



## Accessibility and Assistive Technology in Pearson Connexus (PCx)

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## Introduction

**What is Accessibility:** Accessibility is the extent to which all people can access or use a product, a service, an object, a physical location, or a website. Pearson designs its products, including curriculum, and services toward 100% accessibility such that all students and parents can have meaningful and beneficial experiences while interacting with Connexus as well as school staff on the phone and in-person.

**What is Assistive Technology:** Assistive technology is “any item, piece of equipment, or product system, whether acquired commercially off the shelf, modified, or customized, that is used to increase, maintain, or improve the functional capabilities of a child with a disability” (34 CFR § 300.5 (Authority: 20 U.S. C § 1401 1)). Assistive technology (AT) ranges from low-tech, such as a special pencil, to high-tech, such a screen-reader or text-reader. While Assistive Technology procurement and provision occurs at the District and/or School level, this guide is intended to assist in making decisions in how to best support students.

### Who should receive Assistive Technology:

Recommending AT is an IEP team decision. It is also important to keep in mind that the student must have the skills to access the assistive technology tools. These tools should make access easier, not more cumbersome. If AT is determined appropriate, it should be documented in the IEP.

Students with Section 504 plans may also need assistive technology. Discuss these needs in the context of the Section 504 plan review meeting and document students' needs for AT on Section 504 plans when appropriate.

**Assistive Technology options:** When considering AT for a student with an IEP, it is best to start with low-tech solutions, moving from low-tech to mid-tech to high-tech. Required AT must be written in the IEP. It is best to avoid using brand names for AT products. For instance, instead of using “iPad” in the IEP use words like “electronic tablet.”

In the table below you will find some common AT options with a progression from low to high tech AT alternatives. While not exhaustive, the resources listed below are good examples of simple methods to address students' needs.

**Table 1:** A list of common areas of need, including description of the need, with Low-Tech, Mid-Tech, and High-Tech options listed.

Area of Need	Description	Low-Tech	Mid-Tech	High-Tech
Reading Disabilities	The student demonstrates difficulties in: <ul style="list-style-type: none"> <li>•Decoding unknown words</li> <li>•Understanding or remembering what is read</li> <li>•Accurate reading</li> <li>•Reading comprehension, complex reasoning, and thinking</li> </ul>	<ul style="list-style-type: none"> <li>• Environmental changes (lighting, decreased distractions, sitting/standing, etc.)</li> <li>• Teacher/adult reads difficult passages with the student or to the student</li> <li>• Alternate versions/easy reader versions of text</li> <li>• Highlighter within text</li> <li>• Physical textbooks</li> </ul>		<ul style="list-style-type: none"> <li>• Read &amp; Write</li> <li>• Fast ForWord</li> <li>• Bookshare</li> </ul>
Word Retrieval	The student demonstrates issues in: <ul style="list-style-type: none"> <li>• Difficulty forming words or thinking of new ones</li> <li>• Cannot keep pace with flow of ideas</li> <li>• Cannot retain ideas/memory to express in writing</li> <li>• Difficulty with spelling</li> </ul>	<ul style="list-style-type: none"> <li>• Dictionary</li> <li>• Thesaurus</li> <li>• Cloze writing activities</li> <li>• Vocabulary development</li> <li>• Student created commonly used words dictionary</li> </ul>	<ul style="list-style-type: none"> <li>• Basic word processing program with spell check, grammar check, and thesaurus</li> <li>• On-line dictionary/thesaurus</li> </ul>	<ul style="list-style-type: none"> <li>• Electronic dictionary</li> <li>• WordQ – Text prediction software</li> </ul>
Writing Disabilities	The student demonstrates issues in: <ul style="list-style-type: none"> <li>• Poor/illegible handwriting despite appropriate time/attention</li> <li>• Inconsistent spacing</li> <li>• Poor organization of ideas</li> </ul>	<ul style="list-style-type: none"> <li>• Alternative writing assignments (ex: collage, brochure, poster, PowerPoint)</li> <li>• Scribe</li> <li>• Use of graphic organizer and outlining</li> <li>• Opportunities for verbal response</li> <li>• Word walls</li> </ul>	<ul style="list-style-type: none"> <li>• Word processor with spell check</li> <li>• Electronic dictionary</li> </ul>	<ul style="list-style-type: none"> <li>• Dragon Naturally Speaking</li> <li>• Speech to Text</li> <li>• Google speak it</li> </ul>

