

iPads for Communication, Access, Literacy and Learning (iCALL)

Second Edition
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A guide to using the iPad with children and adults who may require additional support

iPads for Communication, Access, Literacy and Learning (iCALL)

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Introduction

Thinking of buying an iPad and some Apps for your child, pupil, student, class, or for the whole school? Or for one or more of your speech and language therapy clients?



Mobile devices such iPads, iPods and iPhones have taken the world by storm and are increasingly used in teaching and learning, and/or in therapy, to support learners with additional support needs, as well as for personal use. We are aware that people are all at different levels of experience in their use of iPads.

You may be just considering purchasing an iPad and some Apps, or perhaps you have already purchased a device - maybe you've even already planned or adopted a school-wide iPad implementation, providing access for all learners.

We hope this Guide will provide you with helpful information and resources to help you on your way.

The primary aim of the Guide is to offer support to readers who are not necessarily technical specialists and who want to use the iPad with children or adults with some kind of additional support needs, special educational needs or disability.

We are imagining such readers to be parents and carers, teachers and other education staff, speech and language therapists, occupational therapists and other professionals.

Section 1 of this Guide should help you to master the basics of getting to know the device and mastering some of the new and interesting features that it introduces.

Who can benefit from using an iPad and Apps?

It seems that the iPad and Apps can potentially offer 'something for everyone' in education. If you search the internet, you might find a large number of links relating to the iPad and autism. But many other different types of users can also benefit.

For example:

- Pre-school and Early Years children.
- Learners with: speech, language and communication problems; literacy difficulties, developmental delays and learning difficulties; visual impairments; as well as autism.
- The iPad can also be used as a communication aid (augmentative and alternative communication - 'AAC').
- iPads may sometimes engage and motivate reluctant pupils/students where other approaches have failed.
- Older and more able learners - and indeed staff - may find iPad Apps that help them to organise and manage their work flow efficiently.

We have included a short 'Glossary' on Page 165 of the Guide, as the world of iPads, iPods and iPhones introduces a number of new terminologies and acronyms.

The key and popular term is '**App**', which just stands for 'application' and refers to programs that you can run in your iPad/iPad mini/iPod/iPhone. (An iPad is useless on its own; the important thing is finding the right Apps.)

In Section 2 of this Guide, we suggest some headings and categories that may help you to sort through the vast, rapidly changing and ever-growing field of Apps in order to identify and evaluate those that might be useful.

We do not attempt the impossible, so there is no totally comprehensive list of Apps here, but rather informative suggestions for each category.

As well as providing information, the Guide also asks some reflective questions and raises issues for you and your school or organisation to consider.

Hopefully these could help to inform your plans and decisions, to ensure everything runs smoothly when you do start using iPads with your learners.

Why iPads?

iPads are undoubtedly very desirable and popular. But iPads are certainly not 'miracle solutions' for every user in every context! Here are some possible 'Pros' and 'Cons'.

Pros

- iPads are 'cool' - attractive and potentially motivating.
- iPads are light, slim and highly portable and shareable (but also easily droppable, lose-able and steal-able...)
- As mainstream technology aimed at the mass market, iPads are:
 - relatively affordable at least compared with specialist technology such as interactive whiteboards, touch monitors, dedicated communication aids etc.
 - inclusive and age-appropriate - less risk of users feeling stigmatised or standing out as 'different'.
- Excellent design: intuitive and easy to use; very bright clear screen (although bit over-reflective/glarey, for some users); innovative features; immediate 'booting up'; fast processing etc.
- Pioneering technology - new developments and new Apps and accessories appearing all the time.
- Versatile, easy to share between pupils - and fun!
- Parents can buy and have ownership of their child's use of educational/communication technology.

Cons

- On-screen keyboard - the iPad's on-screen keyboard can be unsuitable for pupils with physical access difficulties. It can also be tricky to write long word processing tasks although keyguards, switch access and Bluetooth external keyboards (and other devices) are available at an additional cost.
- You can't view multiple screens or Apps simultaneously; instead you need to flick or swipe between Apps. Some Apps now incorporate multiple windows, i.e. for web browsing and writing notes.
- Over-hyped - may raise unrealistic expectations.
- You can't always try Apps before you buy.
- You can't run standard computer software on them.
- Tricky to manage iTunes accounts, multiple devices and backups etc. in schools and therapy settings (see Chapter 7 of this Guide).

- Service providers (schools, local authorities, NHS) may see iPads as a way to save money, and start delaying or blocking access to other more specialised technology that may be needed.
- Puts additional support needs professionals and learners at the mercy of commercial forces.
- Unlike with specialist equipment, little or no support or training is available from suppliers.
- Parents can buy and have ownership of their child's use of educational/communication technology.
- While there is a great deal of anecdotal evidence to suggest that iPads are beneficial in education and therapy, it is too early perhaps to be able to point to solid research-based evidence.
- There are no options to expand the memory or use external memory cards and/or USB memory sticks.
- To use an iPad effectively, some degree of cognitive and physical skill and flexibility is required:
 - Physical/coordination skills - accurate touch, swipe, pinch (sometimes in combination).
 - Operational skills - basic device controls, mastering navigation etc.

Having said that, children seem to learn very fast how to operate an iPad, and we have seen evidence that some of those that can't at first, seem willing to persist and improve their techniques.

For communication, the iPad is only a tool, albeit a potentially good one. Basic requirements of communication are (1) A need to communicate; (2) Motivation and intention to communicate; (3) Someone to communicate to/with (and someone to spend time, pay attention and listen); (4) Something to talk about; (5) Something to talk with (i.e. a means of communication).

The iPad can certainly help with (5), and, if used creatively, can maybe help with aspects of (2) and (4). Fundamental communication skills such as initiating, turn-taking, requesting, commenting, repairing communication breakdowns etc. remain as social, linguistic and strategic skills to be mastered.

And of course, without the proper preparation, a clear idea of what you are trying to achieve for/with your learner, and appropriate support, iPads and Apps could turn out to be an expensive failure, just like any other technology.

Managing your iPad(s)

A word of warning before you start! There is a **big** difference between buying and using an iPad for yourself or a family member (pretty easy!) and buying an iPad - or several/many iPads - for a client, pupil, class or school, or as an assessment tool (pretty complicated!).

Because all App purchases, synchronisation and backups are done through an iTunes account, you have to have a clear plan about how the account will be managed. If you get started too quickly using your own credit card you may end up in trouble later, when you try to update or transfer Apps, synch several devices to one computer, backup client data, and so on.

Chapter 7 and Appendix 2 in this Guide will take you through some of these somewhat tricky manoeuvres.

iPads only? What about iPad minis, iPods and iPhones? What about other mobile devices?

Throughout this Guide, we mainly use the term 'iPad'. This is really just a convention that we have settled on, partly because the iPad tends to be the most popular device, and partly because using the full phrase 'iPads, iPad minis, iPod Touches and iPhones' every time is clumsy!

In practice, although some content in this Guide might refer exclusively to the iPad - for example, some technical details - much of the Guide is equally applicable to the iPod Touch (but not the original iPod Classic, or the iPod Shuffle or Nano music players) and to the iPhone. In particular, most of the content relating to Apps applies equally to iPads, iPad minis, iPods and iPhones (or if it doesn't we will signal this).

This particular Guide does not cover Android or other mobile platforms at this time (there may be scope to add this later). For now, we feel that the Android market is too unregulated, and too vulnerable to virus infection to recommend for use in educational or therapeutic environments.

Which device and model should I get? How much do they cost?

There is no clear-cut answer to this, as it depends who is going to use the device, in what settings, and what they want to do with it. And of course, what you want to spend. Many people will go for the iPad just because it seems to be the most versatile device. It is not too big and not too small, with a startlingly clear and bright screen visible to most people even those with some visual impairment.

The iPod and iPhone are more portable, but can be slightly too small for many users, especially those with difficulties with vision and/or hand function. The iPad mini however, could offer a more appropriate 'fit' for younger and smaller hands - where the iPad is just too big to comfortably hold.

There are currently four iPad models available; the iPad Air, iPad with Retina display, iPad mini with Retina display and the iPad mini.

The iPad with Retina display and iPad mini are only available with 16 Gigabytes (GB) of memory (storage space) with the choice of Wi-Fi only or 'Celluar' 3G/4G (which is dependent on your data plan and if your area supports the faster 4G).

The iPad Air and iPad mini Retina Display are available with 16; 32; 64, 128 GB, with Wi-Fi as standard or the more expensive Celluar option. 3G and 4G gives access to the internet more or less anywhere there is a 3G or 4G signal for the chosen provider - O2, 3 or EE (not tied to the positioning of wireless routers and accessible networks).

An iPad with Retina display (16 GB - with Wi-Fi and Bluetooth as standard) can start at about £330.00. A cheaper option is the iPad mini (16 GB 16 GB - with Wi-Fi and Bluetooth as standard) which is priced at £249.00 - a difference of about £80.00. The more expensive iPad with Retina display (16 GB) Cellular is about £430.00 and the iPad mini (16 GB) Cellular is approximately £349.00

If you're looking to buy a top of the range iPad Air or iPad mini with Retina display prices start from about £399.00 and £319.00 (16 GB) respectively although the price increases with the amount of storage; 32, 64 & 128 GB - you could pay up to as much as £650 - £730 for the Celluar models (plus 3G and 4G costs - you need a mini SIM card and there are data-transfer costs on top).

You will find further discussion of when and why you might (or might not) need 3G/4G in Chapter 5 of this guide. You will also find more detailed information about the different iPad models in Chapter 1.

Where and how to buy

Apple provides information on buying iPads for individuals and education organisations: www.apple.com/uk/education/ipad/how-to-buy/

The Scottish Government National Framework for Tablet Devices

The Scottish Government has a procurement guide to buying tablet devices through a national framework with slightly reduced prices: bit.ly/ipadframework

iPhone

If you absolutely need a phone function then obviously you need an iPhone. But many parents or education or therapy professionals specifically do not want to pay for a phone contract nor wish their child/client to be able to phone.

Pricing iPhones is complicated as it depends not only the model (5S and 5C are the latest) but also on which phone service provider and what type of contract you want.

Chapter 1: Getting to grips with the iPad



Introduction

The iPad's functionality, with its camera, microphone, Apps and iOS, has the potential to be a personal learning studio. With a bit of imagination the iPad can be a science lab, a literacy tool, an art canvas, a language lab, a music studio, a video editing suite, a games console and even a library with all your favourite eBooks. For some, it can also be a tool for communicating.

Whether you have your own personal iPad or you have iPads belonging to your school, there are some basic issues that are worth considering at the outset. From the built-in Apps, such as Contacts, Calendar, Safari and Accessibility to the added extras

available through the App Store, your iPad can open up a whole new world of possibilities - learning, usability, accessibility, functionality, enjoyment and fun! With its improved battery life and range of Apps (there are now over one million Apps to choose from) the iPad can potentially be an 'anywhere, anytime' learning device making it ideal for projects and learning taking place both in and out the classroom.

This chapter gives some practical advice on getting to know your iPad including helpful advice on protecting the screen and offering some important hints and tips to help you make the most of the iPad for yourself and your learners.

First, second, third, fourth and fifth generations of iPad – what's the difference?

The iPad was first introduced in January, 2010 and made its debut in April, 2010. Since the original announcement, there have been 5 different iPad generations released with the most current being the iPad Air, iPad with Retina display, iPad mini with Retina display and iPad mini.

Each new version has boasted new and improved features than the previous; a faster processor, better connectivity, improved battery life and more recently a high resolution screen, termed by Apple as 'Retina display', i.e. the pixels on the screen are so closely packed together you cannot make out individual pixels when looking at the screen.



Figure 1: iPad Air & iPad mini

You can compare models, features and prices on the iPad Shop web site: <http://store.apple.com/uk/ipad/compare>

Getting to know your iPad

The illustration below provides an overview of the main generic features of the iPad Air and iPad mini (with Retina displays).

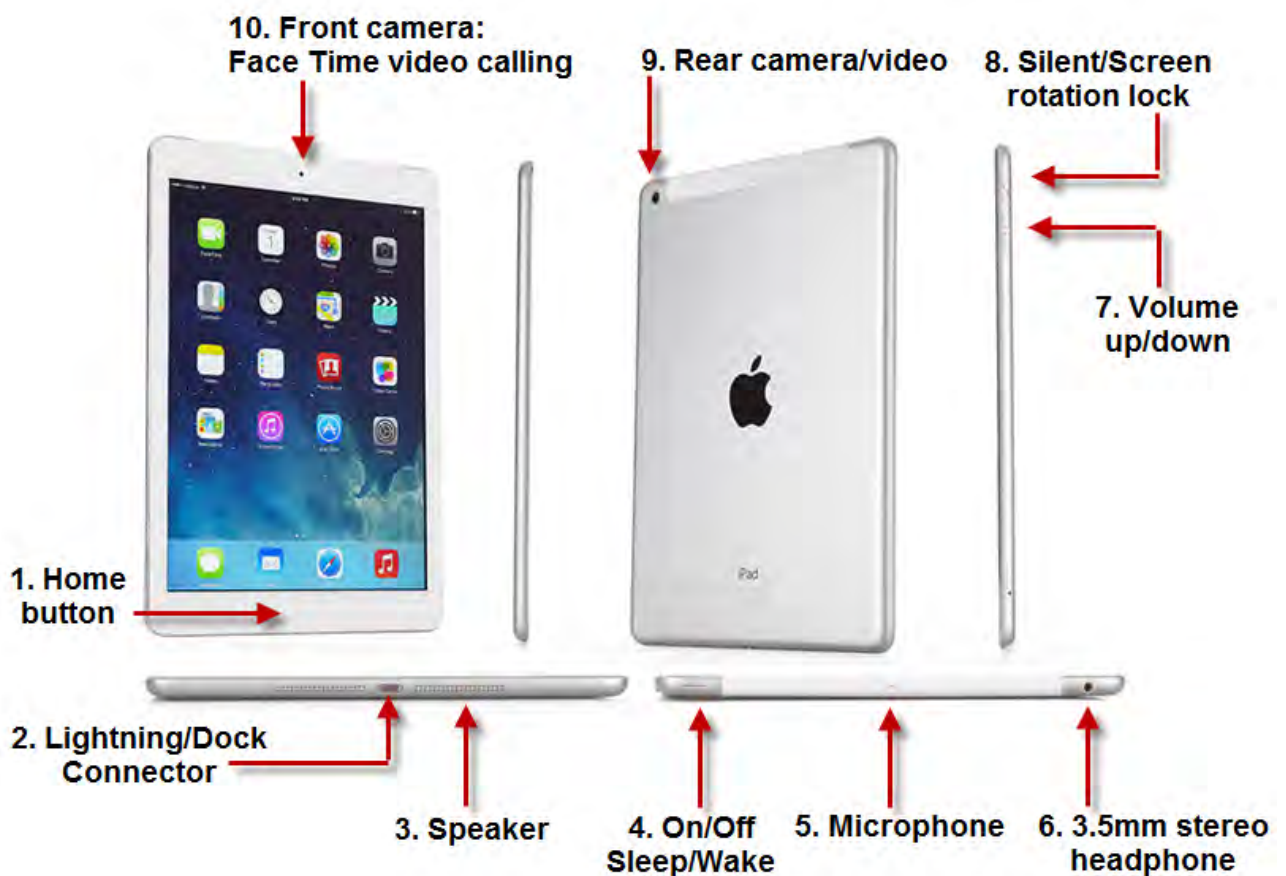


Figure 2: Getting to know your iPad.

1. Home button. Press this button when you want to exit an App and return to the home screen. The Home Button is also used to close non-responsive Apps and to rearrange Apps.
2. Dock connector. Is used for charging the iPad when connected to an electrical mains power supply. The dock connector is also used to connect the iPad to a computer so you can synchronise the iPad with iTunes and/or copying photographs to the computer. You can also use it to plug-in the Camera Connection Kit (see Chapter 3: Accessibility Options) and other external compatible devices such as a data projector, so you can reflect or mirror the iPad to a large screen for use in class.

There are two types of dock Connector, i.e. the earlier 30 pin Connector (iPad 2 and 3) and the newer Lightning Connector for the iPad Air and iPad Mini.



Figure 3: iPad Connectors.

3. Built-in Speakers - left and right.
4. On/Off button (hold to power on and off). This button also locks the iPad screen and puts the device to sleep. You can also use it to restart a frozen iPad.
5. Microphone.
6. Headphone Jack for plugging in headphones or speakers.
7. Volume Controls. Use this button to increase or lower the volume of the audio played through the speakers at the bottom of the iPad.
8. Lock Rotation/Volume/Mute button: mute and lock rotation options can be assigned to the button in Settings.
9. Rear Camera (iSight camera). A five megapixel (MP) camera for taking digital stills. Video is High Definition; 1080 dpi resolution. On older iPads, e.g. iPad 2 the resolution and quality of video and stills is lower.
10. Front Camera (Facetime HD camera). This camera records video at 720p HD resolution and works with Face Time; face-to-face video calls.

Built-in Apps

When you buy a new iPad (i.e. the iPad Air) and start it up for the first time, you will find that the iOS has a number of pre-installed or built-in Apps - 27 in total. From word processing, spreadsheets, to video and photo editing it is well worth experimenting with what's already there.

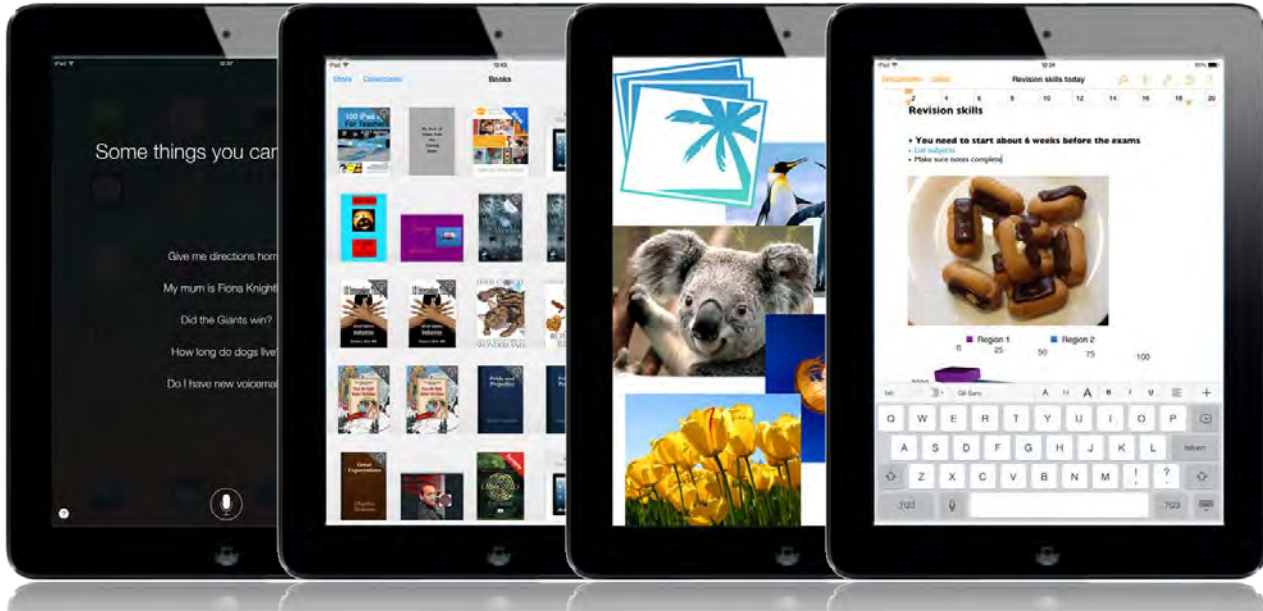





























Figure 4: Preinstalled Apps.

