# Glossary of Instructional Accommodations 2015-16

**Some resource websites and weblinks have also been included in the chart for your reference. Please consult the Tables A-P for more suggestions and websites related to specific areas of disability.**

**Computer-based Testing (CBT) References:** (See PARCC Manual for full explanation of each feature / accommodation and the Appendices for protocol.)

- **Accessibility Features for All Students** – Table 1  (reference numbers on the Glossary correspond to PARCC Table 1)
- **\*Accessibility Features Identified in Advance** – Table 1  - MUST BE SELECTED ON THE STUDENT'S REGISTRATION/PERSONAL NEEDS PROFILE   (SR/PNP)
- **Accommodations** for Students with a Disability – Only available for students with a 504 Plan / IEP /

**(Alternate terms or names for the Accessibility Feature or Accommodation)**

## Assistive Technology

The evaluation of need and selection of appropriate assistive technology is paramount to providing access to communication.  Assistive Technology Partners works with CDE to support a network of assistive technology teams across all school districts in the state of Colorado.  They provide assistive technology services in schools and classroom settings within their districts, with the intention of enabling students with disabilities to achieve full access and participation in all educational opportunities.  Visit the SWAAAC website to learn more about SWAAAC activities, professional development opportunities, or to find a team coordinator for your district.

In addition, SWAAAC has several webinars on demand to learn more about a variety of assistive technology topics.

### Integrating Tech Tools into Instruction
The integration of technology use in the classroom has spawned a generation of new tech tools for colleagues to share with professional learning networks.  Many offer students with a disability and students who are struggling with certain tasks a more level playing field for accessing material and independently producing school work.

While it is impossible to list every single useful app or software, an *Assistive Technology team from Michigan's Region 3* has compiled a list of resources and summaries that contain helpful sites and tools. Note:  some are free while others may require purchase.   ( Information adapted from Jennifer Herseim's July 15, 2014 article for the LRP Special Ed Connection newsletter.)

| Tech Tools | Description |
| --- | --- |
| **Tar Heel Reader** | A website with free, easy-to-read and accessible books with a wide range of topics.  Accessible using multiple interfaces.  Students can also author their own readers. |
| **Storyline Online** | A website with free, streaming audio books that are read by actors |
| **Talk Typer** | A website with free speech-to-text and speech recognition |
| **Vocaroo** | This website allows you to record a voice and send it to anyone.  Students can dictate answers to any assignment and email the file to their teacher.  Teachers can also speak directions and create a QR code that they can print out and tape to a book page or assignment.  Vocaroo helps the student be successful in being able to speak instead of write or be able to listen instead of read text. |
| **Evernote, Clearly** | A website and app for keeping track of notes and websites to find them when you need them.  Clearly helps remove clutter from web pages, news blogs, and articles. |
| **Rewordify** | A website that can reduce text complexity and help students learn what hard words and phrases mean with smart highlighting.  Helpful to teach the skill of "hovering" to bring up a pop-up glossary.  Student will have to select the definition of the word that is applicable in the given text. |
| **Symbaloo** | A free, visual bookmarking website.  Teachers can host a Symbaloo page and assemble a set of selected resources for students and families that are easily accessible in one place.  Great for your teacher's homepage. |
| **Kidspiration** | A website that presents a visual way of thinking and learning to organize ideas and to strengthen reading, writing, and math skills |
| **Dragon Naturally Speaking** | Voice-to-text software for students having difficulty accessing a keyboard;  Dragon Dictate may also be used on an iPhone for student to dictate answer and text to teacher.  *See Glossary for more speech to text options |
| **My Study Bar** | A set of portable open source and freeware applications to help students overcome problems commonly experienced with studying, reading and writing |
| **Browsers and iPad Speak Selection:  Speakit!, Readability, Speech Recognition, Google Dictionary, Select and Speak** | Accessibility features of browsers and tablets |
| **Livescribe** | A digital smart pen that takes notes, records audio, connects the two and uploads |
| **AnyBook Reader** | A reading pen that records your voice so any book can be an audio book. |
| **Mathtrain TV** | A website with math videos created for students by students |
| **Khan Academy** | An educational website with many resources |
| **IXL** | A website where students can practice math and English skills online |

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| **AAA Math** | A website with thousands of interactive math games |
| **Math is Fun** | A website designed to teach students math skills with puzzles, games, quizzes, worksheets and more |
| **Em Power Math** | Helps users produce images and equations for math and science |
| **Math Paper** | print various types of papers useful for math |
| **StarChild** | A NASA learning center for young astronomers |
| **Windows to the Universe** | Explore earth, space, and science at a chosen reading level in English or Spanish |
| **Scholastic Student Activities** | Teachers can access activities across all grade levels that are web-engaging, used for computer labs, and/or for interactive whiteboards |
| **Newsela** | Current event website that allows students to adjust the Lexile reading level of an article (free version and paid version) |
| **Bookshare** | An online accessible library, free to all students with print disabilities |
| **Accessible Educational Materials** | CAST national center on accessible educational materials for students with low vision or students with specific learning disabilities who have a print disability  *Highly recommended to use during  instruction for any student using the Unique Accommodation for Reading request |
| **Inspiration 9** | Software that applies visual learning concepts in reading and writing |
| **Texas School for the Blind—Math** | Materials and strategies for teaching math to students with visual impairments |
| **Texas School for the Deaf – Math** | ASL online sign dictionary for math terms |
| **Virtual Manipulatives** **Virtual Manipulatives - Glencoe** | A digital library of math activities organized by grade level and topic |
| **Math Bits** | Digital math resources for secondary students |
| **iSolveIt** | An app that supports the development of logical thinking and reasoning skills as essential competencies of algebra and mathematics |
| **Co-writer app** | An app that supports students' writing or spelling with word prediction |
| **Notability**  **iPad app review video** | An app to help students take notes, type, draw and record |
| **Dragon Dictation app** | A free voice-to-text app that is easy to train |
| **SoundNote** | An app that tracks what you write, type or draw while recording (Mac) |
| **Voice Dream Reader** | A document reading tool that reads in many voices and in different document formats (Android) |
| **Claro apps** **Claro PDF** **Claro Speak** | Accessible, professional and user-friendly PDF viewer, reader and annotator (free and paid) Text to speech reader (paid) |

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| **Claro Com** <br> **Claro MagX** | iPad/iPhone AAC (free and paid) <br> powerful high definition visual magnifier (iPhone/iPod Touch/iPad (free) |
| **Show Me Whiteboard  (You Tube Demo), Educreations, ScreenChomp** | Apps for creating and sharing video lessons on a tablet; <br><br> Recordable whiteboard useful for recording tutorials that can be sent home with students |
| **Lower tech tools** | Label maker, fraction calculator, talking calculator, misspellers' dictionary, wireless touchpad and keyboard mouse combo, highlighter tape, EZC reader guides, portable word processor, adapted paper, carbonless notetaking notebook, talking dictionary, and excel math supports |
| **Teaching Technology Skills:** | |
| **Common Core State Standards  K-12 Technology Skills Scope and Sequence** | Long Beach Unified School District produced this scope and sequence aligned to the CCSS standards (embedded in the Colorado Academic Standards) for English Language Arts/Litercy and Mathematics (Elementary and Secondary) |

## Accommodations for the Presentation of Content

**Note:**  Reference numbers included in the instructional accommodations glossary correlate to the *PARCC Accessibility Features & Accommodations Manual (4th Edition2015).  For PARCC assessments, accommodations are considered to be adjustments to the testing conditions, test format, or test administration that provide equitable access during assessments for students with disabilities and students who are English learners. Accommodations provided to a student must be generally consistent with those provided for classroom instruction and classroom assessments.  There are some accommodations that may be used for instruction and for formative assessments, but are not allowed for the summative assessment because they impact the validity of the assessment results. Please note and document the accessibility feature; accessibility feature identified in advance, or accommodation (504 /IEP/EL)*

*\*Indicates the Accessibility Feature Identified in Advance/Accommodation must be selected in the Student Registration/Personal Needs Profile  (SR/PNP).  If such features or accommodations are selected for use on assessment, they must also be provided, routinely used, and evaluated for effectiveness during instruction.*

*Also see the PARCC Appendices (August 2015) for more detailed explanation of protocol used during assessment. For consistency, the same protocol should become routine in the classroom during instruction. For Unique Accommodation Requests, use the Colorado form. (See you District Assessment Coordinator for assistance.)*

**This format of the glossary has had spacing condensed to conserve printing space.**

**AT-Presentation**
**\*Assistive Technology  - (Non-Screen Reader)**
   For PARCC, Table 3 (Page 29) provides a list of presentation accommodations for students with disabilities that describe changes in the assessment format and method in which the assessment is administered.  The table also outlines the before, during and after testing activities necessary to successfully administer these accommodations.

