A Healthy Computer

TRAINER RESOURCE

This document is a reference and preparation sheet for the trainer, and a companion to the lesson plan.

The Learning Objectives summarize the knowledge that learners should have gained by the time they reach the end of the module.

The Background and Detail for Trainer provides greater details on the content, and links to references. It will allow trainers to learn more about the topic so they can lead discussions or answer questions confidently without being limited to the classroom content. Each item in the Background supports a section in the Lesson Script.

Learning objectives

> An understanding of the risks of installing new applications and games
> An understanding of why updates are important
> Ability to set up automatic patching

Background and Detail for Trainer

1   The risks of installing new applications and games

1.1   In Brief

Applications are what make computers great but they can also cause problems

- Install only the programs you need.

- Install new applications only from trustworthy sources, and read the screen prompts (dialogue boxes) carefully.

1.2   In Detail

Backups are important. Copy (back up) your data frequently in case something happens to the original (for example, you lose your smartphone).

- Millions of computer programs or applications are available to use on our computers and devices.

- The freedom for anyone to develop applications to solve problems has made computers very useful

  - The quality of the programs can vary greatly as there is no minimum standard for operation

- The complexity of software means that every program on your computer and their millions of lines of code represent a potential hidden flaw.

  - Every program installed on a computer or on a smart phone could contain an exploitable vulnerability.

  - The risk is quite low but you can take steps to minimize the chance of installing poor quality software.

  - Download software from official and controlled sources and sites:

    - Google Play: Google's official store for downloading software for Android devices.

    - Apple iTunes store: Apple's official store for downloading software for iOS devices.

    - Recognized software manufacturer websites.

      - Large software companies such as Microsoft, Adobe, Google, Intuit, etc. provide downloads from their sites.

  - Downloading software from other sites, particularly those advertising a large amount of free software can be risky as the site operator is probably not monitoring the quality and content of the applications.

  - Installing illegal versions of software is even more risky as these applications are often implanted with malware or, at the very least, are cut off from the manufacturer's updates that keep the software safe.

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- Reduce the risk of flaws on your system by uninstalling software that you no longer use, no longer need, or is no longer being updated by the manufacturer.

- Many software providers arrange with other software providers for secondary software to install at the same time as their product.

  - This is attractive to some companies whose software is not of great benefit to users.

    - An example is a toolbar for a web browser that provides a few buttons in exchange for sending a record of your Internet use to marketing companies.

    - This kind of software is known as spyware.

  - Do not install this software.

    - Most companies will give you the option to install or not.

    - It is very important to read the directions during the installation process of the software you are installing.

      - Often, the option to install is selected by default, and you will need to manually deselect the installation.[1]

- Read carefully when installing applications.

  - Many applications, particularly those on mobile devices, collect more information than necessary.

    - Reading the information in the screen prompts presented at installation can alert you that a piece of software presents a risk to your privacy.

      - An Android phone will alert you to the services an application is asking for at installation. You can then choose to continue installing the application, or not.

        - For example, you might give a weather application access to your location, as it should know where you are to provide appropriate information. You would choose not to install a weather application that wants to access your microphone or contacts (address book).

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[1]   This software is often referred to as Spyware if it collects information, Adware if it delivers advertising or crapware for obvious reasons.

More detail can be found at http://www.avgjoeguide.com/wordpress/just-because-its-freeware-doesnt-mean-that-it-doesnt-contain-crapware

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- View the applications with a critical eye before installing.

  – Being a little vigilant can help you understand what you have installed and what it does.

  – When installing software, enable automatic updates if that option is available.

1.3 In Practice

Do look for software from legitimate sources, and read everything carefully during the installation process.

2 Why set up automatic updates/patches

2.1 In Brief

Modern software is designed to be updated (or patched) regularly to improve it and remedy security problems. Updating regularly greatly increases the security of your computer or device

2.2 In Detail

- Modern software is very complex.

