My
COMPUTeachER

THE COMPUTER BOOK FOR EVERYONE

PAUL RALLION

My COMPUTeachER

The Computer Book for Everyone

Paul Rallion, MAE, NBCT

My COMPUTeachER
The Computer Book for Everyone
Copyright © 2012 by Paul Rallion

This book is available at:
www.paulrallion.com

Dedications

To All My Students: Past, Present, and Future

I dedicate this book to all my students: past, present, and future. Their presence and participation in my classroom has made my teaching worthwhile. With this book I'd like to reach students that I won't have the fortune to meet.

—Paul

Contents

Introduction

Throughout the years, many people have asked me questions regarding computer applications. As a computer instructor, I decided that publishing some of them (not necessarily in question format) might have a high interest value. This book is a comprehensive collection of all the handouts I have developed through my last 20 years in the classroom.

The handouts in this book represent the bulk of my classes. Following each handout, there is a suggested class project or exercise, a homework assignment, and a sample quiz. The answers to some of the questions are found directly on the handouts, while others require deductive reasoning. I have added a few questions that ask for an opinion, and of course, those answers would be neither right nor wrong.

The goal of this book is to provide you with valuable information you can use right away. As you read these handouts, consider this:

• **If you're a teacher:** How do you use technology in the classroom? You can use many of the programs explored in these handouts to enrich your curriculum. If you would like some of this material to become part of your teaching repertoire, feel free to modify class projects or homework and quiz questions.

• **If you're a parent:** You can use these handouts to explore and enjoy your computer more. Perhaps there is a program you would like to know more about. I hope these handouts will be beneficial to you.

• **If you're a student:** Most of what I teach in my computer class is in these handouts. They contain important concepts and tips that you can use throughout your journey as a student and beyond.

• **If you're a professional in another field:** The productivity software covered here is used in most fields of work. There is other software that is recreational in nature. In either case, computer programs can be enjoyed more when understood more deeply.

Disclaimer

Due to the nature of the Internet and computer development, some commands, shortcuts, or Web addresses contained in this book, may have changed since publication and may no longer be valid. The information in this book is for educational purposes only. Nothing herein should be interpreted as personalized advice. None of the information in this book is guaranteed to be correct, and anything written here should be considered subject to independent verification. The author does not take any responsibility for any opinions or ideas expressed in this book. The author does not assume any liability as a result of the use of the information presented herein. Under no circumstances will the author be responsible for incidental or consequential damages or direct or indirect damages that result from your use of the information in this book.

Computer Basics
www.paulrallion.com

Objective: You will learn what a computer is, a short history, and the types of computers.

What is a Computer?

➢ A computer is an electronic device to which you enter or input data, it processes data, it stores data, and it gives you the desired result or output.
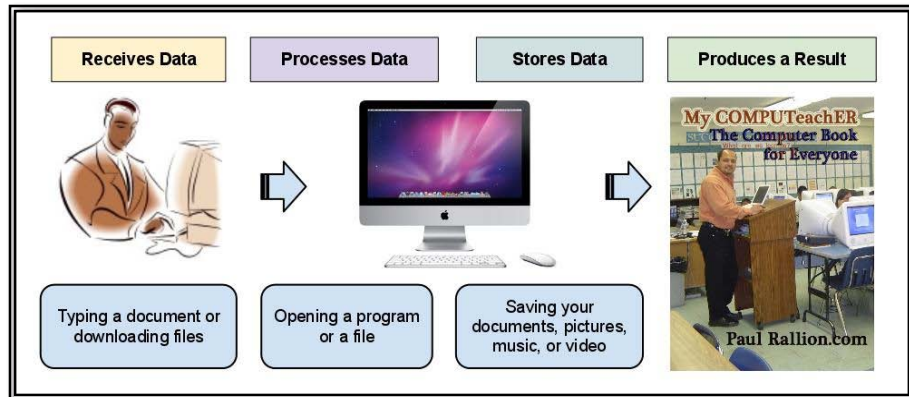
History of the Computer:

➢ The computer era began with Charles Babbage in the 1860's. He invented a mechanical calculator. The ENIAC (Electronic Numerical Integrator and Computer) was part of the first generation of computers powered by vacuum tubes in the 1940's. They were temperature-sensitive, expensive, and difficult to repair. These inventions have allowed us to enjoy computers today: the transistor (1947), integrated circuits (1960's), and microprocessors (1970's). The first personal computers became available as follows: The Altair (1974), Apple II (1977), IBM (1981), Macintosh (1984), IBM with Windows (1985). (Winters, Moore, Cambridge Educational 2008).

