



Keyboard and Mouse Alternatives

Generally when you purchase a computer it comes with a standard mouse and keyboard. For many people these devices pose difficulties. This factsheet is written to outline some of the options that are available. We cannot comment on every single piece of equipment. If you would like further information please do not hesitate to call us.

Keyboard Alternatives

The standard PC keyboard is designed to be used with two hands, it favours right handed people (the numeric keypad is on the right), and can be “over sensitive” so that it is easy to get a string of letters if a key is held down for slightly too long.

Modifying the Keyboard Response

The way the keyboard behaves can be changed, this can be done on Windows and Apple computers as these things are generally built in.

The types of thing that can be changed are:

StickyKeys

This allows one finger users to operate Shift, Ctrl and Alt keys. The modifier key is held down until the next key is pressed. So to type “**The**” the keystrokes would be: **Shift + t + h + e**.

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.

MouseKeys

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

We have skillsheets that give a step by step guide to these features. Please contact us, or go to our website at www.abilitynet.org.uk/myway

Keyguards

These are rigid plates with holes designed to work with specific keyboards. The holes are positioned over each key and they make it impossible to press two keys at once. As a further benefit it is possible to rest hands and arms on the guard without pressing keys. They can be removed and fitted for use only when required.



Keyboard with keyguard

It can often be easier to purchase a keyboard and guard together rather than get one to fit a specific keyboard.

Product	Supplier
Keyboard/guard combinations, standard and small keyboards	Maxess Products, Inclusive Technology, Keytools
Customised keyguards	Dave Williams Design Engineering

Different Sizes and Shapes

There is a wide choice of keyboards to replace the standard keyboard. We have chosen examples of keyboards here to illustrate the ideas described.

Small Keyboards

Small keyboards can be more easily positioned and are often suited to single handed users. They can fit between the arms of a standard wheelchair.

The actual key sizes are fairly similar to a standard keyboard. Space is generally saved by removing the numeric keys and reducing the gaps around the editing and function keys.



Cherry G84

Various designs including wireless and ones with built in trackballs are available.

Separate numeric keypads are available, if required.

Product	Supplier
Compact keyboards	Inclusive Technology, Granada Learning, Tekdata, Access keyboards, Intolect, Keytools
Tash Mini (small membrane keyboard)	QED

Keyboards with Larger Keys



Big Keys



Intellikeys

Keyboards with larger keys can help in situations where it is difficult to accurately locate a standard sized keytop, the larger size gives more area to aim at.

Some have a built in guard as the letters are slightly sunk beneath the surface of the keyboard.

“Intellikeys” is a flat keyboard which is pressure sensitive. It comes with a number of “overlays” which define the action of areas on the surface of the board. You can change layouts “on the fly”. In addition you can design your own layouts. This can be useful if you only want to work with a small number of keys.

Product	Supplier
Tash King	QED
Intellikeys	Inclusive Technology, Keytools, TechReady
BigKeys	Keytools, Granada Learning, TechReady

Ergonomic

Ergonomic keyboards are aimed at those wanting to touch type using both hands. Generally they incorporate a split between keys operated by each hand with the aim of reducing strain in wrists and arms.

A number of variations on this design are available.



Goldtouch

Some ergonomic keyboards have a fixed split whereas others, like the one above, are hinged to allow the angle and height to be adjusted. As well as the two handed design PCD Maltron supply an ergonomic keyboard aimed at single handed users wishing to use all fingers to touch type.

Product	Supplier
Fujitsu Siemens ergo keyboard	Advance Seating Designs, RichardsoNEyres, Tracline UK
Maltron Ergonomic keyboard	PCD Maltron
Goldtouch Ergonomic keyboard	Keytools

Numeric Keypad Use

Because the standard keyboard has a fixed numberpad it presents difficulties for some people. A left handed user wishing to use the numberpad will have to reach across their body. A right handed user who makes little use of the numeric pad has to reach unnecessarily in order to use their mouse. Separate numeric pads used with smaller keyboards provide a more flexible solution.