**In order for the student to be fluent in the use of an accommodation, it must be provided, routinely used and evaluated for effectiveness in daily instruction.**

**\***3a  Assistive Technology must be selected on the Student's Student Registration/Personal Needs Profile (SR/PNP) Guidelines are available at http://avocet.pearson.com/PARCC/Home to test assistive technology for compatibility with the TestNav8 platform.  Click on "Infrastructure Trial".

*SWAAAC Loan Bank*:  Assistive Technology Partners offers an Assisted Search Service to aid in searching for some assistive technology items to use from the Loan Bank.  Check with your SWAAAC partner or visit the website.

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| | **See Appendix M:  PARCC Assessments for Students with Visual Impairment, Including Blindness** |
| | **\*Screen Reader Version (for a student who is blind or visually impaired)** |
| | There are many free and purchased versions of screen reader software available.  Please consult your AT representative and your Teacher of the Visually Impaired to evaluate those most appropriate for your student.  Reviews and comparisons Screen Reader Software Review. <br> **Comparable CBT Accommodation: 3b** Screen Reader Version must be selected in student's SR/PNP.  PARCC recommends using JAWS 15 with Firefox.  Test compatibility with an Infrastructure Trial as noted above. |
| | **\*Large Print** |
| | Large print editions of texts, instructional materials, and printed tests are beneficial for some students with visual impairments.  It is recommended that regular print materials be manipulated to reformat test items and enlarge or change the font as needed to accommodate the visual spacing/font enlargement needs of the student.  The selected font is often one that is free of serifs (sans serifs).  All text and graphic materials, including labels and captions on pictures, diagrams, maps, charts, exponential numbers, notes, and footnotes, must be presented in at least 18-point type for students who need large print assessments.  Measurement tools or items being measured should be retained in their standard increments.  It is important for the print to be clear, with high contrast between the color of the print and the color of the background.  It is the responsibility of the school district to secure and/or to prepare large print texts and instructional materials.  Such materials are not provided to students with visual impairments by the Colorado Instructional Materials Center. <br> **Comparable CBT Accommodation: 3g** Must have Large Print Edition selected on the student's SR/PNP.  See *Appendix M* and *Appendix A* <br> American Printing House for the Blind, Inc. <br> New!  Large Print Textbooks for eReader |
| | **\*Paper-Based Edition (Alternate Representation –Paper Test)** |
| | For instruction presented via auditory or visual media, students may also be provided with paper-based materials either in large print or braille.  Please consult the student's Teacher of the Visually Impaired for recommendations. <br> **Comparable CBT Accommodation: 3h** Must have Paper-Based Edition selected on student's SR/PNP.  See *Appendix A: Accessibility Features and Accommodations for Students Taking the Paper-Based PARCC Assessments* |
| | **\*Black and White Print/High Contrast  (\*1d Color Contrast -Invert Color Choice - Background/Font Color)** |
| | Some students with visual impairment may require text with high contrast ink from the color of the background page.  The high contrast enables the student to see the material more effectively. <br> **\*Comparable CBT Accessibility Feature Identified in Advance: 1a** Must have Color Contrast (Background/Font Color) . |
| | **General Masking (\*1a Answer Masking – \*1i General Masking    Also see Visual Aids/Organizers)** |
| | The student creates a custom "mask" to electronically cover portions of test items, including passages, as needed.  This could be in the form of a ruler, blank card, etc. or electronically show highlighted words, phrases or lines of text. |

**\*Comparable CBT Accessibility Feature Identified in Advance: 1a**   Must have Answer Masking selected on the student's SR/PNP to activate the feature on the platform.

**\*Visual Aids/ Organizers (Highlighter-Highlight Tool)**

The student uses highlighters, template, place marker, masking device, colored overlays, reading guide ruler, or pointer to aid in the presentation of text/graphics.
**Comparable CBT Accessibility Feature Identified in Advance:**
\*1a   Answer Masking – Must have Answer Masking selected on the student's SR/PNP.
\*1d   Background/Font Color (Color Contrast)  Must have Color Contrast (Background/Font Color) selected on the student's SR/PNP
 1c   Bookmark (formerly called Flag Items for Review)
\*1i  General Masking-Must have General Masking selected on the student's SR/PNP
 1j   Highlight Tool
 1l   Line Reader Tool

**\*Color Contrasting (\*Background/Font Color) (Invert Color Choice) (Overlay Color) (External Color Overlays)**

Some students with visual needs are better able to view information through color contrast.  This need can be met for paper-based materials by either creating different color versions of content or by providing colored transparencies to place over materials.  For computer use, a content and test delivery system can allow students to overlay different colors over content and choose different combinations of text and background colors.
**\*Comparable CBT Accessibility Feature Identified in Advance: 1d**  Must have student's Color Contrast (Background/Font Color) selected on the student's SR/PNP.

**Increased White Space**

Increasing the amount of blank space between items in a paper-based test booklet or between instructional content may help students to better see the presented material and/or maintain visual focus.

**Magnification Devices  (Magnification/Enlargement Device - Low Vision Devices)**

Some students with visual impairments read regular print materials by enlarging the print size with magnification devices.  These include reading glasses, eyeglass-mounted magnifiers, free standing or handheld magnifiers, and Closed Circuit Televisions (CCTVs)/Video Magnifiers, projectors, or electronic devices to enlarge print and display printed material with various image enhancements on a screen.  See below for computer.
**Comparable CBT Accessibility Feature:  1m**

**Computer Magnification /  \*Magnification / Enlargement Device**

**S**ome content and test-delivery systems allow students to manipulate the size of text and graphics presented on the screen.  It is important that the system is able to enlarge all material, including narrative text, formulas and equations, information presented in scientific and mathematical nomenclature, tables, graphs, charts, figures, and diagrams with visual clarity.  The system may provide tools that allow students to either view material in magnified form on an occasional/as-needed basis or on a more permanent basis.  Other desirable features of a computer magnification system would be to allow students to easily move content that is forced off the screen into viewing mode; allow magnifying tools to work in conjunction with other accessibility tools and/or accommodations provided on the computer; and give students the option of enlarging the entire test interface (including navigation buttons, menu options, and directions) or only instructional or test content.
PARCC:  The student uses magnification or enlargement devices to increase the font or graphic size. (e.g., telescopes, projector, CCTV, eye-glass-mounted or hand-held
magnifiers, electronic magnification systems
**\*Comparable CBT Accessibility Feature: 1m**    Large Monitor, Zoom Tool, Magnification/Enlargement Device

**\*Braille  (Uncontracted Braille)**

Braille is a method of reading a raised-dot code with the fingertips.  There are braille codes specific to literature, math, and science.  Some students who are blind/visually impaired will use braille as a primary and/or a secondary literacy modality.  \*Decisions will need to be made about whether a student will use contracted or uncontracted literary braille.  If instructional tasks or assessments are timed, a braille user may need additional time to complete the task.

A certified teacher of students with visual impairment should work with the student's IEP Team to determine the student's need for braille.

**\*Comparable CBT Accommodation: 3e** Must have Hard Copy Braille Edition selected on the student's SR/PNP. Requires a Braille Kit.  See *Appendix M* and *Appendix C* for transcribing after the assessment.

**\*Refreshable Braille Display with Screen Reader Version for ELA/Literacy**

A student may use a manual braille writer to produce braille. Refreshable braille displays are electronic devices used to read text.  This device is connected to a computer via a cable or Bluetooth and produces braille output on the braille display. Braille note takers are electronic devices to read and write braille.

**\*Comparable CBT Accommodation: 3d** Must have Screen Reader Version selected on the student's SR/PNP.  Once a student is placed into a test session, the student will be assigned a Screen Reader form.  PARCC recommends using JAWS 15 with Firefox.  Also requires refreshable braille display and tactile graphics booklet for test administration.  (See Appendix M and PARCC Assistive Technology Guidelines at

**http://avocet.pearson.com/PARCC/Home**

**Accessible Denver: Resources for the Blind or Visually Impaired**

**\*Tactile Graphics**

**T**actile graphic images provide graphic information that can be discerned through touch.  Graphic material (e.g., maps, charts, graphs, diagrams, illustrations) is presented in a raised format (paper or thermoform).  Tactile graphics cannot always capture the same information that is presented in a visual format and/or may be very time consuming for the student to acquire all the needed information in the graphic.  In these instances, the student may benefit from an audio description or text/word description of the image.

**\*Comparable CBT Accommodation: 3f**   Must have Large Print Edition selected in the student's SR/PNP.  See *Appendix M* and *Appendix A*

**http://www.tactilegraphics.org/resources.html**

**\*Paper/Pencil version of computer-presented items**

Available for students who are unable to take computer-delivered assessment due to a disability.

