Local Services Assistive Technology Resource Pack: Computer Access

This document aims to suggest physical and online/software resources that local services supporting clients to access a computer, tablet or mobile phone may find appropriate to stock or have access to. The majority of these are items that we would consider come under the remit of local teams and therefore our team are unlikely to provide to clients. We may expect local teams to have trialled these or similar items prior to referring to the Barnsley team and be able to provide feedback on this in their referral.

Our "Local Services Resource Pack" has now been updated and split into four separate guides:

- AAC: A Resource Pack for Local Services
- EC: A Resource Pack for Local Services
- Computer Access: A Resource Pack for Local Services
- Mounting Solutions: A Resource Pack for Local Services

Please visit our website to download a copy of the other Resource Packs in this series:
https://www.barnsleyhospital.nhs.uk/assistive-technology/resources-and-information/

This guide focuses **on computer access**, which also includes access to tablets and mobile phones. If someone is finding it difficult to use the mouse, keyboard or touch screen of their device, there are a range of options to consider, such as:

- alternative keyboards e.g. large key keyboards
- alternative mice e.g. a trackball, joystick or touchpad
- additional accessibility software, e.g. on-screen keyboards, speech recognition, ability to adjust keyboard, mouse settings and touch screen settings (these are often built into the computer e.g. within Windows)
- physical supports, adaptations or alterations which may assist with the position of the client and physical access to the computer itself.

Please note:

This document is not designed to be an exhaustive list. We intend to update this document on a regular basis to ensure products are as up to date as possible, but this cannot be guaranteed, so please contact suppliers and manufacturers for the most up-to-date information.

We do not always have first-hand experience of all the products mentioned in this guide, and some are given just as an indication of what is available. We would expect that local teams would use their own clinical judgement to decide whether products are suitable for individual clients. Other products are of course available and we are happy to discuss other options with you. Please let us know if you feel anything should be added or if any of the information is incorrect.

Some of the items listed in this resource pack are no longer available to buy on the market. They have continued to be included as you may come across these resources in use by individuals or may have access to them within your local services.

Contact us if you want to know more about any of the items described or are struggling to find suppliers.

If you cannot find the appropriate equipment for your client then please ring or email the department and we will be happy to help.

Further sources of support

The Barnsley Assistive Technology team provides specialised computer access equipment for people with severe physical disabilities at home. Please contact us if you would like to discuss a potential referral.

Our team is not commissioned to provide assessments for accessing computers at school or work. The following sources of support may be useful:

- "Computer Access in Schools" document on our website: https://www.barnsleyhospital.nhs.uk/assistive-technology/resource/computer-access-schools-starter-resource/
- Support including computer access at work: https://www.gov.uk/access-to-work
- AbilityNet is a charity that has computer access resources and can provide assistance to older people and people with disabilities to access their technology: A digital world accessible to all. | AbilityNet

Contents

Definitions

Some of the terms used in this resource are explained below:

- **AAC** – stands for Augmentative and Alternative Communication. It is a term used to describe the methods a person may use to support their communication. These may be aided by a tool, device or resource, or the person may use unaided methods, such as their body language and facial expression.

- **Access method** – the way a person will control or refer to the device or resource. For example, they may use their eyes to point to the message, or they may press a button (switch) which scans through options to make a choice.

- **EC** – stands for environmental controls. Environmental control devices enable a person to operate appliances and devices in their home, such as the television, radio and mains operated appliances such as a lamp or fan. EC can also be used for attention calling, answering and opening the door, adjusting a bed or armchair.

- **Operating system** – the program used in a phone or tablet. For example, apple phones use iOS and Samsung phones use Android. You can find out which version you have in your phone or tablet settings.

- **Hardware –** the physical device, such as a phone, computer or laptop.

- **Software –** the program or app running on your device.

- **Accessibility –** settings within the operating system and/or software that provide alternative ways to help a person access it physically (such as alternatives to a hand-operated mouse), visually (such as changing the layout or adding auditory support) or to support hearing (such as captions).

- **Dwell –** an alternative way of selecting an item to 'clicking' with a mouse. The user moves the mouse around the screen with their chosen access method, then when they pause the mouse cursor, a dwell timer appears. When the timer completes, the mouse performs a left click action. The timer can often be adjusted to be faster or slower.

Positioning of the Client and the Equipment

Computer access can often be improved by looking at the positioning of either the client or the equipment itself. This may range from seating for the client e.g. the type of seating, or adjustments to a wheelchair, or looking at alternative seating with good postural support if appropriate.

Clients may benefit from an external keyboard as opposed to the inbuilt laptop keyboard, or an external mouse rather than a laptop touchpad.

The position of the mouse and keyboard should also be considered. It may be easier for these to be placed nearer to the individual e.g. on their lap, on a lap tray, or on a computer desk with slide out keyboard tray. Using an overbed table whilst in bed may also facilitate use.

Tablets and iPads may be best mounted on a wheelchair or desk at a certain angle to enable easier access to the screen. There are a number of 'off the shelf' mounts available for this purpose. Alternatively, individuals may find it easier if tablets are placed on their lap or on a table.

Consideration of placement of other access methods should also be taken in to account e.g. a switch or joystick. This may be positioned in a particular place for hand or head access e.g. on their lap or pillow, or may need mounting on their wheelchair, headrest, lap tray etc.

If access, mounting or switch or device positioning becomes complex, it may be that a referral to the Barnsley team may be appropriate for either advice or provision.

Arm and Wrist Supports

Function	Computer access
Category	Hardware
Access Method	Direct
Operating system	Any

Overview

Foam or gel pads placed in front of the keyboard can be helpful when typing, or when resting from typing. These are widely available from most office suppliers and PC outlets or from more specialist suppliers.

Where there are difficulties supporting the weight of the arms (e.g. those with muscle weakness as in Motor Neurone Disease or Muscular Dystrophy), mobile arm supports which clamp to the table top or wheelchair can also be useful. Again, these are available from similar companies but are also sometimes available from local Equipment Services. Other sources of funding may be available e.g. charitable organisations.