Little mistakes or errors in the code can be exploited by criminals, leaving you and your systems vulnerable to harm.

  – Applications are constantly being added to, improved or modified to better suit people's changing needs.

    ○ This takes a lot of effort from companies. Sometimes, security is overlooked or not looked at hard enough.

      – After an application is released, responsible companies put a lot of effort into finding and/or fixing problems with the code.

      – Applying these fixes to your computer is typically easy to do, and often can be automated.

      – Some companies schedule regular fixes so that everyone can be prepared for them.

        ○ For example, Microsoft sends out fixes for its software on the first Tuesday of every month. These fixes are referred to as patches or updates, depending on the kind of changes being made.

    ○ Use legitimate software that provides access to this update service. Illegal copies of software normally cannot be updated.

  – Installing updates ensures your computer is as secure as possible.

    ○ Being familiar with how this works can help you notice when something else is being installed instead.

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- ○ Being better aware of the normal process of updating helps you spot abnormalities on your computer, such as a fake update window.

- – Set your computer to automatically install updates.
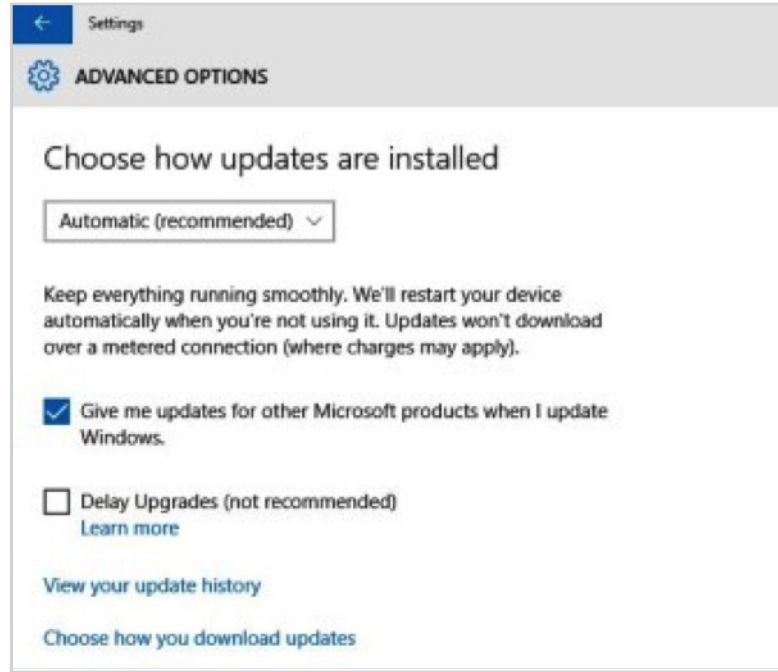
  - ○ Apple

    - – Apple Computer
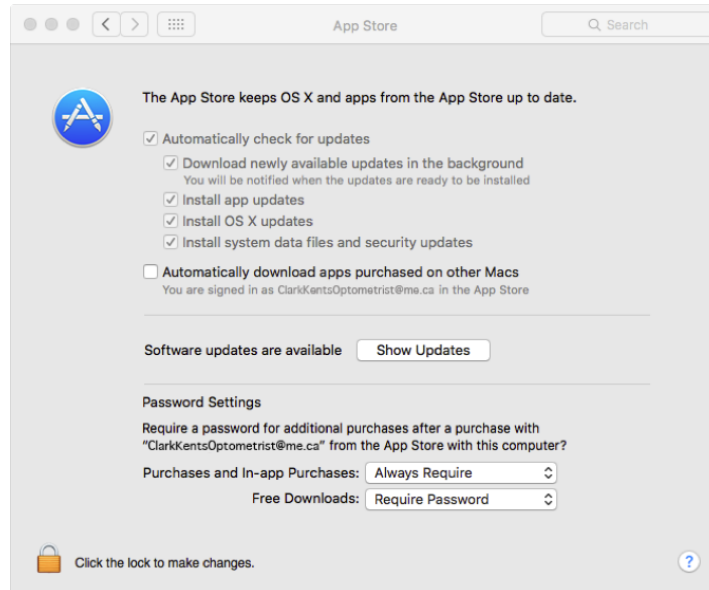
  - – Go to **Apple menu > System Preferences,** then click **System Preferences.** Click **App Store**, then select the settings you want.

