

Adapting Diverse Learning Needs:
A Companion Guide for Digital Learning

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Introduction

What is the *Companion Guide* and how can it be used?

Adapting Diverse Learning Needs: A Companion Guide for Digital Learning has been developed by staff from ATN Access Inc. in partnership with Literacy Link South Central as part of the Digital Literacy Exchange Project funded by the Federal Government of Canada.

This *Companion Guide* is designed to help improve the digital literacy learning experience by helping to accommodate diverse learning needs experienced by learners due to injury, disability, and/or learning style.

Computers have free built-in 'accessibility features' to accommodate individual needs and support learning. These can be very helpful as a starting point, especially for those new to the digital learning experience. More comprehensive assistive technology solutions, however, are available for purchase, and learners may want to consider these, especially as they develop and expand their skills, to optimize their digital learning experience.

There are web links provided throughout the *Companion Guide* to provide access to additional information and resources. Additionally, there are internal document links to allow users to customize their learning based on their individual needs.

Types of Assistive Technology

Assistive technology can make using computers more efficient and is used to accommodate the diverse needs of learners due to disability, injury and/or learning style. This *Companion Guide* shows learners how assistive technology can be used to accommodate individual needs and improve the digital learning experience.

Participants in the Digital Literacy Exchange Program were introduced to specialized assistive software such as Read&Write, Dragon Speech Recognition, and Kurzweil 3000, and information on these and other assistive technology solutions is provided in this *Companion Guide*. However, we recognize that not all digital learners have access to these types of assistive technology options, so we also provide step-by-step instructions on how to use the accessibility features built right in a computer. We have provided instructions to use accessibility features on both the Windows operating system and Chromebooks given both were used in training.

We focused this *Companion Guide* on the following assistive technology solutions based on the participant needs that arose during training:

1. Text-to-Speech

- a. **Text-to-Speech** enables digital learners to have information on their screen to be read to them. **Text-to-Speech** programs are beneficial for auditory learners, and can be very helpful for learners with reading difficulties and those whose first language is not English.
- b. **Screen Readers** are a type of text-to-speech software designed for users who are blind or have low vision.
- c. If you are using the Windows operating system, you can learn how to use **Narrator**, the Windows built-in screen reader, using the following link: [Narrator \(Screen Reader\)](#)
- d. If you are using a Chromebook, you can learn how to use **ChromeVox**, the Chrome built-in screen reader, using the following link: [ChromeVox \(Screen Reader\)](#)

- e. Chromebooks have an additional feature, **Select-to-Speak**, to select specific text to be read You can learn how to use **Select-to-Speak**, using the following link: [Select-to-Speak](#)
- f. There are additional **text-to-speech** options that have extra learning support features that can be purchased or downloaded for free. For more information on these, use the following link: [Appendix A](#)

2. Speech-to-Text

- a. **Speech-to-Text** enables digital learners to enter information onto their screen using their voice by speaking into a microphone, instead of using their keyboard. **Speech-to-Text** programs are beneficial for learners impacted by physical restrictions due to disability or injury, and can be very helpful for learners who have difficulty with spelling and those who have difficulty putting their thoughts down on paper.
- b. If you are using the Windows operating system, you can learn how to use the Windows accessibility feature, **Speech Recognition**, using the following link: [Speech Recognition](#)
- c. If you are using a Chromebook, you can learn how to use the Chrome OS accessibility feature, **Dictation**, using the following link: [Dictation](#)
- d. Chromebooks have an additional feature, **Select-to-Speak**, to select specific text to be read; if you are using a Chromebook, you can learn how to use **Select-to-Speak**, using the following link: [Select-to-Speak](#)
- e. There are additional **speech-to-text** options that have extra learning support features that can be purchased. For more information, use the following link: [Appendix A](#)

3. Screen Magnifiers

- a. **Screen Magnifiers** enable digital learners to increase the size of text, graphics and numbers on your screen. **Screen Magnifiers** are helpful for learners with low vision.
- b. If you are using the Windows operating system, you can learn how to use the Windows **Magnifier** using the following link: [Magnifier](#)
- c. If you are using a Chromebook, you can learn how to use the Chromebook **Screen Magnifier** using the following link: [Screen Magnifier](#)

- d. There are additional **magnifier** options with added features that can be purchased. For more information on these, use the following link: [Appendix A](#)

