Hello, my name is John Paul Harris and I am the Wyoming AIM Clearinghouse project coordinator at the Wyoming Institute for Disabilities. I work with individuals and educators across the state of Wyoming to enhance the accessibility of devices, services, and education curriculum. Today, we are going to talk about the accessibility features of Apple’s desktop operating system—Mac OS X. As of today, October 31, 2013, the most current version of Mac OS X is 10.9. However, I will be using Mac OS X 10.8 for this training as it is a stable release.

Most of the accessibility features that I am going to review are consistent across OS X versions 10.7 through 10.9. However, a point of difference is that the accessibility features of versions 10.7 and older are located in the Universal Access menu. Now, with version 10.8, accessibility features are located in the Accessibility menu—identical to the iOS nomenclature. If you are using version 10.7, or older, the features that I will be discussing today can be found in the Universal Access menu from the System Preferences menu.

Let’s get started.

This training module will go-over how to use the following features from Mac OS X:

1. Invert Colors
2. Zoom
3. Onscreen keyboard
4. Increasing text size for the Finder and desktop icons
5. Text to Speech
6. Dictation & Speech
7. VoiceOver

I will discuss how to use these features to support students with print disabilities and how to integrate the use of these features with accessible instructional materials, such as large print, digital text, DAISY audio, and refreshable braille displays.

In this training module participants will be able to identify the accessibility features of Mac OS X, match Windows accessibility features to be used with the different types of accessible instructional materials, and be able to identify additional resources.

As I said earlier, I will be using Mac OS X 10.8 for this training series. OS X 10.9, referred to as Mavericks, is a free download for anybody using OS X 10.5 through 10.8. This should include just about everyone using a Mac today.
Let’s review the Mac OS X Accessibility menu. The Accessibility menu is where you will find most of the accessibility features.

__DEMO__

To find the Accessibility menu, go to the Apple icon at the top-left of the screen and select System Preferences from the drop down menu. The System Preferences menu is the equivalent of Microsoft Windows’ Control Panel. Select Accessibility from the System category.

The Accessibility menu of OS X 10.8 looks considerably different from OS X 10.7, but all of the features are still there and most OS X 10.8 features have more options for customization.

From the left-hand graphical display menu we can select the desired accessibility option. There is a light organization of these accessibility features in the categories of:

- Seeing
- Hearing
- Interacting

In OS X 10.7 the categories are a little different:

- Seeing
- Hearing
- Keyboard
- Mouse

More precisely, we can enable the following:

- Display
- Zoom
- VoiceOver
- Audio
- Keyboard
- Mouse & Trackpad
- Speakable Items

__INVERT COLORS DEMO__

From the Display menu we can enable Invert colors and/or use grayscale for our display. The Invert Colors feature is useful for students with visual impairments. It can be used with a large font size or the Zoom tool to make the screen more readable. We can customize the contrast feature with the Enhance Contrast slider.

Also from the Display menu we can increase the cursor size. This is a nice feature for students with low vision that only need minimal magnification.
For students who need more magnification, we can enable the Zoom feature from the Zoom menu.

__ZOOM DEMO

We can enable the Zoom feature from the Accessibility menu. Select Zoom from the left-hand menu. We also have some options for customization.

Zoom has multiple user settings for increased student usability. Also, the Magnifier tool is free! I mention this, because other screen magnification software can cost hundred’s of dollars to purchase. The Magnifier tool is useful for educators and IEP team members needing to assess the student’s use and need for screen magnification. Try this option before the school district purchases expensive screen magnification software.

In settings where student’s will use a hard copy textbook or workbook, the Wyoming Institute for Disabilities can provide accessible instructional materials to allow for access to the instructional material.

Accessible instructional materials can be provided in a digital text format, such as a Word document or PDF, and can be displayed with an increased font size or viewed with the Magnifier tool on a computer screen or mobile Windows device.

__ACCESSIBILITY OPTIONS DEMO

A new feature of OS X 10.8 is the Accessibility Options shortcut key. This provides access the accessibility features most commonly used. We can open the Accessibility Options by pressing Command + Option + F5

Next, I will demonstrate the Mac OS X onscreen keyboard.

