# Assistive Technology Scope and Sequence Chart

For Students Who Use VoiceOver on an iPad

(Diane Brauner, March 2022)

Based on the [Technology Scope and Sequence Chart](https://www.cde.state.co.us/cdesped/accommodationsmanual_ccss_k12_techscope)

S = Same Skill A = Adapted Skill +AT = Added Assistive Technology Skill

O = Optional I = Introduce R = Reinforce M = Mastery (ability to teach others)

Note: Some gesture commands are listed in chart; student should also learn the equivalent braille display commands (if appropriate) and Bluetooth keyboard commands.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Alignment** | **Skills** | K | 1 | 2 | 3 | 4 | 5 |
|  | **Basic Operations** |  |  |  |  |  |  |
| 1. S | Turn on iPad and login | I | R | M | M | M | M |
| 1. + AT | Turn VoiceOver on/off | R | M | M | M | M | M |
| 1. S   + AT | Gestures/Keyboard/braille display commands to click on icons, urls, radio buttons, check boxes; use scroll bar   * Swipe/double tap, drag/split tap, (master in K) * Swipe up/down (scroll bar – Introduce in K) * Two-finger swipe down, swipe up, single tap (Reinforce in K) | I | R | M | M | M | M |
| 1. S   +AT | Use home screen icons to open applications and documents   * 3-finger Swipe right/left | I | R | M | M | M | M |
| 1. S | File management – saving documents | O | I | R | M | M | M |
| 1. S | Explain and use age-appropriate online tools and resources (e.g. tutorial, assessment, web browser) |  | I | R | M | M | M |
| 1. S +AT | Keyboarding (*Bluetooth keyboard and Braille display* if appropriate)   * Use proper posture and ergonomics * Locate and use letter and numbers keys with left and right-hand placement * Locate and use correct finger, hand for space bar, return/enter and shift key * Gain proficiency and speed in touch typing | I | R | M | M | M | M |
| 1. +AT | Learn about and use different types of elements (e.g. address bar, tabs, menu) | O | I | R | M | M | M |
| 1. +AT | Learn about and use Control Center, Notification Center, App Switcher, Status Bar, etc. | O | I | R | M |  |  |
|  | **Word Processing** |  |  |  |  |  |  |
| 1. S   + AT | Use a word processing application to write, edit, print and save simple assignments   * Delete using keyboard and braille display commands * Use rotor to navigate by character, word, line paragraph (gesture/keyboard/braille display) * Commands to navigate to the beginning and end of document; first and last item on screen * Use keyboard commands to navigate to beginning/end of word or line | I | R | M | M | M | M |
| 1. + AT | Read and navigate documents:   * Use two-finger “read all” commands to read documents * Use three-finger swipe right/left to navigate to next/previous pages in a document | R | M | M | M | M | M |
| 1. N/A age appropriate? | Use menu/tool bar functions (e.g. font/size/style, line spacing, margins) to format, edit and print a document |  | I | R | M | M | M |
| 1. S | Highlight text, copy and paste text |  | O | I | R | M | M |
| 1. A   + AT | * Copy and paste images within the document and from outside sources * Insert (eliminate sizing a graphic) a graphic in a document   + Use and create image descriptions for photos |  | I | R | M | M | M |
| 1. S | Proofread and edit writing using appropriate resources (e.g. dictionary, spell checker, grammar, and thesaurus). |  | O | I | R | M | M |
|  | **Spreadsheet (Tables, Charts and Graphs)** |  |  |  |  |  |  |
| 1. S | Demonstrate an understanding of the spreadsheet as a tool to record, organize and graph information. |  |  |  | I | R | M |
| 1. S | Identify and explain terms and concepts related to spreadsheets (i.e. cell, column, row, values, labels, chart graph)   * Be exposed to pre-requisite skills: Rows, columns, and simple grids (tactile then tactile paired with digital) (Introduce in K) * Be exposed to and create tactile charts and graphs (Introduce in K) * Transition from tactile charts and graphs to digital charts and graphs (Introduce in K) * Use BTK and braille display commands to navigate by row or column (Introduce in 1st) |  |  | O | I | R | M |