	<ul style="list-style-type: none"> <li>•Great difficulty in thinking/writing at the same time</li> </ul>	<ul style="list-style-type: none"> <li>• Writing templates</li> </ul>		
Deaf/Hard of Hearing/Hearing Impairment	<ul style="list-style-type: none"> <li>•Hearing Impairment means a hearing impairment, whether permanent or temporary.</li> <li>•Determination of the existence of this disabling condition shall be based on the following:</li> <li>•Certification of the disabling condition and the extent of the hearing loss;</li> <li>•The effect of the hearing loss on education performance; and,</li> <li>•The degree of speech or language impairment assessment by a speech/language pathologist, if appropriate</li> </ul>	<ul style="list-style-type: none"> <li>• Pen and paper</li> <li>• Use of the computer with word processor</li> </ul>	<ul style="list-style-type: none"> <li>• Use of the closed captioning in Teachlets and other videos</li> <li>• Use of the chat pod in LiveLesson sessions</li> </ul>	<ul style="list-style-type: none"> <li>• FM System</li> <li>• Closed captioning pod in LiveLesson session room</li> <li>• American Sign Language translation in the LiveLesson session room</li> </ul>
Fine Motor	<p>The student demonstrates difficulties in:</p> <ul style="list-style-type: none"> <li>• Grasping the pencil</li> <li>• Controlling the speed of their own movements</li> <li>• Controlling their force, often ripping paper or breaking pencils</li> <li>• Navigating through windows/mouse control</li> <li>• Spatial relations</li> </ul>	<ul style="list-style-type: none"> <li>• Manipulatives</li> <li>• Upright working surface such as easel or white board</li> <li>• Slant Board</li> <li>• Scribe</li> <li>• Raised line paper</li> <li>• Handwriting Without Tears</li> </ul>	<ul style="list-style-type: none"> <li>• Basic word processing system with built in spell check, grammar check and thesaurus</li> <li>• Opportunity to record writing assignments with a recording tool</li> <li>• Online writing template</li> </ul>	<ul style="list-style-type: none"> <li>• Dragon Naturally Speaking</li> <li>• Talking calculator</li> </ul>

<b>Vision Impairment</b>	<b>Types of Vision Loss:</b> <ul style="list-style-type: none"> <li>• No Vision</li> <li>• Low Vision</li> <li>• Vision in one eye</li> <li>• Peripheral vision or central vision</li> <li>• Color vision deficiencies</li> </ul>	<ul style="list-style-type: none"> <li>• Magnifying glass</li> <li>• Scribe</li> <li>• Lighting change</li> <li>• Color acetate sheets</li> <li>• Large print books</li> <li>• Braille textbooks</li> <li>• Physical textbooks in place of iTexts</li> </ul>	<ul style="list-style-type: none"> <li>• Microsoft Magnifier</li> <li>• Ease of Access (Windows 7 computers: Go to start menu, choose Control Panel)</li> <li>• Microsoft Narrator</li> <li>• Anti-glare filters for monitor</li> </ul>	<ul style="list-style-type: none"> <li>• Perkins Braille</li> <li>• Braille translation software</li> <li>• NVDA Installation</li> <li>• Jaws Screen Reading Software</li> <li>• Low vision: ZoomText magnifier-reader</li> <li>• Bookshare for Braille files</li> </ul>
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Reference:  
 Council for Exceptional Children. Assistive Technology Considerations: Quick Wheel. Arlington, VA.

Consider the assistive technology needs for instruction as well as state testing. Think of timelines for ordering materials needed.

**Dictation or Speech to text software:** To benefit from this technology the student must be able to articulate clearly.

**Closed Captioning Services:** If your district/school doesn't have captioning services, there are fee-based services, such as those offered by [\\*Vitac](#). If needed, these services should be listed in the IEP. When considering closed captioning services, the team must first determine if the student will be able to read the captioned text on the screen as it will likely be on grade level.

**Students with visual impairments** can have a wide range of vision loss. It is imperative that a state- certified Teacher of the Visually Impaired be present at the student's IEP meetings to review the Functional Vision Assessment and Learning Media Assessment and discuss the need for services. If these assessments are not present, then ensure that these assessments are completed per IDEA. Some students may also need an Orientation and Mobility Assessment. If that is the case, a state-certified Orientation and Mobility Therapist should be invited to the IEP meeting to review the assessment and discuss the need for services.



**Tip:** Ask the parent and student if the student worked with a Teacher of the Visually Impaired or Orientation and Mobility Therapist previously before contracting.

Students with visual impairment may require various assistive technology resources depending on their individual needs. Students with low vision may benefit from screen magnification software. Other students without sight likely need a screen reader such as NVDA\*.

Discuss the assistive technology needs for students with visual impairment, like all other supplementary aids and services, in the IEP Team or 504 Meeting. Assistive technology needs will vary by student. The current IEP with AT listed should be uploaded to Connexus/PCx, and all teachers who work with the student made aware of their role in supporting the use of AT by the student.