*See Appendix A*

**Blank Scratch Paper**

Student is provided with blank (unlined, lined or graph) paper to use as scratch paper.  For students with visual impairment (braille paper, raised line paper, bold line paper, raised line graph paper, bold line graph paper, or abacus)

**Comparable CBT Accessibility Feature:  1e**

**Audio Description of Images**

Audio description can provide access to complex images and graphics for students with visual and print disabilities. For specific information on how best to use audio description; please go to the website for **National Center for Accessible Media**

**Described and Captioned Media** – Browse Media library for audio texts with added narrations (descriptions) that convey meaning and enrich language.  Also check accessible programs under Accessible Television.

**Read Aloud (Oral Presentation)**

A qualified person may be provided to read aloud to students who are unable to decode text visually. Readers should use an even tone and inflection so the student can process the information. Readers need to be familiar with the terminology and symbols specific to the content. This is especially important for high school mathematics and science. Graphic materials may be described, but should also be made available in print or tactile formats. Readers must be provided to students on an individual basis, not to a group of students. A student should have the option of asking a reader to slow down or repeat text. This cannot occur effectively when a person is reading to an entire group of students.

See PARCC *Appendix B* Human Reader and *Appendix J* for Mathematics Audio Guidelines

### Teacher-Read Directions / (1g General Administration Directions Clarified)

Classroom practice should routinely mirror the assessment procedure.

**Comparable CBT Accessibility Feature: 1g** General Administration Directions Clarified (by test administrator) The test administrator clarifies general administration instructions only. No part of the test may be clarified, nor can assistance be provided to the student during testing.

### General Administration Directions Read Aloud and Repeated as Needed

The teacher may read general administration directions aloud to the student and repeat as necessary.

**Comparable CBT Accessibility Feature: 1h** General Administration Directions Read Aloud and Repeated as Needed (by test administrator) Read aloud general administration directions only. Student may request repetition.

### Oral Script (*Text-to-Speech for the Mathematics Assessments)

**I**f it is determined that the student requires an oral administration type of accommodation, the same procedures outlined for use on state assessment should be routinely used in classroom assessment. Directions, assessment items and answer choices must be read verbatim from an oral script without clarifying, elaborating, or providing assistance with the meaning of words. Rephrasing or clarification of directions is not allowed.

**\*Comparable CBT Accessibility Feature Identified in Advance:1r** See http://parcc.pearson.com for tutorial

### Text-to-Speech (TTS)

**Intel®Reader** (purchase) operates much like a digital camera—point, shoot and listen to it read aloud printed text for such things as schoolwork, printed documents, magazines, mail, cookbooks etc.; portable; earbuds.

**The Reading Pen 2** (Wizcomtech – also check SWAAAC Loan Bank)

**iPad 3** provides a speech to text option through a microphone icon in its keyboard allowing students to generate text with voice rather than typing (The Yale Center for Dyslexia & Creativity)
TalkTyper (for Chrome) YouTube tutorial

### Read Aloud to Self

This accommodation is useful for students who may need to see and hear text in order to comprehend what is written. The use of an auditory/acoustical feedback device (such as WhisperPhone®, Phonics Phones or similar device) may also be beneficial, but will require individual administration in order not to disturb others.

**Comparable CBT Accommodation: 3c**

### Eliminate Answer Choices

When working with paper/pencil, the student may cross out answer choices as they consider each choice.

**Comparable CBT Accessibility Feature: 1f** Eliminate Answer Choices- student selects the "Answer Eliminator" icon on the toolbar. A red X will appear when the student selects an answer. Student may disable the feature on the toolbar by selecting "Answer Eliminator" again.

## *Closed Captioning of Multimedia (*Closed-Captioning of Multimedia on the ELA/Literacy Assessments)

Students who are Deaf or hard-of-hearing view captioned text on multimedia (e.g., video)

**\*Comparable CBT Accommodation: 3i** Must have Closed-Captioning selected on the student's SR/PNP.
Described and Captioned Media
YouTube Help – How to enable auto-translated and captions/subtitles
Google Search "How to enable captions on……"

## Audio Cassette Tape, Compact Disc, or Digital Recorder

Written tests and instructional materials can be prerecorded on an AAC device, audio cassette, compact disc, digital recorder, or any other type of assistive technology device which a student accesses with playback. Classroom directions, assignments, and lectures could also be recorded. When taping lectures, students may need sit near the speaker, use a quality microphone, and tape only parts of the class that can clearly be replayed (e.g., turn the tape recorder off during small group discussions or pass the microphone). Advantages include ease of operation, portability and low cost. Audio versions of tests and other written materials may need to be supplemented with a print or braille version of the text, so a student can have access to complicated graphic material. Copyright issues may need to be addressed. Consult your Assistive Technology Specialist for recommendations.

## Audio Books

An audio book is a human-recorded version of a printed book. Some of these recordings contain the full book and some are abridged. Audio books are produced on tape, CD, and in other electronic formats playable on computers and various types of digital media devices. They can be borrowed from libraries, downloaded or purchased from bookstores. Many online bookstores also carry recorded books, making access even easier. In most cases audio books are subject to copyright restrictions unless they are specifically designated as public domain works or fall under copyright exemption. (also see *Learning Ally*)

**Colorado Talking Book Library**

## Learning Ally

Learning Ally provides accessible audio textbooks and literature titles for individuals with visual and learning disabilities. The 71,000+ library of audio books are human voice recorded by subject specialists and are available through an individual or institutional membership. In addition to the audio format, Learning Ally is incorporating synchronized text to speech into their collection of books and will gradually add these books to the library. Learning Ally titles can be accessed by downloading through an online account. The books can then be played on the Learning Ally audio app for the iPhone, iPod Touch, or iPad, as well as software for a PC or Mac, and specialized hardware devices. Downloadable DAISY books provide instant access with enhanced navigation, bookmarking, and variable speed control.

**Learning Ally:** (formerly Recording for the Blind & Dyslexic)

## Electronic Books

An electronic book (or e-book) is a digital version of a printed book. These books come in a variety of formats. Depending on the source, these books can be read aloud by a computer generated voice using special software or hardware. Unlike audio books, electronic books include the full text so that students can read along while they listen without requiring a printed copy. Digital books are widely available from online bookstores and can be downloaded from several websites. Not all publishers allow their electronic books to be read with computer speech due to copyright.

**Colorado Talking Book Library**
**Tarheelreader.org** Click on "gear" symbol, download as PowerPoint or epub; will also read aloud. (*Putting Tar Heel Reader books into iBooks – with Speech Support* (Jane Farrall)

**Bookshare.org**

Bookshare is an online library of digital literature and textbooks designed for use by individuals who are blind or have other print related disabilities. The program supports students with a wide range of disabilities by providing classroom access to books that can be read aloud by computers, magnified or spaced differently. The digital books are primarily contributed by volunteers or provided in digital format by publishers. Bookshare provides free individual and institutional memberships to eligible schools and students in the United States. The books are available in DAISY format which is playable with specialized hardware or software.

**Bookshare** (access to content)
**ibooks** Download and read books with natural looking book and ability for text to speech, highlighting, definitions, etc. (fee)
**Audible** – Download audio books (fee) Amazon

**Accessible Materials**

Accessible Educational Materials (AEM) are print- and technology-based educational materials, including printed and electronic textbooks and related core materials that are designed or converted in a way that makes them usable across the widest range of student variability regardless of format (print, digital, graphic, audio, video). IDEA specifically focuses on accessible formats of print instructional materials. If a student is unable to read or use standard print based materials but is able to understand the content presented in textbooks and other related core instructional materials that are used across the curriculum, the student may need specialized formats of the curricular materials. For some students, printed instructional materials can be a barrier to participation and achievement in the general education curriculum. For example, students whose decoding abilities are well below grade level and those with identified disabilities who receive services under IDEA can gain access to information contained in typical textbooks and related printed instructional materials. For many students, these needs can be addressed by offering multiple means of input in the form of braille, large pri8nt, audio, and/or digital. When specialized formats and supports are matched appropriately with the student's needs, independence and achievement boost student outcomes.

National Center on Accessible Educational Materials – Audio-Supported Reading, Dr. Richard Jackson (video)
Audio-Supported Reading and Students with Learning Disabilities article
*Getting Started with ASR* article

National Center on Accessible Educational Materials – CAST
Decision-Making Tools and Supports – AEMs offers interactive tools that may be useful to teachers and IEP Teams to make decisions about the use of Accessible Educational Materials:
AEM Navigator – Examines the areas of need, format, acquisition of materials and supports. It can also print a summary of the decisions.
AIM Explorer – This is a free simulation tool for use with grade-level text supported with magnification, text color, highlighting and text layout options that can help students who are struggling with reading identify which features and helpful to them for accessing and understanding text. Exploration will involve the student and will also prepare a summary of their choices.
*Download the Instruction and Installation Instructions.

