Insert tab	highlighted
Cursor	processing
Formatted letter	inserted
Double-headed arrow	impression
Centralized icon	disappears
Triple clicking	suitable size
Right indented	

**Summary:**

- Word processing is the process of writing, editing and producing a document.
- For word processing commonly Home tab, Insert and Page Layout tabs are used.
- We can add date and time and pictures in the document through Insert tab.
- We can create new document through the file menu
- We can format the document using Home tab options
- In Home tab, we mostly use font styles, alignment, indents, bullets points and line spacing.
-

**Assessment:**

You may ask question related to the concept given in the textbook. Like

- Why MS Word is important?
- How can you open Word?
- Which tools of Home tab are most frequently used?
- Why we use Insert tab?
- What is alignment?

**Assignment:**

You may ask your students to:

- Create a NEW document in Word on” My duties”
- Insert a header – Name Texting Date
- Use font and paragraph section.

**Activity:**

Do activity form textbook, **Page no: 41**

**Helping tools:**

As a support material, you should tell them about the information pools.

- **The Net Extra:**

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Log on to net extra account at

[www.learningwell.pk](http://www.learningwell.pk)

- **Other links:**

Besides the Net Extra, here we give other sites also which are **educational computer games and activities** for elementary students to learn on the web.

**Visit: <http://www.abcya.com/input.html>**

**Comprehension Assessment (Answers)**

1. Text should be bold or to make it Heading or a Note.
2. We use bullets or numbers to describe anything in points.
3. Note: Let students choose any document from NE and give reasons.
4. Yes we can do effective formatting while using home tab.
5. By changing header and footer of the letter for specific person.

## Lesson 9: Routine problems and their solutions

### Aim of the lesson:

When we use computer, we face some routine problem too. As computer is an integral part of lives, we should fix some of the problem ourselves. The aim of this lesson is tell how routine problems can be resolved. It also emphasizes on its maintenance in keeping the system running smoothly and efficiently.

### Learning objectives:

This lesson tells about:

- Routines problem of computer and their solutions
- Some safety measure to avoid computer problems

### Teacher support:

To get the detail on learning objectives, you may follow given sites.

Visit: <http://en.kioskea.net/faq/7318-if-your-keyboard-stopped-working>  
<http://www.computerhope.com/issues/ch000955.htm>

### Warm-up:

Generally everyone has computers at home. Youngsters are more fascinated towards it. Children may hear the problems arriving while using computer. You may ask like;

- Have you ever found that your computer did not turn on?
- Do you know that sometimes Keyboard stop working?
- Do you know sometimes monitor doesn't start?

### Discussion:

Students have the concept of machine. They know that machine can stop working. You can say that sometime refrigerators need maintenance to be in order, sometimes television or LEDs have problems to run and sometimes other home appliance become out of order. Similarly computer also has some technical issues which may stop its working and its different parts show inactivity. As, Sometimes keyboard, mouse, speakers etc don't work and sometimes monitor and computer do not run. Sometimes computers gets hang and sometimes whole system freezes.

In these situations, before we contact any technician, we need to check cable connections fixed properly to the socket to run the system or parts of computer and sometimes we need to restart the system to unfreeze the system. See details in textbook **Page: 42**

You should write difficult words and terms of the topic on the board. Read aloud the following terms  
 Let students read the book with more understanding and mark difficult words as well as the key words  
 Read aloud the following terms:

Keywords	Common words
Technician, Stabilizer Sockets, Power cables Ctrl+ S, Num lock Crashed application Restart	Fixing a problem Plugged in Consult Protect





**Summary:**

- If computer has problems it may stop working.
- We can fix normal routine problems of computer but the difficult and the complicated problems are fixed by the computer technician
- Cables wires should be tightly fixed with the sockets and the stabilizers.
- When computer or monitor, keyboard, mouse doesn't start, it may be due to the loose cable connections to the socket. Fix it tightly.
- Sometimes entire computer or an application freezes, or it becomes too slow, restarting the computer may resolve these problems.
- Children should not see check the connections themselves, they better ask their elder to fix them.
- If any problem persists, take computer to the technician to get it fixed.

**Assessment:**

You may ask question related to the concept given in the textbook. Like

- What are the routine problems we generally face while using computer?
- Why sometimes computer does not turn on?
- What should we do when monitor doesn't turn on?
- What happens when computer runs slowly?

**(Note: there is more to ask)**

**Assignment:**

You may ask your students to:

- Make a file of routine computer problems and their solution on Ms Word.

**Activity:**

Do activity form textbook, Page no: 45

**Helping tools:**

As a support material, you should tell them about the information pools.

- **The Net Extra:**

As it has been mentioned, the Net Extra is especially designed for the teachers and the students. Here you can find not only the text material but also the related information, activities and exercises. You can guide your students to use net extra for more information.

Log on to net extra account at

[www.learningwell.pk](http://www.learningwell.pk)

- **Other links:**

Besides the Net Extra, here we give other sites also which are **educational computer games and activities** for elementary students to learn on the web.