You'll be pleasantly surprised at the range and quality of the Apps and there's plenty to keep you occupied before you hit the App store.

 Safari	<p>Safari: the iPad's default browser for searching and browsing the web. Safari's features include adding favourite web pages to a Reading List and creating Bookmarks.</p>
 Mail	<p>Mail: a built-in email App for sending, receiving, storing and managing email conversations.</p>
 iBooks	<p>iBooks: use the iBooks App for downloading and storing electronic books. With iBooks you can adjust the font size, style and background colour for easier reading.</p>
 Photos	<p>Photos: with the Photos App you can browse through all your photographs, organise them into folders and even do simple edits such as cropping and red-eye removal.</p>

 <p>Maps</p>	<p>Maps: if you're familiar with Google Maps, then the iPad comes pre-installed with its own version of Maps. Maps requires Wi-Fi to search and display directions or find local services but you have an iPad with 3G, Maps can be used as a GPS for the car.</p>
 <p>FaceTime</p>	<p>FaceTime: FaceTime uses the iPads front facing camera to make video phone calls so you can see and speak to friends and family.</p>
 <p>Newsstand</p>	<p>Newsstand: with Newsstand you can subscribe to digital versions of popular magazines - some offer a 'try before you buy'.</p>
 <p>Messages</p>	<p>Messages: send instant messages for free to anyone with an iPad or iPhone.</p>
 <p>iTunes Store</p>	<p>iTunes: for browsing, buying and downloading films, music, TV programmes and audiobooks directly to your iPad.</p>
 <p>App Store</p>	<p>App Store: for purchasing and downloading Apps on your iPad. There are also plenty of free Apps to download. Always read the reviews before downloading.</p>
 <p>iPhoto</p>	<p>iPhoto: great for viewing, organising and sharing photos. iPhoto also has some basic tools to edit your photos, such as cropping, colour enhancer, paint brushes and some interesting colour effects.</p>
 <p>iMovie</p>	<p>iMovie: iMovie is a powerful yet easy-to-use video editor and includes a range of built-in trailer templates. You can edit videos taken directly from the iPad's camera then upload them to video hosting sites such as YouTube or Vimeo.</p>
 <p>GarageBand</p>	<p>GarageBand: create music on your iPad from a selection of instruments, including a grand piano, acoustic and electric guitars and more. Don't worry if you can't play as the Smart Instruments have everything you need to create music and have fun.</p>

 <p>Pages</p>	<p>Pages: Pages is a word processor which has similar tools to Microsoft Word. Pages can open existing Word documents and save to Word as well as PDF and ePub formats. The App also includes colourful templates and options for different fonts styles and sizes as well as drawing tools, graphs, charts and more.</p>
 <p>Numbers</p>	<p>Numbers: Numbers is a fully-fledged spreadsheet App which includes the usual rows and columns but also features Formulas to calculate simple and complex data which can be converted to colourful charts, graphs and tables. Numbers includes over 30 templates to help you get started.</p>
 <p>Keynote</p>	<p>Keynote: if you need to do a presentation, Keynote will allow you to present straight from your iPad. Keynote will open existing PowerPoint slides and save Keynote slides to other formats such as PowerPoint and PDF.</p>
 <p>Calendar</p>	<p>Calendar: the calendar App will allow you to set up events and share them through other compatible devices such as your iPhone. You can set up multiple calendars and even synchronise calendars to existing ones such as Google Calendar which means you can keep all your important dates and events in one place.</p>
 <p>Music</p>	<p>Music: the Music App is where you store downloaded music tracks from iTunes. You can create custom playlists and organise your music by songs, artists and albums.</p>
 <p>Videos</p>	<p>Videos: you can use Videos to play films or TV programmes that you have purchased in iTunes or copied across from your computer, via iTunes.</p>
 <p>Siri</p>	<p>Siri: hold the Home button down for a couple of seconds and Siri responds by asking, "What can I help you with?" If you are not sure what to ask Siri will provide some questions such as 'what is the weather like tomorrow?'. Siri requires a Wi-Fi connection.</p>

 <p>Reminders</p>	<p>Reminders: with Reminders you can create and schedule reminders or notifications by day and time and set it to repeat on a regular basis. Reminders can also be used as a 'to do' or 'task' list.</p>
 <p>Contacts</p>	<p>Contacts: keep and organise all your contacts in the one place. Contacts can be synchronised with other devices such as an iPhone so every time a new contact is added or updated - everything is updated automatically.</p>
 <p>Camera</p>	<p>Camera: the iSight, rear facing camera can be used to take photos and video.</p>
 <p>Notes</p>	<p>Notes: Notes is a simple note-taking App for writing and storing notes. Notes can also be used as 'to do' list or for creating lists of everyday things.</p>
 <p>Photo Booth</p>	<p>Photo Booth: great for taking fun photos with different effects, including twirl, stretch, mirror effects and more.</p>
 <p>Clock</p>	<p>Clock: as well as keeping track of time, the Clock App is useful for setting alarms and as a stopwatch.</p>
 <p>Game Center</p>	<p>Game Center: for playing online games.</p>

Evaluating Apps

If you are unsure about the 'relevance' or 'purpose' of specific Apps, Glasgow Caledonian University has developed a checklist to help you evaluate Apps before you use them. The checklist is based on eight criteria including Currency: how current is the App? Relevance: How relevant is it to your educational purpose or outcomes? Authority: Who created the App etc? To see the full framework and download the checklist go to: bit.ly/appchecklist.



iPad Settings

If you haven't already done so, a good starting point is to familiarise yourself with Settings. Settings can be best explained as the 'Mission Control' of the iPad, the place where you can control, customise, expand, restrict, connect to Wi-Fi or external devices via Bluetooth and more. Settings also contains Accessibility where you can increase the magnification of the icons and text and even control the iPad using switch access via Switch Control.



Many of the Apps installed on the iPad can also be customised in Settings, particularly some of the AAC Apps which have built-in scanning options. Settings will be explored in more depth in the hints and tips section so it is recommended even at this early stage that you tap the Settings icon and start exploring the potential the iPad has to offer.

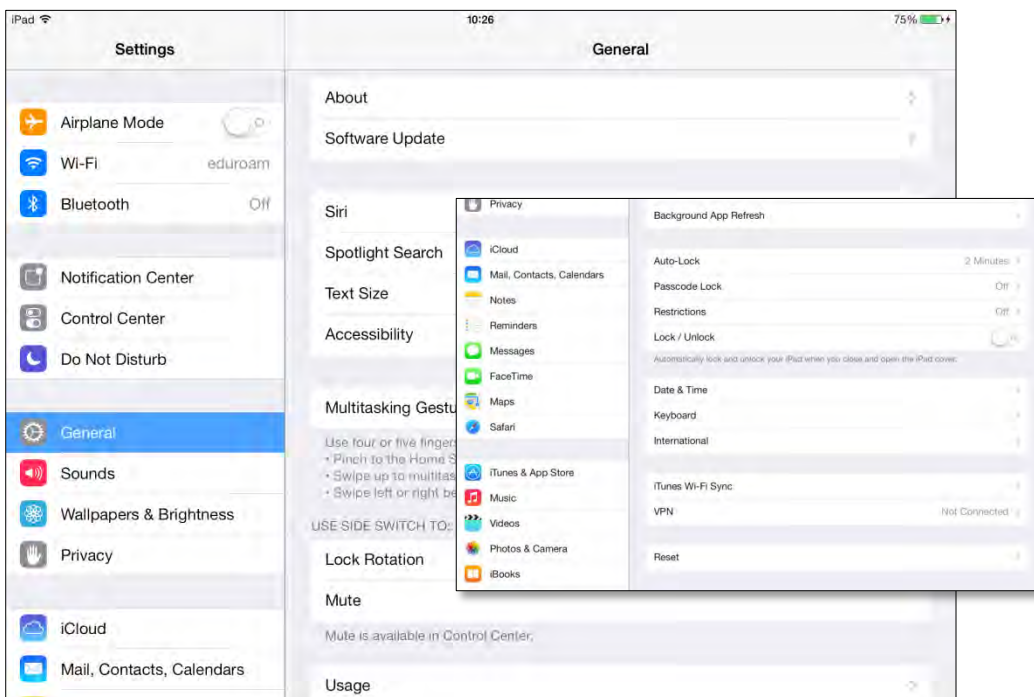


Figure 5: Settings.

Protecting your iPad

Protecting your iPad from the start can not only save money but can protect you from the emotional stress of having your device scarred with scratches. A scratched screen can limit the experience and enjoyment of using your favourite Apps. Even more so if you have an iPad Air with its Retina Display high-definition screen.

There is a range of iPad accessories including protective cases, wheelchair mounts (see Chapter 4: iPad Accessories). Protective cases are widely available; some come equipped with Bluetooth keyboards, built-in stands and screen protection, some are available in luxury leather portfolio cases and others are more specialised, particularly for children with mobility difficulties and those with

challenging behaviour who may not understand or appreciate the value, cost and fragility of an iPad.

If a protective case is beyond your budget then the least you can do to protect the screen is to consider a screen protector - a transparent overlay which covers the entire screen (often with holes providing access to the Home Button and front and rear cameras).

A quick Internet search for 'iPad protective screen' or 'iPad case' will display an array of options. Typically prices can range from basic screen protectors (usually a thin, clear plastic overlay which fits on the screen) from about £3.00 and/or cases from about £14.00.

A disadvantage of screen protectors is that they can be fiddly and difficult to fit. A poorly fitted screen protector can often leave a patchwork of air bubbles which are impossible to disperse despite constant smoothing. A credit card or soft plastic card can help to flatten out bubbles - but please take care!



Figure 6: Protective screens are also available in Matt.

Anti-Glare

For many people the iPad's 'glossiness' and shine is a major attraction but for others it can be distracting as the glare and/or reflection produced by a combination of refracted light on the glossy screen can be off-putting and painful to the eyes.

A frosted screen cover which minimises glare and reduces the brightness of the backlit display can help.

Applying anti-reflective covers such as the frosted screen cover will result in a depreciation of colour rendition (less vibrant colours, not quite so deep blacks) but such covers can make a big difference to those who find the reflective light difficult or impossible to view.

A quick search on Google or Safari (the iPad's default web browser) for 'iPad matt screens' or 'iPad frosted screens' will provide fruitful results.



Figure 7: A frosted cover can help to prevent glare.

20 hints and tips for making the most of your iPad

1. Turning your iPad on and off

To turn on your iPad press the Power button (located at the top right hand side of the iPad) for about 5 seconds. A 'white apple' icon will appear on the screen to indicate the iPad is powering up.

To turn off the iPad hold the power button until you see the 'slide to power off' screen. Slide the white and red 'power off' button/circle to the right hand side. The iPad will power down. To cancel, tap the white 'Cancel' button/circle located at the bottom of the screen.

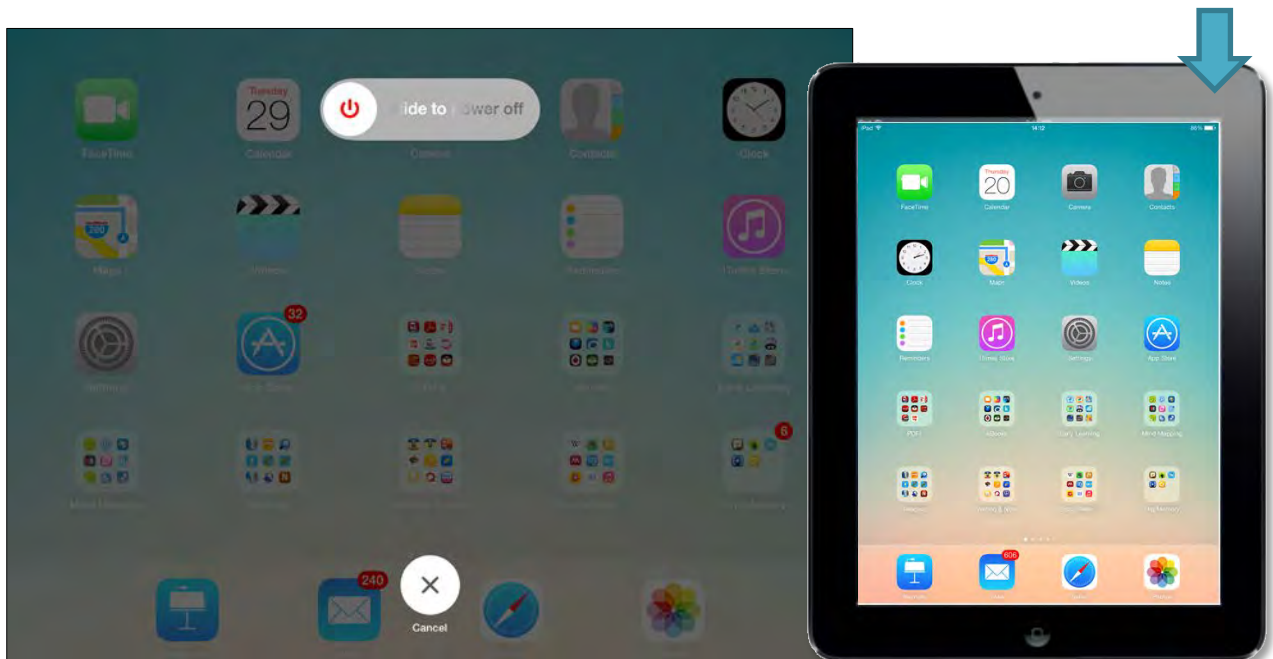


Figure 8: Turning off the iPad.

The power button also acts as a 'sleep mode' which can help conserve battery power when the iPad is not in use. To put the iPad into sleep mode press, hold and release the power button and the screen will turn black, i.e. sleep mode.

To come out of sleep mode gently press the power button until the screen turns on. You can also use the Home button (the Circular button on your device), located at the bottom of the iPad, to exit sleep mode.

2. The Home button

The Home button is an important and much-used control. It is a circular button with a square icon on it, indented into the top surface of the iPad. The Home button can be used to see all your active Apps (double-click) or as a shortcut to get access to Accessibility Options (triple-click).



Figure 9: The Home button.

3. Volume and Mute

The volume controls are located on the long side of the iPad (just round the corner from the On/Off Power Button).

1. Volume control for increasing and decreasing sound volume.
2. Mute slide switch to mute all sounds (if enabled in Settings).
3. Main power On/Off button.



Figure 10: Volume and mute buttons.

If you want to enable the Mute button go to Settings, General, 'Use Slide Switch To', and finally select Mute.

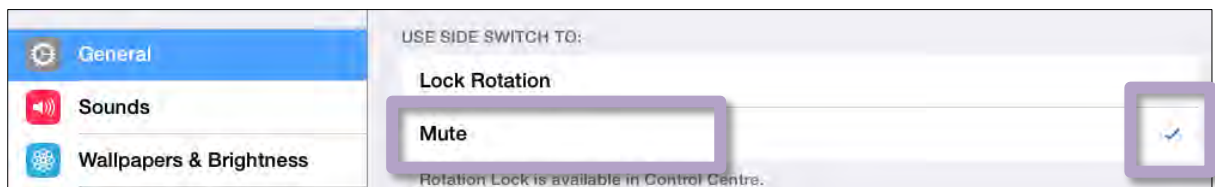


Figure 11: Mute in Settings.

4. Lock Rotation (and/or Mute) and Control Center

The iPad screen rotates a full 360 degrees so it can be viewed in both landscape (horizontal) and portrait (vertical) modes, e.g. this gives you the flexibility of choosing landscape for surfing the internet or portrait for reading eBooks.



It can also be confusing if the screen is constantly moving around; from landscape to portrait and vice versa. It's often a good idea to lock the rotation of the iPad, so that it stays in one position and doesn't move. Lock Rotation is located in Settings > General, 'Use Slide Switch To' and Lock Rotation. When Lock Rotation is selected it disables and replaces the function of the 'Mute' slide switch, and swaps its role to Lock Rotation.

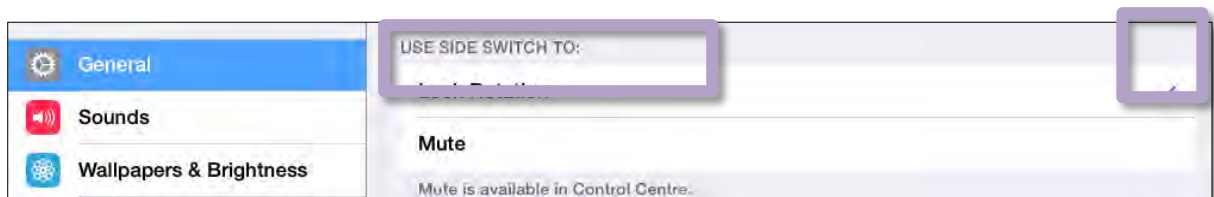


Figure 12: Use Slide Switch.

The Control Center is a sort of 'short cut' to various useful settings (volume, brightness, camera, Wi-Fi etc.). Whether you want to use it or not, it's helpful to know about it, in case you activate it by mistake and wonder what's happening!

- To access Control Center, flick or swipe upwards from the very bottom of the screen. You'll see a grey panel/window appear



Figure 13: Control Center located at bottom of the screen.

- Sometimes this won't work because of the kind of case your iPad is in: you may have to peel back the case at the bottom edge of the iPad before you can flick the Control Center to see it. (Actually, this can sometimes be quite handy, as you don't necessarily want the Control Panel appearing all the time).
- To close Control Center, swipe down, tap the top of the screen, or press the Home button.

The Control Center is always available from the Home screen. However, you can enable and disable access to Control Center for when the screen is locked or when you are within an App. Go into Settings, then Control Centre. It's usually best to turn the 'Access with Apps' setting OFF (or turn both off) as it can be confusing and annoying when the Control Center pops up unintentionally.

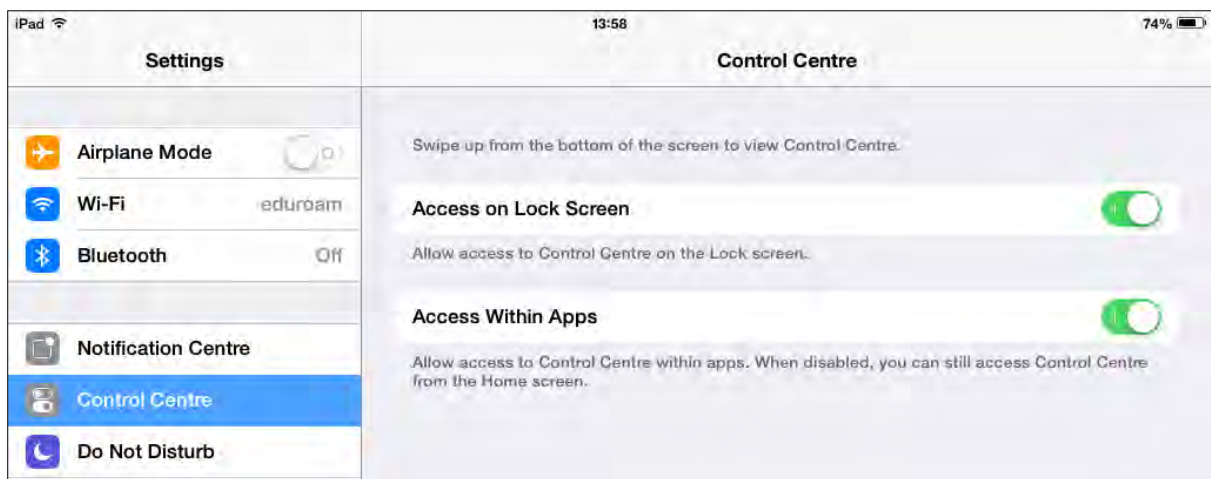


Figure 14: Control Center in Settings.