## Other Factors to Consider

- If the student has some vision:
  - Is the VI a global loss or just a partial loss (central or peripheral, tracking?)
  - Does the student need enlargement?
    - If yes, things to consider:
      - The lesson view will need to be enlarged in addition to textbooks.
      - Depending on degree of loss, a larger monitor may be necessary.
      - ZoomText\* will read and enlarge the print on the screen.
      - Read & Write\* will not read accurately if the font is enlarged beyond 18 point.
      - If the student needs enlarged print books, consider the font size.
        - After approximately 28-30-point font, the books are very large, and print becomes distorted.
        - A vision evaluation should be conducted/consulted to find recommended font size.
      - If the enlargement needed is up to 20 point, consider a magnifier for physical materials.
- If the student has total vision loss:
  - Does the student use a screen reader (JAWS\* or NVDA\*)?
  - Does the student require Braille materials?
- Other Assistive Technology Considerations



- White Cane
- Keyboards: Enlarged, Braille, High Contrast
- Orientation and Mobility
- Materials for State Testing

## Accessibility Features on Windows Computers and Chromebooks

There are a variety of accessibility options to assist with vision, hearing, and physical interactions on the computer including display settings, audio and closed captions, keyboard, mouse, and eye controls, and more.

### Chromebook:

- Turn on Chromebook accessibility features Alt+Shift+S
  - Select "settings"
  - At the bottom, choose "advanced."
  - In the "Accessibility" section, select "Manage Accessibility Features".
  - You can also have quick access by turning on "Always show accessibility options in the system menu".
- To increase and decrease the size of text and images on your screen:
  - Press and hold down the CTRL key on your keyboard.
  - At the same time as holding the CTRL key: press the + key to increase the size of the text and images or press the '-' key to decrease the size of the text and images.
  - Keep repeating until you reach the desired size.
  - You can return to the standard size by pressing CTRL + '0'.

### Windows Machines

- Click on the Windows icon on the bottom left of the screen.
- Click on Control Panel
- Click on Ease of Access

### Google Chrome Keyboard Shortcuts


[A page of Chrome keyboard shortcuts](#) for Windows and Mac (external link).

## Accessibility within Pearson Connexus (PCx)



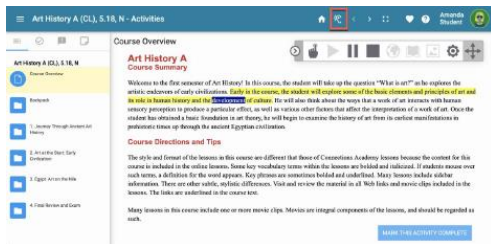
**Note Taking:** Students can easily take notes based on the text provided in Pearson. They can do this by:

- opening the "notes" feature at the top of the page (it looks like a sheet of paper between a paper airplane and a question mark).
- Click on the + then highlight the text to copy.
- Use ctrl C to copy then ctrl V to paste.
- They can also type to add their own notes as well.
- Teachers have the same feature.

**Printing:** Wherever the print icon  is visible in the toolbar, users can print content on the screen.

**Text to Speech** embedded within a Pearson lesson.

- Within the curriculum, it will look like an ear near the top right of the page.
- Within the online book lessons, it will look like a speaker with a couple of lines to indicate sound.
- At the bottom of the page be sure that "Audio Icons" is turned on Use the TTS toolbar
- With SpeechStream enabled, the Activities toolbar displays a Text to speech (TTS) button for assignments and rich-text activity types, as shown in the image below. Selecting the button hides and shows the TTS toolbar that reads aloud the assignment text using the play button. In some video or demonstrations, you will see an icon that will read the question or statement to you.










In addition to Text to Speech, **Speechstream** offers a range of tools to assist the student in navigating lessons.

**Commented [JS1]:** update this if new info comes out April 2021






-  **Touch/Click to Read aloud:** Read text on command by simply clicking/touching on text to be read aloud.
-  **Read aloud:** Select text and hit play to read text aloud with dual color highlighting using natural- sounding male and female voices.
-  **Pause:** Pause read aloud of text.
-  **Stop:** Stop read aloud of text.
-  **Translation:** Allows single or multiple words to be translated and spoken in the translated language.
-  **Fact finder:** select a word with your cursor, then click this button to find facts from the web about your chosen word.
-  **Dictionary:** Provides definitions of words with read aloud option to improve comprehension.





**Picture Dictionary:** Displays images from Widgit® Symbols for selected words to help support fluency & understanding.



**Highlighting tools:** Users can highlight/strikethrough and extract text to create study guides, outlines, summarizations & categorized content. Once highlighted, users can collect using this button. 



**Vocabulary Builder:** Builds vocabulary lists from individually highlighted words. A new web page will pop up with the words, dictionary definitions, images from Widgit Symbols and a space to add notes.



**Text to MP3:** Text is converted to an MP3 file and can be downloaded so you can keep it and listen to it later.



**Screen masking:** Helps maintain focus and reduces eyestrain. This is also helpful for students who need assistance with tracking.



**Settings:** Set the speed for text read aloud.



### Digital Media and Technology:

For a list of Apple accessibility options, visit Apple's [Accessibility page](#) (link is external).

For a list of Internet Explorer accessibility options, visit Internet Explorer's [Accessibility page](#) (link is external).

For a list of Google Chrome accessibility options, visit Google's [Accessibility page](#) (link is external).

\* Please note that services/products noted in descriptions above, other than those noted as being within Pearson Connexus (PCx), are not affiliated with or endorsed by Pearson.

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