Computers and ICT

*This sheet looks at how using a computer can be made easier for people with hemiplegia, whether children or adults. It draws on material from both **Abilitynet** (see Useful Addresses) and the work of Di Caesar and Teresa Loftus of Gloucestershire's Advisory Teaching Service, whose account of their experience teaching children with hemiplegia to use computers is included in HemiHelp's 'Guidelines for Teachers in Primary Schools' pack. Parents might like to suggest their child's school buy a copy of this pack; in any case they should make teachers aware of the seating rules, adaptations etc in this sheet and check that they are also followed at school.*

Computers are everywhere in our lives: home, school, work and play. Children and adults with hemiplegia may seem to start at a disadvantage, but learning to use ICT effectively can help them keep up more easily with classmates and workmates. At school, for example, using a keyboard can:

- help children with poor handwriting skills
- help develop the ability to present work effectively
- help develop personal organisational skills
- reinforce or teach spelling skills.

Before you start

It is important to sit properly at the computer.

- The desk or table should be at elbow height.
- Eye level should be at the bottom of the toolbars on the screen.
- The chair should have good back support.
- Feet should be flat on the floor, with knees at 90 degrees. If necessary use a stool or an old Yellow Pages (also useful for raising a monitor to the right height).
- Adjust lighting to avoid glare and reflection.
- Allow space on the surface for the affected hand.
- Before starting to use the computer it can be useful to do warm up exercises (gentle stretching, finger wiggling etc.), and repeat these after a typing session.
- Don't forget to have breaks.
- As children grow, seating should be monitored regularly.

Tweaking and adapting computers

Sticky keys

If you are only able to use one hand you will find that there are some key combinations that are difficult to achieve. Try pressing "ctrl+alt+delete" with one hand and you will see the problem. Thankfully there is a "Sticky Keys" function that is built into Windows. Sticky Keys changes the behaviour of the modifier keys - Shift, Control and Alt, so that they are "held down" until the next key is pressed. This means it is possible to type a capital "P" by pressing and releasing the shift key and then pressing the "p" key. Or you can get % by pressing shift then 5. The settings for sticky keys can be turned on by visiting the "Accessiblity Options" in the Control Panel.

Improving clarity

If you create a document in your word processor you will generally find that the text on the screen consists of black letters on a white background. The writing in the menus is generally black on grey and the title bar is blue. If these colours are not the best for you, you can change them and adjust the size of the text in the menus.

- To try this out revisit Control Panel and select Accessibility Options and then Display (in Windows 2007 'Pick a task', and the Accessibility Wizard will take you through some of the operations below). Choose the appearance Tab and look under "Scheme" – if you scroll down through this list you will see a number of pre-defined schemes that use different colour combinations – some of which are available in a number of sizes. For example, High Contrast schemes are useful for anyone with a visual impairment.
- The mouse pointer can often be difficult to locate on the screen. If so, then you can try making it bigger. If you have a white background try the "Windows Standard Black (large)" - or try a large white pointer if you have a high contrast black scheme. You can select different "Mouse Schemes" through the "Mouse" item in Control panel.
- The Mouse tab also allows you to slow down the mouse speed if this presents a problem, whilst enabling Sound enables a multi sensory approach to typing - good for some learners but frustrating for others.
- While you are in the mouse properties think about swapping the buttons over if you are left handed so that you can do all your clicking with your index finger.
- Some fonts are clearer than others. 'Ariel' and 'Courier' are considered easier to read than traditional fonts such as 'Times New Roman', and children may like using a 'fun' font such as 'Comic Sans'.

Keyboard Options for single handed users

- There are some specialist keyboards available for users who can only use one hand, for example those made by **Maltron** (see useful addresses below). However if you learn to type on a specialist keyboard you would then need to use that keyboard on other computers. And given that you will probably use a computer throughout your life in all sorts of settings (school, work, home etc.) it may be more practical to use a standard QUERTY keyboard from the start.
- Many people find compact "laptop sized" keyboards easier to use as they can be operated more easily with one hand. Turn the keyboard over – most have two retractable legs. Flip these down so that your keyboard has a gently downhill slope. It makes the letters easier to see and gives some forearm support. Next, offset the keyboard to whichever hand is typing, with the letters G and H in the centre. For a right-hander, the keyboard is angled up to the right, for a left-hander to the left.
- There is a useful typing tutor called "Five Finger Typist" www.typeonehand.com that enables a single handed user to develop a touch-typing style based on the keys "FGHJ" as "home keys". See Useful addresses for stockists. Another programme, www.aboutonehandtyping.com, is available from its website.
- Most people with hemiplegia will use their affected hand, if at all, only for anchoring the keyboard, but some with left sided hemiplegia can learn to use the hand to access the keys on the left side of the bottom row e.g. z,x,c,v,b.
- For people with a visual impairment, keyboard stickers can make the letters clearer. See Useful adresses for stockists.
- Another thing you might want to try is Dasher, a text entry interface that requires no keyboard. It is free to download at www.inference.phy.cam.ac.uk/dasher

Portable Notetakers

If you find writing notes or doing written work in class difficult, and find typing easier, there are some very good lightweight and portable note-taking devices that can be used as "pen and paper substitutes", for example the Alphasmart Neo. This is a battery driven word processor (700 hours of operation on 3 AA alkaline batteries) with the added advantage of an extra large font. Work can then be easily uploaded into a computer.