Accessing Lock Rotation and Mute from Control Center

Lock Rotation or Mute is located in Settings > General and 'Use Side Switch to'. Whichever is selected in Settings, the alternative will be offered in the Control Center, so you can quickly switch between them.

For example, if you have selected Lock Rotation in Settings, Mute will be available in Control Center. This can be puzzling at first, but after a couple of minutes of experimenting, it won't take long to familiarise yourself with the different settings.

In the illustration below Lock Rotation has been assigned to the Side Switch so Mute is now available from the Control Center.



Figure 15: Assigning functions to Control Center.

5. Notification Center

Notification Center is designed for personal use of an iPad i.e. alerts and notifications linked to the Calendar and Reminder Apps. Whereas the Control Center is a flick up (or pull-up) from the bottom of the iPad, the Notification Center is a flick down (or pull-down) from the top edge of the iPad's screen.

It's unlikely you'll want to use it in a school, and it can be a bit of a nuisance, so you might want to turn it all off.

But for individual or personalised use to help with school timetables, homework schedules etc. Notification Center is worth exploring.

Notification Center is located in Settings just above Control Center.



Figure 16: Notification Center.

6. Spotlight Search

Spotlight Search is an easy and quick way to find an App. If your screen is becoming cluttered with lots of Apps, and finding Apps is becoming difficult and time consuming, then Spotlight Search will make all the difference.

To find Spotlight Search tap the iPad's screen (preferably in the middle of the screen and in a space between the App icons) and drag your finger down until the search box at the top of the screen appears.

The on-screen keyboard appears simultaneously. In the Search box type the name of the App you want to find. You only need to type the first letter of the App for it to appear, e.g. in the example below the letter 'K' is typed and the Kindle App appears top of the list.

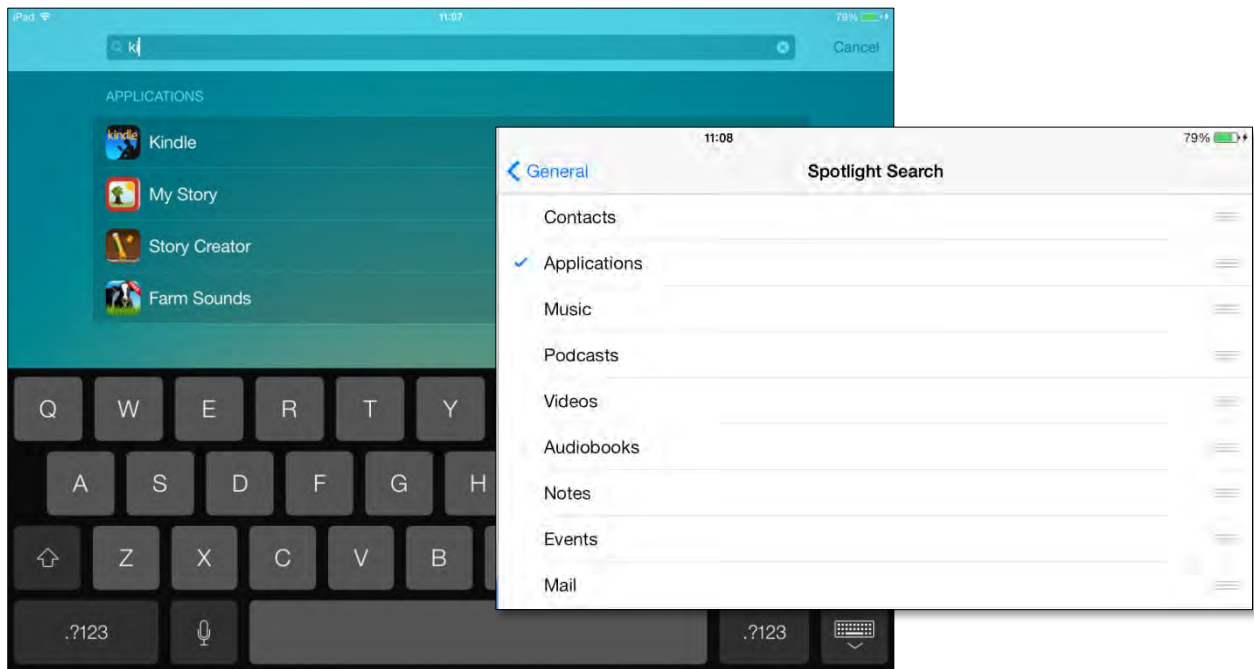


Figure 17: Spotlight Search.

Finely tune Spotlight Search

You can adjust Spotlight Search so you can define what items you want to Spotlight Search to find, e.g. Contacts, Applications, Music, Podcasts, Videos etc.

- Tap Settings > General and Spotlight Search.
- Tap to select or deselect the item(s) you want then return to main screen - General and Settings.

7. Rearranging Icons

If you want to rearrange the icons on your screen, tap and hold on any icon until it starts to shake or jiggle - jiggle mode.

When in jiggle mode drag the icon to its new location. Ensure you do not press the 'x' on the icon as this will delete it. Press the Home button to exit jiggle mode.

8. Create Folders

You can create folders on the iPad in the same way as you would create a folder on a desktop or laptop computer. Putting Apps into folders helps to keep your screen organised and helps you to find Apps quickly without endless scrolling through pages.

Creating folders on the iPad is straightforward. In order to create a folder, follow the steps below:

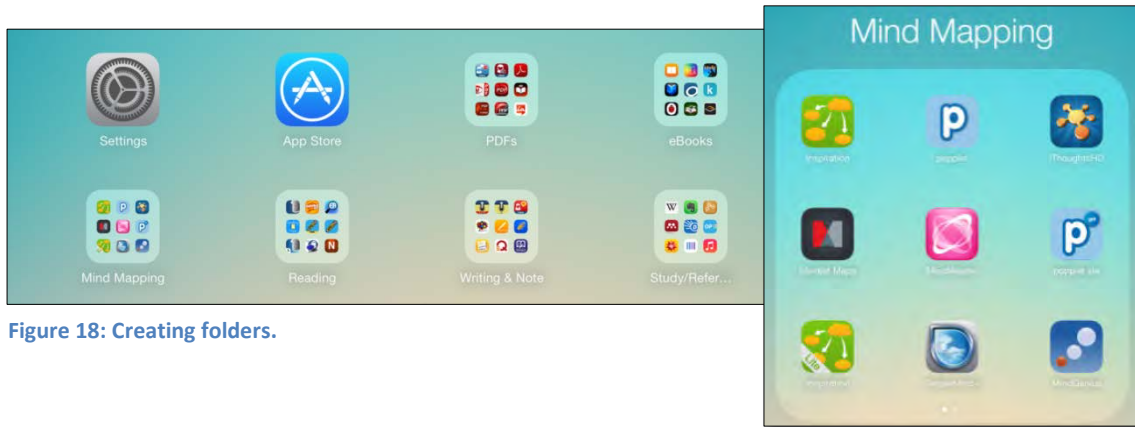


Figure 18: Creating folders.

- Tap and hold an App on the screen until it and the other Apps start pulsing or jiggling - jiggle mode.
- Choose the Apps you want to put into a folder and then drag one App on top of the other. Repeat until all your chosen Apps are in the one folder.
- Press the Home button to finish the process.
- Follow the same steps to create more folders.
- To remove Apps from folders, tap and hold the folder until they start pulsing or jiggling, then drag each App out of the folder onto the screen. Press the Home button to complete the process.

9. Renaming folders

If you want to rename a folder, tap and hold on the folder you want to rename until it starts to jiggle.

While the folder is jiggling tap the folder to open it. Click on the folder's title. The keyboard will appear - now enter the appropriate text to rename your folder.



Figure 19: Renaming folders.

10. Keyboard Options

Docking and Undocking the keyboard

The Undock option allows you to move and position the keyboard from the default position (the bottom of the screen) to any position, i.e. next to a line of text making it easier to see what you're writing as you type, similar to the illustration below.



Figure 20: Docking and Undocking the keyboard.

To Undock the keyboard from the default position tap and hold the keyboard icon on the far right hand side of the keyboard until the pop-up menu appears. Tap Undock.

- Then tap, hold and gently move the keyboard up and down the screen to where you want to position it, i.e. next to where you are typing.
- To Dock the keyboard, so it sits in the default location, at the bottom of the screen, tap Dock. The keyboard will automatically move to its original position.

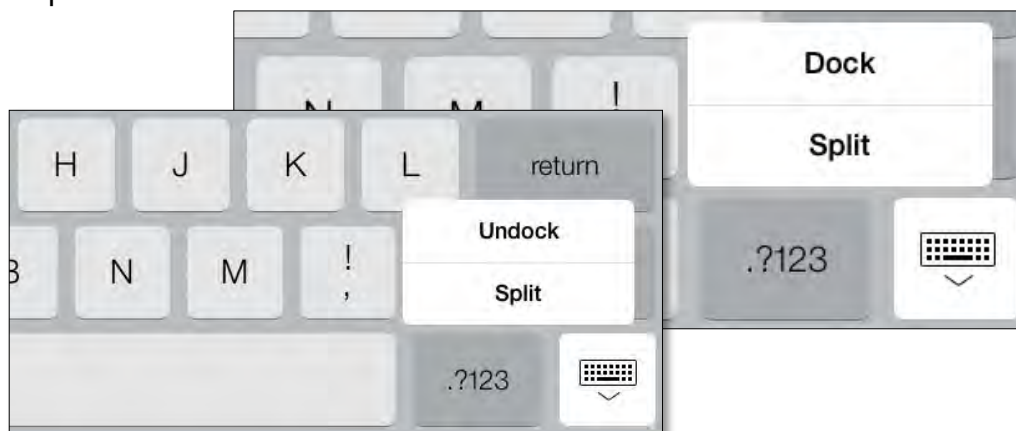


Figure 21: Tap and hold the keyboard icon.

Splitting and merging the keyboard

Splitting the keyboard may not be to everyone's taste but for some users it could be useful, particularly if you want to use both hands and/or 'thumb type' to input text.

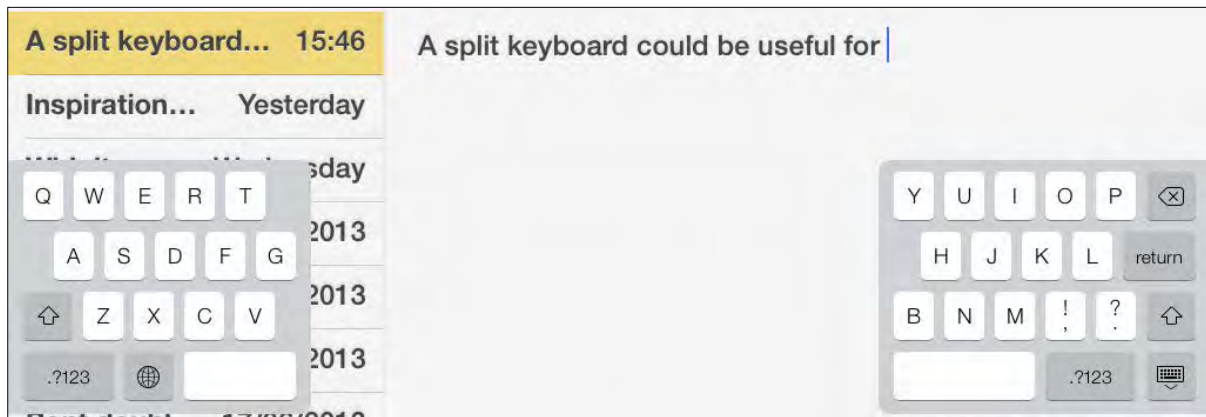


Figure 22: Splitting and merging the keyboard.

Tap and hold your finger on the keyboard icon for Dock or Split to appear. Tap to Split the keyboard and tap again to Merge the keyboard.

11. Shortcuts

If you are familiar with Auto-Text in Microsoft Word then Shortcuts is very similar. Word's Auto-Text is like abbreviation expansion, you type the first two or three characters into your document and you are prompted with the completed word or phrase. By pressing the Spacebar or Enter key you input the text.

Shortcuts can help to cut down keystrokes while at the same time help a user to enter a large amount of text with the least amount of input and effort. It can be particularly useful for someone with poor mobility difficulties. However, if you have collated a large number of Shortcuts a good memory is essential to remember each abbreviation that has been created.

In the example below 'ab' is used to expand the sentence; 'Abbreviation expansion can help to increase typing speed'.

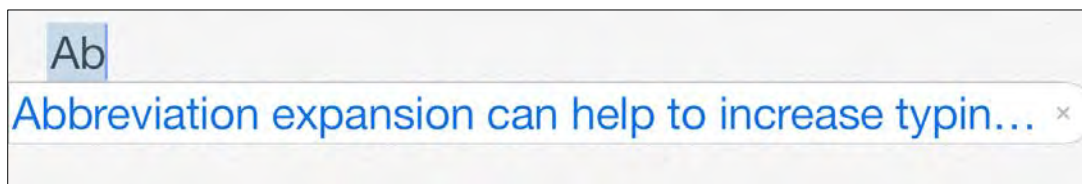


Figure 23: Shortcuts.

First of all you need to create a bank of Shortcuts, or short abbreviations that you want to expand. As you create new Shortcuts they are stored together in alphabetical order.

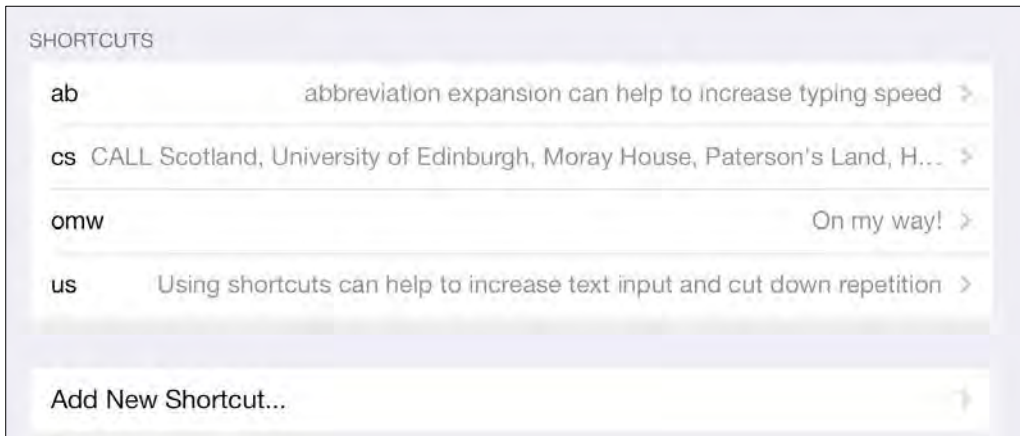


Figure 24: Adding and editing Shortcuts.

- To start go to Settings > General, and scroll down until you see 'Keyboard'.
- In the keyboard screen tap 'Add new Shortcut'.
- Type the phrase you want expanded.
- Type the shortcut.
- Tap 'Save'.



Figure 25: Saving Shortcuts.

Now try typing your new Shortcut in Notes, or email or any other text-based application which uses the iPad's keyboard. Remember to tap the Spacebar on the keyboard to enter the abbreviation.

Use Shortcuts to help with spelling

You can use Shortcuts to create your own bank of correctly spelled words by using Shortcuts, i.e. enter the word/spelling in Phrase and the

abbreviation in Shortcut, e.g. 'acc' for 'accommodation'. This method could be helpful for words which the iPad's dictionary fails to recognise.

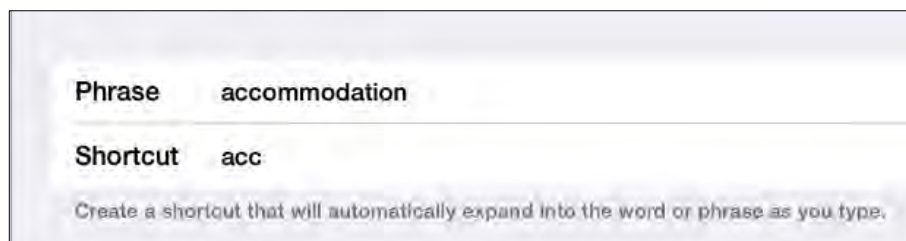


Figure 26: Use Shortcuts to support spelling.

Another useful way of using Shortcuts is to support spelling. As mentioned previously, Shortcuts can expand words or phrases after the first or second keystroke.

New 'Phrases' created in Shortcuts can be used to correct common or individualised spelling mistakes, similar to the example below, although in some cases the misspelled word must be completed before the correct spelling appears.

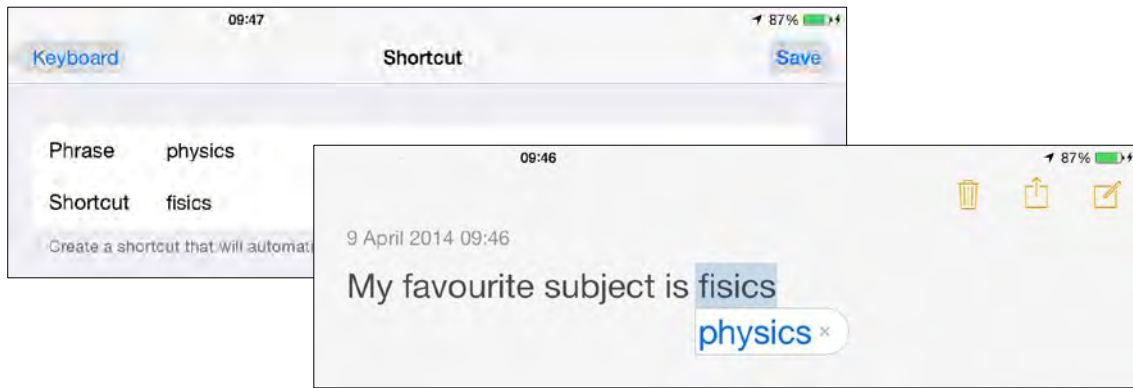


Figure 27: Example of Shortcuts correcting a spelling mistake.

Depending on the age, level, skill and spelling ability of individual pupils, spelling corrections may need to be done manually by a teacher, learning assistant, parent or a helper.

12. Multi-tasking

The multi-tasking feature allows you to have one or more Apps open at the same time. Multi-tasking also allows you to keep individual Apps open without closing the App, so you can move between Apps.

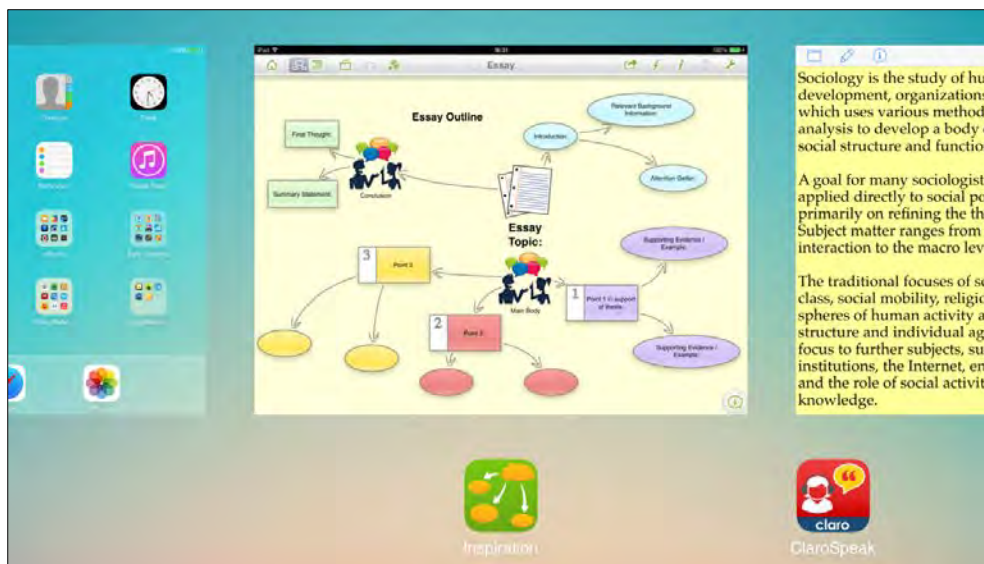


Figure 28: Multi-tasking on the iPad.