Tarheel Reader - collection of free, easy-to-read, and accessible books on a wide range of topics to share or create Exemplar Text Support- These books are accessible, open-source texts that you and your students can read online, on a reader that uses epub files, or offline as Powerpoint files or printed versions of the books. The books come from the collection of books at Tar Heel Reader. Many of the books were written by teachers across the U.S., Canada, and other English speaking countries. Dynamic Learning Maps has created Exemplar Text Supports or you can create your own. Navigate to the DLM webpage > Professional Development>Exemplar Text Supports . Also check out the Materials Exchange and Instructional Resources on this page.

**Note:** Books are contributed to the site from teachers, students, parents and others from around the world. **Please select and/or revise the books for your student to ensure suitability before providing access for students.** The books can be downloaded, edited, and printed (PowerPoint format) or as an ePub. (Click on the little gear symbol> Download)

**\*Audio Amplification Devices / Auditory Aids (\*noise buffers, \*headphones, white noise machines)**

Some students may benefit from hearing assistive technology to enhance their access to auditory instruction. The device used may vary depending on the impact of the hearing loss and personal amplification the student may be using. Amplification enhances the intelligibility of teacher-directed instruction, seating options, and in some cases connectivity with other technology (computers, audio devices, etc). There is an array of options available such as infrared and frequency modulated (FM) amplification systems, in addition to a student's personal hearing aids/cochlear implant(s), to increase clarity of the teacher's voice. An FM system can also be used with headphones. The teacher/speaker wears a small microphone which would transmit to either a classroom and/or device that is worn by the student. A student-worn receiver allows the student to receive consistent voice input regardless of where the teacher is standing in the classroom. When working with students in classroom situations that contain ambient noise, another consideration to improve spoken voice input quality may be a classroom sound field amplification system. The teacher/speaker wears a small microphone, a receiver is placed in the classroom, and the teacher's voice is clearly projected for all students. Check with a certified professional in your administrative unit, such as an educational audiologist to assist with addressing individual student need and refer to the IEP for student's amplification requirements.
This article outlines the benefit of amplification for all students: Educational Technology Support Center White Paper: Classroom Amplification Systems
**calypsosystems.com/images/uploads/researchstudies/Sound_Amp_whitepaper.pdf**
**Comparable CBT Accessibility Feature:**
Audio Amplification – 1b
Headphones or Noise Buffers  1k

**Video Tape and Descriptive Video**

Many books have been made into movies, giving students a visual and auditory way to access literature. Videotapes are often closed-captioned. Captions are visible when activated by a decoder or enabled on streaming media. Look for the CC (Closed Caption symbol on the tool bar.)  Built in decoders are required on all 13-inch or larger television sets. Descriptive video is a descriptive narration of key visual elements, making television programs, feature films, home videos, and other visual media accessible to people who are visually impaired. Key visual elements include actions, gestures, facial expressions, and scene changes. Inserted within the natural pauses in dialogue, audio descriptions of important visual details help to engage viewers with the story.
**Described and Captioned Media**
**Accessible Denver**

**\*Human Interpreter for a Student Who is Deaf or Hard of Hearing**

Spoken English /Text is signed to the student by a human Interpreter using the student's preferred mode of communication.

**\*Comparable CBT Accessibility Feature Identified in Advance: 1s    3m** \*ASL video for the Mathematics Assessment for a Student Who is Deaf or Hard of Hearing; \*ASL Video of Test Directions (If a deaf student does not use ASL, an actual human interpreter and separate test setting will be required.  See PARCC Appendix B-Human Reader/Human Signer; Appendix J: Mathematics Audio Guidelines; Appendix L:  Human Signer Guidelines
**3l**  Human Reader/Human Signer
\*ELA/Literacy Assessments, including items, response options, and passages) **3n** - Must have Text-to-speech, ASL Video, or Human Reader/Human Signer selected on student's SR/PNP  See Appendix D for decision-making guidance.
Also see *Appendix B*; *Appendix L* and *Appendix M* in order to mirror the protocol during instruction.

**Word-to-Word Glossary (Pop up Glossary)**

Student uses bilingual, word-to-word dictionary or electronic translator. Dictionaries that include definitions or pictures are not allowed. The student should be familiar with the dictionary they will use on the test. Students should be given ample time to complete the test using the accommodation
A list of bilingual word-to-word dictionaries authorized for use on PARCC assessments is available at:
**http://www.doe.mass.edu/mcas/testadmin/lep_bilingual_dictionary.pdf**
**Comparable CBT Accessibility Feature: 1o** Pop-up Glossary- student views definitions of pre-selected, construct-irrelevant words by hovering over them.  The definition appears in a pop-up text box.

**Sight Word app**

**Simplex Spelling** – Sight word app (fee)  Also offers Simplex Spelling Phonics (fee)

**Adapting Text Complexity**

**Rewordify** – this is a free, online software that can simplify difficult English, build better vocabulary and offer choices for students to understand complex text.  Copy and paste selected text into the text box and click on Rewordify text.  Teachers can also get charts and reports to monitor student progress.

**Text Compactor** – Free online automatic Text Summarization Tool .  Very simple tool to use to simplify complex text.  Just cut and paste text into text box, set the % of text to keep in the summary and read the summarized text. It also has a text to speech and translation tool.

 (For improved quality of text-to-speech, you may want to paste the summary into a Word document, save as pdf tutorial:  https://www.youtube.com/watch?v=ETOohmYui3Q)

**Newsela** (free version and and upgrade for fee)  This site allows teachers to select news stories and adjust the Lexile reading level simply by increasing or decreasing the text complexity levels.

**Lexile Tools**
**Lexile by Chapter Guides** – **Explore the complexity within a book**

**Snap & Read Universal:  Text Reading + Text leveling for Google-**  donjohnston.com has a new reading tool for Google  (fee)

**Paula Kluth article:  Rewriting History, and Nine Other Ways to Adapt Textbooks**

**5 Technology tools to Measure Text Complexity**
**Text Complexity:  Qualitative Measures Rubric** for Literature and Informational Text

**Visual Aids/ Organizers (1j  Highlighter)**

The student uses highlighters, template, place marker, masking device, colored overlays, or pointer.
**Comparable CBT Accessibility Feature:**
1f – Eliminate Answer Choices  Answer Masking, Background/Font Color (Color Contrast), Flag Items for Review,

| | 1i *General Masking – Must have General Masking selected on the student's SR/PNP<br>1j - Highlight Tool<br>1l  Line Reader Tool |
|---|---|
| | **Colorado Unique Accommodation Request form (UAR)** |

# Presentation Accommodations:

**Considerations in the Transformation of Accommodations from Paper/pencil to Computer-based Tests**

**Note:** The accommodations listed below are offered as general suggestions.  Please check with your Assistive Technologist specialist, Occupational Therapist, Speech-Language Pathologist, Deaf Education specialist or TVI/vision specialist for specific equipment and software recommendations for classroom and assessment.

| **Large Print and Magnification** | • Capacity to self-select print size or magnification<br>• Ability to scroll or advance screen<br>• Apply magnification to screen graphics and tables without distortion<br>• Very gradually consider building visual stamina; avoid visual fatigue<br>• Choose background to improve readability of overlying text |
|---|---|
| **Instructions simplified/clarified** | • Capacity to self-select audio (screen reader), alternate language or signed versions of instructions and test items (all students wear ear/headphones)<br>• Choose to have text repeated |
| **Audio presentation of instructions and test items**<br><br>**\*General Administration Directions Read Aloud and Repeated as Needed** | • Ability to self-select audio (screen reader)<br>• Use screen reader that converts text into synthesized speech or braille<br>• Control audio speed and quality of audio presentation<br>• Wear headphones or test individually<br>• Ability to process audio descriptions of graphics and other visual media<br>• Choose to repeat as many times as needed<br>• Ability to understand synthesized voice of reader<br>• Activate alternative text or "alt tags" for images |
| **Sign Language** | • Capacity to self-select alternate versions of written text/ instructions presented in sign language<br>• Capacity to self-select signed versions of instructions and test items<br>• Not feasible to read lips on video<br>• Check equipment compatibility<br>• Consider quality, accuracy and appropriate speed of signed information |
| **Languages other than English** | • Capacity to self-select alternate language versions of test items in written or audio format<br>• Be aware that translation may require different speed than English<br>• Use machine translation capabilities<br>• Check compatibility of interfaces<br>• Enable pop-up translation features<br>• Ability to regulate audio speed |
| **Braille** | • Ability to use screen reader to convert text into synthesized speech or braille<br>• Provide tactile graphics or three-dimensional models for some images<br>• Select screen and text colors<br>• Check compatibility of equipment and interfaces<br>• Express need for additional time if necessary |
| **\*Highlighters or Place holder** | • Capacity to self-select highlighter tool |