Suitable for:

- Individuals with weakness in the upper limbs, tremor, fatigue, pain in the upper limbs including hands and wrists.

Product specification:

- Products are available from companies such as Posturite: http://www.posturite.co.uk/ and Inclusive Technology: http://www.inclusive.co.uk/

Using and Improving the Existing Computer Setup

There are a range of inbuilt accessibility settings within most modern mobile phones, tablets and computers. These can usually be accessed by going in to the settings or control panel and searching for accessibility options.

On phones this can enable adjustments to facilitate direct access, setting up of switch access, voice control options, options for individuals with visual difficulties and many others.

Windows computers and Macs have even more in-depth accessibility settings. These are easy to access and adjust and can make a significant difference to those with disabilities.

It is hoped that local therapists would have tried adjusting these options prior to making a referral to Barnsley AT Team if possible. They may be enough to facilitate access for some without the need for any additional equipment.

Options vary between devices so it is recommended to look at each device individually to discover the options that it offers.

- For step by step guides on how to implement accessibility settings, visit AbilityNet: **https://mcmw.abilitynet.org.uk/**
- Also see their free fact sheets: **https://abilitynet.org.uk/free-resources/abilitynet-factsheets**
- Accessibility settings in Windows 11: **https://www.microsoft.com/en-us/windows/accessibility-features#vision**
- Accessibility features on Mac: **https://support.apple.com/en-gb/guide/mac-help/mh35884/mac**
- Accessibility on Android devices: **https://support.google.com/accessibility/android/answer/6006564?hl=en**
- Accessibility on iOS devices: **https://www.apple.com/uk/accessibility/**

Modifying the keyboard

The way that the keyboard behaves can be altered. This can be done on Windows and Apple operating systems in their inbuilt accessibility settings. The following adjustments are available:

StickyKeys

This setting makes it easier to type with one hand or one finger, so that instead of having to press e.g. in Windows the shift key and a letter key down at the same time to get a capital letter, you can press them separately. It also works with the Alt and Control keys.

FilterKeys

This allows you to alter the length of time a key needs to be held down before it initially appears or repeats on the screen. This reduces the sensitivity of the keyboard and can prevent accidental or repeated key presses, which can be useful for those with a tremor or for those with reduced dexterity.

Keyboard shortcuts

These are built in to Windows and Apple operating systems and can enable users to achieve actions quickly on their computer without the use of a mouse, for example in Windows use Control + C to copy, and Control and V to paste. A comprehensive list of keyboard shortcuts can be found online for either operating system.

MouseKeys

This allows the mouse pointer to be moved around using the numeric keypad keys.

Adjustments for those with visual difficulties

There are numerous adjustments that can be made to make the computer easier to use for those with visual difficulties. This can include:

- Making the text larger
- Magnifying the screen
- Making the mouse pointer easier to see
- Changing the colour of the text and background
- Turning on the narrator

Examples of accessibility settings across a range of different operating systems can be found at:

Simple 'how to' guides to make your device easier to use | My Computer My Way

Adjusting how the mouse behaves

It is possible to adjust the behaviour of the mouse, for example:

- Swap over the right and left mouse buttons
- Change the speed required to double click
- Drag and drop without holding down the mouse button
- Change the appearance, visibility and speed of the pointer
- Change the amount that a wheel on the mouse scrolls up and down

Automated Clicks

There are a number of pieces of software which will detect when your mouse has stopped moving (dwells) and then send a click. This works well for individuals that can move a mouse, but struggle with clicking.

Dwell Clicker is a good example of this and is free to download for a 30-day trial or costs around £10 for the full version:

Download software from Smartbox

Separating out the clicks

If someone is able to move the mouse pointer where they want to, but when they try to click the mouse, they nudge the pointer away from the target, it might be useful to use a separate piece of equipment to carry out the click. For example, you could set up a switch to do left click, which could be pressed with the other hand. A JoyCable can be used to connect a switch to a computer, and is described elsewhere in this guide.

Adjusting touchscreen settings

Both Apple (iOS) and Android tablets and phones have a menu which simplify touch screen tasks. On iOS devices it's called AssistiveTouch, and on Android devices it's called the Accessibility Menu. These menus allow you to set up alternative ways of doing gestures such as pinching to zoom or double tapping. They also allow you to operate "physical button" functions such as volume up / down, and the home button, from the touch screen.

You can adjust how the touch screen reacts to your finger. These settings can be found in the Touch Accommodations menu on iOS devices, and in the Interaction and Dexterity settings on Android devices. Here are some examples:

- You can set the touch screen to ignore repeated presses, which can occur if someone has a tremor. ("Ignore repeat" in iOS / "Ignore repeated touches" in Android)
- Instead of selecting the first item on the touch screen that your finger touches, you can set the touch screen to select the last item you touch. This allows you to stabilise your finger on the touch screen, and move it to where you want it to go, rather than having to be accurate with your first press. ("Use final touch location" in iOS)

Guided access

Guided Access can be helpful for people with sensory or attention challenges. It restricts access to areas that are not relevant to the current task. This can help someone concentrate on the task without being distracted. A pin can often be used so that the user is unable to turn guided access off.

This is called Guided Access on iOS and Kiosk mode on Windows. It has different names on Android phones but can often be found by searching for pin in the settings.

There is also often an option in settings to hide task/navigation bars on devices as a way to minimise distraction.

Use Guided Access with iPhone, iPad, and iPod touch - Apple Support
Kiosk Mode | Microsoft Learn

Voice control

There are voice control options in the majority of phones, tablets and computers that enable at least some level of function, if not full control.

Alternatively, extra software can be purchased to download on to a computer to allow full control of the device by voice.

Consideration must be given of course to how clear an individual's speech is and to how effective this is as an access method.

Windows voice access

Windows 11 includes a free voice recognition programme, so that you can use your voice to control your computer (Get started with voice access - Microsoft Support). You can say commands that the computer will respond to, and you can dictate text to the computer. There are three steps to setting up voice access: set up your microphone, learn how to talk to your computer, and train your computer to understand your speech (Use voice recognition in Windows - Microsoft Support). Earlier versions of Windows still have the original speech recognition for dictation but no options for screen control.