You can easily switch from App to App seamlessly and speedily. You can use multi-tasking in landscape and portrait layout.

- To start the multi-tasking feature, double-click the Home button on your device.
- Double clicking the Home button pushes the screen outwards so you can see all your open or active Apps.
- Simply swipe or flick the active screens or icons (underneath each App) to the right or to the left until you find your chosen App. Tap the App screen or icon to start.
- Double-click the Home button to close the active icons and the multi-tasking feature. The screen will return to its normal view.

13. Closing an open App

To close an App, double-click the Home button until you see the active Apps. Select the App you want to close and flick it to the top of the screen until it disappears.

14. Safari Browser and Reader

Safari is the iPad's default web browser. Reader is a feature in the iPad's Safari browser. Some websites can be cluttered making it difficult to read or identify the main information. Safari Reader lets you view web articles in an uncluttered linear format. Not all websites offer the Reader facility but when Reader is available the 'Reader' icon appears in the URL/search pane. One example where you can view the Reader option is Wikipedia.

Go to www.wikipedia.org and type a subject to see the Reader icon appear: 4 horizontal lines one under the other. To activate the Reader touch or tap the Reader icon and a new page will appear. The Reader icon also changes colour to 'black'. To close the Reader panel touch the black Reader icon.

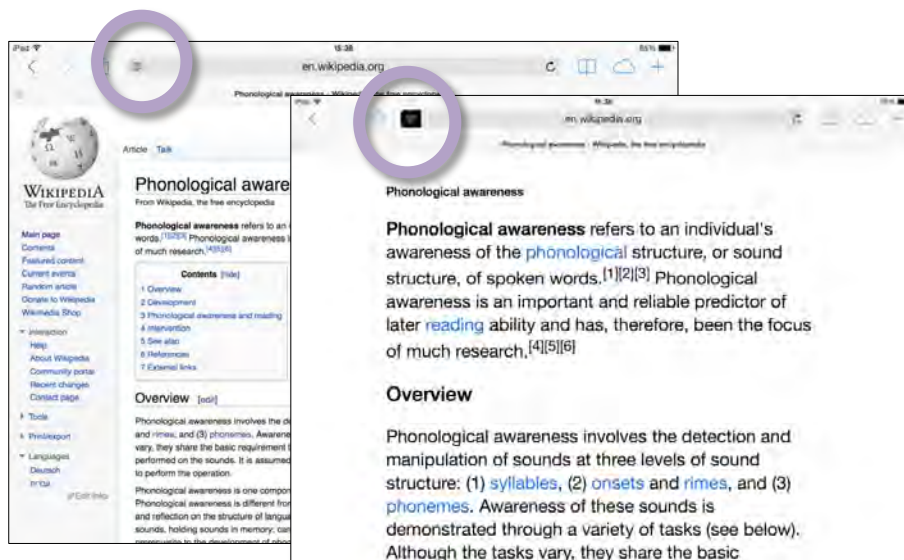


Figure 29: Safari Browser and Reader.

15. Take a screen shot

To take a photo (screen shot) of your screen or an App or any part of the iPad - hold down the Home button and Power On/Off buttons together at the same time until you see the screen momentarily turn white.

After the screen turns white let go of the buttons. If the volume is on you will also hear a 'snapshot' camera sound. Look in the 'Photos' album to see your screen shot.

You can use screen shots of your iPad to make instructional tutorials or you can use them in story Apps to capture images within Apps, e.g. an image, an interesting background, a cartoon character etc.



Figure 30: Examples of screen shots.

16. Restrictions

Restrictions, also known as Parental Controls, allows you to prevent access to specific features and content on the iPad such as the web browser Safari, YouTube, as well as options to prevent a user from installing or deleting Apps. To set Restrictions, tap Settings > General and Restrictions.

To Enable Restrictions, tap Enable Restrictions and enter a passcode. The passcode will be required to make changes to these settings or to disable restrictions. You can also control access to 'Allowed Content' by restricting items such as books, movies, TV Shows, Apps, Websites etc. that could potentially have adult content.

17. Save Images from the web

If you find an image or a photograph that you would like to keep when surfing the web, press and hold your finger on the photograph or image for a few seconds until a pop-up menu appears. Tap on the 'Save Image' button and the image is automatically saved to your iPad's photo library.

18. Create web thumbnails

Although the Bookmark option in Safari can help to organise websites you can also create web clippings or thumbnails of your favourite websites.

Choose a website and then select the 'Share' icon at the top of the page (to the left of the URL address box).

When the drop-down menu appears select 'Add to Home Screen'.

This creates an icon or thumbnail of the website.

You could also create a folder and drag or organise all your favourite web clippings into one folder.

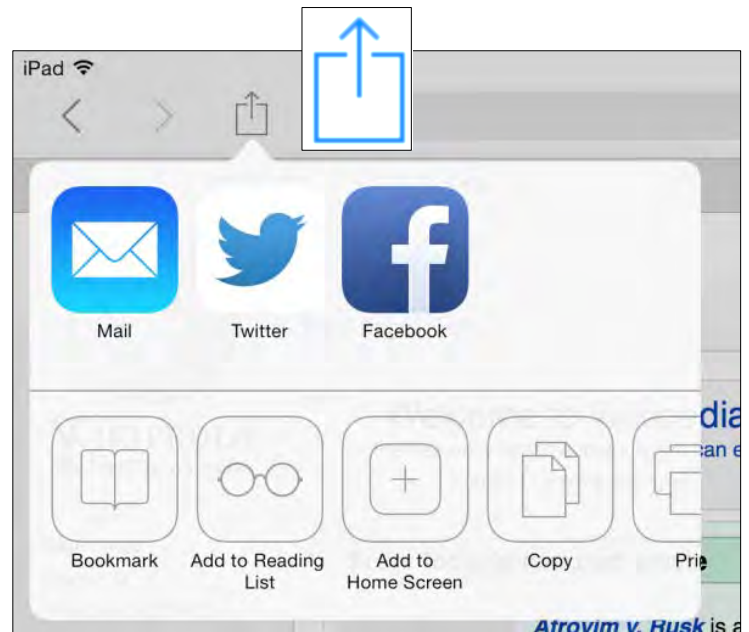


Figure 31: The 'Share' icon.

19. Add full stops to sentences

To automatically add a full stop at the end of sentence double-tap the space bar.

20. Protect your iPad and data

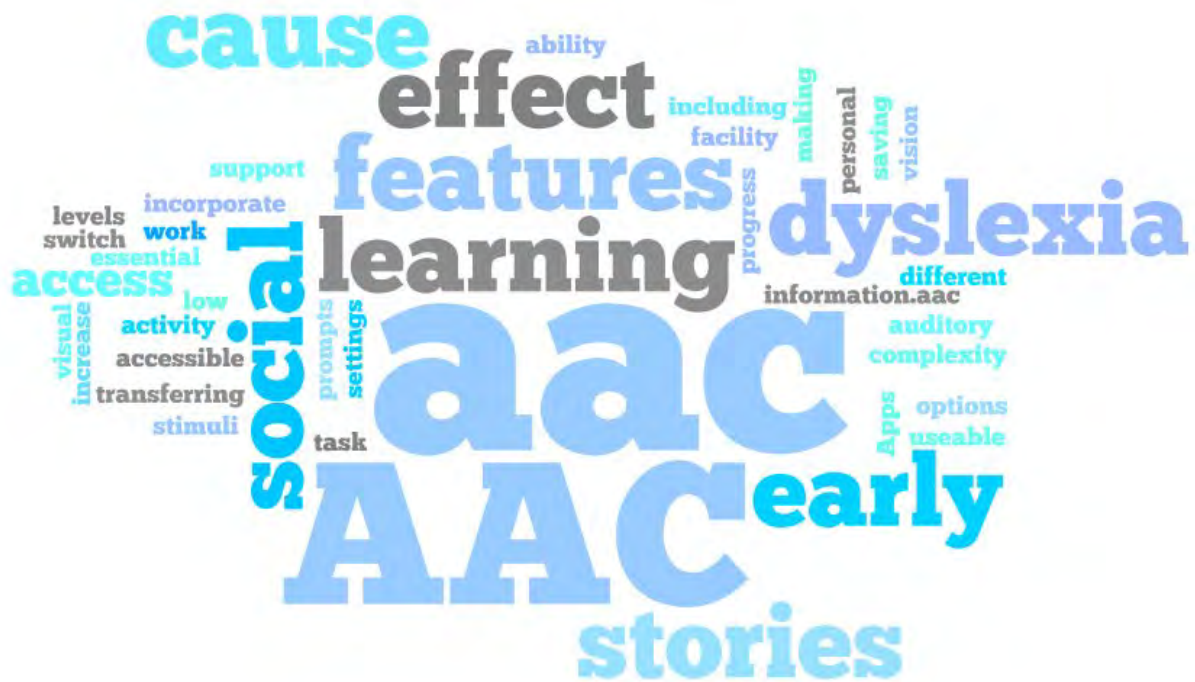
Always try to keep your iPad and data secure by using the passcode option - Settings > General and Passcode Lock and select Turn Passcode On. You can create more complex Passcodes by typing in your current passcode and turning off Simple Passcode. This allows you to create a new code that contains both numbers and letters.

More iPad Tips, Tricks, and Tutorials

Only a few of the iPad's hints and tricks are covered here, there are many, many more! To see the complete list of tips, tricks and tutorials the 'Trusted Reviews' website is a good place to start:

www.trustedreviews.com/opinions/ios-7-tips-and-tricks-a-simple-guide

Chapter 2: Apps to support teaching and learning



Introduction

There are literally hundreds of thousands of Apps - for just about everything you might possibly want to learn, do, see, hear, play with, say, practise, or share. But, with so many to choose from, how do you find the best App(s) for your learners' needs?

Making mistakes when selecting Apps can be costly, not necessarily from a financial point of view (as many Apps are free or pretty cheap), but in terms of time and effort wasted and frustration experienced if they turn out to be of limited use to learners. Chopping and changing to new Apps all the time is not a good learning environment for learners. A few reliable and versatile tools, ideally with a clear and consistent interface,

will be more productive than a 'rag bag' of unconnected activities. The purpose of this chapter is to provide you with guidance on identifying and selecting useful Apps for learners who need support for communication, language, literacy and learning, with suggestions about particular features to look out for.

Additional Support Needs

Pupils with additional support needs can do well with standard Apps but are likely to also benefit from Apps offering extra options and flexibility. For example: extra visual and/or auditory prompts; good quality local-sounding voices; different levels and the ability to increase task complexity

for progress through an activity; support for low vision; editable settings; special access options including, potentially, switch access; and a facility for saving and transferring any personal work or information. Teachers especially like Apps that collect and record user data.

General Features to look for in any App

US versions

Many Apps are written and developed in the US. This may not matter, but can really show up as a problem in the area of Phonics and early spelling activities, because US Apps use upper case letters and letter names instead of letter sounds, and may offer only US voices.

Editable content

An App will be more motivating and useful if its content can be customised to the learner's interests, and takes account of personal needs and preferences. Check whether Apps can be edited to include relevant and familiar photographs, pictures, symbols, vocabularies and topics.

Range of Settings

An App with a wide range of possible settings is more likely to include the exactly suitable settings for particular learners. This may make an App slightly more complicated to set up, but it could make it many times more usable and useful. Surprisingly, many people don't look through/try out the settings properly.

Many Apps show a 'cogwheel' icon within the App to indicate where to find the settings. Some Apps also have other settings in the iPad's own Settings on the desktop (scroll down to the 7th block of items) - these may include more global settings such as enabling editing or sharing.



Check both sets of settings out, to optimise for your learner and to ensure that you are familiar with the range of functions of the App.

Tutorial materials, guides and support

Information to assist you in setting up, configuring and using an App (apart from very basic Apps) is very important. Many Apps have a basic Help option (or even a full Manual) within them; others will direct you to the developer's website, where more comprehensive help and support materials may be available. Increasingly, Apps often have video guides on YouTube or hints and tips written by third party users within other web forums and blogs (see Chapter 5: iPad Resources), so it is always worth digging a little and Googling to find out what help material is available.

Controlling 'exploring', and Guided Access

As App users will often be inquisitive, it's important that key functions such as Edit and Delete can be hidden or locked to prevent 'fiddling' that might distract the learner or even cause accidental loss of carefully prepared material. This function

may be offered within an individual App, or can be provided through Guided Access, which is a setting in the iPad's own in-built Accessibility options (only in iOS 6 and above). See Chapter 3: Accessibility, on how to set up and operate.

Guided Access allows you to disable 'dangerous' buttons and to 'lock' the child into the App you want them to be using. This stops them wandering into Editing mode, or repeatedly pressing the Home button and continually exploring the desktop and flicking in and out of other Apps, instead of focusing on the task in hand. Find this valuable tool in Settings > General > Accessibility > Guided Access. *Guided Access could be the single most useful function, when using the iPad with some children with additional support needs.*

Access options

Most Apps are operated by direct touch control with a finger or specialised pointer (see also iPad stylus in Chapter 3) requiring fairly accurate fine motor control. Certain Apps are designed to accommodate those with reduced physical ability and allow for minor adjustments to be made to the screen response, such as touch delay in the case of tremor. Such Apps may incorporate larger target cells or the ability to customise the size of a cell or button (and the space between them).

If further access support is required, then switch access may be the best option. This allows control with one or two switches and with onscreen scanning in which cells/buttons are highlighted, one-by-one, by a moving cursor, then selected by a carefully timed switch press. This requires a Bluetooth switch interface. There are simple interfaces and more complex ones. If you just want to operate Apps (not integrate with wheelchair control for example), simple is OK.



Figure 32 Left to Right: Blue2 switch interface (thanks to SENICT for picture)- APPLICATOR for iPad, both from Inclusive Technology Ltd.

Previously, only a very few Apps were designed specifically for switch access (notably, some of the Apps for communication), and although things have moved on since then, these Apps tend to be the ones that offer the widest range of useful scan options and functions, and may still be the 'safest' choice for switch users.

However, since the advent of the iPad operating system, iOS 7, new Accessibility settings built-in to the iPad itself mean that almost any/all Apps (and indeed the entire iPad, desktop, and all functions) can - theoretically anyway - be operated by external switches (or by using the screen as a switch, or even head movements).

Some - but not all - Apps that were not specifically designed for switch access will run very satisfactorily under 'Switch Control' in the iPads' own accessibility settings. But there are a few that do not work at all - or not well - with switch access. Some were simply not designed with scanning in mind, and their layout is illogical or tedious in this mode. Others, instead of getting a scanning box that highlights each row & column in turn, they use a rapid 'gliding cursor', which can be very tricky. So if you know you are going to need switch access, never buy an App (at least, not an expensive one) that claims to be switch accessible, without first carefully checking which switch interface is needed, what settings are available and - if possible - perhaps via a specialist centre such as CALL Scotland - whether it actually works or not!

In summary, in spite of many more exciting possibilities than before, in practice it can still be pretty complex to set up the interface and switches and settings correctly. (See Chapter 3 for more details).

App Pricing Options

Everybody loves a free App, but unfortunately free does not necessarily mean good. (Although expensive does not necessarily equate with good, either!) Apps that you buy can cost anything from £0.69p upwards. (Prices do seem to be creeping up steadily.) Downloading a free or cheaper version, if this is an option, does at least allow you to try it out first, before parting with too much money.

Free or 'Lite' Apps typically provide the first few levels or screens of the paid App, to give you a 'taster' and get you started with it, while you decide whether to go on to upgrade and purchase the full paid App. The opportunity to upgrade to the full version is often offered as an 'in-App purchase'. (This might be a nuisance in school situations where you may not be on Wi-Fi, or have to get IT technicians to download Apps for you, so if you know you want an App, it may be easier just to buy the full version straightaway.)

Some free Apps are 'ad-supported' and will contain banner advertisements often including sound and video. Be aware that touching the banner ads will redirect the user away from the intended App and into the ad site, which, apart from being confusing and annoying, will not be regulated for age appropriate material. It is often well worth paying the small cost to buy an App in order to avoid these distracting advertisements.

There is an option within the iTunes App Store to select the display of paid-for Apps or alternatively to display only free Apps (the default is to include those that are paid for). Apps that have built-in copyright symbol libraries cost significantly more. Acquiring good quality voices often involves an extra purchase.

Searching for, and finding Apps

The iTunes App Store is where you go in the end to buy Apps. But it's not usually the best place to *start* looking for Apps. There are just too many Apps there, and they are commonly not reliably categorised or adequately described and evaluated. (The most useful categories might include: Education, Games, Medical, or Kids - all much too broad to be useful.)

If you know exactly the name of the App you are looking for (and its exact correct spelling, for the App Store is a little unforgiving on this) then you can go straight to the iTunes App Store and purchase. (Note: if you can't find it, your App may be in the *iPhone* store - look along the tabs at the top of the screen - and most iPhone apps will also run on the iPad.)

Otherwise, only go to the App Store once you have researched and identified your App elsewhere.

If you are just browsing and looking for potentially useful Apps, instead look first in lists on websites or blogs that have been compiled independently by others, often experts in the field, focusing on specific areas and reviewing and recommending Apps. (see Chapter 5: iPad Resources' below, for useful lists.) Bear in mind however that unless regularly updated, any third party website or blog list could be up-to-date for a short time only, given that developments happen so quickly in this field.

The best thing is often to just 'Google it'. Search for something like "best App for kids drawing" or "AAC App + Widgit symbols" or "phonics practice" or "best iPad Apps for toddlers" - or whatever. You can also use YouTube to search and see if there is a video posted demonstrating the App in practice - there often is.

Reliable App developers

If you find an App that you really like, search to find out what other Apps the same developer has produced. Firstly, you may be lucky enough to uncover a rich seam of attractive Apps that share all the qualities you value. Secondly, it can be really helpful for your learners to be presented with a consistent interface, across a range of different activities; this helps to build their confidence, resulting in more effective use. (Also easier for staff to learn to edit.) Take for example, the favourite App **Bitsboard**; if you look through the 'Related' section on the App Store entry, and note the 'Developer' from the 'Details' on the App Store entry, then you can look up the **GrasshopperApps.com** website. Another example - **Special iApps** is a British company specialising in Apps for children with special needs, so you can trust that all their Apps will be targeted at this same user group.

Apps by Disability?

In the iTunes App Store, you *won't* find Apps categorised by specific disability. You may, however, find third party lists that claim to do this. For example - 'Apps for Dyslexia'; or 'Apps for Autism'; or 'Apps for AAC'. (Or you can Google using such terms).

Such lists can be helpful, but beware of considering them as definitive or exclusive. In reality, you may find the same App(s) in several different categories. Equally, you might miss the perfect App for your learners' needs, by looking under the wrong heading, or too narrow a heading.

Rather than searching for Apps by disability label, it can be useful to search by specific 'function'. For example: 'concept development Apps'; 'language development'; 'emotions'; 'visual schedulers' and so on. The following sections explore a few such headings and categories.