**Visit:** <http://www.abcya.com/input.html>



**Comprehension Assessment (Answers)**

1. We should always keep the power cable of computer tightly fixed.
2. We can solve this problem by restarting the computer system.
3. We should avoid power fluctuation by connecting power cables and stabilizers properly.

**Lesson 10: The living internet Basics****Aim of the lesson:**

The Internet has modernized the communication and computer world like nothing before. The invention of devices for communication set the stage for this unique integration of capabilities. The Internet, without regard for geographic location, is a medium for collaboration and interaction between individuals and their computers having world-wide broadcasting abilities and information dissemination.

**Learning objectives**

This lesson focuses on:

- Internet
- E-mail
- World Wide Web
- Websites
- Web browser
- Search engines

**Teacher support:**

For assistance get information on **learning objectives** and on **how-to-teach techniques** from TRB and from the following available resources:

Visit:

<http://simple.wikipedia.org/wiki/Internet>

<http://www.techopedia.com/definition/28247/internet-of-things-iot>

<http://www.forbes.com/sites/jacobmorgan/2014/05/13/simple-explanation-internet-things-that-anyone-can-understand/>

**Warm up:**

For lesson stimulus, you may ask:

- Do you play online games?
- Do your parents talk to their friends on Skype?
- Does your father send emails to different people?
- If you want to read about Robot, can you search the material on internet?

**Discussion:**

Discuss with them in detail that the Internet plays a vital role in the research fields and development of information infrastructure



Discuss internet in general if they know. Many of them must be aware of emails, Google, face book, twitter, etc. they are generally used to playing internet games. Elaborate that all is possible because of internet. Internet connects all computers together by telephone lines or Wi-Fi (may hear it.)

It is not a good choice to explain verbally. It is always better to show them in lab.

Take them to lab if internet is available.

There focus on internet, emails, Websites, WWW, and types of websites. Tell the importance and function of each component of the internet. **(Explained very friendly in textbook. See page 48)**

Note: The basic aim is to familiarize these terms to them.

In class, write difficult words and key words of the topic on the board

Let students read the book with more understanding and mark difficult words as well as the key words.

Keywords	Common words
Internet, Wi-Fi	connection
Wireless system	format
E-mail	messages
Worldwide Web	countless
Websites, Hypertext	specialized websites
Web pages	famous sites
Social networking sites	description
Online shopping	
News websites	
Search engines and web browsers	

#### Summary:

- Internet connects one computer or device to another worldwide through wireless system and telephone lines.
- Billions of computers are connected through internet.

Internet is used to share information,

#### Assessment:

For assessment you may ask:

- What is Internet?
- Why do we use E-mail?
- What is the difference between website and webpage?
- What does HTML stands for?
- Where do we use HTML?
- What is the aim of search engine?

#### Assignment:

- You may ask your students to visit Net Extra.

**Activity:**

Do activity from textbook, page:51

**Helping tools:**

As a support material, you should tell them about the information pools.

- **The Net Extra.**

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Log on to net extra account at:

[www.learningwell.pk](http://www.learningwell.pk)

- **Other links:**

Besides the Net Extra, here we mention links to sites which have **educational computer games and activities** for elementary students to learn on the web.

**Visit:**

<http://www.abcya.com/input.html>

**Comprehension Assessment (Answers)**

1. We share files so that other users can also view the file.
2. So many computers are connected to internet to communicate with each other and share different things.
3. It is a communication system because it links many users and creates a communication path through emails, chat messengers and file sharing.
4. Sharing made easy by connecting several users through single network.
5. We need Internet of Things as it will share information and devices will act upon them with little or no human involvement

**Lesson 11: Understanding Chrome****Aim of the lesson:**

Chrome is the application software that is developed to access and retrieve Web pages, images, documents, books, etc using the Internet.

**Learning objectives**

This lesson focuses on:

- Browsers and their aim
- Chrome and its features.

**Teacher support:**

For assistance get information on **learning objectives** and on **how-to-teach techniques** from TRB and from the following available resources:

Visit: <https://answers.yahoo.com/question/index?qid=20070705013154AAWaW4F>  
<http://careerride.com/view.aspx?id=3183>  
[http://wiki.answers.com/Q/What\\_is\\_the\\_main\\_function\\_of\\_a\\_web\\_browser](http://wiki.answers.com/Q/What_is_the_main_function_of_a_web_browser)  
<http://whatbrowser.org/>  
<http://www.computerhope.com/jargon/b/browser.htm>

**Warm up:**

For lesson stimulus, you may ask:

- How do you visit different website on Internet?
- Can we get access to any website without search engine?
- What is the role of internet in searching any document online?

**Discussion:**

Students have learnt about Application software, internet, Search engines and web pages. Give them a little review and tell the importance of Browsers, their purpose and way to use them. There are many browsing Software, but the easiest is Chrome. Take them to the Lab and show them chrome and show every feature with its function.

**Address box** is where we type address of the website to search.

At the extreme left beside the address bar there are two arrows that is Backward and Forward buttons.

Control menu is divided into eight sections, which provides many facilities to the users.