I had many different devices at school, such as sloping boards, but none of them solved my slow handwriting problem. Eventually in Year 9 I was given a portable lightweight word processor called an Alphasmart. I must say this was the best solution I was ever given. At first I was really slow but due to using it in the classroom every day I have now developed my own typing method using 4 fingers on one hand and one on the other and can type about 40wpm which is very good considering!!

Adult HemiHelp member

Pointing devices

The standard mouse is quite a challenging device for many people with reduced dexterity. Sometimes changing to a different shaped or different sized device will help, though if you are left-handed beware of anything labelled 'ergonomic', as it will be designed for right handed users. Even Anything Left Handed no longer stocks a left handed mouse.

If a mouse does not suit then there are large numbers of alternatives – rollerballs, touchpads, joystick devices… However, as with a Qwerty keyboard, use of a standard mouse has many benefits. Use of a Tiny mouse can be a useful initial step for young or small children. Check that the the mouse or alternative is positioned correctly, on the side of the typing hand. There are many activities which introduce and develop mouse control - important skills to master are:

- accurate mouse control and movement across the screen
- single clicks
- double clicks
- clicking and holding

The following free sites available on the internet may be useful for teaching mouse skills.

Paint programme: www.tuxpaint.org

Various games and activities: www.helpkidzlearn.com

Mouse games and more: www.starfall.com

BBC programme orientated games and activities: www.bbc.co.uk/cbeebies/games

Magnification and Screen Reading Systems

Magnification software and screen reading programs can be bought to offer support to users with significant visual impairments. Magnification software magnifies the area around the cursor or mouse pointer. Screen reading systems monitor the activity on the screen and speak out the current menu options and the keys pressed, and give the user the ability to interrogate the system.

Voice Recognition Software

This can be useful for those who have good speaking voices. The systems take time to "train" to recognise the speaker, but are improving and becoming cheaper all the time. The most widely used programme is Dragon Naturally Speaking: go to www.scansoft.co.uk/naturallyspeaking/locator for stockists around the country.

Other useful software

Abilitynet has produced two useful software packages for introducing children to ICT. Its website also has an extensive range of downloadable information and skill sheets that may be useful for older children and adults. For example, its 'Dyslexia and Computing' sheet alone has suggestions on software for planning your work, word prediction, speech to text and autocorrecting.

Useful Addresses

Information and Advice

Abilitynet www.abilitynet.org.uk whose motto is 'Adapting Technology – Changing Lives', works nationwide, with a separate Scottish branch www.abilitynet.org.uk/com_centre_scotland. It provides assessments, equipment and training to help children with additional needs get the most out of education. Its site has factsheets, skillsheets and free downloadable software, and you can buy two useful packages of software on USB sticks, AccessFun and AccessAT, at £14.99 each (email sales@abilitynet.org.uk). Freephone: 0800 269545 Email: enquiries@abilitynet.org.uk

ACE Centre North www.ace-north.org.uk offers free information and advice on Assistive Technology for people with physical/ communication difficulties. The site also has links to useful freely downloadable and open source software. Tel: 0161 358 0151 Email enquiries@ace-north.org.uk.

Cenmac www.cenmac.com works only in London, providing assessments of children, loans of equipment and training, but its website has lots of information, equipment and software recommendations and links which are useful wherever you live. Tel: 020 8854 1019 Email: mail@cenmac.com

IT-Can-Help (ITCH) www.itcanhelp.org.uk is a network of volunteers who are able to offer free local computer assistance to disabled people. They can diagnose and fix most computer related problems; Install and set up hardware, software, internet, email and accessibility settings. To contact them see Abilitynet phone and email details above, or go to the ITCH website to contact a local volunteer.

Scope Response can make suggestions about funding for keyboards etc.
Freephone: 0808 800 33 33 Email: response@scope.org.uk

www.dyslexic.com is a commercial site but the 'Articles' section has a lot of useful information on dyslexia and how best to support children with the condition – hardware, software, which typefaces to use, funding for technology and much more.

www.e-bility.com/articles/dyslexia more about customising computer settings.

Hardware and Software

The two main suppliers in the UK are:

Inclusive Technology www.inclusive.co.uk Tel: 01457 819790 Email: inclusive@inclusive.co.uk

Keytools Ltd www.keytools.co.uk Tel: 023 8029 4500 Email: info@keytools.co.uk

These stock a wide range of QWERTY keyboards; Alphasmart word processors; mice and alternatives and other ICT accessories; keyboard stickers; software for one-handed typing etc.

PCD Maltron Ltd www.maltron.com manufactures and distributes the main 'alternative', ergonomically designed for one-handed users. This requires good dexterity and uses a non-QWERTY layout (instructions and exercises supplied). Tel: 0845 230 3265 Email: sales@maltron.co.uk

HemiHelp has a range of information sheets for both families where there is a child with hemiplegia and adults with the condition, as well as a Useful Names and Addresses List to help you contact other organisations.

__Hemiplegia__ is a neurological condition that weakens one side of the body and affects one child in a thousand. It is sometimes described as a form of cerebral palsy and the effects are similar to those of a stroke. __HemiHelp__ is a membership organisation offering information and support to children and adults affected by hemiplegia and their families.

HemiHelp is happy for you to make photocopies of any part of this document.

Helpline: 0845 123 2372 (Mon-Fri 10am-1pm)
Admin: 0845 120 3713 • Fax: 0845 120 3723
Email: support@hemihelp.org.uk • Web: www.hemihelp.org.uk

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