Apps for communication

The purpose of these Apps is to provide learners with support for their communication needs by using photographs, pictures, symbols, text and/or voice output to help them to share information and communicate with others. They have been sorted here into sub-categories (although some Apps might fall into more than one category, depending on how they are used) with the most important features highlighted and a few examples within each heading provided. Some important general features of communication Apps to look out for are:

- Degree of personalisation - can the content of the App be edited so you can change and add pictures and message content relevant for the user? This is vital and you should reject any communication App that does not allow this.
- How easy is it to personalise? Can it be edited on-device (or only edited and exported from elsewhere)? Can you take photos and/or access Google images from within the App? Can it be edited when the iPad is offline?
- Speech output - is there an option to record speech or, with synthesised speech, what are the voice options, e.g.: male, female, child? And what is the voice quality? Does the voice accent match that of the user? Can you buy additional voices, and at what cost? Can you switch voices easily?

- Access methods - is it designed for touch only access or are switch settings built-in? Are there extra options like auditory prompting? How well does it adapt to iOS 7 scanning settings?
- Usability - how intuitive and simple is the App to learn, use and edit?
- Consistency of 'look'? - or messy looking? How easy to process, is it, visually?
- Backing up - having spent ages editing and personalising a communication vocabulary, it is vital that this is saved each time it is updated. How easy is this to do? Is the back-up system feasible in your setting (e.g. several AAC Apps back up to Dropbox and/or iTunes - but many schools/local authorities block both of these).
- Sharing - as communication is a two-way process, what options are there for saving and sharing messages produced? e.g. emailing, publishing, storing/sharing via Air Drop, web or Cloud?

1. Single/Simple Message Communication

Simple communication Apps are designed to support and encourage basic functional communication - one message at a time. Many have been designed specifically for young children and/or children with autism spectrum disorder (but will also be relevant to other users). These Apps vary in price and in how simple they are to set up, edit and use.

Some include a bank of built-in pictures or symbols (of varying quality); others leave you to import your own pictures or photos. Some are geared specifically to the highly structured PECS style of communication, and will display the symbol message that has been selected. Others will just speak, when a picture is selected.

Examples in this category include:

Grace-Picture Exchange for Non Verbal People

Grace is a PECS structure in which learners select pictures to form requests or a structured sentence. There is no speech output.

Grace-Picture Exchange for Non Verbal People iAskU

Grace and iAskU are both PECS structure Apps in which learners select pictures to form requests or a structured sentence. There is no speech output. With **iAskU**, the iPad itself is exchanged or an animated 'exchange' symbol is activated. The communication partner can respond on the iPad also (Yes, Not available, or Wait (+ Timer)).



SPEAKall!

SPEAKall! also closely mirrors the PECS process (simple touch, or touch and drag pictures), for simple messages, but with the addition of speech output. Look2Learn is similar.

image2talk

Similarly, but not so PECSy looking, this is a simple to use 'all on one level' single picture/message App that just speaks out the picture selected, then reverts automatically ready for the next selection. You can set the 'time delay' so the speed matches the user's language processing time, which can be useful.

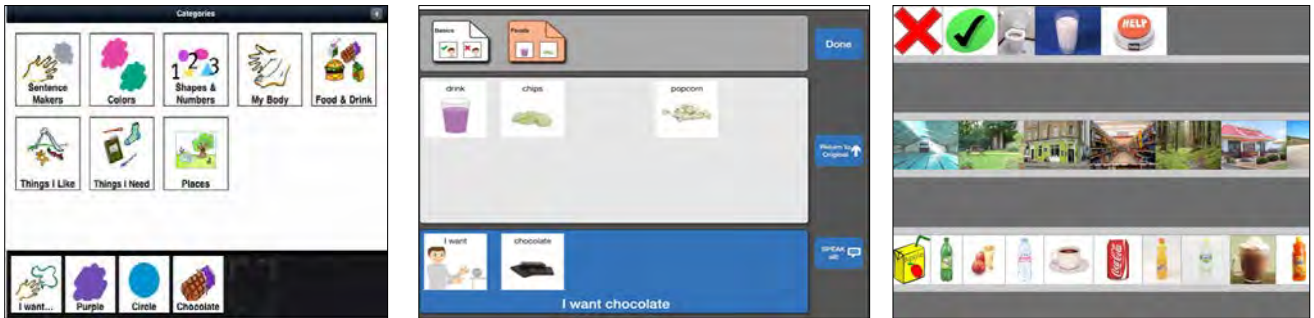


Figure 33 - Left to right: Grace Picture Exchange, SPEAKall!, and image2talk.

Tapspeak Button Plus

Tapspeak Button Plus turns the iPad into a large coloured button. It is customisable with pictures (and is one of the few Apps that provides an in-built library of Mayer Johnson PCS symbols - which makes it expensive).

When touched, it speaks out a recorded single message output, just like a BIGmack, only you can store dozens of different messages and swap amongst them quickly (so could be shared by different users). It could be useful for expressing basic needs and wants, and for participating in group activities.

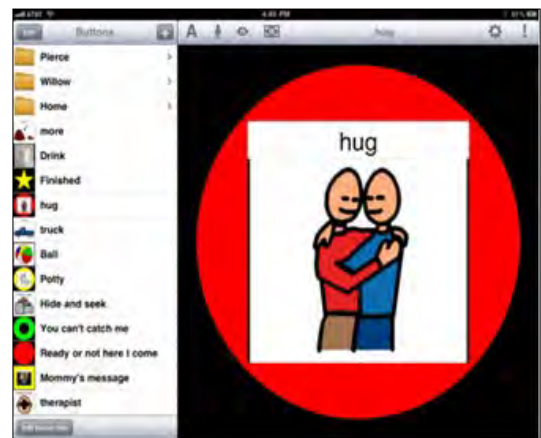


Figure 34 Tapspeak Button Plus

Sounding Board

This is free, switch accessible (with optional audio scanning), and the perfect assessment tool and 'starter App' for AAC introduction and use.

Using your own pictures and recorded voice, you can display 1, 2, 4, 6, or 9 pictures per screen, and construct links between boards. There is no message bar. This App can be a useful bridge between single message Apps to more complex and powerful AAC systems.

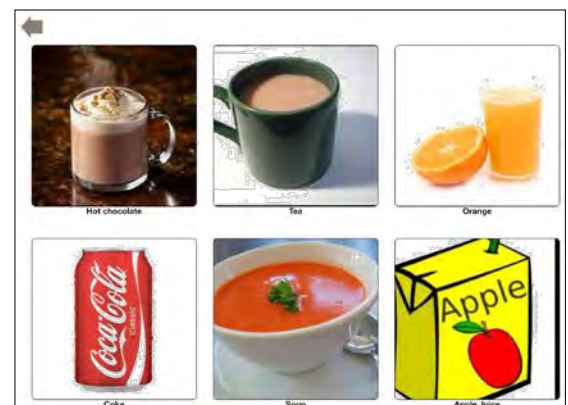


Figure 35: Using pictures on Sounding Board.

2. Symbol based AAC Apps

The following Apps are highly featured interactive augmentative and alternative (AAC) Apps that function as full-scale communication aids, with a symbol interface and message display, and speech output. They offer multiple linked pages of symbols, with the ability to edit and save vocabulary layouts.

Some Apps offer a 'bottom-up' approach to creating user vocabularies, providing an empty framework that you build up from scratch into a personalised user vocabulary. Others offer 'top-down' approach - i.e. they come with sample pre-stored vocabularies, and you then edit and personalise the 'best fit' one of these for an individual user. (Neither approach is necessarily quicker, easier or 'better' than the other: both have pros and cons, depending on the individual end user(s) and the experience of the person(s) supporting users.)

Symbol based Apps are dearer than most other Apps because they include a large built-in library of symbols (or they offer in-App purchases of symbol sets, as an extra). This library is usually a recognised and copyrighted communication symbol set such as SymbolStix, Widgit Symbols or Makaton Symbols that will have been licensed with the developer. (Mayer Johnson Picture Communication Symbols (PCS), aka Boardmaker symbols, are currently available only in DynaVox's own products, e.g. the **DynaVox Compass App**.)



Figure 36: DynaVox Compass App, with PCS.

As there are more steps involved in setting up and personalising user vocabularies and access settings in complex communication aid Apps, it is particularly important to have access to good tutorial materials including videos, downloadable guides, online support and discussion forums.

Some AAC Apps allow only one vocabulary set to be used in an iPad at any one time, whereas others provide the option to swap between available sets. This is an important feature to consider if you are assessing and managing a number of different learners at the same time, with one device.

Some also offer the ability to share and download vocabularies from online or cloud storage, requiring a registration process and sometimes a paid-for subscription. Some have the facility to set up and save vocabularies on a PC, which may enable easier and safe management of vocabulary sets. Some are universal and will run across the range of iPod touch, iPhone and iPad, whereas others need separate purchases for each type. You need to think through what you require.

Examples in this category include:

Go Talk Now (Free version available)

Go Talk Now includes a built-in image library and offers Widgit and/or SymbolStix symbols as extra optional purchases, and a direct link for downloading images from the Internet.

It has recorded speech and/or (voices are an additional purchase) text-to-speech output. Different styles of communication pages are possible including Visual Scene Display.

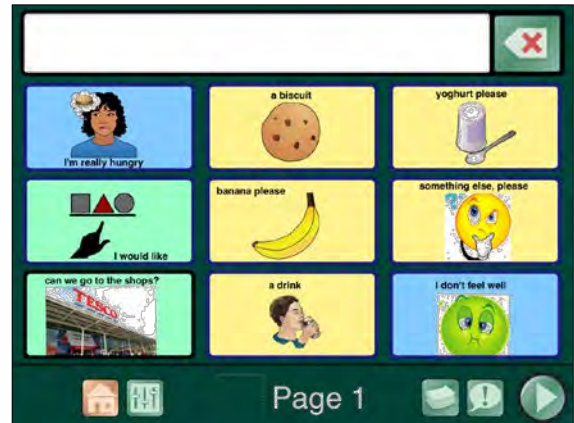


Figure 37: Go Talk Now with built-in Imagine image library.

Buttons can speak, display a message, link to another page or to a URL, or play music and video. It is clear and easy for the user (though not always the most intuitive interface for editing), lets you hide the editing buttons from the user, and has built-in switch access and auditory scanning. It allows multi-user support, via separate 'communication books'. Go Talk Now can also save and backup vocabularies to Dropbox.

Widgit Go!

This is a clean looking, simple to operate App, with the full set of Widgit symbols (12,000) built-in. It has been designed not only for communication use but also for curriculum access, in school settings, so as well as symbol grids and message display, it includes a 'writing screen' that lets the user build up symbol sentences/stories (and re-telling stories is also a very useful communication function). The 2 sample user vocabularies it comes with are useful, although simple/pretty minimal. *NB. Switch access currently doesn't work well with this App.*



Figure 38: Widgit Go - symbol communication layout and symbol writing layout.

Proloquo2Go Version 2.0 (P2Go)

This highly customisable and well-supported communication App contains more than 14,000 SymbolStix symbols and includes multi-user support. It comes with a choice of two pre-stored vocabularies; Basic communication (9-36 buttons per page, mainly single word/message communication) and Core Word (9-64 buttons, 2-4 word sentence building level) that you build upon (or edit down) to personalise.

It's easy to repeat recently used phrases and/or store them to a button.

P2Go includes an onscreen keyboard with text to speech and good word prediction. It has US, English (but not Scottish!), Australian and Indian English speaking voices. Switch access is available. Various backup options are available. It's a Rolls Royce communication aid in many senses - *but* there's so much in P2Go that it is sometimes 'too much' for early level users.

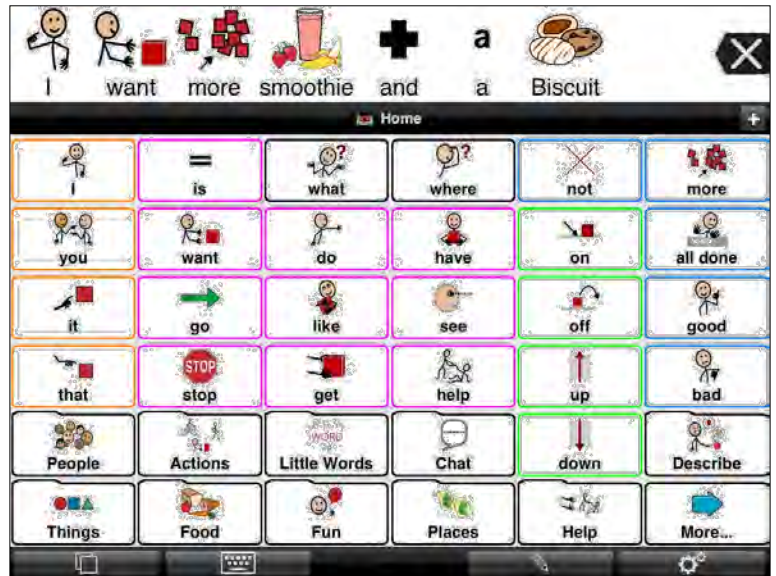


Figure 39: Proloquo2Go Version 2.

Other AAC Apps are available

Too many to detail here, there are several other important AAC Apps to be explored, each with slightly different features and attractions, including:

- **Grid Player** - comes with 2 symbol vocabularies and 1 text vocabulary. No on-device editing. To set up a new user, edit grids, or to download more grids from the Online Grids resource, you need the communication aid software The Grid 2 on your PC.
- **TouchChat HD** - 4 useful user vocabularies are included and you can add the popular **Word Power** vocabulary (extra purchase) for higher level language development/support.
- **SonoFlex** - useful single vocabulary, plus a chat context feature. *NB. Switch access currently doesn't work well with this App.*
- **Unity** - mirrors the Unity symbols and language building structure available on dedicated Prentke Romich/Liberator communication aids.
- The above are all, basically, grid based Apps.

A few AAC Apps are based on different models of language representation and message construction, e.g.

- **Scene and Heard** - this is based on visual scene displays, messages are embedded in hotspots, with popup symbol windows. Switch accessibility is built-in. (And **Scene Speak** is a cheaper simpler way to explore and evaluate the use of visual scenes - no symbols though, just text and speech output.)
- **ChatAble** - highly customisable hybrid, mixing symbol grids, visual scenes, handwriting input (and keyboard).
- **AACorn** - an 'intelligent' predictive sentence building structure that presents options step by step, rather than overwhelming the user with a big array of choices.

NB. Switch access currently doesn't work well with this App.



Figure 40: AACorn App.

iPad Apps for Complex Communication Support Needs: Augmentative and Alternative Communication (AAC)

CALL Scotland has designed a 'Wheel of Apps' to support complex communication support needs: Augmentative and Alternative Communication (AAC) and is available as a free download: bit.ly/CALL-AAC-App-Wheel

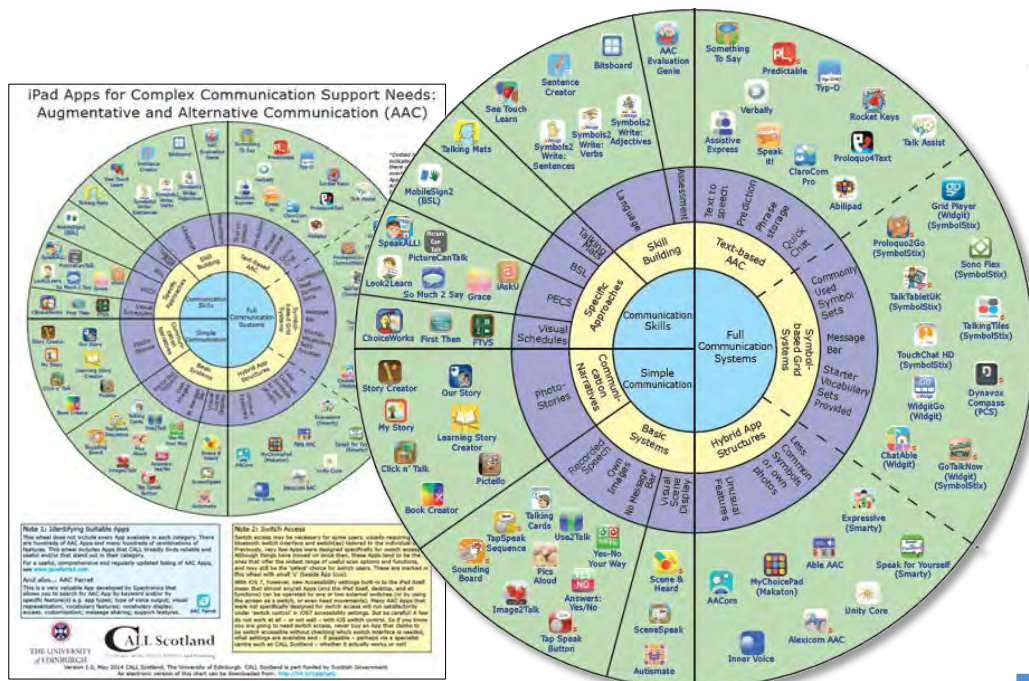


Figure 41: AAC Wheel of Apps.

AAC Ferret

You can now search for AAC Apps by feature in an exciting App called AAC Ferret, from Spectronics. It will be updated regularly.

www.spectronics.com.au/ferret



3. Text based AAC

This category covers a range of Apps with keyboard input and text to speech output for use by individuals with functional literacy skills. Some Apps are very basic and make use of the iPad's inbuilt keyboard, offering no stored words or phrases. Some (more expensive) are much more comprehensive, having been designed specifically for AAC use, with many more features such as word prediction, and customisable options such as alternative keyboard layouts, and accessibility settings.

The fully featured Apps here have numerous keyboard layouts - QWERTY, ABC, optimised scanning layout and in some cases the layout is fully customisable. They have word and next word prediction, and have large prediction dictionaries offering the most accurate predictions and the ability to learn (or not) new and frequently used words. They also have a word and phrase store, and a list of recently used phrases.

Examples in this category include:

Proloquo4Text

This is one of the Rolls Royce options in terms of features and customisability. It offers abbreviation expansion, excellent word prediction, and a sentence prediction feature. It will also store phrases. It has good quality UK voice choices, and you can change speech output settings (letter, word, sentence, paragraph etc.) and adjust speech rate. The 'Quick Blocks' feature means the user can save or repeat phrases quickly just by holding down on them. Using one single screen can get a bit crowded but would support keyguard use. Back up to Dropbox or iTunes is available.

Great support (FAQs, videos, manuals, tutorials). Share by SMS, email, Twitter or FaceBook. Switch access is via iOS 7 Accessibility Switch Control.

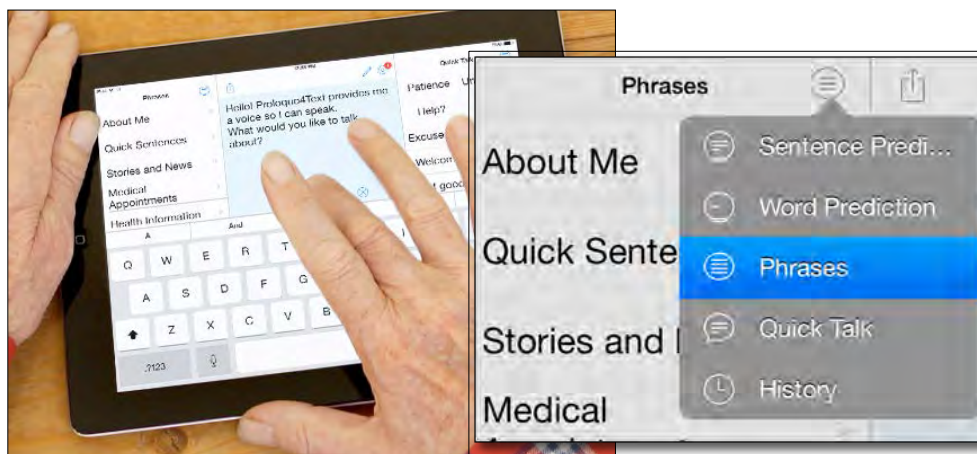


Figure 42: Proloquo4Text.

