Hello, my name is John Paul Harris and I am the Wyoming AIM Clearinghouse project coordinator at the Wyoming Institute for Disabilities. Thank you for joining us for this webinar series focusing on technology to support accessible instructional materials. Today, we are going to talk about the accessibility features of Android devices.

The Android operating system is designed to be used with mobile technology that features a touch-interface, such as phones and tablets. Android tablets are an alternative to the iPad and can be used with students in the classroom and with accessible instructional materials. I want to briefly review the popularity of Android tablets, today and in the future.

- Every day more than 1 million new Android devices are activated worldwide
- Android users download more than 1.5 billion apps and games from Google Play each month
- So far, Android users have downloaded more than 25 billion apps from Google Play

I want you to know how to use Android accessibility features with accessible instructional materials.

Let’s get started.

This training module will go-over how to use the following features on an Android device:

1. TalkBack (text-to-speech)
2. Extra large text
3. Magnification gestures
4. Keyboard options
5. Speech Recognition with Google Voice Search

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 Android devices, match Android accessibility features to be used with the different types of accessible instructional materials, and be able to identify additional resources.
I want to spend some time talking about the Android device that I will be using today. Unlike the iPad, there are many Android tablets in the market and it is important to identify a device that is of high quality and produced by a manufacturer with a good reputation.

I will be using an ASUS Transformer Pad TF700T tablet running Android 4.2.1.—commonly referred to as Jelly Bean. The ASUS Transformer Pad is one of the top Android tablets on the market and it is a good competitor to Apple’s iPad. However, by the end of today’s training I hope to point out the differences between an Android tablet and an iPad when it comes to accessibility.

The ASUS Transformer has support for a microSD card and a microHDMI connector. This is an advantage over the iPad which does not have any connectivity options. You can connect an iPad to a computer via the USB adapter cable, but this is for managing the iPad and not for connecting devices to the iPad.

I am also using the ASUS Mobile Dock for the Transformer so that I have access to a full QWERTY keyboard with a mouse pad, a USB drive port, and an SD card slot. Once again, these connectivity options are features the iPad does not offer.

I understand that different districts have different resources, and if you have any questions, please call me at the Wyoming Institute for Disabilities for more information on mobile device options for the classroom.

Let’s review Android’s accessibility options.

We will select the Settings icon from the home page. You will see a page with many items listed on the left-hand side. I will scroll down the list until I reach Accessibility.

From the Accessibility menu we can turn on the accessibility features: TalkBack, magnification gestures, and extra large text.

First, I will demonstrate the extra large text feature. The extra large text feature is useful for students who need a minimal increase in screen text, icons, and buttons—similar to the iPad’s large text feature. Note that this feature does not work in all apps. If the desired app does not support the extra large text feature or the limited range of increased font size is not suitable for the student, then the student should use the magnification gestures feature, which I will talk about in a minute.

Next, I will demonstrate the magnification gestures.

I will turn on the magnification gestures feature from the Accessibility menu. I will select the Settings icon from the home page and then scroll down to the Accessibility menu.
In settings where students 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 from an Android device.

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 Magnification gestures feature from an Android device.

Next, I will demonstrate the built-in text-to-speech feature TalkBack.

TalkBack is a text-to-speech application optimized for mobile touch interfaces, similar to Apple iPad’s Voice Over. The design of TalkBack allows the user to explore the device by touch: move around the home pages with one finger and TalkBack will tell you what app or widget you are hovering over. To activate an app that has focus, double tap anywhere on the screen.

Since TalkBack overrides the default touch interface gestures, there will be times when a student with low vision will want to pause or disable speech while they are in a particular app. Many users of TalkBack mention that the one drawback to TalkBack is that there is no way to pause or turn-off speech with a gesture. However, I have found the way to enable the turn-off speech with a gesture. Let’s go over how to do this.

Next, I will demonstrate some options for the onscreen keyboard.

The onscreen keyboard also has a built-in word prediction feature. It is a very basic word prediction application, but you can add words as you type to your word prediction dictionary. Word prediction can be a benefit to students who have never used word prediction and might actually benefit from such a feature.

Another on-screen keyboard option is the Swipe+Dragon keyboard app. This app combines the usability of the Swipe keyboard with Dragon speech recognition. The app can be downloaded from the Google Play store.

Let’s review the tools we have reviewed so far.

Extra large text, magnification gestures, TalkBack, and onscreen keyboard options.

Next, I will demonstrate the Google Voice—the Siri-equivalent for Android devices.
There are other options for voice recognition on Android devices, such as Dragon Mobile Assistant, but I have been impressed with Google Voice Search and others have as well. I do not recommend voice recognition apps for students with physical disabilities or students with limited finger dexterity. These voice recognition apps still require the user to frequently use the touch interface.

This is similar to the iPad in that there are no voice recognition apps that I recommend for students with physical disabilities. The voice recognition apps for mobile devices are not full featured applications and are meant more for ease and convenience.

To activate Google voice from a tablet you have to tap the microphone icon from a search box or the home page. However, another option is the click and hold the home button icon for 2 seconds then swipe up. Google Voice Search does not depend on an Internet connection to function and it is said that Google Voice Search performs much faster than Siri, especially when it comes to retrieving information from the Internet. To perform a search say “OK Google” and speak your command, such as “open accessibility”

It is worth noting that Google Voice Search is not available when you are in an app. You can only use Google Voice Search from the home page or from Google Search.

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Options for braille.

The best option for braille support is an app called BrailleBack. BrailleBack is designed by the same makers of the Eyes-Free keyboard and is free from Google Play. BrailleBack works with TalkBack and a refreshable braille display to provide a combined braille and speech user experience.

Finding the right refreshable 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 the Android accessibility features with accessible instructional materials (AIM):

1. Tools are readily available
2. Tools can be used in a mobile environment
3. Provide students with print disabilities access to classroom instructional material.
Review of Android apps discussed today
Eyes-Free Keyboard
BrailleBack
Dragon Mobile Assistant

Other recommended Android apps
Readability
Go Read from Bookshare
Learning Ally Audio (Beta)
Walky Talky

All are available from the Google Play store. The links are too long to post in the presentation, but I can post on the AIM training modules home page.

Additional Resources
The Android Developers home page is a great place to learn about everything Android. The website has a nice interface that lets you explore the features of current and past releases.

For those of you interested in the ASUS Transformer pad I have the link here for the home page. Note that the ASUS tablet I am using today, the ASUS Transformer TF700T, is now called the ASUS Transformer Pad Infinity.

Another great resource for reviews of mobile accessibility is Interactive Accessibility and the SSBart Group.

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