Computer Applications: ➢ Computers are used in a great number of ways: to type letters, to make tables, charts, to draw, to communicate, etc. Can you name a few more?

Types of Computers

➢ There are different types of computers:

The **microcomputer**, also called personal computer or PC (insert at left), is used at home or at the office. The desktop PC is becoming less popular (refer to the next section), but also less expensive as manufacturing technology becomes more efficient.

The **notebook computer**, also called laptop (insert at right), has similar capabilities to the PC. It is smaller, portable and wireless. It has become more popular than the desktop PC. The **netbook computer** is a new, smaller version of the notebook computer.

The **mainframe computer,** also called server, is larger and more powerful than a microcomputer. Mainframe computers are used for centralized storage and management of large amounts of data (insert at left). Large organizations such as banks, hospitals, universities, etc., use computer servers to store and manage their customers' data. You can withdraw money from your bank account at one bank location, and all other bank branches will have that information updated instantly.

Class Project # 01
Computer Basics
WWW.PAULRALLION.COM

➢ Read the handout and draw examples of how the computer performs the functions described. Do a research on the history of computers. Look up the acronym: ENIAC. What kind of storage devices have been available?

Homework # 01
Computer Basics
WWW.PAULRALLION.COM

1.- What are four things all computers do?
2.- Describe the types of computers
3.- Make a list of 10 uses of a computer (NOT from the handout)

Sample Quiz # 01
Computer Basics
WWW.PAULRALLION.COM

1.- Give an example of a computer producing a result.
2.- Give an example of a computer input device.
3.- Computers used for centralized storage, processing, and management of large amounts of data:
4.- What is one way we use computers today (NOT from the handout)?

Keyboarding

Objective: You will learn keyboarding, the correct way to type.

QWERTY Keyboard Layout
➢ Our current keyboard layout was designed about 150 years ago to prevent keys from jamming in a typewriter (picture at right). This layout is here to stay, so it makes sense to memorize the key locations.

➢ Keyboarding is the ability to enter text by using the correct fingers without looking at the keys –one of the most useful computer skills! Place you fingers over the home row keys:

a, s, d, f, (left hand), ---- **j, k, l, ;** (right hand).
All keystrokes are made from this position. After a keystroke is made, the finger returns to the home row. Sit up straight and lean forward slightly. Your body should be a forearm's length from the front of the keyboard. An online course I recommend is: www.goodtyping.com.

International Keyboard Set Up (to type accents and ñ's):
➢ For Windows: Control Panel ⇨ Clock, Language, Region ⇨ Regional & Language Options ⇨ Change Keyboards or other input methods ⇨ Change Keyboards ⇨ General tab: Select English (United States) - United States - International. Click Ok.
To type an accent: type the ' key and then the letter. To type the ñ, type the ~ key and then the n.
➢ For Mac: Press and hold the Option key + the letter e key, then type the letter you wish accented. For ñ, press and hold the Option key + the letter n key, then type the letter n again.

Avoiding Physical Injury:
➢ To reduce the effect of Carpal Tunnel Syndrome, learn to use the mouse with BOTH hands, and alternate between them every few months. It may seem hard at first, but it's worth trying.
➢ To avoid eye fatigue, take visual breaks. Look at and focus for a few seconds on a distant object (as far as you can) and then turn to look at something close for a few seconds. Repeat.

Class Project # 02
Keyboarding
WWW.PAULRALLION.COM

➢ Find a free typing tutorial online and practice your typing skills. The one I receommend is www.goodtyping.com. Remember, DO NOT look at the keyboard!

Homework # 02
Keyboarding
WWW.PAULRALLION.COM

1.- Which keys are the "home row"?
2.- Why is it called the "home row"?
3.- Describe the correct Keyboarding Posture.
4.- What are some things you can do to lessen physical injury?