Predictable

This is the other very popular ‘high end’ App also with many customisable functions, integration with social media, and good support materials. It has an App specific keyboard with different layout options, a straightforward word and phrase store, pronunciation editor, ‘emotion’ sounds, a sophisticated word prediction engine and an editable dictionary.

The categories of stored phrases can be tagged with pictures to make them easier and quicker to spot. Prediction can be set to work with phonetic spelling errors, and dyslexic users. An important feature, especially for adults with degenerative conditions, is the built-in switch scanning options. Predictable includes US, Australian and UK voices. Choosing between these two Apps is a tough call! Simpler (and cheaper) options are available.



Figures 43/43: Predictable App.

Verbally/Verbally Premium

Provides a permanently visible ‘bank’ of core vocabulary and common phrases, which might be important for some users. The free version might be useful for assessment, but does not allow editing. The Premium version enhances prediction and allows you to customise and save phrases. There are two US voices.

Assistive Express

Assistive Chat is a (relatively) cheap and cheerful option. It offers average prediction and you can store favourite phrases for re-use. Only US voices are available.

Assistive technologist Jeannie Krull has published a useful matrix that compares the features of the above four Apps in more detail, see bit.ly/1jTS9Mr

Speak it!

A very simple but useful ‘bargain basement’ App that adds high quality UK voice output to any text typed in, and allows you to store phrases for re-use. It does not include prediction. (See also Apps to Support Literacy Difficulties below).

Grid Player

Grid Player comes with a well-designed text-based example layout ‘Text Talker’. This is an excellent solution for those who use The Grid 2 on a PC; all page layouts can be fully customised allowing for any design of keyboard, and offering good prediction. However, as it can only be edited on the PC and then exported to the iPad, rather than providing on-the spot editing on the iPad itself, it may not be so practical for some other users.

4. Photo Story Apps

Many learners are not ready to use a formal communication system or may not understand or respond to symbols. They need photos that are highly concrete and linked to their own immediate and familiar contexts. But we don't want to leave them just flipping through their camera roll, we want to find ways to organise and attach language to their photos. 'Photo Story Apps' is a general way of describing Apps that let you quickly create a talking story book, with pictures or photos linked together in a series of pages, either just a few pages or longer, each picture accompanied by some text and recorded speech/narration. This can help users to make sense of the world around them and what is going to happen next, and it can allow users to recall events, review things they want to think and talk about, and to direct a listener's attention to the topic area, as a form of expressive communication, sharing their news and interests.

The end result can be 'News', a talking photo album, a talking Communication Passport, a talking Social Story, or a talking visual schedule etc. These can be useful for teaching social skills and storytelling, They can be used to document and record a pupil's work. They can also be used for motivating creative writing work.

There are many, many Apps in this category - mostly very cheap - varying in their usability, their overall 'look', whether they use recorded or synthesised speech, whether you can also draw on the pages, the amount of text that can be inserted on each page. Some also allow a sound file and/or video clip to be inserted into the album as well as photos or pictures. A key issue is if/how your story can be shared once it's made e.g. passing news between home and school, directly or via email or social networking sites.

The variations between these many Apps are apparently slight - but may be crucial to particular users. For example, some speak 'automatically', some users need the control of touching the photo directly to hear or repeat the story, whereas others may be able to identify and touch a 'speak' button (loudspeaker Play icon) separate from the photo. Some require a 'swipe' to turn pages, whereas others use a touch or have an 'auto slide show' setting.

Examples in this category include:

Little Star Learning Story Creator

Very clear screen and the simplest of all the Apps to use - but very few personalisable settings. It can auto play the recorded sound and/or use Speak button. (Other Apps from the same developers provide ready-made Social Stories - e.g. toilet, sleep, trying new food).

Story Creator

A very quick and easy to use App. It plays recorded story text automatically as each page appears.

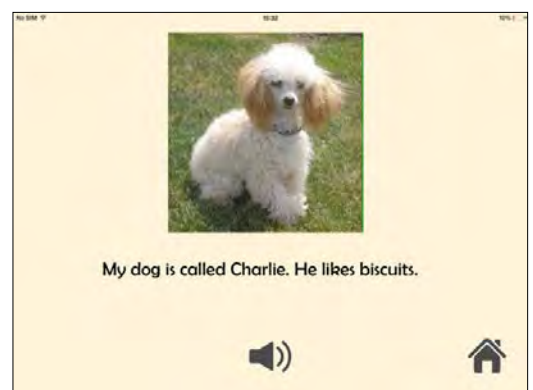


Figure 44: Little Star Learning Story Creator.

Story Creator emphasises the text as well as the photo and spoken message (can touch each word to hear it), and text is highlighted word by word as it is spoken. The App takes short video clips as well as photos.

My Story

Simple to use, and allows the user to enjoy drawing or writing on the page, as well as, or instead of photo.

Book Creator

Book Creator is as cheap as chips but is absolutely the greatest App of all time! It is simple and logical to use, allows for more varied and 'artistic' page layouts, supports video as well as pictures, sound files and recorded speech. You can create audio 'hotspots' or add a sound track if you want to get fancy. (Some professionals use Book Creator instead of PowerPoint or KeyNote as a presentation tool.) Book Creator can also import text.

There are lots of excellent sharing options including Dropbox, email, iTunes, or publish to iBooks (or others, e.g. Stanza, Kobo etc.). There is also an option to publish to PDF. Online Help notes are also available. The publishing options mean that you could actually use Book Creator as a way of storing all work, arranged under different headings, if required, to record pupils' work and show progression.

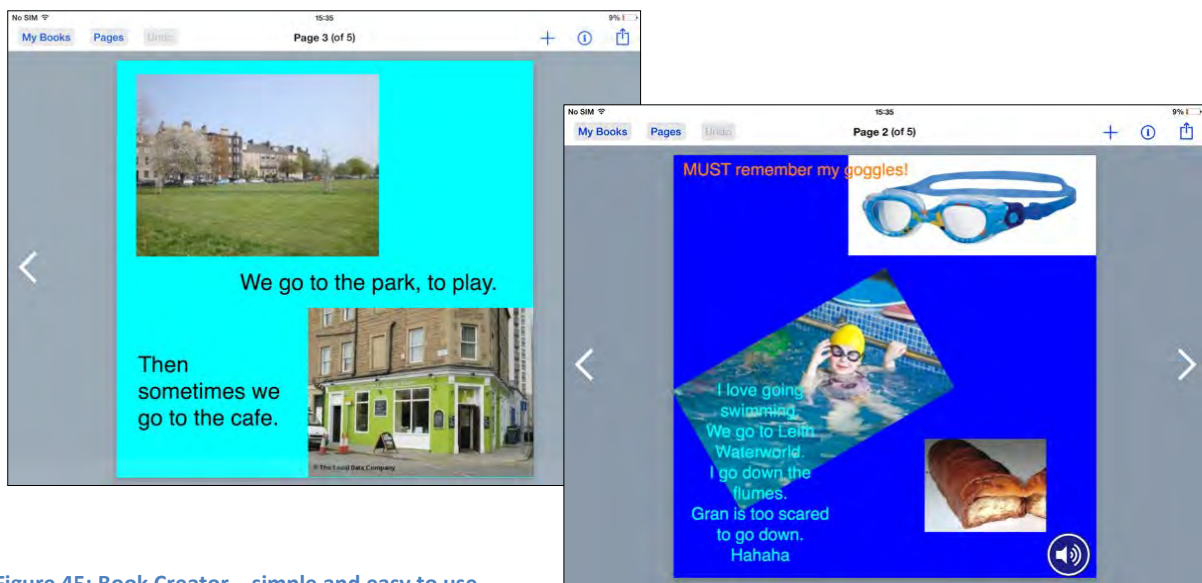


Figure 45: Book Creator – simple and easy to use.

All about Me Storybook

This App provides a structure (with twelve 'starter' chapters built-in), for users to organise a personal profile with photos, text, and recorded audio.

Book of Me is a simpler version of the same kind of thing.

5. BSL and Signing Apps

These Apps are for helping individuals to learn and use sign language/signs for communication. They are useful for individuals who are deaf or hearing impaired,

and additionally for those with language and communication support needs rather than deafness, for whom signing can be an effective communication tool. Signing Apps may also be useful for staff and communication partners to learn signing.

There are quite a few low cost Apps for learning the finger-spelling alphabet. Others use British Sign Language (BSL) or Makaton signs. You need to check whether a signing App uses BSL or American Sign Language (ASL), as many are based on ASL (though they don't always make that clear in the iTunes blurb). Some of these Apps have real video to demonstrate the signs and some use 'avatars' (virtual people).

Some have text subtitles and/or voice over, others are sign only (i.e. silent and without subtitles). Warning - video based Apps can take up a lot of memory space in the iPad.

Examples in this category are:

Baby Sign and Learn

Baby Sign and Learn is an App to help you teach your baby to communicate by teaching basic sign language (based on BSL). Animated baby characters model and say each sign and the App includes flashcards and an interactive quiz.

MobileSign 2 (NB. This is in the iPhone section of iTunes App Store)

The ultimate BSL App - a great (free) BSL dictionary comprising a video lexicon of 4000+ BSL signs, with a simple alphabetic search Invaluable! No voice over.

My ChoicePad

My ChoicePad (Lite version available): this unusual App which is a cross between a signing App and a communication aid App, offers a combination of 450 core vocabulary Makaton symbols and Makaton signs. NB. *Switch access currently doesn't work well with this App.*

My ChoicePad has video clips of signing accompanying the symbols, as well as line drawings of how to make each sign, and speech output. You can also use your own photos and voice recordings.

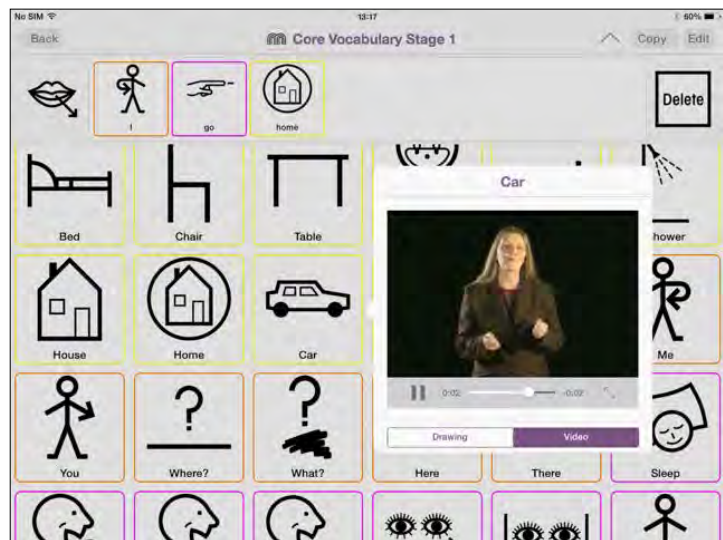


Figure 46: My ChoicePad App.

It is useful for staff or communication partners that are non-signing, who need to quickly learn or revise a specific sign for use, as well as for learners who use signs and symbols to make choices and to communicate.

Apps for Autism: Visual Schedules

Having said that it is not helpful to sort Apps 'by disability' we might make an exception in this case, as so many developers and consumers seem to market and search for Apps as being 'for autism'.

Apps for Autism (2011) by Lois Jean Brady. This hefty book describes over 200 Apps. Inevitably, the list of (American) Apps is already somewhat out of date, but the way the author has sorted them into categories is helpful, as is the brief 'Customer' Review for each App.

There is a 'course' in the 'Apple Distinguished Educators' category in iTunes: bit.ly/appsforautisticstudents that explores how to select Apps based on learning traits and styles of students, and appropriate uses in education.

While learners with ASD will often enjoy and benefit from the same Apps as everyone else for, e.g. concept development, language development, spelling, maths etc., one category that may be rather ASD specific is the use of **visual organisers or schedules**. These are a way of providing visual support that can reduce anxiety (especially around transitions), provide advance information and promote understanding about upcoming events, and increase independence.

There are many of these Apps, and obviously it depends on the age and stage of the learner which will be the most appropriate and most useful. Some seem unnecessarily complicated for everyday use in a busy home or school environment.

All visual schedulers are inevitably labour intensive to set up, as you need to break every process down into small discrete steps and find pictures (using the exact photos or familiar symbols), and record messages for every step - so keeping extra complications to a minimum seems like common sense.

The following Apps are reliable, tried and tested standbys of the simpler variety:

First Then Visual Schedule (NB - This is in the iPhone section of iTunes) and FTVS HD - the updated iPad version of the above App.

These are clear and easy to use. They offer a few different ways of displaying the same information (single screen, scrolling screen, checklist format, touch and drag list, touch and 'finished' list). There is an inbuilt library of images and easy access to your own photos or external images.

FTVS includes extra features. You can set a timer for the whole sequence or for each step. You can attach a video clip as a 'model' for any step.



Figure 47: First Then Visual Schedule.

ChoiceWorks

Also a favourite, this App lets you set up a visual schedule and shows a choice of two possible 'reward' actions at the end of the lists of tasks to complete. There is also a visual 'Wait' timer, and thirdly a customisable 'Dealing with Feelings' template (as a mini 'general purpose' social story.) There is a built-in book of three pre-made Social Stories provided within the App.

Apps for Learning and ASN

Apps can facilitate and support learning for a wide range of children, teenagers and adults with additional support needs. Some important general features of Apps for Learning and ASN to look out for are:

- Age appropriateness - check that Apps are appropriate to the age and interest as well as the developmental level of the learner using it.
- Progression - does the App have different levels and allow for progression through them?
- Recording - can progression through the App be recorded and printed out?
- Independent use - does the App have controls, such as enlarged or spoken text that allow the learner to make selections, to save or print work and to quit the App independently?

1. Sensory, Cause and Effect, and Early Years Fun

These Apps aim to prompt and motivate the user to look, listen, and pay (and sustain) attention. The simplest are just experiential or 'sensory' level, while others encourage the user to explore, respond and interact with the iPad. They are useful for encouraging persistent gaze, eye tracking, and for developing understanding of cause-effect relationships.

They can help the child to develop accurately targeted touch and to explore and develop dragging. Apps typically provide multisensory stimuli and feedback - spoken language, sounds, music, and bright, contrastive and animated visual displays.

There are thousands of these Apps, as they are popular with parents for all young children, not just children with ASN. Many are free or very cheap. Just do a Google search for 'best apps + kids'. Or, there are 'Apps lists', for example, the 'guru' of sensory education, Flo Longhorn, publishes a termly *Info Exchange Magazine* (annual subscription) and a weekly email highlighting new sensory App suggestions: folonghorn.com/index.php/about-us

Remember however that many of these Apps were designed to entertain children, rather than to be educational as such. Note too that some of them although aimed at young children are actually assuming quite high cognitive and hand-eye skills. So you need to evaluate each with a critical eye, with your own learner's developmental level in mind. Apps with settings can be useful, so that options can be turned on and off to suit the learner.

On the other hand, too many settings can make an App too complicated for independent use, or can make it too easy to set up wrongly for particular learners. For example, if set right **Art of Glow** can be absorbing and fun and potentially instructive - but if set wrongly it can counter-act rather than reinforce cause and effect learning (because the effects produced may stay on the screen when the child removes their finger).

Some examples in this category include:

Sensory Training - a big 'bundle' of brightly animated displays (mainly experiential).

Fluidity

Fluidity is a fascinating swirl of colourful, sparkly fluids. The user can just watch, or the child's touch can 'stir' and move the fluid around. **Ooze** is similar.



Figure 48: Fluidity - swirls of colour.

Hidden Grid

Hidden Grid is an introductory cause and effect level activity, designed to encourage exploration of the screen and to teach basic touch/tap and drag skills. Drag your finger around the screen to reveal coloured shapes and patterns, with melodic sound effects.

liLoveFireworks

Touch the screen to create exciting graphic firework displays with real sounds.

Rubber Ducky

Touch the colourful ducks and hear satisfying loud varied squeaks (and other sound options).

Virtuoso

Play a piano keyboard. There are lots of piano and xylophone Apps, with interesting variations, e.g. **Piano Free**, **Kid's Xylophone**. Try **Burping Farting Piano**, **Cat Piano** or **Dog Piano** for popular sound effects!

Fish Fingers

Touch the pond and fish swim to your finger. Tap to feed them and they grow bigger. Again, there are lots of fish Apps, try **Pocket Pond**, **Koi Pond (Lite)**.

Peeping Musicians

Peeping Musicians promotes early visual skills and basic touch targeting. Watch for the musician as he or she 'peeps' from the top or side of the screen. Touch the musician and he/she moves to centre stage and plays a piece of music.

Hatch! Plus

In Hatch! Plus an egg appears on screen, the child has to tap and tap, it cracks and cracks (5 steps) and then hatches and a different 'special friend' emerges.

Nighty Night

Nighty Night is a beautifully illustrated and narrated interactive story. Children can touch the animals to hear the sounds they make and see what they do.

Touch the light switch to turn off the lights.

This App introduces the use of an arrow, to prompt touching of a hot spot or for a page turn.



Figure 49: Nighty Night illustrated interactive story.

2. Speech and Language Development

Speech and language Apps are for facilitating speech and language development and range from those that are mainly just a bit of fun to more formal drill-type practice games for speech sounds or the development of specific language forms.

The built-in microphone on the iPad permits new types of interactive games, often aimed at younger children, although potentially enjoyed by all.

Apps may target any aspect of language development, for example vocabulary, different parts of speech e.g. verbs, prepositions, sentence building, following directions, asking questions and turn-taking.

Speech and language Apps do not replace language teaching or speech and language therapy, they are tools that can enhance therapy and make repetitive practice tasks more interesting. Or they may stimulate and promote interaction and discussion.

Wordless Apps

Paradoxically, wordless games - if used interactively - can be a very rich source of language material, stimulating questioning, commenting, discussion, following instructions, inferencing, and vocabulary expansion.

For younger children, the range of charming Toca Boca Apps is hard to beat, for language use. See Toca Tea Party; Toca Doctor; Toca House; Toca Band; Toca Kitchen; Toca Pet Doctor, etc.

(The Pepi Play series (Lite versions available) is similar (Pepi Bath, Pepi Doctor, Pepi Tree).

Speech Practice

Voice Morph Pro

Say something into the iPad and then choose from 22 morph selections, to make it sound quite different. This App may encourage reluctant speakers to talk, through having fun.

Articulation Scenes (American)

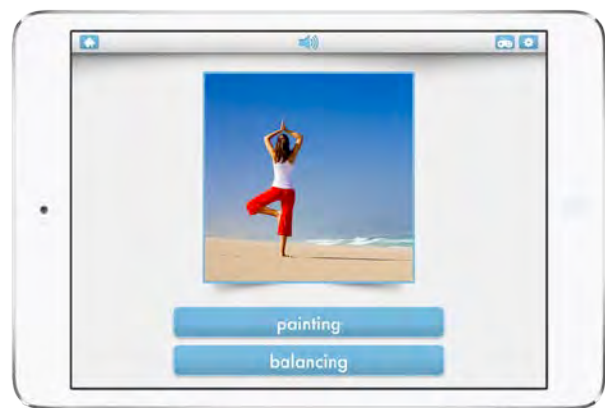
Articulation Scenes is part of the extensive Smarty Ears series designed by speech and language therapists for many aspects of language work. This is an elaborate App that embeds phonology work and articulation practice (which many children get fed up with!) into a creative movie theme.