Cherry number pad

Product	Supplier
Numeric pads	Inclusive Technology, Keytools, Keyboard Company, Intolect, Access Keyboards, Tekdata

Headpointer and Mouth Stick

Some of the smaller keyboards may be suitable for use with headpointer and mouth stick. A specialised layout is available from PCD Maltron.

Product	Supplier
Headpointer, Mouth stick	Aremco
Headpointer keyboard	PCD Maltron

Chord Keyboards



Cykey

Chord keyboards have only a few keys and rely on keys being pressed in combination to generate letters. They therefore work well for single handed users with independent movement in each of their fingers.

Product	Supplier
CyKey	Bellaire Electronics, Keytools

Position

It is very important when using keyboards and pointing devices to be comfortable. Some of the following ideas may be helpful:

Keyboard tray

This bolts under the desk and provides a retractable tray which holds the keyboard. It allows a lower typing position which may be more comfortable. A “lap tray” can achieve the same effect. It is basically a small bean bag attached to a tray, the beans mould to the shape of your legs and the tray gives a flat surface. A Laptap is similar but without the tray and is intended for use with laptops.

Product	Supplier
Keyboard Tray	Advance Seating Designs
Lap Tray	QED, Homecraft Abilityone
Laptap	Laptap Ltd

Fixing Equipment

Keyboards, switches and pointers can be fixed in specific locations using modular systems like the one illustrated. Home made devices can also be helpful e.g. to raise up or tilt a keyboard.



Mighty Mount

Product	Supplier
Mighty Mount, Universal Mount	QED, Inclusive Technology

Arm and Wrist Supports

Foam or pads placed in front of the keyboard can be helpful when resting from typing. These are widely available from most office suppliers and PC outlets. Where there are difficulties supporting the weight of arms, articulating wrist supports which clamp to the table top are useful.

Product	Supplier
Articulating arm supports	Posturite, Datasound
Foam or gel supports	Datasound, see Non-Specialist Suppliers

Monitor Arms

These allow monitors to be easily moved and positioned. Generally they are designed for standard monitor sizes, heavy duty arms are also available.

Product	Supplier
Monitor arms	Datasound, Posturite, SIS Jensen, see Non-Specialist Suppliers

Workstation Redesign

Many people especially those with neck and upper back problems may find alternative positioning of items more comfortable.



Togl Organiser

Product	Supplier
Togl Organiser	Osmond Group

Protection

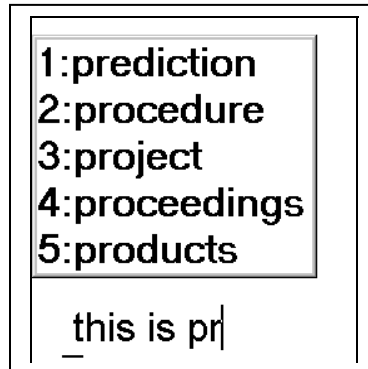
Anti-dirt, anti-moisture keyboard covers can be used to protect the keyboard.

Product	Supplier
Kidglove	Keytools
Keyboard covers	Inpace, see Non-Specialist Suppliers

Speeding Up Keyboarding

The following techniques can increase keyboarding speed:

Prediction



After typing the first few letters of a word predictive software gives a number of words starting with those letters. To complete the word the user simply selects one of the words offered. For longer words this can offer speed improvements.

Product	Supplier
Prophet	Ace Centre
Co-Writer	Don Johnston
TextHelp Read & Write	Iansyst
Penfriend	Inclusive Technology, TechReady

Typing Without a Keyboard

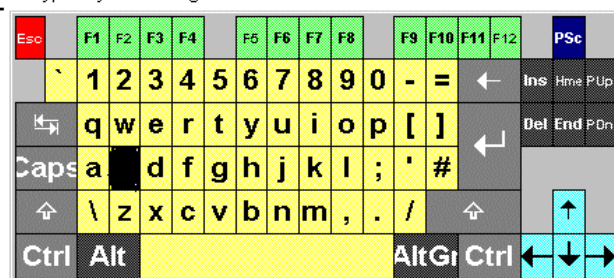
It is not necessary to be able to use a keyboard to get ideas and text into a computer.