Dependent on your computer you may be able to use the built-in microphone. Alternatively you might need a headset with microphone or desktop microphone to improve the quality.

Open voice access by going to settings, then accessibility, then speech. There you can find an option for Voice Access to be automatically turned on before or after signing into the computer.

It is likely that clients would benefit from support with setting up and learning to use any speech recognition packages until they are proficient in their use.

Voice Control (iOS) and Voice Access (Android)

Voice Control / Voice Access enable full control of all aspects of a phone or tablet via voice.

Instructions for setting these up can be found via the accessibility links at the start of this chapter.

Digital assistants

Computers, phones, tablets and smart home hubs often have some form of voice assistant built in to them e.g. Siri, Bixby, Alexa etc. These can be used for tasks such as answering calls, searching the internet, setting alarms and setting reminders. It is worth noting that digital assistants require internet or mobile data connection to fully function.

It is worth exploring these options if an individual is struggling to access their device to see if they can help.

Further information about using smart home hubs to control equipment in the home can be found in our guide "Remote Control of Home Equipment": https://www.barnsleyhospital.nhs.uk/assistive-technology/resource/additional-environmental-control-equipment-peripherals/

Voice Attack

Voice attack is a programme that allows users to create custom voice commands to control games and apps on their computer. It also allows for voice commands for mouse clicks and keyboard strokes. Clients can build up macros for more complex control of their computer. Free version allows for one profile and 20 commands, but full version is only $10. Compatible with all Windows systems back to Vista. VoiceAttack - Voice Recognition for your Games and Apps

Dragon Naturally Speaking

Function	Computer access
Category	Software
Access Method	Voice
Operating system	Windows, iOS

Physical ability required	None
Cognitive ability required	Good ability required
Ease of learning	Can take time and practice
Support needed	Mid to high level support for set up and learning

Overview

Dragon NaturallySpeaking is a voice recognition program that converts your speech into text on your computer as you talk. It allows you to completely control your email package using you voice, to dictate documents in Word, take notes without looking at the screen and even post to your Twitter or Facebook - all without touching a keyboard. You can also dictate your presentations in PowerPoint.

Special Features:

- A number of different versions are available including:
    - Dragon Home, Dragon Premium, Dragon for Mac, Dragon Professional and Dragon Legal.
- A reduced-price version is available for students.

Suitable for:

- Those who struggle with using a keyboard and mouse, but wish to have access to all parts of their computer, including internet, writing documents, social media, Windows etc.
- Those with some support to get them set up, practising and learning basic commands.
- A reasonably high level of attention and memory is required to learn how to use the software initially.

Product specification:

- Available either as an electronic download or as a CD set, which includes a microphone headset
- Tends to work better with an appropriate microphone headset.

Supporting Direct Access to a Computer / Touchscreen

For some, support with directly accessing a computer/tablet may be enough, without the need for further hardware or software. This may involve something as simple as using a stylus instead of their finger to access smaller items on a touch screen. Many tablets and phones also include 'touch' settings which may reduce issues with fine motor control or tremor – please see the previous chapter for details.

Keyguards

Function	Computer access, AAC
Category	Hardware
Access Method	Direct
Operating system	Windows, iOS, Android

Physical ability required	Low to mid
Cognitive ability required	Requires individual to be literate
Ease of learning	Easy if literate
Support needed	Minimum

Overview

Keyguards go over keyboards to make it harder to hit wrong keys by mistake. They consist of a plastic or metal sheet with precisely engineered holes to help guide the user's touch to targeted icons on the screen.

Special Features:

- The keyguard can be removed for cleaning or replaced when necessary.

Suitable for:

- Users with limited manual dexterity, tremor, spasms or co-ordination difficulties.

Product specification:

- A range of keyguards are available online at places such as Key Guard — Keyboard Specialists LTD or Metal Keyguard for Standard Keyboard - Inclusive Technology. There are other places that provide them as well.

Styluses / adapted styluses

Function	AAC, Environmental control, computer access
Category	Hardware
Access Method	Direct
Operating system	Windows, iOS, Android

Physical ability required	Low to mid
Cognitive ability required	Varies dependent on task/function
Ease of learning	Easy
Support needed	Minimum

Overview

Clients with limited dexterity may find it easier to access a tablet, iPad or touchscreen phone using a stylus rather than their finger to increase their accuracy on the screen. This can be particularly useful for small mobile phone screens.

This may be a **standard stylus** or an **adapted / specialist** version which may help with grip. **Mouthstick styluses** are also available.

Standard styluses are available from many mainstream electrical retailers. Specialised styluses are available from the following companies: **Inclusive Technology, Amazon, Dad In A Shed, Etsy (Shapedad).**

Special Features:

- Alternative styluses are available to enable an easier grip for those with reduced dexterity
- Styluses can be held with a strap e.g. Homecraft utensil Multiholder (available from Amazon) if the user struggles with grip

Suitable for:

- Individuals with reduced dexterity who may struggle to isolate small icons on a touchscreen
- Mouthstick styluses are suitable for those with no or limited upper limb movement, but good head control

Mice, Keyboards and Alternatives

There is a large range of alternative mice and keyboards available to suit a range of requirements. Alternative mice include joysticks, which will act as a mouse and move the cursor around the screen. There are also mice available that are head, mouth, chin and foot controlled.

Alternative keyboards come in different sizes and colours and include those with keyguards to facilitate access. Onscreen keyboards are also a good option for those who are able to manage a mouse and can 'point' at the letters on the screen with their mouse cursor, or directly access a touch screen.

Using a mouse in iOS

A mouse will either be wireless (Bluetooth) or will have a USB connector. Unless you are using a Bluetooth mouse, you will also need an adapter which converts USB to either the USB C or lightning port. You can check which port your device uses by looking at the charging cable. Adapters can be purchased from Apple, or other electrical stores such as Currys and Argos.