Articulation Station (Free and Pro versions) (American)

Provides help for practice of selected sounds at word, sentence and story level.

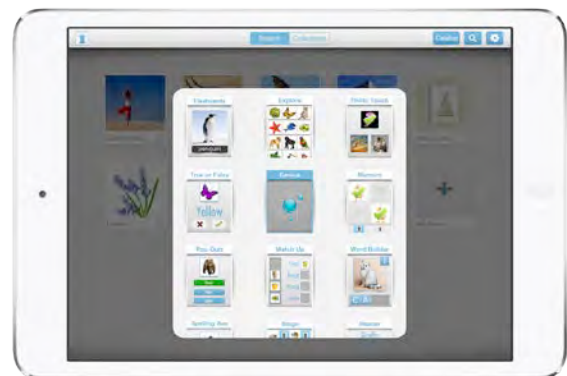
Build Your own Language Exercises - Bitsboard!

Bitsboard is by far and away the most useful App for early level language learning and practice. It is free, though there are in-App purchases if you want to import ready-made 'collections' (sets of exercises) - though there are also many free collections available. Schools or therapy services might want to buy the **Bitsboard Pro** version (not dear) as it offers bulk discounts for schools, and extra features e.g. managing multiple users.



Bitsboard provides hundreds of high quality images and spoken, or you can use your own.

Once you've selected the set you want to use, and saved it, you get not just one but 12 possible quizzes, games and activities using the same set, including listening, memory, comprehension, true/false, word recognition, word building, spelling, sentence building, wordsearch etc.



The user interface is clear and consistent and the games are simple and repetitive. Pupils can often play independently.

You can set feedback, prompts and encouragements to appear at whatever interval necessary, and pupil achievement is recorded (just take a screen shot of the score sheet page and you have your pupil work record).



Figure 50 - Above and left: Bitsboard App.

Sound Touch (Lite version available)

This is a very early level attention and vocabulary building exploration/play App containing hundreds of photographs with spoken word and sound output.

Video Touch - Animals is a 'sister' App (free) with high quality video clips and there are equivalents (paid) for vehicles, birds etc. Single word level only.

Vocabulary Development and Sentence Structure

The **Symbols2Write** series from Widgit offers excellent structured exercises for practising different parts of speech, in sentences. Picture and symbol support is also included.



Figure 51: The Symbols2Write series from Widgit.

The series includes:
 Symbols2Write - Sentences.
 Symbols2Write - Adjectives.
 Symbols2Write - Verbs.
www.widgit.com

Early Learning and Emergent Literacy

The iTunes App Store has a huge selection of Apps to support early learning, providing endless games and activities to support basic cognitive skills and concept development such as visual perception, matching, odd one out, memory, sequencing, listening, following instructions, colour, shape, size etc. (and in the process practising accurate touching and dragging).

Beware of Apps with over-stylised or cartoony style graphics that might be too 'busy' or sophisticated for early learners especially those with visual processing difficulties or poor language and inferencing skills. Beware also of over-animated multimedia offerings. There can be a thin line between Apps that are motivating and Apps that are over stimulating/distracting.

Phonics

Many Apps support phonics learning and bring letter and sound correspondences to life with colourful visual imagery and audio.

- **Hairy Phonics** is widely used and much loved in schools - as is the whole of the Nesy product suite www.nesy.com/uk/
- **Phonics Genius** teaches word recognition through phonic awareness using flash cards and letter/word sequencing supported with audio.
- **ABC Phonics Word Family Tree** is a colourful fun way of learning phonics spelling, beginning sounds, word family phonics with short vowel sounds and is supported with hints, animated matching picture and word games.
- **Mr Thorne Does Phonics** - one of the very extensive collection by a British teacher - is a video-based App that most children find very engaging (though this is serious Phonics work, not a game as such). (You can access these videos free on YouTube, but many schools block this, or have it 'Restricted' on school iPads.)

Letter Formation

Usually also based on a particular Phonics approach, these Apps support the user in recognising and then 'writing' letters, by listening to the letter sound and then practising forming the letter shape by following a template on screen.

Some are more fun and some are more forgiving of wobbles and wiggles. There are many of these - it may be best to avoid American ones that use letter names not sounds. These two are based on Jolly Phonics and are popular in schools:

- **Hairy Letters** is the outright winner of most popularity contests for phonics Apps, as it adds 'action' and a bit of visual humour to each stage.
- **abc PocketPhonics** (Lite version available): This App teaches and practises letter sounds, handwriting, and first words in a simple, clear and satisfying manner.

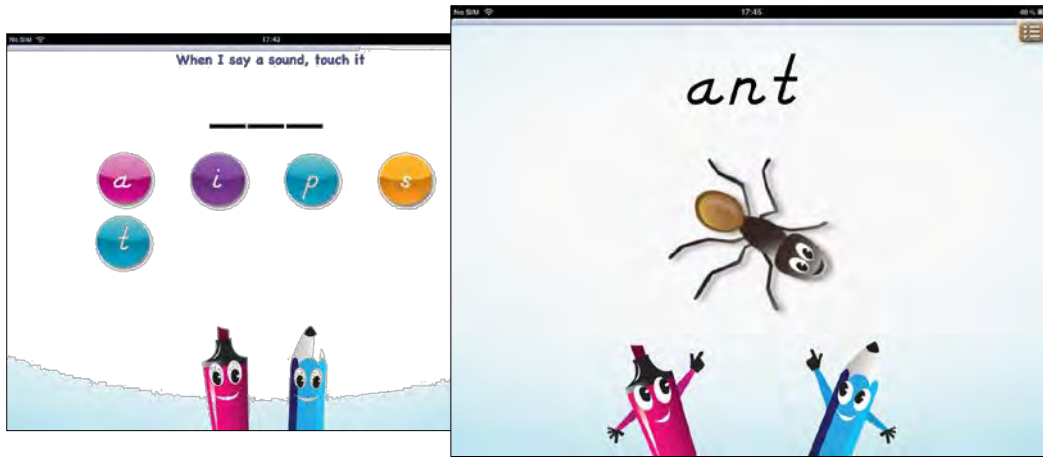


Figure 52: abc PocketPhonics

Build your Own Literacy Exercises

If you want to target specific words and words families you can use a framework that lets you choose and create your own word recognition and word building exercises.

- Bitsboard (see above) is fabulous for this.
- Special Words allows you to insert the words you specifically want the learner to practise, along with a photo or picture of your choosing.

Access to Stories

Early phonics and spelling work is only part of the process of acquiring literacy. Becoming a reader means having access to books, and learning to listen to and follow (and tell!) stories. There are many wonderful storybook Apps available, many free or low cost. Ideally, books that are *interactive* will better engage the learner and hold their attention. For example, at the very earliest level:

- Ladybird Learning To Read Books: touch a picture e.g. of a lion or tiger and it will growl.
- Peppa Pig Me Books: colourful games along with an engaging storyline. Create hotspots where parents or children can record their own telling of the story.
- The Three Pandas: charmingly illustrated and animated panda version of the three bears story, set to auto-narrate or to allow child to control.

Some storybooks Apps are very 'book-like', just adding the spoken word, often with expressive actors' voices reading, focussing on the language of the story and building listening skills.

Others are more visual and/or more interactive. Some allow the child to record his/her own voice to tell the story. Generally, it is desirable to look for Apps or settings that force the child to be as actively involved as possible - we do not want

to use the iPad to replace an adult story-reader, or to behave like television that the child passively 'consumes', we want them to engage with the story process and have their attention drawn to the story text, even if they're not at a stage to read it themselves.

- **The Land of Me Story Time** (27 possible story outcomes, depending on the learner's choices, as he/she goes through) is a standout 'build-it yourself' story (BAFTA nominated!) with beautiful hand-drawn graphics, expressive British English voices narrating, and point and touch choices throughout the each story.

There are now three further titles in the **Land of Me** series (making things; shape, size and colour; songs and rhymes) all incorporating creative tasks within the story.



Figure 53: the Land of Me (shape, size & colour)

Children who struggle to maintain auditory attention to language may respond well to the multimedia Apps that include lots of video, games and activities, such as:

- **Toy Story Read Along** is a free multimedia App - you can listen to the story, with the feeling of being inside the movie. There are options to call up a song or a game in mid-story, which may support the child in staying on task for longer.

Reluctant readers may be motivated by especially Apps that link to movies they know and like, see:

- **Disney Storytime** - familiar stories and characters. By and large these are at a higher language reading level.

A number of Apps act as a bookshop/library and enable parents to download (buy) new books regularly:

- The **Story Mouse Talking Books** offers traditional stories, charmingly animated.
- **Read Me Stories** is a library of animated storybooks –a child can choose and read a new book every day.

Apps to support Literacy difficulties

The iPad offers a range of benefits for learners with literacy difficulties such as dyslexia. However, there are also limitations to what the iPad can offer in terms of adapting or fine tuning its global features, such as background, font colours and font styles of the iOS.

These features are particularly important for pupils who experience light sensitivity or visual stress when reading, often as a result of black text on a white background.

You can download plain colour backgrounds or wallpapers for the iPad from CALL Scotland: bit.ly/ipadcolourwallpaper. The wallpapers only mask the desktop screen of the iPad - they don't change the colour of Apps.



Figure 54: Plain colour backgrounds.

While the built-in accessibility features in the iPad offer some adaptations such as Invert Colors or Larger Text, they are better suited to a user with a visual impairment rather than someone with a dyslexia related difficulty. This is worth considering when choosing a device for a dyslexic pupil.

There are however other built-in benefits the iPad has to offer, such as Speak Selection, Speak Auto-text and VoiceOver; which read aloud selected sections of text in Apps such as Mail, Safari and Pages (Apple's word processor). It is also possible to use Speak Selection and VoiceOver in some eBooks, although many are also narrated.

There are numerous Apps to support reading and writing. Many of these Apps allow the user to fine tune personal preferences, for example, custom colour backgrounds, font style, size etc. and include recording and annotation tools, text-to-speech and speech recognition. Fine tuning is mostly App-specific. While some Apps offer a range of adaptations others contain much less. Finding the most appropriate App to meet individual need can be a minefield, time-consuming and costly. A useful starting point is the Spectronics website 'Apps for Literacy Support': www.spectronicsinoz.com/apps-for-literacy-support.

The British Dyslexia Association (BDA) has also compiled a list of Apps to support dyslexia: bdatech.org/what-technology/small-portable-devices/apps/.

CALL Scotland has designed a 'Wheel of Apps' for learners with dyslexia/reading and writing difficulties and is available to download for free: bit.ly/CALL-Dyslexia-Wheel.

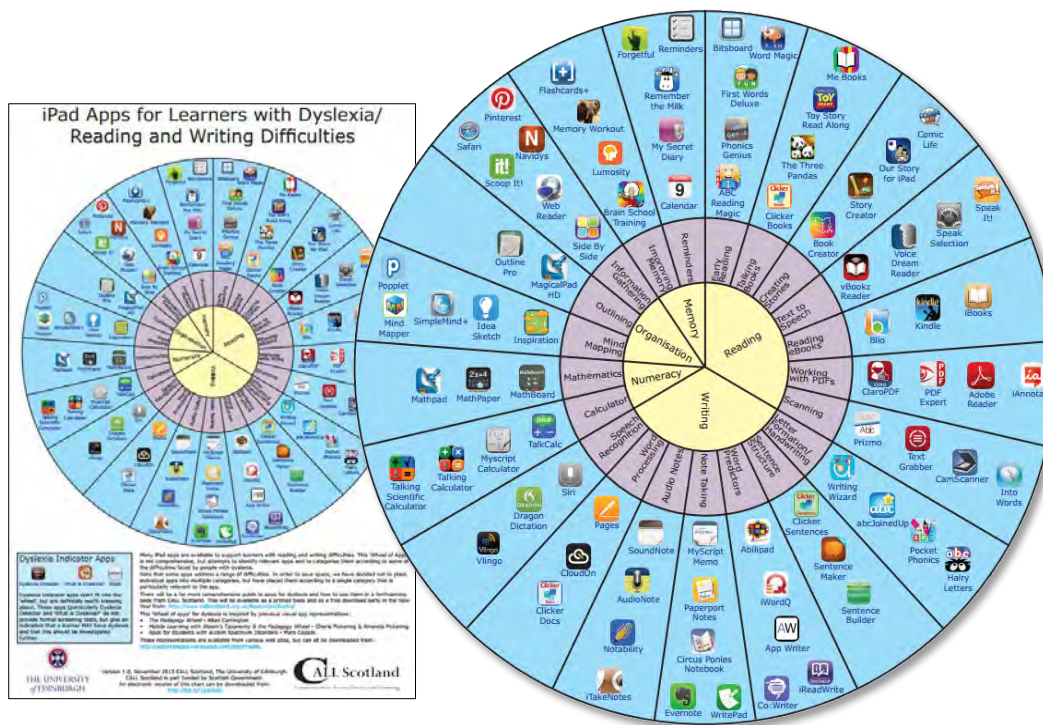


Figure 55: Wheel of Apps for Learners with Dyslexia.

Apps to support literacy difficulties are categorised into the following: Planning and Organisation, Reading Support, Writing and Notetaking, Study Support and Reference, Optical Character Recognition and eBooks. This section also explores Apps to support visual difficulties.

1. Apps to support planning and organisation

Mind mapping

Mind Mapping is a practical tool to improve creative-thinking, planning and problem-solving abilities. For those pupils who find it difficult to put their thoughts and ideas to paper, mind mapping can help to overcome writers block. Pioneered by Tony Buzan, mind mapping programs have proved to be popular with pupils to aid with essay planning and writing. The visual interface of mind mapping Apps can help to generate ideas and make new connections which can be arranged in colours, shapes and images. Mind mapping has also been accredited with aiding memory for exams so could potentially be useful for revision.

Examples in this category include:

Inspiration (Lite version available)

Inspiration offers numerous features such as Diagram Background Fill, over 10 font styles, font colour and size options. The App looks similar to the computer version and includes both the visual and linear options to create mind maps. There are hundreds of ready-made images and shapes that you can view along the top of the menu bar. Double-tapping on an image pops it into the mind map. You can also add your own photos directly from the iPad's camera or from the Camera Roll.

Also included are 30 ready-made templates ranging from English Biography, English Essay Outline, History Time Period to Science Classification etc. to get you up and running without a great deal of prior knowledge. Inspiration also supports Speak Selection for text-to-speech and audio support.



Figure 56: Inspiration to support mind mapping.

An advantage of Inspiration is the large amount of export options, e.g. send to Mail, Photos etc. but mind maps can also be exported to other text-based Apps such as Pages, to extend and complete their essay or project outline.

The Lite allows you to 'try before you buy' but you are limited to only two Inspiration maps and you will have to put up with intrusive 'pop up' prompts encouraging you to 'Upgrade Now'.

Kidspiration (Lite version available)

For younger pupils an alternative to Inspiration is Kidspiration. Kidspiration includes a colourful and engaging interface with lots of ready-made activities and templates including Reading & Writing, Social Studies, Science and Math, all geared to develop visual learning techniques in younger children to help scaffold reading, writing and numeracy.

Kidspiration also contains a library of images although pupils can also use images from the iPad's Camera Roll. An audio recording tool is also included.

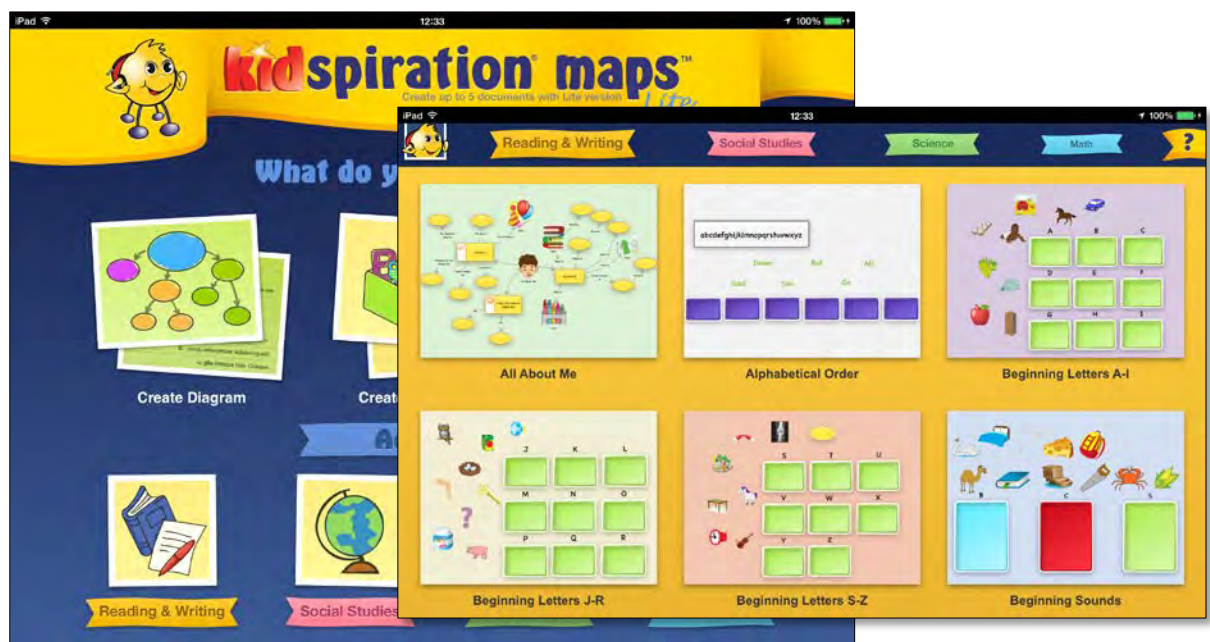


Figure 57: Kidspiration for younger learners.

Popplet

With Popplet you can create colourful mind maps quickly and easily – a good choice for pupils who are new to mind maps.

It features a range of colour and font options, as well as an online collaborative tool, so others can add to the mind map simultaneously (requires a Wi-Fi connection). The App has an uncluttered interface making it easy to create (and delete) colourful 'popplets' with options to paste images from other Apps or import them from the Photos App.



Figure 58: Popplet with a simple interface.

Export options are limited to PDF or the JPEG image format. Popplet is also available as a Lite App but limits the amount of mind maps you can create.

SimpleMind+

SimpleMind+ is a free (and advert free) mind mapping App with a basic and simple layout. The full version of SimpleMind has additional tools i.e. option to add 'Hyperlinks' and extra sharing options such as 'Send via email' and 'Share via Web'

Creating and editing new or existing topics can be difficult, particularly for pupils who have difficulties with fine motor skills as the icons and lines are fiddly.

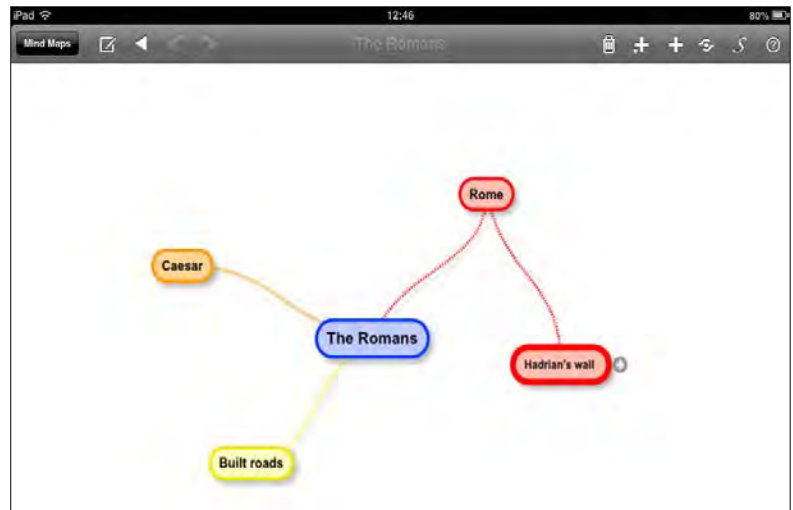


Figure 59: SimpleMind+.