Bookmark, the option in the Control menu, is an online service that lets you save links to your favorite web sites, so that you can view the webpage immediately without typing in the address again,

In class, write difficult words and key words of the topic on the board

Let students read the book with more understanding and mark difficult words as well as the key words.

Keywords	Common words
Browsers, Internet Explorer	evident
Firefox, Apple Safari	enlarge
Address box	reduce
Control menu	extensive tools
Edit, Zoom	dialogue box
Bookmarks	

**Summary:**

- Browsers are the Application Software to access and retrieve the documents, images, WebPages etc
- Chrome is the most famous and the easiest browsing Software
- Control menu is to operate the chrome the way we want
- Control menu is divided into eight sections
- Address bar is the place where we enter the web address to search.

**Assessment:**

For assessment you may ask:

- What is the aim of a browser?
- What is Google Chrome?
- Name the features of the Chrome.
- What do we have the option of bookmarks?
- What options does control menu give to its users?

**Assignment:**

- Search some websites via chrome for the "the history of Browser"

**Activity:**

Do activity from textbook, page:55

**Helping tools:**

As a support material, you should tell them about the information pools.

- **The Net Extra.**

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Log on to net extra account at:

[www.learningwell.pk](http://www.learningwell.pk)

- **Other links:**

Besides the Net Extra, here we mention links to sites which have **educational computer games and activities** for elementary students to learn on the web.

Visit: <http://www.abcya.com/input.html>

**Comprehension Assessment (Answers)**

1. Some websites appear on Chrome because they are bookmarked.
2. We must open those web pages in a new tab of same window.
3. We can go to the history option in the control menu. It has all the addresses of sites we visited with dates.

**Lesson 12: The coming revolution: wearable computers****Aim of the lesson:**

The basic aim of this lesson is educate the students what is the wearable computer and why and how we use it.



**Learning objectives**

This lesson focuses on:

Wearable computer and its use

Technologies used in wearable computers

**Teacher support:**

For assistance get information on **learning objectives** and on **how-to-teach techniques** from TRB and from the following available resources:

Visit: <http://www.prnewswire.com/news-releases/adaptive-optics-technologies-and-global-markets-263790471.html>  
[https://www.princeton.edu/~achaney/tmve/wiki100k/docs/Wearable\\_computer.html](https://www.princeton.edu/~achaney/tmve/wiki100k/docs/Wearable_computer.html)

**Warm up:**

For lesson stimulus, you may ask:

- Can you imagine how we can wear a computer?
- Use your imaginations to give forms of wearable computers?

**Discussion:**

Give any new concept to a child very friendly. Before coming to wearable computers, children should know why we need wearable computers and they should also know the continuous effort of scientists in advancement of computer. Smart phones are the advanced form of portable computers. Now from smartphones, scientists want to have consistent interaction between computer and its user when the user is even busy in other physical activities. Scientists want that user do not need turn on and off computer. In 1979, Steve Mann gave this concept. wearable computer is a computer which can be stick on a body without causing any discomfort. The input is either voice driven or with wireless wrist mounted devices

There are four basic technologies are used in wearable computers

Optics for lenses and vision

Infrared for vision at night

Cloud computing for remote use of CPU

Biometrics for people recognition

Google Glass has been developed, which displays information on a tiny screen. Google glass allows a user to take photos, video chat, and access maps for direction and search Web.

In class, write difficult words and key words of the topic on the board.

Keywords	Common words
Wearable computers, Miniature computers Optics, Infrared, Cloud computing Biometrics, Google's Glass Google's Android, Epidermal computers	Inception, transformation Augment, plain language Intelligence, suspicious basic vision, infancy

**Summary:**

- Size of computers has been decreased but efficiency have been increased
- After smart phones , computers are entering the era of wearable computers
- Wearable computers will be worn on body to augment the senses or monitoring
- WCs will be able to do navigation, social networking, gaming and shopping

**Assessment:**

For assessment you may ask:

- Why do we need wearable computers?
- What do you understand by optics and infrared technologies?
- What is the aim of Biometrics?
- How Google's Glasses would help its wearer?

**Assignment:**

Get to know technologies of wearable computer via Google Chrome.

**Activity:**

Do activity from textbook, page:60

**Helping tools:**

As a support material, you should tell them about the information pools.

- **The Net Extra.**

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Log on to net extra account at:

[www.learningwell.pk](http://www.learningwell.pk)

- **Other links:**

Besides the Net Extra, here we mention links to sites which have **educational computer games and activities** for elementary students to learn on the web.

Visit: <http://www.abcya.com/input.html>

**Comprehension Assessment (Answers)**

1. Navigation, social networking, gaming and shopping system has made WC's possible.
2. Wearable computers are used only to augment the senses but not for writing, calculations or making pictures like normal PCs.
3. Optics and infrared technologies of WCs will let our grandparents to see clearly and even in the dark.
4. Optics, Infrared, Cloud Computing and Biometrics are the most important technologies used in WCs.
5. Cloud Computing, Optics and Infrared are already done but they need more advancement.