4. Sticky Keys

- a. **Sticky Keys** makes it easier for digital learners to use keyboard shortcuts by enabling them to press each key without holding down other keys. **Sticky Keys** is very helpful for learners that have limited control of their hands due to injury or disability, and can alleviate stress on fingers by reducing the sort of movement associated with repetitive strain.
- b. If you are using the Windows operating system, you can learn how to use Windows **Sticky Keys** using the following link: [Windows Sticky Keys](#)
- c. If you are using a Chromebook, you can learn how to use Chromebook **Sticky Keys** using the following link: [Chromebook Sticky Keys](#)

5. Word Prediction

- a. **Word Prediction** provides digital learners word choice options by predicting the word being typed and the next word, based on word frequency and context. Word prediction can be beneficial for learners that have difficulty with spelling or finding the appropriate words to use.
- b. If you are using the Windows operating system, you can learn how to use Window **Word Prediction** using the following link: [Windows Word Prediction](#)
- c. If you are using a Chromebook, you can learn how to use Chromebook **Word Prediction** using the following link: [Chromebook Word Prediction](#)
- d. There are additional **word prediction** options that have extra learning support features that can be available for purchase. In addition, some text-to-speech programs include **word prediction** features. For more information, use the following link: [Appendix A](#)

Windows Accessibility Features

Ease of Access Center

In order to use Windows accessibility features on your PC (computer/laptop), you need to go to the *Ease of Access Center*. Follow the instructions below:

1. Right click on the **Start** button in the bottom left hand corner of your screen
2. Select **Settings**
3. Select **Ease of Access**
4. Along the left side of the **Ease of Access** menu, Windows Accessibility Features are listed under three headings:
 1. Vision (*Display, Cursor & pointer, Magnifier, Color filters, High contrast, Narrator*)
 2. Hearing (*Audio, Closed Captions*)
 3. Interaction (*Speech, Keyboard, Mouse control, Eye control*)

Hint: You can also use a keyboard shortcut to use the *Ease of Access Centre*:
Windows logo key + U



Narrator

1. To use Windows **Narrator**, follow the instructions below:
 - a. Go to the *Ease of Access Centre* menu
 - b. On the left side of the screen look under the “Vision” heading and click on **Narrator**
 - c. Click the “Turn on Narrator” button to *On*

Hint: For quick access to **Narrator**, use the following keyboard shortcut: **Windows logo key + Ctrl + Enter**



For more information and instructions, use the link below:

<https://support.microsoft.com/en-ca/help/22798>

For a list of **Narrator** keyboard commands and touch gestures, use the link below:

<https://support.microsoft.com/en-ca/help/22806>

Speech Recognition

1. **Speech Recognition** is the Windows built-in speech-to-text feature that allows you to use your voice to dictate your documents instead of using your keyboard. You can also use **Speech Recognition** to compose emails and navigate the internet.
2. To use Windows **Speech Recognition**, follow the instructions below:
 - a. Go to the *Ease of Access Center* menu
 - b. On the left side of the screen look under the “Interaction” heading and click on **Speech**
 - c. Click the “Turn on Speech Recognition” button to *On*

Hint: For quick access to **Speech Recognition**, use the following keyboard shortcut: **Windows logo key + Ctrl + s**



d. Once **Speech Recognition** is turned on, press the **Windows logo key + h** to start dictation



e. To stop **Speech Recognition**, say “Stop dictation”

***Note:** In order to use Windows **Speech Recognition**, you need to be connected to the Internet

For more information and instructions for Windows **Speech Recognition**, including setting up your microphone, use the link below:

<https://support.microsoft.com/en-ca/help/4027176/windows-10-use-voice-recognition>

For a list of **Speech Recognition** basic commands, use the link below:

<https://support.microsoft.com/en-ca/help/12427/windows-speech-recognition-commands>

Magnifier

1. To use Windows **Magnifier**, follow the instructions below:
 - a. Go to the *Ease of Access Center* menu
 - b. On the left side of the screen look under the “Vision” heading and click on **Magnifier**
 - c. Click the “Turn on Magnifier” button to *On*

Hint: For quick access to **Magnifier**, use the following keyboard shortcut:

Windows logo key + Plus Sign (+)



For more information and instructions for Windows **Magnifier** use the link below:

<https://support.microsoft.com/en-ca/help/11542/windows-use-magnifier-to-make-things-easier-to-see>

Sticky Keys

1. To use Windows **Sticky Keys**, follow these steps:
 - a. Go to the *Ease of Access Centre* menu
 - b. On the left side of the screen look under the “Interaction” heading and click on **Keyboard**
 - c. Click the “Use Sticky Keys” button to *On*

Hint: For quick access to **Sticky Keys**, press the **Shift key 5 times**. Pressing the **Shift key 5 times** will also turn off **Sticky Keys**