Lightning connector


USB C connector

How to set up a mouse to work with your iPad

(general information from https://support.apple.com/en-gb/guide/ipad/ipad9a2466d3/ipados)

- Plug the cable into your iPad (where you usually plug in the charger)
- Plug the mouse into the USB port.
- On the iPad, go to Settings > Accessibility > Touch > AssistiveTouch.

1. Turn on AssistiveTouch.
2. Below Pointer Devices, tap any of the following:
    a. *Pointer Style:* Adjust the size, color, and auto-hide settings.
    b. *Show Onscreen Keyboard:* Display the onscreen keyboard.
    c. *Always Show Menu:* Show the AssistiveTouch menu when a pointer device is connected.
    d. *Tracking speed:* Drag the slider to adjust the speed.
    e. *Drag Lock:* Turn on to enable dragging.
    f. *Zoom Pan:* Choose Continuous, Centered, or Edges.
    g. *Dwell Control:* Turn on to perform a dwell action when the cursor is held still. To adjust the amount of time needed to initiate a dwell action, tap − or +.
    h. *Fallback Action:* (iPadOS 13.3 or later) Turn on to revert the dwell action to the selected fallback action after performing an operation.
    i. *Movement Tolerance:* Adjust the distance you can move while dwelling on an item.
    j. *Hot Corners:* (iPadOS 13.3 or later) Perform a selected action—such as take a screenshot, open Control Center, summon Siri, scroll, or use a shortcut—when the cursor dwells in a corner of the screen.

- To avoid the iPad locking and stopping the pointer working (until someone presses on the home button:

3. Go to Settings > Display and Brightness.
4. Tap Autolock and choose 'Never'.

Using a mouse in Android

Android tablets can often be accessed via a mouse. Older versions of android may not enable this feature, so please check your accessibility settings first.

- Firstly, you will need to ensure your mouse or keyboard is compatible with Android by checking the manufacturer information.
- Unless you are using a Bluetooth mouse, you will also need an adapter which converts USB to either the USB C or micro USB. You can check which port your device uses by looking at the charging cable. Adapters can be purchased from electrical stores and online.

Micro USB

USB C

How to set up a mouse to work with your android device

- Plug the cable into your iPad (where you usually plug in the charger)
- Plug the mouse into the USB port.
- A mouse cursor should appear on the screen

AbilityNet have further details on how to use dwell timing (where clicking a mouse is difficult) - https://mcmw.abilitynet.org.uk/how-to-use-a-mouse-with-your-android-phone-or-tablet-in-android-pie

In both iOS and Android tablets, especially with newer versions of software, you can also often plug in an external keyboard. You may require an adapter for wired keyboards. Please check the manufacturer information to ensure the keyboard is compatible with the device you intend to use.

Kensington Orbit trackball mouse

Function	Computer access
Category	Hardware
Access Method	Direct
Operating system	Windows, iOS, Android

Physical ability required	Mid
Cognitive ability required	Mid- depends on what you are using the mouse for
Ease of learning	Easy
Support needed	Minimum

Overview

Plug and play easy to use trackball mouse. The user moves their hand over the ball to move the cursor on the screen, limiting the overall movement necessary compared with a standard mouse. Larger buttons make it easier to click. The mouse can be positioned on a table or on the user's lap and is often suitable for users who struggle to use a standard mouse.

Special Features:

- 2x large buttons, which are programmable with the ability to control the button functions, scrolling and pointer speed via the software.

Suitable for:

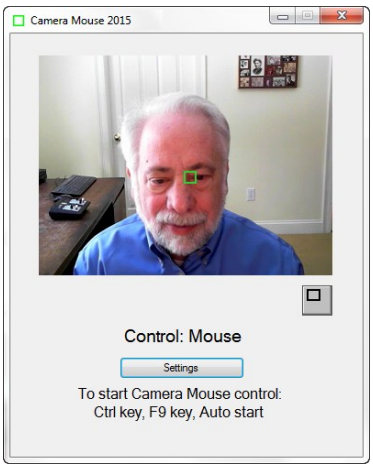
- Those with limited upper limb movement and dexterity and who are struggling to use a standard mouse.

Product specification:

- Plugs in to the computer via a USB cable
- Kensington also produce a number of other trackball mice, including wireless options.

Available from a range of suppliers, including Currys and Amazon.

E(nable) Viacam and Camera Mouse



Function	Computer access
Category	Software
Access Method	Head movement/ webcam
Operating system	Windows

Physical ability required	Low
Cognitive ability required	Good ability to manage computer access
Ease of learning	Mid-range
Support needed	Mid

Overview

Free downloadable mouse replacement software that moves the onscreen cursor as you move you head. Works on any standard PC, laptop or Windows tablet with a webcam.

eViacam available from: https://eviacam.crea-si.com/

Camera Mouse available from: http://www.cameramouse.org/

Special Features:

- Enables hands free use of a Windows or Linux (eViacam only) computers
- Tracks movement of a particular feature on your face via the webcam
- The amount of head movement required can be adjusted in the settings
- Uses dwell to click
- Pointer speed, smoothness, dwell time and acceleration can all be adjusted
- Useful to try as a free alternative to **Headmouse** or **Smartnav**

Suitable for:

- Those requiring hands free use of a computer with webcam
- Those who struggle with standard control of a keyboard/mouse and who have reasonable head movement

Product specification:

- Works on Windows or Linux (Eviacam) platforms (download the correct version).
- Requires the computer to be placed on a table or mount to ensure stable positioning

n-ABLER Joystick

Function	Computer access
Category	Hardware
Access Method	Direct +/- switches
Operating system	Windows, iOS, Android

Physical ability required	Mid
Cognitive ability required	Varied dependent on what you are using it for
Ease of learning	Easy
Support needed	Minimum

Overview

Light touch joystick to enable easier computer navigation. Can be used with the left or right hand.

Available from Inclusive Technology https://www.inclusive.com/uk/nabler-joystick.html

Other similar joysticks are available.