Sample Quiz # 02
Keyboarding
WWW.PAULRALLION.COM

1.- Which keys are the "home row"?
2.- The ability to type using the correct fingers without looking at the keys is called:
3.- Touch typing is also called:
4.- The correct typing position refers to your:

Computer Drawing

Objective: You will learn how to use a Drawing® program.

Computer Drawing®:

➢ Drawing® is a program used to create simple shapes such as rectangles, circles, lines, and polygons (see insert at right). You can combine these shapes to create designs –such as a map or a quick sketch. A drawing is made of "objects" – separate elements such as rectangles, lines, and text, as well as paint and spreadsheet frames. An object has eight handles (eight dots around it) when you select it (click on it). These handles are used to resize the object. To move the object around, click and hold your mouse anywhere inside the object. You can make copies of your object by going to: *Edit,* and selecting *Copy.* Then go to *Edit*, and select *Paste.*
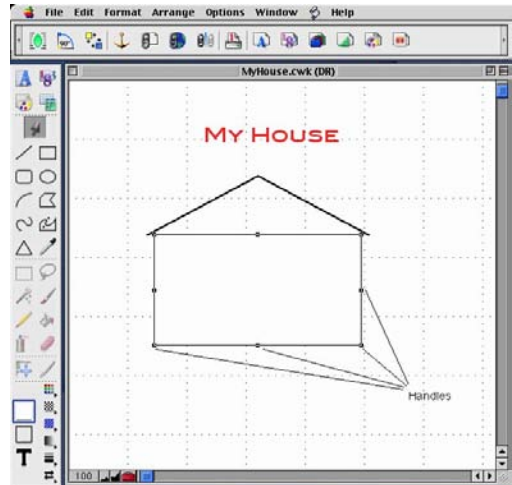
Using the Tool Panel (below):

➢ The tool panel contains icons that represent the tools used to work in Drawing®. You use these tools to create, select, move, resize, and reshape objects. For a description of each tool just place your mouse over any icon.

Text Tool	Spreadsheet Tool
Paint Tool	Table Creation Tool
	Arrow Pointer
Line Tool	Rectangle Tool
Rounded Rectangle Tool	Oval Tool
Arc Tool	Polygon Tool
Freehand Tool	Bezier Tool
Regular Polygon Tool	Eyedropper
	Color Palette Button
Fill Formatting Button	Pattern Palette Button
Pen Formatting Button	Wallpaper Palette Button
	Gradient Palette Button
Pen Color	Line Weight Palette Button
	Arrow Style Palette Button
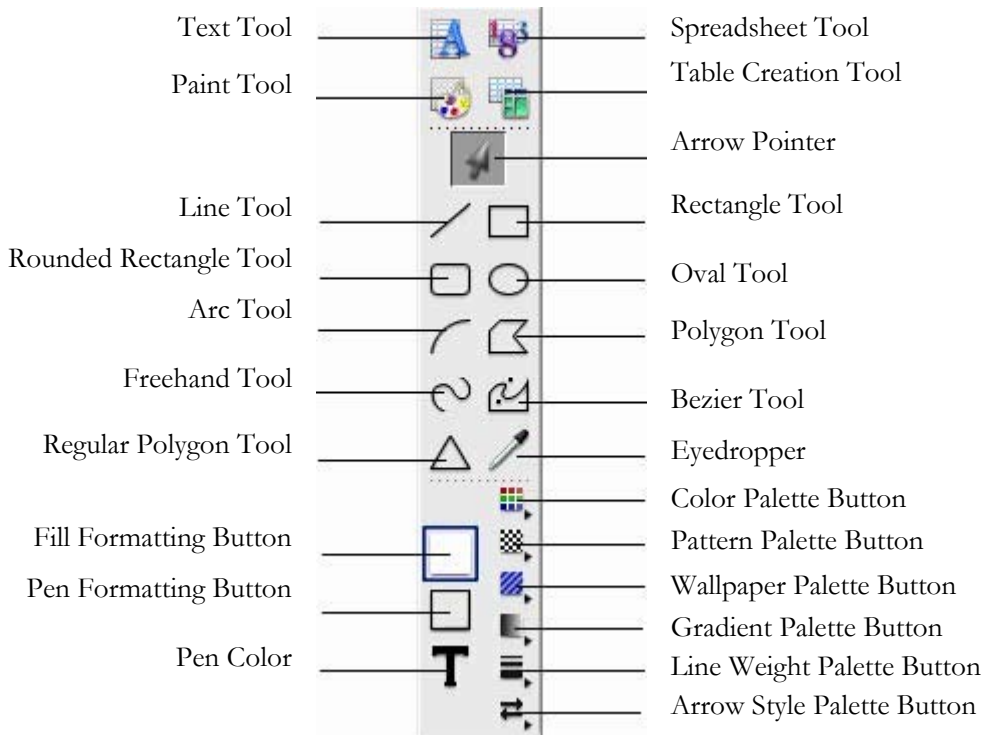
Computer Drawing
WWW.PAULRALLION.COM