For more information and instructions for Windows **Sticky Keys** and other input settings (keyboard/mouse), use the link below:

<https://support.microsoft.com/en-ca/help/27936/windows-10-make-input-devices-easier-to-use>

Word Prediction

1. To use **Word Prediction**, follow the instructions below:
 - a. 'Right Click' your mouse on the **Start** button at the bottom left corner of your screen
 - b. Select **Settings**
 - c. Select **Devices**
 - d. On the left side of the **Devices** menu, select "Typing"
 - e. Scroll down to the "Hardware keyboard" heading and click the **Show text suggestions as I type** button to *On*

More information on these accessibility features, as well as other available options, use the link below:

<https://www.microsoft.com/en-ca/accessibility/windows>


Chrome OS Accessibility Features

Accessibility Features System

To use accessibility features on your Chromebook, you need to access the *Accessibility Features System* menu using the instructions below:

1. Click on the clock in the bottom right corner of your screen
2. (Or press **Alt + Shift + s** if you prefer using keyboard instead of mouse)



3. Select **Settings**  from the menu
4. At the bottom of the menu, select **Advanced**
5. In the “Accessibility” section, select **Manage Accessibility Features**




For a step-by-step video tutorial, use the link below:

<https://partnerdash.google.com/apps/simulator/chromebook#turn-on-accessibility-features?l=en>

For more information on using Chromebook accessibility features use the link below:

<https://www.howtogeek.com/415909/a-guide-to-your-chromebooks-accessibility-features/>

Select-to-Speak

1. To use **Select-to-Speak** on your Chromebook, follow the instructions below:
 - a. Go to the *Accessibility Features System* menu
 - b. Under “Text-to-Speech”, turn on **Enable select to speak**
 - c. Select **Select-to-speak** 
 - d. Select the text you want read and the text on screen will be read aloud for you; words on the screen will be highlighted as they are read out loud
 - e. To stop **Select-to-speak**, press **Ctrl** or the **Search key** , or select **Stop**  in the bottom right hand corner of the screen

For a step-by-step tutorial on using the **Select-to-speak** feature, click on the following link:

<https://partnerdash.google.com/apps/simulator/chromebook#turn-on-select-to-speak?l=en>

ChromeVox (Screen Reader)

1. To use **ChromeVox** on your Chromebook, follow the instructions below:
 - a. Go to the *Accessibility Features System* menu
 - b. Under “Text-to-Speech, turn on **Enable ChromeVox (spoken feedback)**

Hint: For quick access to **ChromeVox**, you can use the following keyboard shortcut: **Ctrl + Alt + z**



Note: Learn more about how to use the built-in screen reader use the link below:

<https://support.google.com/chromebook/answer/7031755>

Dictation:

1. **Dictation** is the Chrome OS built-in speech-to-text feature that allows you to use your voice to dictate your documents instead of using your keyboard. You can also use **Dictation** to compose emails and navigate the internet
2. To use **Dictation**, on your Chromebook, follow the instructions below:
 - a. Go to the *Accessibility Features System* menu
 - b. Under “Keyboard and Text Input,” turn on **Enable Dictation**
 - c. Select **Speak** 🗣️

Hint: For quick access to **Dictation**, use the following keyboard shortcut:

Search + d


- d. Tap or select where you want text to be entered on the screen
- e. Say what you want to type and the text will appear on the screen

Screen Magnifier

1. To use the **Screen Magnifier** on your Chromebook, follow the instructions below:
 - a. Go to the *Accessibility Features System* menu
 - b. Under “Display” turn on **Enable fullscreen magnifier**
 - c. Select your zoom level by clicking the Down arrow ▾ .



Sticky Keys

1. To use **Sticky Keys** on your Chromebook, follow the instructions below:
 - a. Go to the *Accessibility Features System* menu
 - b. Under “Keyboard” turn on **Enable Sticky Keys**
 - c. To use **Sticky Keys**, press the key that starts the keyboard shortcut (i.e. **Search key** , **Ctrl, Alt, Shift**) – press the button twice to keep it pressed until you finish the keyboard shortcut; to unpress the key, press it again

Word Prediction

1. To use **Word Prediction** on your Chromebook, follow the instructions below:
 - a. Go to the *Accessibility Features System* menu
 - b. Select **Open keyboard device settings**
 - c. Under “Keyboard” turn on **Enable Word Prediction**

Appendix A – Assistive Technology Solutions

Text-to-Speech Options

Read&Write

Enables digital learners to hear information on their screen (documents, emails, web pages) read back to them. Read&Write is very helpful for those with reading and spelling difficulties.