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| | |
|---|---|
| | • Ability to select text for highlighting |
| **Graphics or images that supplement text** | *Carefully consider images selected for presentation; avoid complex backgrounds or wallpaper that may interfere with the readability of overlying text<br>• Select alternative text or "alt tags" for images<br>• Use tactile graphics or three-dimensional models for images |
| ***Paper/pencil format** | • Select for students who are not yet computer literate<br>• Use if needed accessibility features or accommodations are not available |
| ***Use of Color** | • Ability to self-select appropriate screen and text color<br>• Ability to adjust contrast/ size and font |
| **Multiple column layout** | *For classroom presentation, keep in mind that linear presentation order needs to be logical. |
| **Book Creators:** | Book Writer (can add video and sound) (fee)<br>Create Book from Text:  Txt2Book (fee) **https://itunes.apple.com/us/app/txt2book-create-book-from/id492393388?mt=8**<br><br>CAST Book Builder  **http://bookbuilder.cast.org/**<br><br>Tarheel Reader  **http://tarheelreader.org/**  (Literacy!) |
| **Class collaboration** | Edmodo – web-based platform that provides a safe and easy way for your class to connect and collaborate, share content, and access homework, grades and school notices.<br><br>**http://www.educatorstechnology.com/2013/06/a-handy-guide-to-everything-teachers.html** |

See PARCC Manual for complete information on Presentation Accessibility Features and Accommodations

**The 55 Best Free Education Apps for iPad**

**Best iPad Apps for Dyslexia** (Jamie Martin YouTube)

# Response Accommodations

Please see **Table 4 Response Accommodations** for Students with Disabilities in the PARCC manual for complete information.    Spacing has been condensed for printing.

| 4 a | **\*Assistive Technology** |
|---|---|
| | The objective of providing assistive technology for any student is to foster the student's ability to make choices and produce work independently.  Teachers, specialists and related service providers will collaborate to craft the most effective approach for each student.  <br>**Computer Based Testing Guidelines:**  Reference numbers correspond with Table 4 in the PARCC manual.  Must have Assistive Technology selected in the student's SR/PNP |

| Response Accommodations | **\*Speech-to-Text/Voice Recognition Software** |
|---|---|
| | Speech-to-text conversion, or voice recognition, allows a student to use his/her voice as an input device.  Voice recognition may be used to dictate text into the computer or to give commands to the computer (e.g., opening application programs, pulling down menus, or saving work).  Allow ample time for instruction and practice when using these types of devices.<br><br>**Comparable CBT Response Accommodation**:<br>ELA/Literacy Selected Response Options:<br>**4f** \* Speech-to-Text – Must have Speech-to-Text, Human Scribe, Human Signer, or External Assistive Technology Device selected for the student's SR/PNP<br>Mathematics Response Options<br>**4j**  \*Speech-to-Text - Must have Speech-to-Text, Human Scribe, Human Signer, or External Assistive Technology Device selected for the student's SR/PNP |
| | Speech Recognition Software Products (some have fee)<br>Speech to Text – Microsoft Word (versions may vary)  YouTube video |
| | **Brailler / \*Braille Notetaker / \*Braille Writer** |
| | A brailler is a machine used to produce text in braille.  As combinations of its six keys are pressed, the braille cells are embossed on the paper rolled into the machine.  Some students use an electronic braille device or note taker, in which the braille is stored in the machine for later embossing through an alternative computer port.  Such tools are procured by a teacher certified in the area of visual impairments. Consult your teacher of students with visual impairments (TVI) for recommendations for individual students.<br>**Comparable CBT Response Accommodation**:<br>**4b**  Must have Braille Note-taker selected in the student's SR/PNP.  See *Appendix C* to mirror procedure during instruction.<br>**4c** – Must have Braille Writer selected on the student's SR/PNP.  See *Appendix C* |
| | **Voice Recording Devices** |
| | A student uses a tape recorder or other recording device to record class work or test responses rather than writing on paper.  (e.g., dictate responses on iphone; text to teacher) |
| | **Notepad** |
| | Embedded feature that can be used when taking notes.<br><br>**Comparable CBT Accessibility Feature**: **1n**<br>**Technology for Notetaking:  Tools to Help Students Capture and Organize What They Learn** (Haven, www.TechPotential.net) |
| | **Computer or Personal Portable Keyboard (1t \*Writing Tools –cut/paste/copy/underline/bold/insert bullets)** |

Computers, or other word processing systems, allow a student to produce a written response to instructional materials or assessments. Students should receive adequate instruction and time for use in order to build fluency and independence.

**Comparable CBT Response Accessibility Feature Identified in Advance: (1t *Writing Tools)**

## Alternative Pencils (Partner Assisted Scanning)

Alternative "pencils" have been designed for students who are unable to hold a traditional pencil or physically manipulate a keyboard. Instead, the alternative pencils tap into students' other developing abilities. For example, the alphabet eye gaze frame may be helpful for students who are learning to eye gaze. The print flip chart or onscreen keyboards may be helpful for students who are learning to use switches. The Braille flip chart may be useful for students who are blind. These are just a few examples. For many of the pencils, perfect vision and/or hearing are not needed. Examples of alternative pencils students may use for response include Alphabet Eye Gaze Frames, Print Flip Chart, Braille Alphabet Flip Chart, Alphabet Intellikeys Overlays, and Switch Accessible Onscreen Alphabet Keyboards.

[Center for Literacy and Disability Studies – Univ. of North Carolina-Chapel Hill](#)

Writing with Alternative Pencils

## Wireless Devices

iPads, tablets, and other wireless devices have become useful tools for students as both presentation and response accommodations. A list of software and devices that have no known conflicts with TestNav8 can be found at http://pearsononlinetesting.com/TestNav/AT/

## *Scribe – English Spoken/ Spanish Spoken / Other

A scribe is a skilled person who has been trained to write down what a student dictates by an assistive communication device, pointing, sign language, or speech. A scribe may not edit or alter student work in any way, and must record word-for-word exactly what the student has dictated. Following the dictation, scribes should request clarification from the student about the use of capitalization and punctuation, and must allow the student to review and edit what the scribe has written. Individuals who serve as a scribe need to become familiar with the content-area vocabulary involved and understand the strict boundaries of the assistance to be provided. The role of the scribe is to write what is dictated, no more and no less. The use of a scribe should be limited as it inhibits a student's ability to produce his/her work independently. **Appropriate assistive technology should be provided, taught, and used whenever possible. The educational goal is for the student to be able to produce work independently.** Examples of inappropriate use of a scribe may include: "The student can tell much more than he/she can write." or "This student can do so much better with a scribe." Such statements may well be true for many students. However, such a reason indicates convenience rather than need and may result in educational advantage. A scribe is not to be routinely used because a student lacks language competency, handwriting fluency, or spelling skill. Students who use assistive technology to respond in the classroom on a day-to-day basis, for assessments, and who have the appropriate documentation on their formal educational plans must use technology in lieu of a scribe for state assessments.

*__Comparable CBT Response Accommodations:__ Must have Speech-to-Text, Human Scribe, Human Signer or External Assistive Technology device selected on SR/PNP. (i.e., Dictation/Transcription or Signing) for the Mathematics assessments, and for selected response (not constructed response) items on the English Language Arts/Literacy assessments. **Consistent protocol and procedures should be mirrored in instruction.**