  - – Turn on all the automatic update options.

  - – You may have to click the little padlock at the bottom left and then enter your password to make changes.[2]

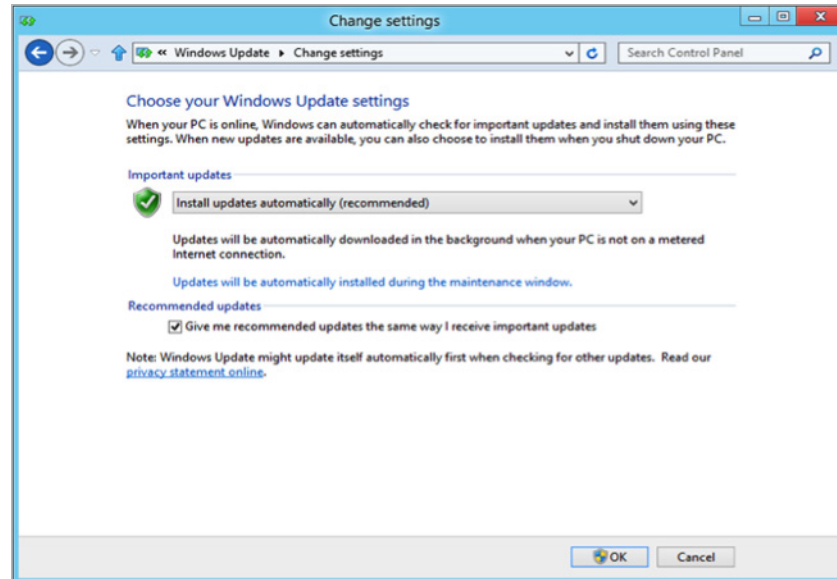2   https://support.apple.com/en-us/HT201541

- Windows
    - Windows 10

- Open **Windows Update** by swiping in from the right edge of the screen (or, if you're using a mouse, pointing to the lower-right corner of the screen and moving the mouse pointer up).

- Choose Settings, Change PC settings, and then Update and recovery. Select Choose how updates get installed. Under Important updates, choose Automatic.

- Under Recommended updates, select the Give me recommended updates the same way I receive important updates check box.

- Under Microsoft Update, select the Give me updates for other Microsoft products when I update Windows check box, and then tap or click Apply.[3]

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3 http://windows.microsoft.com/en-ca/windows/turn-automatic-updating-on-off#turn-automatic-updating-on-off=windows-8

- Windows 8

    – Swipe in from the right edge of the screen, and then tap Search. If you're using a mouse, point to the lower-right corner of the screen, and then click Search.

    – Type Windows Update in the search box, tap or click Settings, then tap or click Turn automatic updating on or off.


> *Figure 1 - Windows 8 Windows Update Settings (source: http://blogs.msdn. com/b/olivnie/archive/2013/04/05/updates-and-maintenance.aspx)*

    – Under **Important updates**, choose **Install updates automatically**.