➢ Draw a sketch of your neighborhood. Label street names and main buildings.

Homework # 03
Computer Drawing
WWW.PAULRALLION.COM

1.- What can you create with a Drawing program?
2.- What is a drawing made of?
3.- How do you make a copy of an object?
4.- How do you get a description of a tool?

Sample Quiz # 03
Computer Drawing
WWW.PAULRALLION.COM

1.- A drawing is made of:_____ (simple shapes like rectangles, circles, etc.)
2.- What do you call the dots around the simple shapes:
3.- How many dots are there in a rectangle or square in Drawing?
4.- How do you make your work area wider?

Parts of the Computer

Objective: You will learn the parts of a personal computer, or a PC. You will learn what software is, and what hardware is.

What is Software?
➢ Software is a set of instructions (programs) and data that a computer uses to do its job. For example: Microsoft Word, Microsoft Excel, Microsoft PowerPoint, Painting, Drawing, Electronic Mail (e-mail), Google Docs, etc.

What is Hardware?
➢ Hardware is the materials and physical components the computer is made of: The monitor (screen), keyboard, mouse, CPU (Central Processing Unit), USB flashdrives, etc.

What is the Operating System?
➢ The Operating System is a type of software that allows the computer hardware and other computer software "talk to each other," to be able to function. Examples of Operating Systems are: Mac OS X®, or Windows® 10, Linux.

The Parts of a Computer
➢ The Computer consists of several parts:
CPU: Central Processing Unit. The CPU contains some or all of the following:
- HD: Hard Drive, - CDW-ROM: Compact Disk Writable – Read Only Memory,
- DVD: Digital Video Disk, - USB (Universal Serial Bus) connections, video outputs.
Keyboard, Mouse, Monitor, Digital Camera, Printer, Scanner.

Input or Output?
➢ If you use a device to send information to the CPU, it is called an input. For example: when you press a key on the keyboard, information is flowing into the CPU, so the keyboard would be an input device. Label the following pictures, including whether they're input or output:

Parts of the Computer

➢ Redraw the parts of the computer in Drawing and label each part.

Parts of the Computer

1.- What is Software?
2.- What is Hardware?
3.- What is an Operating System?
4.- Label the The Parts of a Computer (include Inputs and Outputs)