Special Features:

- Interchangeable heads are available to assist those with limited grip/dexterity (ball, T-bar etc.)
- Light touch/ minimal hand movement only required
- Large base means good stability or can be mounted if required

Suitable for:

- Those with limited hand control, motor skill difficulties, poor hand-eye-coordination, limited manual dexterity, involuntary muscle spasms and hand or wrist tremors.

Product specification:

- Mac or PC compatible.

Jumbo XL Keyboard

Function	Computer access
Category	Hardware
Access Method	Direct
Operating system	Windows, iOS, Android

Physical ability required	Low to mid
Cognitive ability required	Mid- dependent on what using for- requires literacy
Ease of learning	Easy if literate
Support needed	Minimum if client is literate

Overview

Large sized keyboard with chunky 1-inch sized keys to aid those with limited dexterity and/or vision. Plugs in to a standard computer- ready to use immediately.

The Keyboard shown is the Jumbo XL II High Visibility Keyboard, available from **Inclusive Technology:** https://www.inclusive.com/uk/jumbo-xl-hi-visibility-keyboard-usb.html

Other keyboards with large keys are available.

Special Features:

- Has two extra USB ports in the side for connecting mice, number keypads etc.

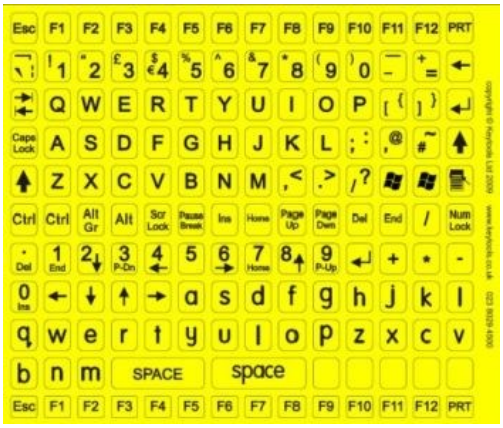
Suitable for:

- Users with reduced vision, cognitive difficulties, young users, users with limited manual dexterity

Product specification:

- Plugs in to the computer via USB.
- Available in standard black/white, colour coded categorising vowels, consonants and punctuation or yellow/black for high visibility/contrast

Keyboard stickers – high visibility



Function	Computer access
Category	Hardware
Access Method	Direct
Operating system	Windows, iOS, Android

Overview

Sheets of stickers with various coloured backgrounds and text to stick on computer keyboard keys to assist those with visual difficulties. Available from Inclusive Technology:

https://www.inclusive.com/uk/full-keyboard-stickers.html

Special Features:

- Upper and lowercase letters available.
- Available in a variety of colours (yellow on black, white on black, black on white and white on yellow.
- Easy to apply, cheaper than purchasing a new keyboard

Suitable for:

- Those with reduced vision, who struggle to see the letters on a standard keyboard, but have the physical ability to press the keys.

Keyguards for keyboards

Function	Computer access
Category	Hardware
Access Method	Direct
Operating system	Windows, iOS, Android

Physical ability required	Low to mid
Cognitive ability required	Requires literacy
Ease of learning	Easy if literate
Support needed	Minimum once set up

Overview

These are rigid with holes designed to work with specific keyboards. The holes are positioned over each key and they make it less likely that two keys can be pressed at once. As a further benefit it is possible to rest hands and arms on the guard without pressing keys. It can often be easier to purchase a keyboard and guard together rather than get one to fit a specific keyboard.

Special Features:

- Can be removed and fitted for use only when required

Suitable for:

- Users with limited upper limb function including those with difficulties with dexterity and tremor

Product specification:

- https://www.inclusive.com/uk/metal-keyguard-for-compact-keyboard.html

Superkeys on-screen keyboard

Function	AAC, computer access
Category	software
Access Method	Direct
Operating system	iOS

Physical ability required	Low to mid
Cognitive ability required	Requires literacy
Ease of learning	Easy
Support needed	None once installed

Overview

Downloadable keyboard for iPad or iPhone where keys are grouped in to clusters for easy access. Tap on the cluster and it will bring up the letters in that cluster, then tap on the letter that you want.

Available via Crick Software/App store: https://www.cricksoft.com/uk/superkeys

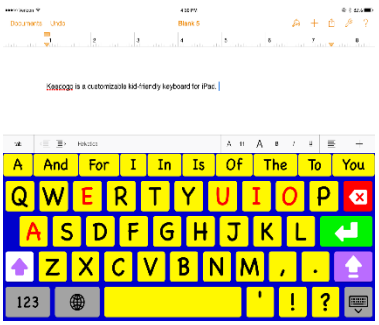
Special Features:

- Up to seven large keys in each cluster - there are more than 30 small keys on the standard iPad keyboard
- Includes word prediction to facilitate typing
- Includes shortcut keys to certain customisable phrases
- Customisable colours to assist with low vision

Suitable for:

- Those who are able to access a touchscreen but may struggle to isolate individual small icons due to limited fine motor control
- Also suitable for those with low vision, once they are familiar with the keyboard layout

Keeble on-screen keyboard



Function	AAC, computer access
Category	Software
Access Method	Direct, switch
Operating system	iOS

Physical ability required	Mid-level
Cognitive ability required	Requires literacy
Ease of learning	Easy
Support needed	Minimum to set up

Overview

Accessible keyboard for iOS from AssistiveWare that can be used in place of the standard Apple keyboard. Can be used in a wide range of different apps, wherever the standard Apple keyboard appears.

https://www.assistiveware.com/products/keeble

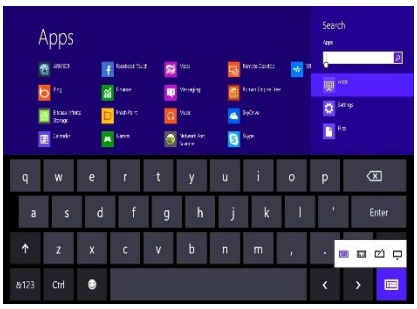
Special Features:

- Wide range of accessibility options including 'select on release', 'select on dwell', 'hold duration'
- Switch scanning as an access method is available using either an external switch or the touchscreen as a switch
- Auditory feedback options (including hearing which key you are on when moving your finger across the screen) - useful for those with visual impairment
- Customisable layouts/colours/themes – can support those with visual difficulties, dyslexia etc.
- Range of different language keyboards available
- Includes word prediction options
- Text to speech

Suitable for:

- Those with physical or visual impairments, dyslexia or emergent writers

Windows / Mac On-Screen keyboard



Function	Computer access
Category	Software
Access Method	Direct, switch, mouse or mouse equivalent
Operating system	Windows, iOS, Android

Physical ability required	Varies dependent on computer access method
Cognitive ability required	Requires literacy and computer knowledge
Ease of learning	Easy
Support needed	Minimum

Overview

On-screen keyboards can be used instead of a physical keyboard to interact with your computer. You can use your mouse or pointing device or a switch to select the keys. They can be found in accessibility settings on both Windows and Mac devices.

Windows (Type "on-screen keyboard" into the search bar on the task bar at the bottom of the screen. Select "Turn the on-screen keyboard on or off." Toggle the on-screen keyboard on)

Mac (Finder→ System preferences→ International→ Input menu→ Keyboard viewer→ Show input menu in menu bar, close the open window then it= on the Union Jack in the menu bar→ Show Keyboard viewer)

Special Features:

- Some keyboards include word prediction and can be re-sized for easier access

Suitable for:

- Anyone struggling with using an actual keyboard but who can manage a mouse or similar (including eyegaze). Individuals may also manage a touchscreen onscreen keyboard on a tablet via direct access.

Optikey on-screen keyboard / AAC

Function	AAC, computer access
Category	Software
Access Method	Direct, eyegaze
Operating system	Windows

Physical ability required	Minimum
Cognitive ability required	Good level and literacy
Ease of learning	Low to mid
Support needed	Low

Overview

Free assistive on-screen keyboard, that runs on Windows devices and can be used with eyegaze tracking devices or a mouse. Enables full computer control (keyboard control and mouse control) as well as speech for those with physical and speech difficulties. Download from: https://github.com/OptiKey/OptiKey/wiki

Special Features:

- Can be used to type in to any application
- Includes predictive text
- Can replace a mouse, enabling all mouse actions
- Can convert whatever you type in to speech and be used for AAC
- Can use dwell to select or a mouse button or keyboard key
- Can be used with lower cost eyegaze devices without the need to purchase expensive AAC software

Suitable for:

- Anyone with physical difficulties struggling to use a physical keyboard and mouse
- Those with speech difficulties who are looking for free computer-based communication software

Switch Access

Switch access is possible on virtually all smartphones, tablets and computers with the right connectors and software or access settings enabled.

A broad range of switches are available in terms of size, shape, type of movement required and sensitivity. Some switches can be activated with a very small movement when accessing a device.

The Barnsley Assistive Technology Team will consider referrals for clients who may require this method of access. However simple switch access to play games etc. on computers via appropriate software (e.g. HelpKidzLearn) is easy to set up locally and practice with users, who may be developing their switch skills with the view of accessing further AAC, environmental control or computer access functions in future.

Joycable

Function	Computer access
Category	Hardware
Access Method	Switch
Operating system	Windows

Overview

The Joycable allows one or two switches to be connected to a device such as a laptop or tablet using a USB connector. A switch can then be used with specific switch software, for example to play games, or to access communication software. Alternatively, a switch can be set to perform a certain action e.g. a mouse click or certain key press.

https://thinksmartbox.com/product/joycable/

Special Features:

- Suitable for up to two 3.5mm switches
- USB interface
- Switch Driver 6 software allows you to edit the actions of switch presses: How do I install Switch Driver 6? - Smartbox Hub

Suitable for:

- People who require switch access for a device which only supports USB.

Product specification:

- The switch adaptor is supported by most switch accessible software. It comes with Smartbox's Switch Driver software to allow it to be used with programs that do not directly support switch access.

Blue2 FT Switch (Ablenet)

Function	Computer access
Category	Hardware
Access Method	Switch
Operating system	iOS Android Bluetooth tablets and computers

Physical ability required	Low- dependent on type of switch used
Cognitive ability required	Good level although depends on set up in iPad settings
Ease of learning	Varies depending on set up, but mid to high
Support needed	Mid-level support with set up and training

Overview

Blue2 is a Bluetooth switch for most Bluetooth enabled devices. You can either use the built-in switches, or plug your own switches in. In-built switches are proximity sensors so that they can be activated without a press. There is visual and auditory feedback when these switches are activated.

Blue2 FT - Inclusive Technology

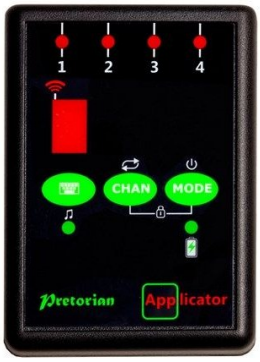
Suitable for:

- People who are using Apple devices and require switch access and have the cognitive ability to understand how this works
- Tablets, computers or phones that require switch access

Product specification:

- Works iOS 16, iPadOS 16, MacOS Ventura, Android, Windows 11, and ChromeOS
- Paired via Bluetooth
- Rechargeable using supplied charger
- Threaded inserts so Blue2 FT can be mounted in accessible location

APPlicator switch interface (Pretorian)



Function	AAC, computer access
Category	Hardware
Access Method	switch
Operating system	iOS and Android

Physical ability required	Depends on type of switch. Low
Cognitive ability required	Low to mid-level - depends on what the switches are set up to do. Can be set up for some simple actions
Ease of learning	Middle
Support needed	Mid-range

Overview

Bluetooth switch interface that can be used with any Bluetooth enabled devices (iOS, Android, Windows) to enable switches to be used with switch enabled apps or with iOS or Android switch control.

https://www.pretorianuk.com/applicator

Special Features:

- Up to 4 wired switches can be connected
- Rechargeable with USB micro lead
- Can be set up for simple timed music playback on iOS (“QuickMedia” feature)
- Can be used to add a switch for mouse clicks if using a mouse on iOS
- Similar to the Pretorian iSwitch, but without the integral switch

Suitable for:

- Those who need to use switch access to a device

iSwitch (Pretorian)

Function	AAC, Computer access
Category	Hardware
Access Method	switch
Operating system	iOS and Android

Physical ability required	Low
Cognitive ability required	Low to mid-level - depends on what the switches are set up to do. Can be set up for some simple actions
Ease of learning	Middle
Support needed	Mid-range

Overview

A Bluetooth device which allows the integral 75mm switch and up to two additional switches to be connected to iPad, iPhone, Android or any other platform supporting Bluetooth connectivity.

https://www.pretorianuk.com/iswitch

Special Features:

- Integral 75mm switch
- Up to 2 additional switches can be attached
- Rechargeable with USB micro lead
- Pairs with your device via Bluetooth
- Can be used to add a switch for mouse clicks if using a mouse on iOS
- Similar to the Pretorian APPlicator but with an integral switch, and without the QuickMedia feature

Suitable for:

- Those who need switch access to a device.

Therapy Box Switch Box for iPad

Function	AAC, Computer access
Category	Hardware
Access Method	switch
Operating system	iOS

Physical ability required	Depends on type of switch buy low
Cognitive ability required	Mid-level- need to cope with scanning and use of Predictable app
Ease of learning	Middle
Support needed	Mid-range

Overview

Bluetooth switch interface for iPads produced by Therapy Box, which enables simple access to their **Predictable** app and **Scene and Heard** apps with a switch. Has 2 switch ports to enable autoscanning (1 switch) or user scanning (2 switches) within the app. Does not work with other apps.

https://therapy-box.co.uk/shop (select Accessories).

Special Features:

- Rechargeable via mini USB cable
- LED indicator
- Pairs with your device easily by Bluetooth
- Simpler to use that some other switch interfaces if the client is only wanting access to Predictable or Scene and Heard (locked in to the app)
- Can be used with any switch with any body part

Suitable for:

- Anyone using Predictable or Scene and Heard, who requires switch access to their iPad
- Those with upper limb limitations

Switch Recipes for iOS

Switch recipes can be set-up on iOS devices to allow a switch to repeatedly carry out the same action on the screen. They require having either a wired or Bluetooth switch connected to the device. Recipes can be as simple as a single tap in the middle of the screen to more complex gestures. A recipe can than interact with a certain app to trigger an action. Examples of these include: starting/stopping a YouTube video, turning pages in a book, or interacting with an app such as Garage Band.

Switch recipes can be helpful to explore cause and effect with emerging switch users. You can find various examples online, for example - ios_13_recipes.pdf (ablenetinc.com)

Access Practice

For some people, direct access (touching keyboard buttons or a touchscreen with their finger) may not be possible or prove difficult. Switch access, eye gaze or other methods may need to be utilised. These can be difficult skills to learn and it can be best to practice these skills through games and fun activities before introducing more challenging tasks. This section outlines some software and hardware designed for access practice.

Eye Can Fly

Function	Access practice
Category	Software
Access Method	Eye gaze
Operating system	Windows

Overview

24 exciting games for users to control with eye gaze.

Special Features:

- "Master control of your aircraft to become a fully-fledged pilot whilst learning geography skills such as compass directions, landmarks and regions across the world as well enhancing your eye gaze skills". From https://www.inclusive.com/uk/eye-can-fly.html
- In addition to eye gaze, play can also be controlled with any mouse pointer device, the keyboard, switches and joysticks.
- Easy to set up and takes the students through carefully graded activities to learn how to use eye gaze with precision and control.
- Useful options and a range of activities at different levels ensure success and maintain motivation for students of different ages and abilities.

Suitable for:

- Clients with some experience of eye gaze control and ability to follow simple verbal instructions.

Product specification:

- Software is issued via a downloadable file.

HelpKidzLearn

Function	Access practice
Category	Resource
Access Method	Direct, switch, eyegaze
Operating system	Windows, iOS

Overview

"HelpKidzLearn is a website from Inclusive Technology with a collection of software for young children and those with learning difficulties to play online. The software is split into five sections: Early Years, Games and Quizzes, Stories and Songs, Creative Play & Find Out About".

From https://www.helpkidzlearn.com/

Special Features:

Each activity in HelpKidzLearn can be accessed using a variety of access methods:

- Mouse and keyboard
- iPad and Android tablets
- Touch screens
- Interactive classroom displays
- One or two switches

Suitable for:

- Children who are learning to explore alternative access methods or developing cause and effect through direct access (touchscreen)

Product specification:

- Monthly or annual subscription require

Inclusive Eye Gaze Learning Curve

Function	Access practice
Category	Software, resource, assessment
Access Method	Eyegaze
Operating system	Windows

Overview

"These 54 fun and meaningful activities can be used with any child to teach eye gaze and develop early choice making skills.

This collection can be used to determine visual skills and potential use of eye gaze, as well as being used as a progressive teaching tool that provides structure and lots of opportunities for practice at each level."

From https://www.inclusive.com/uk/inclusive-eye-gaze-learning-curve.html

Special Features:

Uses relevant vocabulary, pictures and sounds and lots of variety to offer opportunities to children with additional needs to develop early interaction, communication and learning skills. Includes 3 Eye gaze software packages:

- Attention and Looking
- Exploring and Playing
- Choosing and Learning

Suitable for:

- Some children beginning to use eye gaze.

Product specification:

- Software is issued via a downloadable file.

Look to Learn

Function	Access practice
Category	Software, assessment
Access Method	Eyegaze
Operating system	Windows

Overview

Look to Learn is a software package with 40 activities designed for adults and children starting out with eye gaze technology (although the activities are very child focused).

https://thinksmartbox.com/product/look-to-learn/

Special Features:

The 40 activities in Look to Learn have been split into five key areas of learning and development:

- Sensory - teaches cause and effect.
- Explore - encourages engagement with the whole screen.
- Target - helps improve accuracy of eye gaze access.
- Choose - develops choice making skills.
- Control - improve eye gaze control.