__ONSCREEN KEYBOARD

On-screen keyboards can be used with students with physical disabilities and those who have minimum finger dexterity. The student can use a pointing device, head tracker, touchpad, or switch to type using the onscreen keyboard.

__DEMO

We can enable the onscreen keyboard from the Keyboard menu in the Accessibility menu. Select Open Keyboard Preferences… Then check the box labeled Show Keyboard & Character Viewers in menu bar. Now, we can enable the onscreen keyboard from the menu bar. We will click on the keyboard icon and then select Show Keyboard Viewer.

I would not recommend the Mac OS X onscreen keyboard feature. The onscreen keyboard lacks features that are found on more user-friendly onscreen keyboards, such as Microsoft Windows’ built-in onscreen keyboard.

I would expect the following features from an onscreen keyboard:
• Type keys that I dwell on with the cursor. This can be beneficial for students who may have
difficulty using the mouse or touchpad to perform a click.
• Word prediction

__INCREASE TEXT SIZE DEMO

Next, I will demonstrate how to increase the text size on your desktop and Finder window. There is no
large text feature in OS X. We have to manually set the text size from the View menu. Changes in the
View Options are not global. To increase the text size for desktop items we will need to click on the
desktop and then select View from the top menu. We could also right-click a desktop icon and select
Show View Options from the context menu.

The Large Text feature is useful for students who need a minimal increase in screen text, icons, and
buttons. There is a limited range of increased font size and for additional aid a student should use the
Zoom tool.

Let’s review VoiceOver. VoiceOver provides basic screen reading capabilities that allow you to use MAC
OS X when you don’t have a more full-featured screen reader.

Narrator is not designed to read content in all programs, including Microsoft Office applications. For this
reason, I do not recommend the use of Narrator in any setting. Instead, I recommend the free screen-
reader software NVDA. NVDA stands for non visual desktop access and it is a full-featured screen reader
application. NVDA is a good tool for students who are just beginning to use screenreader software and
for educators needing to assess the usefulness of screenreader software with a student.

__BACK TO POWERPOINT

Let’s review the tools we have used so far. Invert colors, Zoom, Accessibility Options menu, onscreen
keyboard, increased text size, and VoiceOver.

Next, I will demonstrate the Dictation & Speech. The Dictation & Speech tool is useful for students who
have limited upper body mobility, limited finger dexterity, or those students who find using the
keyboard frustrating, possibly a student with a visual impairment who is not yet familiar with the
keyboard.

__DEMO

We will go back to the System Preferences menu and select Dictation & Speech. Notice that the
Dictation & Speech feature is NOT in the Accessibility menu.

First, I will setup my microphone. It is important to use a high quality, USB microphone with Speech
Recognition. A USB microphone provides a clean digital signal to the speech recognition application. I
am using a $45 dollar headset from Cyber Acoustics. It is a device I have used effectively in the past and
with many clients.
When I have the microphone plugged in, I will select **Set up a microphone** from Ease of Access. When you first use the Speech Recognition application, you will be asked to complete a tutorial. During this tutorial, the Speech Recognition application learns to recognize your voice and creates a voice profile. The tutorial takes about 40 minutes, but I would recommend you complete this tutorial before you use the Speech Recognition application.

Enhanced Dictation

__BACK TO POWERPOINT__

Options for braille. Mac OS X can be used with over 40 wireless braille display devices. With a refreshable braille display a student can interact with text documents, online resources, email, and many more applications.

Finding the right braille display for a student is an involved process and there are many vendors and manufacturers of braille displays. Many companies will let you demo their braille display products for 30 or 60 days. Finding a correct match is important: the student will need to be comfortable with the device for many years to come. Contact WIND for help and additional resources regarding refreshable braille displays.

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Recap.

Benefits of using Mac OS X accessibility features with AIM:

- Tools are readily available
- Tools can be used in a mobile environment
- Tools can be used to assess the effectiveness of AT before purchase
- Provide students with print disabilities access to classroom instructional materials!

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I want to provide you with resources about the features we reviewed today as well as some additional resources.

My name is John Paul Harris and you can contact at j-h-a-r-r-i-4-2-@-u-w-y-o-.e-d-u or call me at 307-766-5770. Thank you for joining us for this presentation on Windows Accessibility features.