On Screen Keyboard

Here letters are selected from an on screen keyboard. A mouse or trackball can be used to make the selection.

This same idea can also work with switches, where the user needs to select first the line then the column. Even if someone can only use a single switch they can operate a computer!

I can type by selecting letter



Wivik on-screen keyboard

Product	Supplier
Windows On screen keyboard	Accessibility Option in Windows ME, XP, 2000
Wivik	Prentke Romich, Liberator
EZKeys	Possum
The Grid	Sensory Software
Penfriend	Inclusive Technology, TechReady

Switches

If the user is physically or cognitively unable to use any keyboard or pointing device, then a basic starting point may be to use switch input. A switch is simply a button which, when activated, sends a signal to the computer. This signal can then be used to drive various software packages.



Discover Switch

Discover Switch replaces the computer keyboard and mouse for people with cerebral palsy and other physical disabilities that prevent them from doing direct selection with a mouse device or keyboard.

Switches come in a variety of shapes and sizes and can be operated by any controlled movement of the body. Switches work well with cause and effect software and programs that require simple choices. A small switch interface box is needed to connect a switch to a computer.



Buddy Button

Product	Supplier
Switches and switch interfaces	TechReady, Granada Learning, Don Johnston, Inclusive Technology, Keytools, QED, Sensory Software

Voice recognition

Voice recognition is an alternative to typing on a keyboard. Put simply, you talk to the computer and your words appear on the screen. The software has been developed to provide a fast method of writing onto a computer and can help people with a variety of disabilities. It is useful for people with physical disabilities who often find typing difficult, painful or impossible. Voice recognition software can also help those with spelling difficulties, including dyslexic users, because recognised words are always correctly spelled.

We have separate factsheets available on voice recognition software.

Eye Tracking Systems

For people with very limited movement there are systems that allow control of the PC by following the movement of the users eyes. These systems are very expensive.

Product	Supplier
EyeGaze	www.eyegaze.com
MyTobii	www.tobii.com
Iriscom	www.iriscom.org

Mouse Alternatives

Standard computer mice come in all shapes and sizes, but are similar in needing to be rolled around a portion of desk. They need to be held in one position while the button is pressed. As a result they pose many problems for people with disabilities.

Making Use of the Keyboard

In Windows the keyboard can be used to perform most of the functions of a mouse. For example menus can be activated and text selected by simple keystrokes like Alt + F and Shift + right arrow. For further details please request our factsheet Keyboard Shortcuts in Windows.

Adjusting the Way the Mouse Behaves

Just as it is possible to modify the keyboard response it is also possible to change the way the mouse behaves. In Windows Control Panel there is a mouse icon. Here you will be able to change the speed of the mouse; adjust the amount of time needed for double clicking; and swap the buttons over for left handed use. Depending on the type of mouse you have you may also have other things you can experiment with e.g:

- Changing the acceleration of the mouse
- Forcing it to only move horizontally and vertically
- Putting different functions onto the available buttons.

Drag Lock

Many programs require you to “drag and drop” pictures or text from one place to another. When doing this you need to move over the item, press and hold the mouse button down, move to the new location and release the button. We often find that this is difficult for people with disabilities. A useful feature to get around this problem is drag lock. Here you simply move over the item, click (i.e. press and release a button), move to the new location, and click the same button again to release the item.

The drag lock feature is available on many pointing devices. It can be an additional button on the device which always works as a drag lock, or it can be a button which you can set up to be a drag lock using the control panel settings.