    – Under Recommended updates, select the Give me recommended updates the same way I receive important updates check box, Then Click OK.[4]

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4   https://www.microsoft.com/security/pc-security/updates.aspx
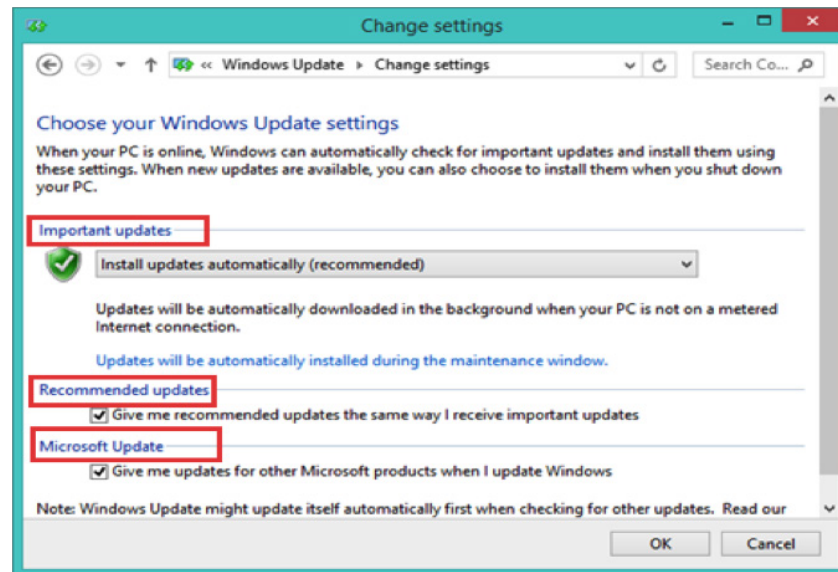
○ Windows 7

– Open **Windows Update** by clicking the **Start** button, clicking **All Programs**, then clicking **Windows Update**. In the left pane, click **Change settings**.

– Under **Important updates**, Choose **Install updates automatically.**

– Under **Recommended updates**, select the **"Give me recommended updates the same way I receive important updates"** check box.

– Under Microsoft Update select the **Give me updates for other Microsoft products when I update Windows**. This will update Microsoft Office and other Microsoft software on the computer.

– Click **OK**. If you are prompted for an administrator password or confirmation, type the password or provide confirmation.

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- Apple Phone or iPad[5]
  - If a message says that an update is available, tap **Install Now** or follow these steps:
    - Plug your device in to power and connect to the Internet with Wi-Fi.
    - **Tap Settings > General > Software Update**.
    - You will see a screen telling you about the update, such as its number, size and the major improvements or fixes.
    - Tap **Download** and **Install**. If a message asks to temporarily remove apps because iOS needs more space for the update, tap **Continue** or **Cancel**. Later, iOS will reinstall apps that it removed. If you tap **Cancel**, learn what to do next.
    - To update now, tap **Install**. Or you can tap **Later** and choose **Install Tonight** or **Remind Me Later**. If you tap **Install Tonight**, just plug your iOS device in to power before you go to sleep. Overnight, your device will update automatically.
    - If asked, enter your passcode.
- Android phone or tablet[6]
  - Open the Google Play Store app ▶ . Touch the Menu icon ≡ > **Settings**. Touch **Auto-update apps**. Select an option.
  - **Auto update apps at any time**: Updates apps at any time, using either Wi-Fi or mobile data.
  - **Auto-update apps over Wi-Fi only**: Updates only when you are connected to Wi-Fi.

2.3 In Practice

Do set up automatic updates for your computers, tablets and smartphones.

5 https://support.google.com/googleplay/answer/113412?hl=en

6 https://support.apple.com/en-ca/HT204204

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Glossary of Terms

Administrator password	Administrator accounts have the ability to change settings on your computer. This could be your normal account or a second account used only for changing configurations.
Browser	A browser is a computer program or mobile app that is used to find and look at information on the Internet.
iOS	Apple operating system for mobile devices.
Malware	Software designed primarily for a malicious purpose.
Operating System	An operating system is the main program in a computer such as Windows or Apple OSX that makes it possible for other programs to function.
Patch	A software patch is a change applied to the code of a program after it is released to fix a potential problem.
Toolbar (Browser)	A browser toolbar is an add-on that provides a feature. Usually these features are not useful and the toolbar can send information to marketing companies.
Update	A software update is a change applied to the code of a program to improve function of the program.

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