ELA/Literacy selected response options. See Appendix C and Appendix L

**4f** Speech-to-Text
**4g** Human Scribe
**4h** Human Signer
**4i** External Assistive Technology device

Mathematics Response Options: See Appendix C and Appendix L

**4j** Speech-to-Text
**4k** Human Scribe
**4l** Human Signer
**4m** Assistive Technology Device

Ela/Literacy Constructed Response Options: See Appendix C and Appendix L

**4n** Speech-to-text
**4o** Human Scribe
**4p** Human Signer

| | |
|---|---|
| | **4q** Assistive Technology Device |
| **Response Accommodations** | **Calculator /* Calculation Device and Mathematics Tools** |
| | If a student's disability affects math calculation, but not reasoning, a calculator or other assistive device (e.g., abacus, arithmetic table, manipulatives, or number chart) may be used for instruction.  It is important to determine whether the use of a calculation device is a matter of convenience, or a necessary accommodation.  It is important to know the goal of instruction and assessment before making decisions about the use of calculation devices.  For example, if students are learning subtraction with regrouping, using a calculator would not give a student an opportunity to show regrouping.  On the other hand, if students are learning problem solving skills that include subtraction (e.g., bargain shopping for items with a better value), the use of a calculation device may be a valid accommodation.  Calculators may be adapted with large keys or voice output (talking calculators).  In other cases, an abacus may be useful for students when mathematics/science problems are to be calculated without a calculator.  The abacus functions as a paper and pencil device for students with visual impairments. <br> Student uses a calculation device or manipulatives to respond to questions. <br> **Comparable CBT Response Accommodation**: <br> **4d**  **\*Calculation Device on Calculator Sections of Mathematics Assessment**- Must have Calculation Device on Calculator Sections selected according to PARCC Calculator Policy <br> **4e**  \*Calculation Device and Mathematics Tools (on Non-calculator Sessions of Mathematics Assessments)  Must have 504/IEP.  Must have Calculation Device and Mathematics Tools on Non-Calculator Sections selected on student's SR/PNP <br> Allowable Mathematics tools include:  (<u>only these</u> for assessment!) <br> • Arithmetic tables (e.g., addition charts, subtraction charts, multiplication charts; division charts) <br> • Two-color chips (e.g., single-sided or double-sided) <br> • Counters and counting chips <br> • Square tiles <br> • Base 10 blocks <br> • 100s chart |
| | **\*Spelling and Grammar Devices  (1q\*Spell Check or External Spell Check Device)** |
| | The use of a dictionary may be beneficial for assignments that require an extended response or essay.  Spelling and grammar can also be checked with pocket spellcheckers.  Students enter an approximate spelling and then see or hear the correct spelling or correct use of a word.  Students who use a word processor may be allowed to use a spell check or other electronic spelling device. <br> AT and Learning Disabilities resources for Spelling Resources <br> **Comparable CBT Accessibility Feature**: **1q**  Embedded spell check in TestNav or external device without grammar check, Internet or ability to save information |
| | **\*Pop-up Glossary   (1o Pop-up Glossary)** |
| | Student learns skill of "hovering" over an unfamiliar word so that the definition appears in a pop-up text box.  This feature is found in a variety of software programs. <br> **Comparable CBT Accessibility Feature**: **1o** |
| | **\*Word Prediction  (\*Word Prediction External Device)** |
| | Word prediction software can work in various modes of operation based on the student's needs.  This accommodation provides a word list pop-up tool that can assist the student with word choice and spelling based on the letters that a student types on the screen. <br> The student uses word prediction software that provides a bank of frequently- or recently-used words as a result of the student entering the first few letters of a word. <br> **Comparable CBT Response Accommodation**: **4r**  Must have Word Prediction selected in the student's SR/PNP. In order for the student to be successful using this accommodation on an assessment, the student must be familiar with the use of the external device during instruction. |
| | Word Prediction Software Comparison Chart:  Word Prediction Apps - Features Comparison Chart  (Technology for Special Education Needs blog) <br> Write Online (fee for license) <br> http://www.cricksoft.com/us/products/tools/writeonline/special-needs.aspx |
| | **Prompt / Encourage Student Responses** |
| | Some students may respond to prompting or encouragement to maintain focus during instruction or testing.  On a |

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| | paper-based task, teachers may encourage or prompt the student to continue. For example, a teacher may walk by a student's desk and point to a picture symbol or card that encourages the student to refocus on the work at hand. In a computer-based environment, the system can be programmed to generate a prompt after a predefined number of minutes elapsed since a student interacted with the content.<br>**Comparable CBT Accessibility Feature**: **1p** Redirect Student to the Test (by test administrator) |
| | **Organization Tools** |
| | Organization tools include graph paper, highlighters, place markers, and scratch paper. Students may not be allowed to write in books owned by the school. Photocopying parts of written text allows a student to use a highlighter and write in the margins. |
| | **Eliminate Answer Choices** |
| | Cross out unselected responses as a decision-making strategy<br><br>**Comparable CBT Accessibility Feature:** Computer based accessibility feature available to all students ;<br>**1c** Bookmark (previously called *Flag Items for Review)<br>**1f** Eliminate Answer Choices |
| **Response Accommodations** | **Graphic Organizers  *NotePad** |
| | Graphic organizers help students arrange information into patterns in order to organize their work and stay focused on the content. Graphic organizers are especially helpful for writing reports and essays. Semantic mapping software is now available to enable students to understand a narrative story, informational text, or writing elements through graphics.<br>**Comparable CBT Accessibility Feature**: **1n** student writes and edits notes using embedded NotePad application |
| | **Specialized Paper** |
| | Some students require special paper in order to respond in writing. Some examples include graph paper, paper with raised lines, or paper with colored/highlighted lines. |
| | **Additional Paper / *Blank Paper** |
| | Some students may benefit from having additional paper available to use during instruction. This paper may be blank (scratch), lined, graph, or other paper.<br><br>**Comparable CBT Accessibility Feature**: **1e** Blank Paper provided by test administrator |
| | **Slant Boards** |
| | Slant boards often help students with motor fatigue or students who need closer visual accesses to print material. An inclined surface may assist in maintaining better posture, thus allowing a student to respond in writing with less fatigue. |
| | **Pencil Grip / Large #2 Pencil** |
| | A pencil grip/large #2 pencil that the student is accustomed to using may help the student with motor fatigue and thus allow the student to respond in writing. |
| | **Abacus / Tactile Math Manipulatives** |
| | Some students require an abacus or physical objects in order to accomplish math calculations. Some examples include raised touch math dots, counters, number lines, 1-100 chart, raised line graph paper, shape construction board, braille ruler, or protractor. |
| | **Other Response Accommodations (*Additional Assistive Technology – determined by individual need)** |
| | Some students may have other response accommodations in place during instruction to help them access the learning objectives. The accommodation should also be documented in the student's IEP or Section 504 Plan as an instructional accommodation.<br>**Comparable CBT accommodation**: External Assistive technology devices; See *PARCC Infrastructure Trial http://avocet.pearson.com/PARCC/Home* |

**Response Accommodations**

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| **Acc om** | **\*Speech-to-Text/Voice Recognition Software** |

Speech-to-text conversion, or voice recognition, allows a student to use his/her voice as an input device. Voice recognition may be used to dictate text into the computer or to give commands to the computer (e.g., opening application programs, pulling down menus, or saving work). Allow ample time for instruction and practice when using these types of devices.

**Comparable CBT Response Accommodation**: Speech-to-Text/Dictation/Transcription or Signing for Mathematics
See *PARCC Manual* for considerations

## Brailler / *Braille Notetaker

A brailler is a machine used to produce text in braille. As combinations of its six keys are pressed, the braille cells are embossed on the paper rolled into the machine. Some students use an electronic braille device or note taker, in which the braille is stored in the machine for later embossing through an alternative computer port. Such tools are procured by a teacher certified in the area of visual impairments. Consult your teacher of students with visual impairments (TVI) for recommendations for individual students.
*Response Accommodation: See *PARCC Test Administration Manual* for transcription guidelines

## Voice Recording Devices (Digital Recorder)

A student uses a tape recorder or other recording device to record class work or test responses rather than writing on paper. The student can add voice narration on Powerpoint presentations or other digital media.

## Computer or Personal Portable Keyboard (*Writing Tools –cut/paste/copy/underline/bold/insert bullets)

Computers, or other word processing systems, allow a student to produce a written response to instructional materials or assessments. Students should receive adequate instruction and time for use in order to build fluency and independence.

## Alternative Pencils (Partner Assisted Scanning)

Alternative "pencils" have been designed for students who are unable to hold a traditional pencil or physically manipulate a keyboard. Instead, the alternative pencils tap into students' other developing abilities. For example, the alphabet eye gaze frame may be helpful for students who are learning to eye gaze. The print flip chart or onscreen keyboards may be helpful for students who are learning to use switches. The Braille flip chart may be useful for students who are blind. These are just a few examples. For many of the pencils, perfect vision and/or hearing are not needed. Examples of alternative pencils students may use for response include Alphabet Eye Gaze Frames, Print Flip Chart, Braille Alphabet Flip Chart, Alphabet Intellikeys Overlays, and Switch Accessible Onscreen Alphabet Keyboards.