Different Kinds of Mouse

It is often worth trying a few different mice as they have different sizes and shapes; and require varying amounts of pressure on buttons. We have not illustrated every possible device here.



Contour Mouse



Anir Mouse

Product	Supplier
Microsoft Mouse	See Non-Specialist Suppliers
Logitech Mice	“ “
Kensington Mice	“ “
Contour mice	Contour Design (Europe), Posturite
Anir Mouse	Osmond Group, Keytools

Trackballs

A trackball is basically an upturned mouse. Rather than rolling the mouse on the table top it is a static device and the ball on the top is moved using fingers, thumbs and palms. Larger trackballs are often suitable for use by feet.



PC Track



Logitech marble mouse



Kensington Expert Mouse
Pro Wireless Trackball

Product	Supplier
PC Track	Intolact, Computerware, Keytools
MouseTrack	Business Futures
Kensington trackballs	TechReady and other non specialists
Logitech, Microsoft	See Non-Specialist Suppliers
Traxsys Roller	Granada Learning, Traxsys, Inclusive Technology

Joysticks

These type of devices work in a similar manner to joystick controls on a wheelchair. The mouse pointer moves fastest when the joystick is pushed fully forward. The joystick illustrated has a built in guard and has a drag lock button and a button which sends a double click.



Traxsys Joystick Plus

Product	Supplier
Joystick Plus range	Traxsys, Granada Learning, Inclusive Technology, TechReady

Touch Pads

These devices are often found on laptops. They are stationary pads which are operated by sliding your finger across the surface. Clicking can be done with buttons or by tapping lightly on surface. They can be held in the hand or placed on a desk.



Cruise Cat

Product	Supplier
Cirque Touch Pads	Keytools, Touchstone Resources, TechReady

Pen Devices

These are held in the hand like a pen and come in two basic forms:

- A device that acts in a similar manner to a mouse, you move it and a small ball rotates moving your pointer in that direction (relative movement).
- A device which you move on a tablet, the tablet represents the screen area, if you touch the centre of the tablet you will always be in the centre of the screen. These tend to be called graphics tablets. They are widely used for drawing - larger sized tablets are used for more detailed work.

Supplier	Product
Mouse pen	Granada Learning
Various graphics tablets eg Wacom	See Non-Specialist Suppliers


Screen Based Ideas: Touch Screens, Light Pens

Here selections and movements are made by pointing at the screen surface. Touch screens act in the same way as a standard screen but have sensitive surfaces. It is also possible to put a "Touch Window" over the front of a standard monitor to give the same function. A lightpen is a similar idea, requiring you to hold a pen and point it at the screen.

Product	Supplier
Touch Screens	Granada Learning, Inclusive Technology, Tyco Electronics, 3M Touch Systems, Keytools
Touch Window	Granada Learning
Lightpen	Computerware

Using Head Movement

Here the pointer is moved across the screen simply by moving your head slightly. They work well with on screen keyboards. Usually a switch is used to do the equivalent of a mouse click.

Product	Supplier
	TechReady, Keytools, Sensory Software,
Tracker 2000	Don Johnston
HeadMouse	Don Johnston, Techcess
Headway	Keytools
VisualMouse	www.mousevision.com

Foot Controlled Devices

Some of the larger trackballs can be used with the feet.



BIGtrack

Product	Supplier
BIGtrack	Keytools, TechReady

Other Ways of Clicking

We often see people who can use a pointing device to move the pointer around the screen but have difficulty clicking. Here it is worth remembering that the click does not have to be on the pointing device itself. You could turn on MouseKeys and use a button on the keyboard to click and drag.

A number of switch boxes are also available to make it possible to use an external switch to click.

Automated Clicks

There are a number of software utilities which will detect when your mouse has stopped moving and then send a click. These utilities work well with pointing devices which can be accurately controlled.

Product	Supplier
Quill Nib	www.quillmouse.com
Point N Click	www.polital.com/pnc
Dragger	Don Johnston