Parts of the Computer

1.- A set of instructions that tells the computer what to do is called:
2.- The materials and physical components of the computer are called:
3.- The keyboard and mouse, are they Input or Output?
4.- The printer, is it Input or Output?
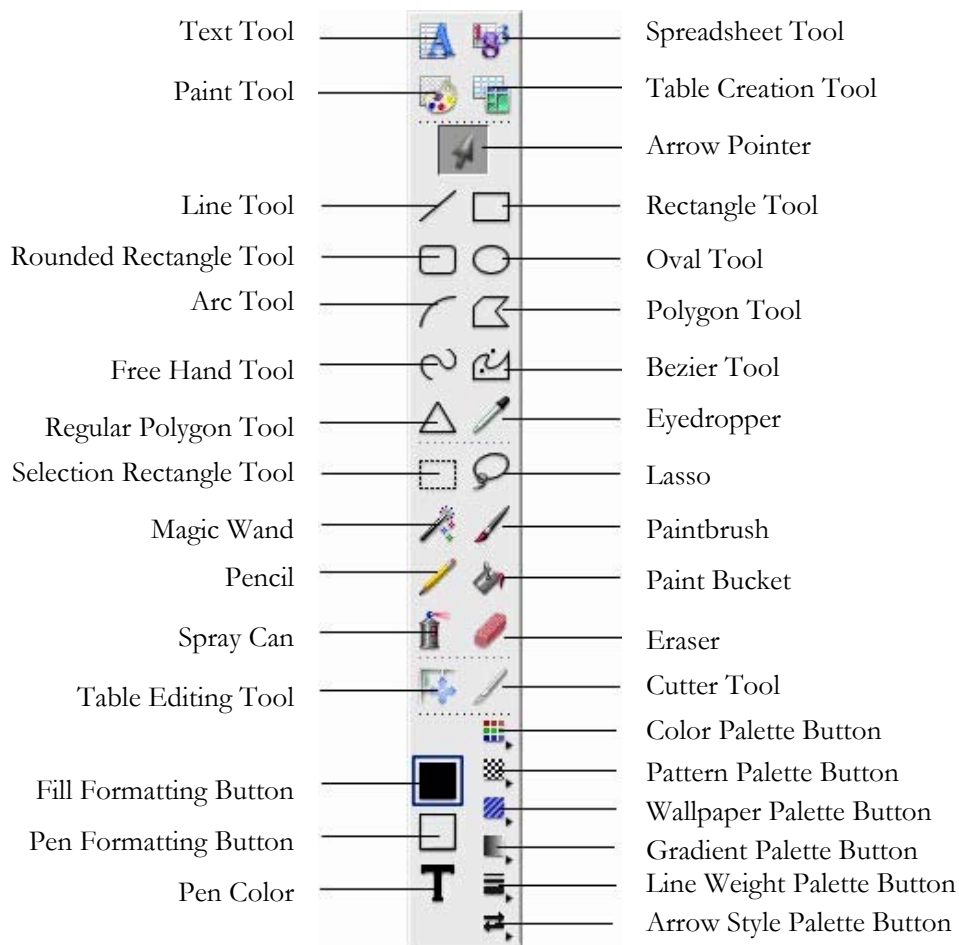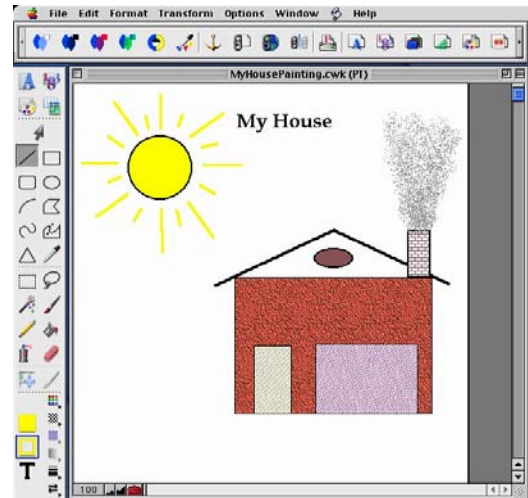
Objective: You will learn how to use a Painting® program.

➢ Painting® is a program used to create simple shapes such as rectangles, circles, lines, and polygons (see picture). You can also create airbrush or brushstroke effects, tint colors, or create "hand-painted" artwork. A popular use of this program is to work with scanned pictures, i.e.: you can add or delete stuff from pictures, decorate them, etc.

Using the Tool Panel (below):

➢ The tool panel contains icons that represent the tools used to work in Painting®. You use these tools to paint images, draw objects, and change the appearance of objects. Below is the tool panel with the name of each icon. For a description of each tool, go to: *Help*, select: *Show Balloons*, and place your mouse over any icon.

Left label		Right label
Text Tool		Spreadsheet Tool
Paint Tool		Table Creation Tool
		Arrow Pointer
Line Tool		Rectangle Tool
Rounded Rectangle Tool		Oval Tool
Arc Tool		Polygon Tool
Free Hand Tool		Bezier Tool
Regular Polygon Tool		Eyedropper
Selection Rectangle Tool		Lasso
Magic Wand		Paintbrush
Pencil		Paint Bucket
Spray Can		Eraser
Table Editing Tool		Cutter Tool
		Color Palette Button
		Pattern Palette Button
Fill Formatting Button		Wallpaper Palette Button
Pen Formatting Button		Gradient Palette Button
Pen Color		Line Weight Palette Button
		Arrow Style Palette Button

Computer Painting
WWW.PAULRALLION.COM

➢ Find a picture of a landmark, from anywhere in the world, and reproduce from scratch, with your Painting program. Use as many as the tools as possible to make it as close to the original as possible.