| 1. S | Enter/Edit data in spreadsheets and perform calculations using formulas |  |  | O | I | R | M |
| 1. S | Use mathematical symbols e.g. + add, ‐ minus, \*multiply, /divide, ^ exponents |  |  |  | I | R | M |
| 1. S | Use spreadsheets and other applications to make predictions, solve problems and draw conclusions. |  |  |  | I | R | M |
|  | **Multimedia and Presentation Tools** |  |  |  |  |  |  |
| 1. +AT | Navigate slides (book format) | R | M | M | M | M | M |
| 1. S | Create, edit and format text on a slide |  | I | R | M | M | M |
| 1. S | Create a series of slides and organize them to present research or convey an idea |  |  | I | R | M | M |
| 1. S | Copy and paste or import graphics; change their size and position on a slide |  |  | O | I | R | M |
| 1. N/A | Use painting and drawing tools/ applications to create and edit work |  |  | I | R | M | M |
| 1. S (+described?) | Watch online videos and use play, pause, rewind and forward buttons while taking notes | I | R | M | M | M | M |
|  | **Acceptable Use, Copyright and Plagiarism** |  |  |  |  |  |  |
| 1. S | Explain and demonstrate compliance with classroom, school rules (Acceptable Use Policy) regarding responsible use of computers and networks | I | R | M | M | M | M |
| 1. S | Explain responsible uses of technology and digital information; describe possible consequences of inappropriate use | I | R | M | M | M | M |
| 1. S | Explain Fair Use Guidelines for the use of copyrighted materials, (e.g. text, images, music, video in student projects) and giving credit to media creators |  | I | R | M | M | M |
| 1. S | Identify and explain the strategies for the safe and efficient use of computers (e.g. passwords, virus protection software, spam filters, popup blockers) |  | I | R | M | M | M |
| 1. S | Demonstrate safe email practices, recognition of the potentially public exposure of email and appropriate email etiquette |  |  |  | I | R | M |
| 1. S | Identify cyberbullying and describe strategies to deal with such a situation | I | R | M | M | M | M |
| 1. S | Recognize and describe the potential risks and dangers associated with various forms of online communications |  | I | R | M | M | M |
|  | **Additional Assistive Technology Skills** |  |  |  |  |  |  |
| 1. +AT | Be responsible for device(s)   * Be responsible for charging devices (introduce in 1st) * Be responsible for pairing devices (introduce in 1st) | I | R | M | M | M | M |
| 1. +AT | Tactile graphics paired with digital graphics   * Be exposed to and create tactile images, charts, graphs, maps * Transition from tactile images, charts, graphs and maps to image descriptions, digital charts, graphs and maps | I | R | M | M | M | M |
| 1. +AT | Understand and use Earcons (screen reader sound hints) | I | R | M | M | M | M |
| 1. +AT | Understand and use spatial relationships on the physical iPad screen   * Name positional areas (e.g. top, bottom, left, right, middle) * Develop a mental map of the various screens (e.g. Home screen, specific apps) | I | R | M | M | M | M |
| 1. + AT | Use sonification to explore and understand digital graphics | I | R | M | M | M | M |
| 1. + AT | Learn and use screen reader commands (gestures/keyboard/braille display) | I | R | M | M | M | M |
| 1. +AT | Increase listening speed (100% on the iPad for pleasure reading) | O | I | R | M | M | M |
| 1. +AT | Learn and use rotor commands   * Customize rotor settings | I | R | M | M | M | M |
| 1. +AT | Learn about accessibility features   * Choose and adjust accessibility settings as needed | O | I | R | M | M | M |
| 1. +AT | Learn note taking skills |  | O | I | R | M | M |
| 1. +AT | Learn and be able to explain what makes digital content accessible |  | O | I | R | M | M |