Includes many features to improve the learning experience of digital learners with diverse needs, including learning difficulties and those whose first language is not English:

- i. Word prediction to help with spelling difficulties
- ii. Spelling and confusable words checker
- iii. Text and picture dictionaries
- iv. Screen tint to reduce visual stress
- v. Collectable highlighters to summarize information

Learners can also convert documents and web pages into audio files that they can listen to when they are on the move.

Read&Write is available for both Windows and Chrome, as well as other platforms. See the below links for more information on the platform you are using:

- Windows: <https://www.texthelp.com/en-us/products/read-write/read-write-for-windows/>
-
- Chrome: <https://www.texthelp.com/en-us/products/read-write/read-write-for-google/>
-
- Mac OS: <https://www.texthelp.com/en-us/products/read-write/read-write-for-mac/>
-
- Android/iPad - <https://www.texthelp.com/en-us/products/read-write/read-write-for-tablets/>

Prices can vary and there may be free trial versions available. For more information on Read&Write, see the below link:

texthelp.com/en-gb/products/read-write/premium-features

Kurzweil 3000

Enables digital learners to have text on their screen (documents, email, web pages) read back to them. Kurzweil 3000 is very helpful for spelling and reading difficulties.

Includes many features to improve the learning experience of digital learners with diverse needs, including learning difficulties and those whose first language is not English:

- i. Word prediction to help with spelling difficulties
- ii. Synonym feature, word lists and vocabulary study guides
- iii. Text magnification for visual impairment
- iv. Writing path to map ideas and brainstorm organizers
- v. Translation feature for multiple languages

Learners can also convert documents and web pages into audio files that they can listen to when they are on the move.

Prices can vary and there may be free trial versions available. For more information on Kurzweil, click on the link below:

<https://www.kurzweiledu.com/k3000-firefly/overview.html>

Balabolka

Enables digital learners to hear text from document on their screen read back to them. Balabolka is very helpful for those with reading difficulties.

Balabolka is a text-to-speech app that Windows users can download on their computers for free.

For more information on Balabolka or to download the app, use the following link:

<http://www.cross-plus-a.com/balabolka.htm>

Natural Reader

Enables digital learners to hear text from documents and PDFs on their screen read back to them. Natural Reader is very helpful for those with reading difficulties.

Natural Reader is a text-to-speech app that Windows users can download on their computers for free. There is a version available for Mac users as well.

Additional versions of Natural Reader with extra features are available for purchase.

For more information on Natural Reader or to download the free app, use the following link:

<https://www.naturalreaders.com/software.html>

Speech-to-Text Options

Dragon Speech Recognition

Enables digital learners to enter information onto their screens using their voice by speaking into a microphone, instead of using the keyboard.

Dragon Speech Recognition is beneficial for learners with physical restrictions and limited mobility due to disability or injury. It is also very helpful for learners who have difficulty with spelling and putting their thoughts to paper (or the screen).

Prices can vary and there may be free trial versions available. For more information on Dragon Speech Recognition, use the link below:

<https://www.nuance.com/dragon.html>

Magnifier Options

ZoomText Magnifier

Enables digital learners with low vision to enlarge and enhance everything on the computer screen.

ZoomText Magnifier is an advanced screen magnification program that can be used with Windows. Includes added features such as visible pointers/cursors, enhanced screen colors, and focus enhancements.

Prices can vary and there may be free trial versions available. For more information on ZoomText Magnifier, use the link below:

<https://www.zoomtext.com/products/zoomtext-magnifier/>

MAGic Screen Magnifier

Enables digital learners with low vision to enlarge and enhance everything on the computer screen.

MAGic Screen Magnifier is a screen magnification and screen reading solution that can be used with Windows. Includes high-definition mouse and cursor enhancement options, built-in color enhancements to eliminate glare and increase contrast, and high definition text and fonts.

Additional versions of Natural Reader with extra features are available for purchase.

Prices can vary and there may be free trial versions available. For more information on MAGic Screen Magnifier, use the link below:

<https://www.freedomscientific.com/products/software/magic/>

[Word Prediction Options](#)

[WordQ](#)

Enables digital learners that have difficulty with spelling and communication word selection options to improve self-expression.

WordQ is a word prediction software that also provides speech feedback proofreading features, and an integrated PDF reader.

WordQ is available for both Windows and Mac operating systems. Prices can vary and there may be free trial versions available. For more information on WordQ, use the link below:

<https://www.quillsoft.ca/wordq5>