Homework # 05
Computer Painting
WWW.PAULRALLION.COM

1.- What can you do with a Painting program?
2.- Which tools are now available that were not available in Drawing?
3.- Why do you think a popular use of Painting is to work with scanned pictures?

Sample Quiz # 05
Computer Painting
WWW.PAULRALLION.COM

1.- Name a popular use of this computer program:
2.- What do you place over a tool on the toolbar to get its description?
3.- With this program you can: paint images, draw objects, and:
4.- How do you make your work area wider?

➢ Computer Technology Standard # 8: Select and use appropriate tools and technology resources to accomplish a variety of tasks and solve problems.

Computer Desktop
WWW.PAULRALLION.COM

Objective: You will learn to describe the computer desktop, and explain the difference between the Microsoft Windows desktop and the Apple Mac desktop.

What is the Desktop?
➢ The desktop is the first screen you see when the operating system (Windows or Mac OS - Operating System) is up and fully running. It is called desktop because the icons symbolize real objects on a real desktop. Icons are shortcuts to programs or files, or other functions.

What is GUI?
➢ GUI stands for Graphical User Interface. It makes a computer easier to use by freeing you from memorizing complicated text commands. Instead, you point and click with your mouse, or some other input device, to activate programs and commands.

Microsoft Windows Desktop
➢ The Windows® Desktop has the icons on the left by default, but you can move them around. The taskbar is at the bottom by default, but you can place it on any side. The taskbar shows you which programs or files are open. To go from one program or file to another, click its button on the taskbar. You can also do this: Hold "Alt," and press "Tab." The taskbar has more icons which are shortcuts to other functions or programs. Some applications, such as Virus protection programs are shown next to the clock.

Apple Mac Desktop
➢ The Macintosh OSX® ("O-S-10") Desktop has the icons on the right by default, but you can also move them around. The menu bar is fixed at the top. The "Dock" contains icons to open programs, documents, folders, and minimized windows. You can also see which programs or files are open. To go from one program to another hold "Apple Command," and press "Tab." The open programs have a small arrow under its icon. You can customize the size of the dock, as well as its position on the desktop.

Tip: Place only a few icons on your desktop. An excessive number of icons on your desktop not only may slow down your computer but it may also make the desktop look messy.

➢ Computer Technology Standard # 8: Select and use appropriate tools and technology resources to accomplish a variety of tasks and solve problems.

Computer Desktop
WWW.PAULRALLION.COM

➢ Redraw both desktops and label its parts. Discuss the difference between the two desktops: Mac and Windows.

Computer Desktop
WWW.PAULRALLION.COM

1.- Why does GUI make a computer easier to use?
2.- Why is it called the "Desktop"?
3.- Make a table of differences between the Mac and the Windows desktop.
4.- Which desktop do you prefer, Windows or Mac? Why?

Computer Desktop
WWW.PAULRALLION.COM

1.- Shortcuts to programs or files are called:
2.- In Windows, where can you see which programs are open?
3.- In Macintosh, where can you see which programs are open?
4.- In Macintosh, what do open programs have under its icon?

➢ Computer Technology Standard # 8: Select and use appropriate tools and technology resources to accomplish a variety of tasks and solve problems.

Objective: You will learn how to scan pictures so you can modify them or use them in your work, i.e.: a report, a web page, etc.

What is a scanner?
➢ A scanner is an input device that "takes a <u>digital</u> picture of a document or a photograph," either in black-and-white or color.

Steps to scan!
➢ Connect your scanner to your computer (wired or wireless), and follow these steps to scan:

1) Place your picture face down on the scanner's glass.
2) Open the scanner's software and insert a USB flashdrive
3) Click **Scan** – click Exit
4) Click **Save** – type a name for your picture
5) Click **Browse** – click MrRallion – click **Open**
6) Click **Save** – click **Close** – click **Clear – Ok**
7) Eject USB drive – take to your computer
8) Plug in USB drive on your computer
9) Click icon & drag your scanned picture to Pictures folder.