The Look to Learn Workbook (free) can guide support staff to track progress of users.

The built-in analysis tool creates a heat map to show where you have looked on the screen during an activity. Heat maps can be saved, printed and used to measure progress and record successes

Suitable for:

- Clients who are learning to use eye gaze, prior to using communication packages.

Product specification:

- A downloadable file.

Look Lab

Function	Access practice
Category	Software, assessment
Access Method	Eyegaze
Operating system	Windows

Overview

"Look Lab is a collection of eye gaze activities, suitable for children, teenagers and adults. They allow you to practice your eye gaze skills, for example "hitting targets, dwelling, tracking objects around the screen and moving the cursor horizontally and vertically".

From https://thinksmartbox.com/product/look-Lab/

Special Features:

There are 5 activity categories:

- **Fun**: relaxing games that are easy to learn and get started with.
- **Challenge**: more complex and strategic games that involve time dependent reactions.
- **Puzzle**: activities with a problem-solving element.
- **Creative**: activities focused on music or art.
- **Mindfulness**: simple cause and effect activities that support relaxation and screen engagement.

The Look Lab Workbook (free) can guide support staff to track progress of users.

Suitable for:

- Clients who are learning to use eye gaze, prior to using communication packages.

Product specification:

- A downloadable file.

Sensory Eye FX 2

Function	Access practice
Category	Software, assessment
Access Method	Eyegaze
Operating system	Windows

Overview

A package of thirty games designed for the earliest level of eye gaze exploration. The software is divided into five levels of exploration; blank screen engagement, object displacement, zoned focusing, active exploration and controlled targeting. https://sensoryguru.com/sensory-eye-fx-2/

Suitable for:

- Those who are beginning to explore and develop their eye gaze skills at a cause and effect level.

When to move the client on from this equipment:

- If the client is engaged with the games and shows understanding at a cause and effect level, they may be ready to progress to more challenging eye gaze exploration software such as Look to Learn or Inclusive Eye Gaze Learning Curve.

SwitchIt! Maker 2

Function	AAC, access practice
Category	Software
Access Method	Direct, switch
Operating system	Windows

Overview

"SwitchIt! Maker 2 will turn your text, images, movies and sounds into simple on-screen activities. These activities are automatically accessible using a mouse, whiteboard, touch monitor, keyboard, one or two switches or IntelliKeys. Make talking books starring your pupils, or a slide show of a recent trip. Put that digital camera to good use!"

From https://www.inclusive.com/uk/switchit-maker-2.html

Special Features:

- Children can make activities as part of a lesson. SwitchIt! Maker 2 first asks you to choose a layout for a new page - do you want words with a picture, or just a picture? Then add an image or some video. Type in the text using your keyboard or the on-screen keyboard (great on an interactive whiteboard), then add some voiceover or load some music.

- Export and import features let you transfer your activities to other computers or onto CD, etc.

- The program also has over 1,500 useful example files, including a selection of PCS symbols from Mayer-Johnson and Rebus Symbols from Widgit, clip-art pictures, sample videos and music. It also allows you to import a wide range of image and sound files.

Suitable for:

- Children who need to practice access methods.

it-Click-On Plus

Function	EC, access practice
Category	Hardware
Access Method	Switch
Operating system	N/a

Overview:

The it-Click-On Plus allows you to control one or two appliances with a switch. For example, you could plug a lamp in, and use your switch to turn the lamp on and off.

https://www.inclusive.com/uk/it-click-on-plus.html

Please see our resource 'Examples of activities for developing switch use' available on our website for ideas: https://www.barnsleyhospital.nhs.uk/assistive-technology/resource/examples-of-activities-for-developing-switch-use/

Special Features:

This product can be set up to be operated by a switch in different ways:

- In "direct" mode, the appliance stays on for as long as the switch is being pressed.
- In "latched" mode, the first switch press turns the appliance on, and the next press stops it.
- In "timed" mode, the switch press turns the appliance on for a pre-set amount of time.

Product specification:

- This product contains a Simply Works wireless receiver, so that it can be operated by a Simply Works wireless switch.
- It also has two switch ports for plugging in wired switches.

Switch adapted toys

Function	Access practice
Category	Hardware
Access Method	Switch
Operating system	N/a

Physical ability required	Varies dependent on switch, but low
Cognitive ability required	Low- cause and effect level
Ease of learning	Easy
Support needed	Low

Overview

A wide range of ready-made switch activated toys are now available, which can be great for teaching cause and effect as a precursor to moving on to more complex AAC and EC. They are also great for practising switch activation as an access method. Toys contain a switch port into which any 3.5mm switch can be plugged. Toys are available from companies including **Liberator** and **Inclusive Technology.**

A wide range of switch accessible computer software and games are also available.

Please see our resource 'Examples of activities for developing switch use' available on our website for ideas: https://www.barnsleyhospital.nhs.uk/assistive-technology/resource/examples-of-activities-for-developing-switch-use/

Special Features:

- Any type of switch can be used- dependant on the functional ability of the user
- Fun way to learn

Suitable for:

- Users who need to develop an understanding of cause and effect and the ability to consistently activate a switch, with a view of using switch access for accessing communication or environmental control in future.

Product specification:

- Dependent on device – usually take batteries

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Changelog

Date	Change	Owner
9/2/2018	Original version of Local Services Resource Pack.	Jenny Scott
11/3/2022	Version 5. Content updated.	
8/11/2024	Version 6. Local Services Resource Pack split into sections: AAC, EC, Computer Access and Mounting Solutions. Content updated. New trust branding applied. Publishing information and Changelog added. Equipment and hyperlinks updated.	Vicky Johnson and Kate Welland
17/3/25	Desktop published, accessibility via headings, overall editing, published	Simon Judge