Center for Literacy and Disability Studies – Univ. of North Carolina-Chapel Hill
Writing with Alternative Pencils (See DLM Self-Directed Professional Development Module # 16)

## Wireless Devices

iPads, tablets, and other wireless devices have become useful tools for students as both presentation and response accommodations. A list of software and devices that have no known conflicts with TestNav8 can be found at http://pearsononlinetesting.com/TestNav/AT/

## *Scribe – English Spoken/ Spanish Spoken / Other

A scribe is a skilled person who has been trained to write down what a student dictates by an assistive communication device, pointing, sign language, or speech. A scribe may not edit or alter student work in any way, and must record word-for-word exactly what the student has dictated. Following the dictation, scribes should request clarification from the student about the use of capitalization and punctuation, and must allow the student to review and edit what the scribe has written. Individuals who serve as a scribe need to become familiar with the content-area vocabulary involved and understand the strict boundaries of the assistance to be provided. The role of the scribe is to write what is dictated, no more and no less. The use of a scribe should be limited as it inhibits a student's ability to produce his/her work independently. **Appropriate assistive technology should be provided, taught, and used whenever possible. The educational goal is for the student to be able to produce work independently.** Examples of inappropriate use of a scribe may include: "The student can tell much more than he/she can write." or "This student can do so much better with a scribe." Such statements may well be true for

many students.  However, such a reason indicates convenience rather than need and may result in educational advantage.  A scribe is not to be routinely used because a student lacks language competency, handwriting fluency, or spelling skill.  Students who use assistive technology to respond in the classroom on a day-to-day basis, for assessments, and who have the appropriate documentation on their formal educational plans must use technology in lieu of a scribe for state assessments.

PARCC:  The student dictates responses either verbally, using a speech-to-text device, an augmentative/assistive communication device (e.g., picture/word board), or by signing, gesturing, pointing, or eye-gazing.

*__Comparable CBT Presentation Accommodations:__*  *Scribing or Speech-to-Text (i.e., Dictation/Transcription or Signing) for the Mathematics assessments, and for selected response (not constructed response) items on the English Language Arts/Literacy assessments.

See *PARCC  Appendix C: Protocol for the Use of the Scribe Accommodation*

## Calculator /* Calculation Device and Mathematics Tools

If a student's disability affects math calculation, but not reasoning, a calculator or other assistive device (e.g., abacus, arithmetic table, manipulatives, or number chart) may be used for instruction.  It is important to determine whether the use of a calculation device is a matter of convenience, or a necessary accommodation.  It is important to know the goal of instruction and assessment before making decisions about the use of calculation devices.  For example, if students are learning subtraction with regrouping, using a calculator would not give a student an opportunity to show regrouping.  On the other hand, if students are learning problem solving skills that include subtraction (e.g., bargain shopping for items with a better value), the use of a calculation device may be a valid accommodation.  Calculators may be adapted with large keys or voice output (talking calculators).  In other cases, an abacus may be useful for students when mathematics/science problems are to be calculated without a calculator.  The abacus functions as a paper and pencil device for students with visual impairments.
Student uses a calculation device or manipulatives to respond to questions.
__Comparable CBT Presentation Accommodation__:  *Calculation Device and Mathematics Tools (on Non-calculator Sessions of Mathematics Assessments)  *See *PARCC manual* for guidelines to identify students to receive the accommodation of a calculation device

## Spelling and Grammar Devices

The use of a dictionary may be beneficial for assignments that require an extended response or essay.  Spelling and grammar can also be checked with pocket spellcheckers.  Students enter an approximate spelling and then see or hear the correct spelling or correct use of a word.  Students who use a word processor may be allowed to use a spell check or other electronic spelling device.
__Comparable CBT Accessibility Feature__: Spell Checker

## *Word Prediction

Word prediction software can work in various modes of operation based on the student's needs.  This accommodation provides a word list pop-up tool that can assist the student with word choice and spelling based on the letters that a student types on the screen.
The student uses word prediction software that provides a bank of frequently- or recently-used words as a result of the student entering the first few letters of a word.
__Comparable CBT *Presentation Accommodation__:  Word prediction on the ELA/Literacy Performance-Based Assessment  *See *PARCC manual for guidelines*

Word Prediction Software Comparison Chart: http://www.spectronicsinoz.com/article/word-prediction-software-comparison-chart
Write Online (fee for license)
http://www.cricksoft.com/us/products/tools/writeonline/special-needs.aspx

## Prompt / Encourage Student Responses

Some students may respond to prompting or encouragement to maintain focus during instruction or testing.  On a paper-based task, teachers may encourage or prompt the student to continue.  For example, a teacher may walk by a student's desk and point to a picture symbol or card that encourages the student to refocus on the work at hand.  In a computer-based environment, the system can be programmed to generate a prompt after a predefined number of minutes elapsed since a student interacted with the content.

Response Accommodations

| | |
|---|---|
| | **Comparable CBT Accessibility Feature**: Redirect Student to the Test (by test administrator) |
| | **Organization Tools** |
| | Organization tools include graph paper, highlighters, place markers, and scratch paper. Students may not be allowed to write in books owned by the school. Photocopying parts of written text allows a student to use a highlighter and write in the margins. Text/graphics may also be scanned to produce an electronic copy that the student can access via technology (e.g., screen reader, etc.) |
| | **\*Eliminate Answer Choices** |
| | Cross out unselected responses as a decision-making strategy on pencil/paper tasks<br><br>**Comparable CBT Accessibility Feature**: Computer based accessibility feature available to all students; \*Flag Items for Review |
| **Response Accommodations** | **Graphic Organizers  NotePad** |
| | Graphic organizers help students arrange information into patterns in order to organize their work and stay focused on the content. Graphic organizers are especially helpful for writing reports and essays. Semantic mapping software is now available to enable students to understand a narrative story, informational text, or writing elements through graphics.<br>**Comparable CBT Accessibility Feature**: student writes and edits notes using embedded NotePad application |
| | **Specialized Paper** |
| | Some students require special paper in order to respond in writing. Some examples include graph paper, paper with raised lines, or paper with colored/highlighted lines. |
| | **Additional Paper / Blank Paper** |
| | Some students may benefit from having additional paper available to use during instruction. This paper may be blank (scratch), lined, graph, or other paper.<br>**Comparable CBT Accessibility Feature:** Blank Paper provided by test administrator |
| | **Slant Boards** |
| | Slant boards often help students with motor fatigue or students who need closer visual accesses to print material. An inclined surface may assist in maintaining better posture, thus allowing a student to respond in writing with less fatigue. |
| | **Pencil Grip / Large #2 Pencil** |
| | A pencil grip/large #2 pencil that the student is accustomed to using may help the student with motor fatigue and thus allow the student to respond in writing. |
| | **Abacus / Tactile Math Manipulatives** |
| | Some students require an abacus or physical objects in order to accomplish math calculations. Some examples include raised touch math dots, counters, number lines, 1-100 chart, raised line graph paper, shape construction board, braille ruler, or protractor. |
| | **Other Response Accommodations (\*Additional Assistive Technology – determined by individual need)** |
| | Some students may have other response accommodations in place during instruction to help them access the learning objectives. The accommodation should also be documented in the student's IEP or Section 504 Plan as an instructional accommodation.<br>**Comparable CBT accommodation**: External Assistive technology devices;  See *PARCC compatibility guide*<br><br>**Unique Accommodation Request –** Use Colorado UAR form.  See your District Assessment Coordinator. |

See [PARCC Manual](#) for complete information on Response Accessibility Features and Accommodations



# Response Accommodations: Technology

**Considerations in the Transformation of Accommodations from Paper/pencil to Computer-based Tests**

**Note:** The accommodations listed below are offered as general suggestions. Please check with your Assistive Technologist specialist, Occupational Therapist, Speech-Language Pathologist, Deaf Education specialist or TVI-vision specialist for specific equipment and software recommendations.

| | |
|---|---|
| **Write**<br>**Alternate Pencil**<br>**Augmentative Communication Device** | • Capacity to select among multiple options to indicate response—mouse click; keyboard; touch screen; speech recognition; assistive devices to access the keyboard(e.g., mouth stick, eye gaze, or head wand<br>• Partner Assisted Scanning to select letter for multiple choice |
| **Scribe** | • Ability to use speech recognition software to dictate response<br>• Ability to use multiple options to indicate response (listed above) |
| **Brailler**<br>**Tape Recorder**<br>**Paper/pencil response** | • Ability to use speech recognition software<br>• Ability to operate equipment and dictate response<br>• Capability of producing response using braille writer or other equipment<br>• Use paper/pencil in addition to computer (e.g. use scratch paper for solving problems, drafting ideas Use paper and pencil in place of computer (e.g. or composing extended response items) |
| **Spell Check** | • Ability to self-select the spell-check option<br>• Capacity to disable option when spelling achievement is being measured<br>• May have implications when using speech recognition software |
| **Calculator** | • Ability to self-select calculator option<br>• Capacity to disable option when math fluency is being measured |
| **English or bilingual dictionary / glossary** | • Ability to self-select dictionary option<br>• Ability to access pop-up definitions built into assessment<br>• Capacity for use of multiple languages |
| **iPad Apps for Differentiation** | • Anne Beninghof's Ideas for Education – Reading Comprehension Booster iPad app (purchase) http://www.ideasforeducators.com/<br>• Anne's Blog: http://www.ideasforeducators.com/idea-blog.html<br>• *15 iPad Skills Every Teacher and Student Should Have*, Educational Technology and Mobile Learning http://www.educatorstechnology.com/2013/01/15-ipad-skills-students-must-have.html<br><br>• Create iBooks on the iPad (fee) https://itunes.apple.com/us/app/book-creator-for-ipad/id442378070?mt=8 |