Your file is saved by default with a .jpg extension. JPG stands for Joint Photographer's Group, and is the preferred format for pictures.

Picture File Settings:
➢ You should set your settings to "Color Photo," 300 dpi (dots per inch) resolution. If you want to re-print the picture you want a Higher Resolution. If you want to email the picture file to someone, you want to select a Lower Resolution.

Now what?
➢ You can now make changes to your picture with Painting, you can add it to text in word processing, or in a web page design program, or just print it out.
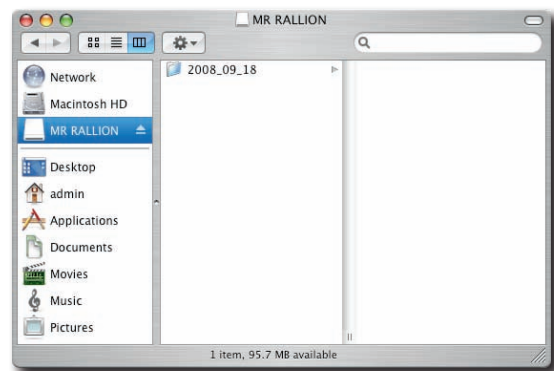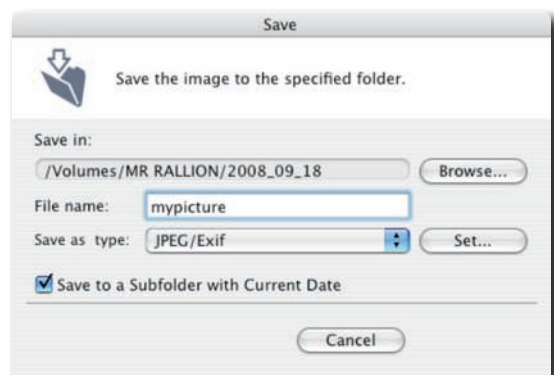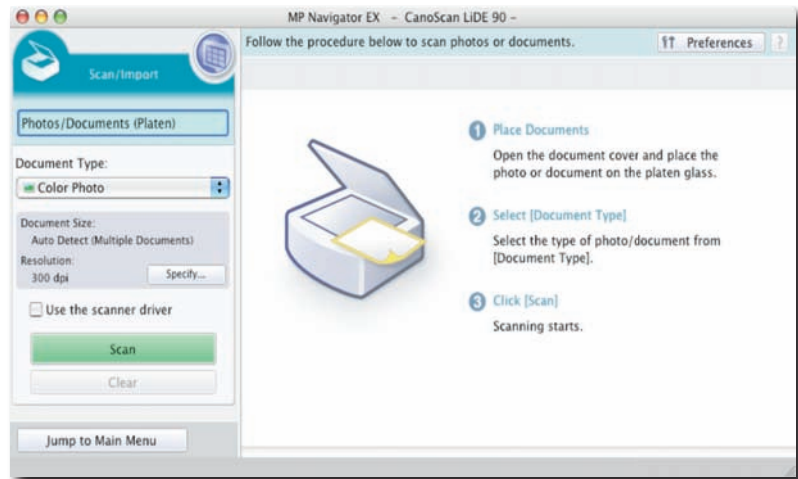
➢ Computer Technology Standard # 8: Select and use appropriate tools and technology resources to accomplish a variety of tasks and solve problems.

Class Project # 07
Scanning Pictures
WWW.PAULRALLION.COM

➢ Scan a picture, save it, and import it to Applework Painting, and make changes to it.

Homework # 07
Scanning Pictures
WWW.PAULRALLION.COM

1.- Make a LIST of the steps to scan a picture.
2.- Which picture settings should you use?
3.- Make a LIST of 10 things you can do with a picture after you've scanned it.

Sample Quiz # 07
Scanning Pictures
WWW.PAULRALLION.COM

1.- What do you need to do right before you unplug your USB flash-drive?
2.- What is one thing you can do after you scan a picture?
3.- What is the preferred format to save pictures?
4.- If you want to make changes to the picture, what program could you use?

➢ Computer Technology Standard # 8: Select and use appropriate tools and technology resources to accomplish a variety of tasks and solve problems.