## Setting / Environment Accommodations

In this version, line spacing has been condensed for printing.

| Enviro nment Accom | **Reduce Distractions to the Student and Auditory Sensitivity Accommodations** |
|---|---|

A setting accommodation to reduce distractions would allow a student to do individual work or take tests in a different location, usually in a place with few or no other students. Changes may also be made to a student's location within a room. For example, a student who is easily distracted may not want to sit near windows, doors, or pencil sharpeners. Preferential seating near the teacher's desk or in the front of a classroom may be helpful for some students. Enclosed classrooms may be more appropriate than open classrooms. Study carrels or other means of focusing sightline may be helpful for students who are easily distracted. Students with low vision may prefer to sit in the part of a room that has the best non-glare lighting.

Noise cancelling headphone, earplugs, earphones or other noise buffers not connected to any audio device are available to all students.

### Auditory Calming/Music /Noise Buffers

Some students concentrate best while wearing noise buffers such as earphones, earplugs, or music.

### Reduce Distractions to Other Students

Some students use accommodations that may distract other students, such as having an oral administration or scribe. In addition, some students might perform better when they can read and think aloud, or a student may make noises or use equipment that distracts other students. Distractions to other students are reduced by using these accommodations in individual settings.

### Change Location to Increase Physical Access or to Use Special Equipment

Occasionally a setting might be changed to increase physical access for a student. For example, a student who uses a wheelchair with a specially designed tabletop and assistive technology may not have adequate space in an auditorium with theater seating. Other students may need equipment that requires specific locations for learning and assessment. For example, a student who uses a computer for word processing might need to complete assignments and take tests in a computer lab. A student who uses large-print materials may need to sit at a table rather than at a desk with a small surface area. Another student might benefit from a standing work station or in a study carrel. Provide space for a guide or working dog, and explain to other students that the dog is working and should be ignored. Make certain the school is accessible for students with mobility impairments. Students should have access to the building, cafeteria, classrooms, media center, restrooms, and playground. In essence, they should be able to access any room or space on the school grounds used by students in general.

### Adaptive Furniture/Equipment

Some students benefit from the use of adaptive or customized furniture to aid positioning during instruction or assessment. Other students may find it helpful to use a slant board or wedge to minimize visual fatigue and provide a better work surface.

### Special Chairs

Some students may need to physically move during instruction and have a difficult time sitting in a regular chair, so ball chairs or rocking chairs may be beneficial. Another way to accommodate this type of need is to modify a regular chair by adding a cushion or a small ball.

### Fidget Toys

Some students may need something in their hand to manipulate as they work in order to focus their attention. Some examples of these are small balls, pieces of textured cloth, or putty.

For additional suggestions, consult your school's Occupational Therapist or Physical Therapist.

### Weighted Vests

| | Some students may require accommodations that provide proprioceptive input and aid in self-regulation; items such as weighted vests or blankets may assist in calming or focusing a student's attention to the task at hand. |
|---|---|
| | **Thera-tubing or Stretchy Bands** |
| | Thera-tubing is often used as a replacement accommodation for foot tapping.  These bands provide students resistance and are used as a calming or focusing accommodation. |
| | **Other Setting/Environment Accommodations** |
| | Some students may have other setting/environment accommodations in place during instruction to help them access the learning objectives.  The accommodation should also be documented in the student's IEP or Section 504 Plan as an instructional accommodation. |

# Setting / Environment Accommodations:

Considerations in the Transformation of Accommodations from Paper/pencil to Computer-based Tests

**Note:**  The accommodations listed below are offered as general suggestions.  Please check with your Assistive Technologist specialist, Occupational Therapist, Speech-Language Pathologist, Deaf Education specialist, behavior specialist or TVI/vision specialist for specific equipment and software recommendations.

| | |
|---|---|
| **Writing**<br>**Alternate Pencil**<br>**Augmentative Communication Device** | • Capacity to select among multiple options to indicate response—mouse click; keyboard; touch screen; speech recognition; assistive devices to access the keyboard(e.g., mouth stick, eye gaze, or head wand<br>• Partner Assisted Scanning to select letter for multiple choice |
| **Scribe** | • Ability to use speech recognition software to dictate response<br><br>• Ability to use multiple options to indicate response (listed above)<br><br>• Focus on student producing work independently with assistive technology support rather than human scribe |
| **Brailler**<br>**Tape Recorder**<br>**Paper/pencil response** | • Ability to use speech recognition software<br>• Ability to operate equipment and dictate response<br>• Capability of producing response using braille writer or other equipment<br>• Use paper/pencil in addition to computer (e.g. use scratch paper for solving problems, drafting ideas Use paper and pencil in place of computer (e.g. or composing extended response items) |
| **Spell Check** | • Ability to self-select the spell-check option<br>• Capacity to disable option when spelling achievement is being measured<br>• May have implications when using speech recognition software |
| **Calculator** | • Ability to self-select calculator option<br>• Capacity to disable option when math fluency is being |

| | |
|---|---|
| | measured |
| **English or bilingual dictionary/ glossary** | • Ability to self-select dictionary option<br>• Ability to access pop-up definitions built into assessment<br>• Capacity for use of multiple languages |

# Timing /Scheduling Accommodations

<table>
<tr>
<td rowspan="11" style="vertical-align:middle"><strong>Timing / Scheduling Accommodations</strong></td>
<td><strong>*Extended Time</strong></td>
</tr>
<tr>
<td>A student's educational team is to determine, based on documentation, a specific amount of extra time to complete assignments, projects, and tests. Data can be collected to assist in the calculation of a typical amount of time that a student requires to perform a given task. For timed tests, a standard extension may be time and one-half. This means that a student is allowed 90 minutes to take a test that normally has a 60-minute time limit. For rare cases, double time may also be allowed. Decisions should be made on a student-by-student basis and evidenced with the collected data. Usually "unlimited" time is not appropriate or feasible. The amount of extra time a student needs (time and 1/2, double time, etc.) should be documented in the IEP based on gathered evidence of need. Students who have too much time may lose interest and motivation to do their best work, while others may simply need additional time to complete work independently.<br><br><strong>Comparable CBT Presentation Accommodations</strong>: *Extended Time  See <em>PARCC Appendix E</em> for guidelines</td>
</tr>
<tr>
<td><strong>Multiple or Frequent Breaks</strong></td>
</tr>
<tr>
<td>Breaks may be given at predetermined intervals or after completion of assignments, tests, or activities. Sometimes a student is allowed to take breaks when individually needed. If the length of a break is predetermined, a timer might be used to signal the end of the break. In an assessment, the breaks do not extend the allotted time.</td>
</tr>
<tr>
<td><strong>Change Time of Day, Schedule, or Order of Activities</strong></td>
</tr>
<tr>
<td>If possible, schedule tests and activities that require focused attention at the time of day when a student is most likely to demonstrate peak performance. Sometimes students are allowed to complete activities over multiple days – completing a portion each day in order to reduce fatigue for students who are medically fragile or have significant support needs.</td>
</tr>
<tr>
<td><strong>Verbal/Visual/Tactile Prompts to Stay on Task</strong></td>
</tr>
<tr>
<td>Such prompts as general verbal reminders ("Keep on/continue working" or "Stay on task"), visual reminders (picture symbols or color-coded cards), and tactile reminders (gentle touch on the hand or arm, soft tap on the table, paperclips to divide tests into sections) may be used to refocus student attention.<br><strong>Comparable CBT Accessibility Feature</strong>: Redirect Student to the Test (by test administrator)</td>
</tr>
<tr>
<td><strong>Countdown Timers</strong></td>
</tr>
<tr>
<td>Countdown timers allow the student to track how much time is left for timed assignments or assessments.</td>
</tr>
<tr>
<td><strong>Other Timing/Scheduling Accommodations</strong></td>
</tr>
</table>

| |
|---|
| Some students may have other timing/scheduling accommodations in place during instruction to help them access the learning objectives. The needed accommodation should also be documented in the student's IEP as an instructional accommodation. |

See PARCC Manual for complete information on Timing and Scheduling Accommodations