Background and font colour options are limited to pre-defined themes, such as Pastel Colours, Gray Scale and Black and White.

iThoughtsHD

iThoughtsHD has a graphical interface more akin to the original mind mappings styles and conventions of Tony Buzan.

In contrast to the simplicity of SimpleMind+, iThoughtsHD has a more complicated look and feel, particularly in relation to the way node shapes are displayed. Completed mind maps can be organised into folders and the App contains pre-defined 'Canvas' themes, e.g. White, White Lined, White Grid etc.

iThoughtsHD includes a large amount of built-in icons to help get you started and numerous export options including the ability to send either part (a branch) or a complete map via Wi-Fi to another device or shared to one of many Cloud services.

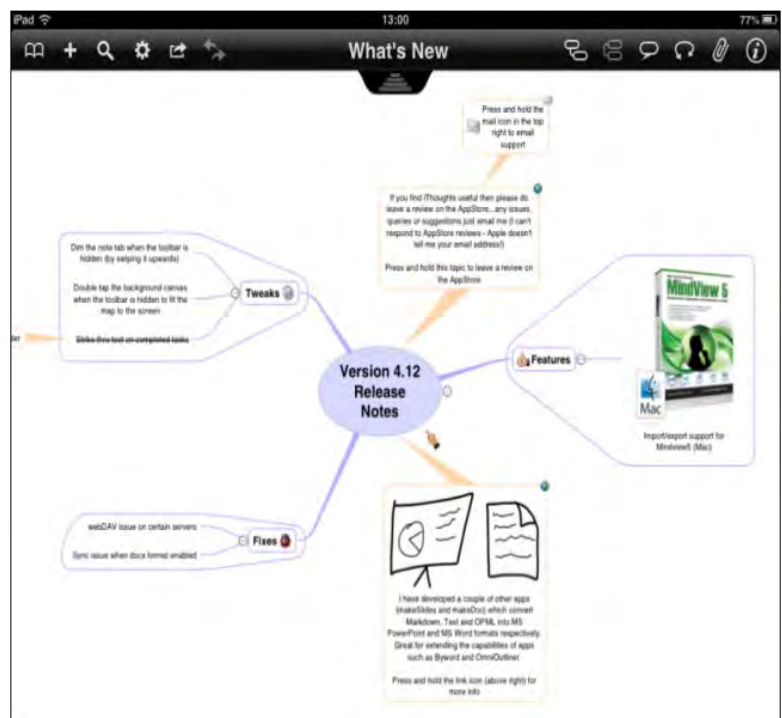


Figure 60: iThoughtsHD.

Outline Pro

Outline differs from orthodox mind mapping Apps, offering instead a step by step approach to structuring and planning essays. Outline Pro provides a structured approach by using headings such as Topic, Introduction, Body Paragraph(s) and Conclusion, to help pupils construct and write essays in small chunks.

Included in Outline Pro is a range of templates for Writing Papers/Essays, Writing a Speech and help to prepare a Scientific Paper. There is also an option to create a 'Blank Outline' giving the flexibility to adjust the structure as you want. Text can also be copied from other text-based Apps such as Notes so you can paste pre-written (typed) notes into specific sections such as Introduction, Body Paragraph, Conclusion etc.

Outline Pro lacks the ability to choose custom font styles or colour backgrounds but once an outline is complete it includes a variety of export options, including 'Send to app' which means the project can be opened in Pages for further editing. Outline Pro is probably best suited to secondary pupils or students in Further or Higher Education.

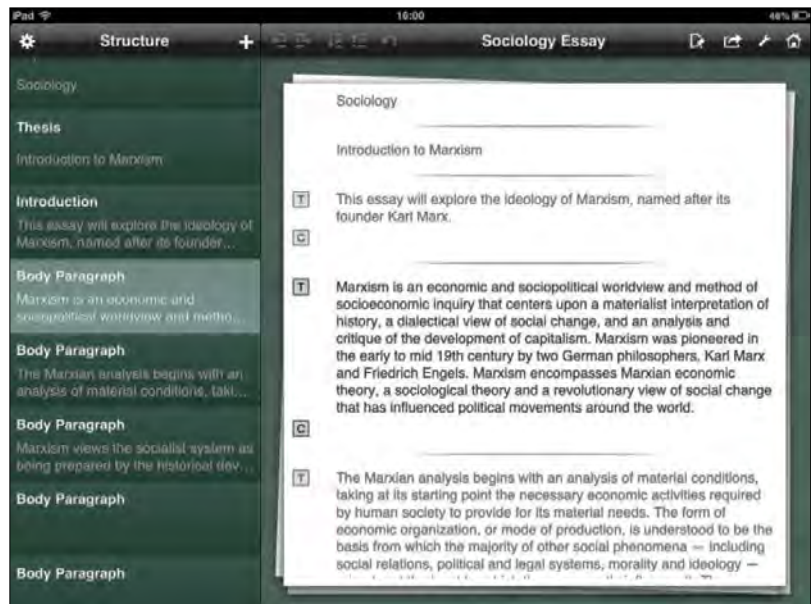


Figure 61: Outline Pro - an alternative to mind mapping.

Apps to help with Memory

The App Store offers a variety of Apps to aid with memory and retention difficulties, e.g. day-to-day memory problems, remembering dates (for submitting homework), and important appointments. There are also Apps to help with specific tasks such as Flash Cards to build vocabulary, recall names, places, and facts - useful for exam preparation or for learning and studying new information.

Examples in this category include:

Forgetful

With Forgetful you can create visual and/or auditory reminders using the iPad's built-in camera and microphone. As well as being easy-to-use, you can record voice notes as reminders which can be set to the integrated Calendar App. You can also take photographic or video reminders so you can match the photo with a relevant reminder, e.g. a picture of a biology text book to match the biology homework submission date.

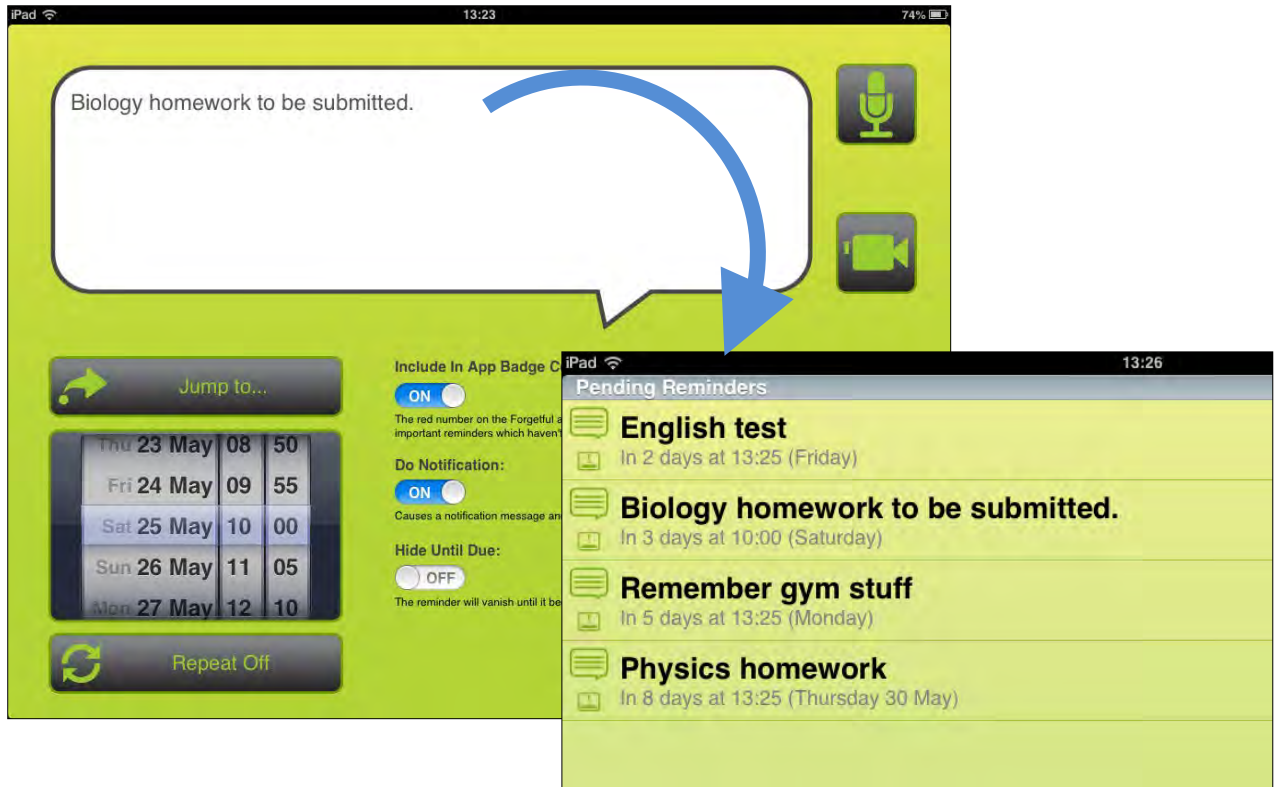


Figure 62: Forgetful – uses the built-in microphone and camera to record visual reminders.

Flash Cards

A simple search for 'Flash Cards' on the App Store brings up a plethora of results, from Baby Flash Cards (Animal Zoo, Sight Words, Balloon Baby,) to Flash Card Apps for younger and older children. As well as word flash cards there are Apps to improve numeracy (Math Practice) and European Languages such as Italian.

Useful features to look for in a Flash Card App include options to customise existing 'decks', i.e. add your own voice, add pictures and control the speed at which the words or phrases are shown from flashcard to flashcard etc. Other features can include the option to 'shuffle' or 'swipe' flash cards and include memory games which can add fun to learning.

Some Flash Card Apps offer voices so that content is read aloud. This multisensory approach can be beneficial to help visualise and hear words and phrases to help learners retain and recall information when required.

Flashcards+

Flashcards+ is a free App although there are options to purchase 'add-ons' such as voices for text-to-speech and additional 'decks' of words.

Flashcards+ includes a large number of 'decks' which can be downloaded free of charge. Decks can be edited so words can be deleted or new words added.

Flashcards+ features a swipe and shuffle mode – shake the iPad and new words appear. For an additional charge, Flashcards+ offers a 'flashcloud' which automatically synchronises all your flash cards across different devices.

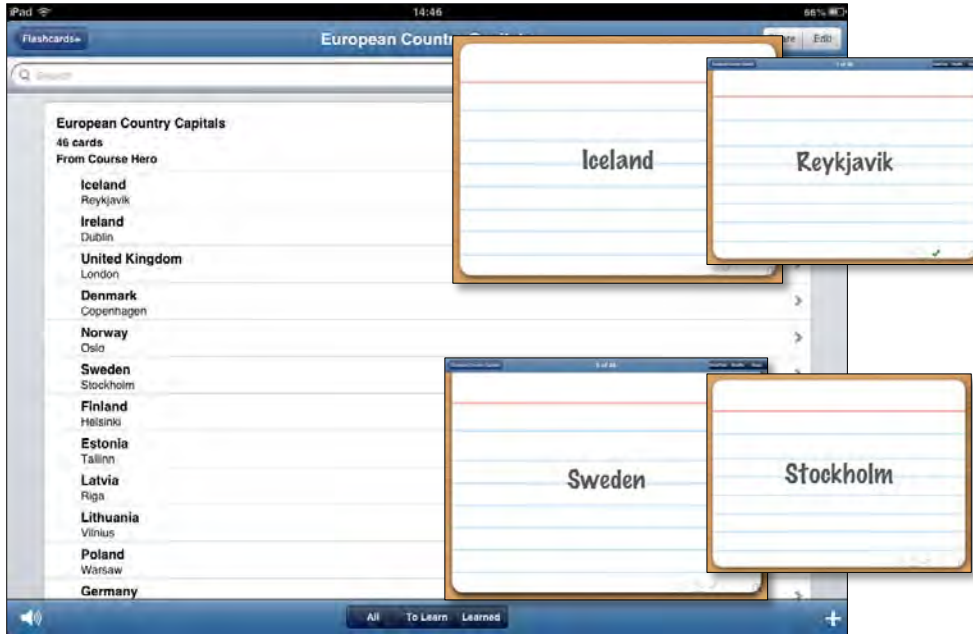


Figure 63: Flashcards+ to help with revision.

For more information on Flashcard Apps visit: www.flashcardapps.info/

2. Apps to Support Reading

Reading Apps tend to offer features such as text-to-speech. Some Apps include word and sentence highlighting to help with visual tracking and comprehension. Others have tools to change background and font colours as well as font styles. While many Apps are primarily geared towards support for reading there can be overlaps with some providing both reading and writing support.

Although text-based Apps can be read aloud using VoiceOver or Speak Selection, some allow you to convert and save text to audio, i.e. MP3 which can then be exported to iTunes, or Dropbox or sent as an email so the file can be listened to at a later time - useful for comprehension and/or revision purposes.

Examples in this category include:

Clicker Sentences

The Clicker Sentences App provides a picture based writing environment for both emergent writers and those pupils who require additional support with literacy.

The App includes text-to-speech, colour highlighting, an option to download free ready-made grids from LearningGrids and Dropbox integration (requires Wi-Fi/WebDAV). WebDAV is a service that allows files to be shared over the Internet - it can be used as a secure alternative to other cloud-based services for sharing and storing files such as Dropbox which can often be locked down in schools.

For more information on sharing Clicker files and WebDAV see: bit.ly/clickerappwebdav.

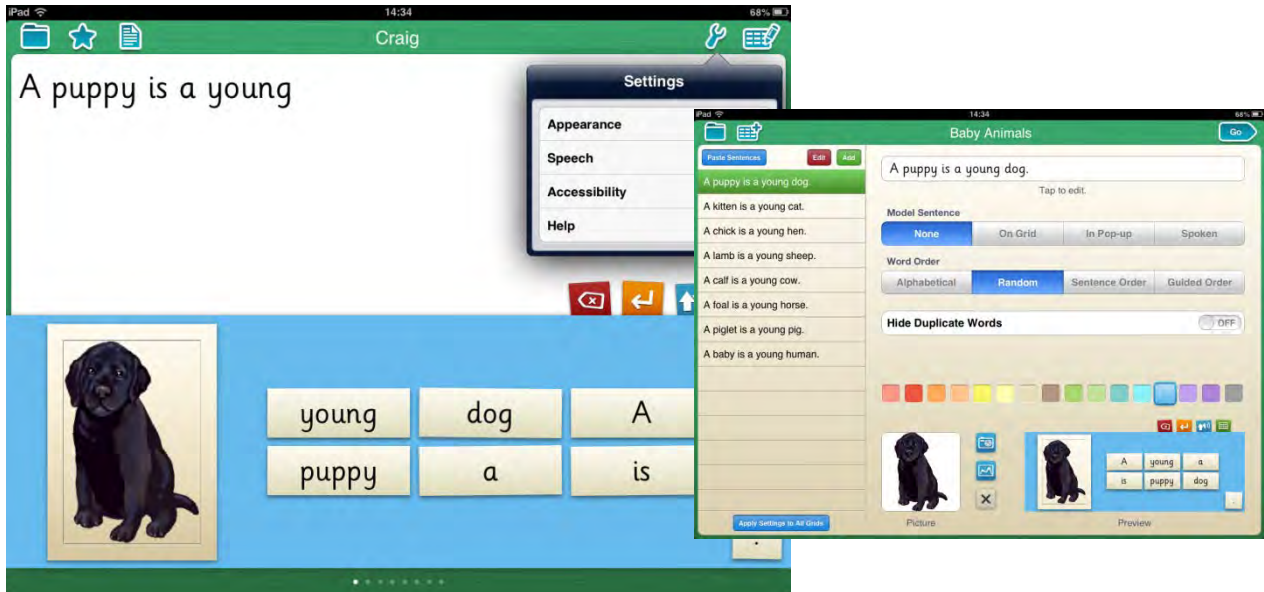


Figure 64: Clicker Sentences to support reading.

Clicker Books

Another App from the Crick stable is Clicker Books (offering reading and writing support) allowing pupils to easily put together their own talking storybooks incorporating pictures, drawings, recorded speech and text. Clicker's well known ways of supporting literacy with Word Banks, Picture Banks and the Word Predictor are all included.

You can watch a recorded webinar tutorial on Clicker Books on the CALL Scotland website: bit.ly/1hOjOMk.

Speak it!

The Speak it! App lets you type into its text field and by tapping the 'Speak it!' button situated just above the on-screen keyboard, it will read the text back.

The App has 4 voices (2 are British English: Graham and Lucy) but other voices can be downloaded as an In-App purchase for £0.69p

As well as typing directly into the text field, you can also copy and paste text from other applications such as Safari, Notes, Pages etc.

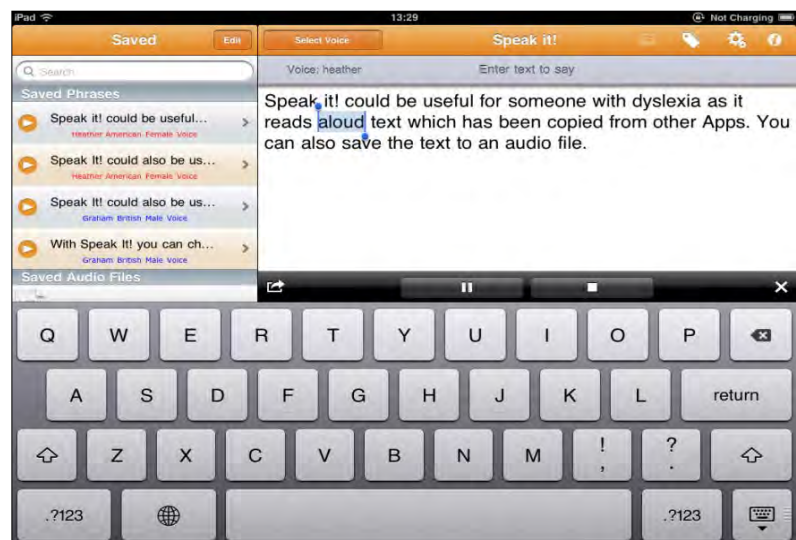


Figure 65: Speak it! reads text out loud.

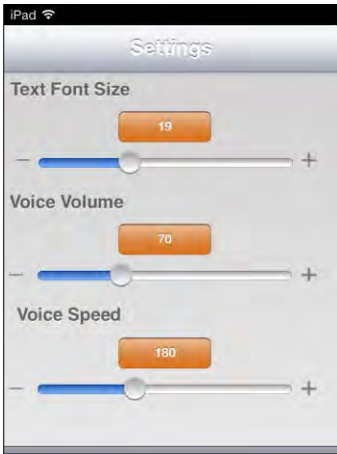


Figure 66: Settings in Speak it!

Tapping the Play button, which is located just above the keyboard, will put Speak it! into reading mode. Speak it! reads from the beginning of each block of text, not at the start of a new sentence or the 'cursor' location, which can be frustrating.

Banks of phrases or text can be stored and are located on the left hand side of the App. Voice settings such as speed and volume are controlled using slider bars, found in the Settings menu. Speak it! also highlights each word as it is spoken. There are no options to change or adjust background and font colour styles.

ClaroSpeak UK

ClaroSpeak UK combines support for both reading and writing. You can copy text from other text-based Apps such as Pages or Safari and there is also an option to open text files which have been previously saved in ClaroSpeak. The App will read words or sentences as they are typed and will read the text from wherever the cursor is located.

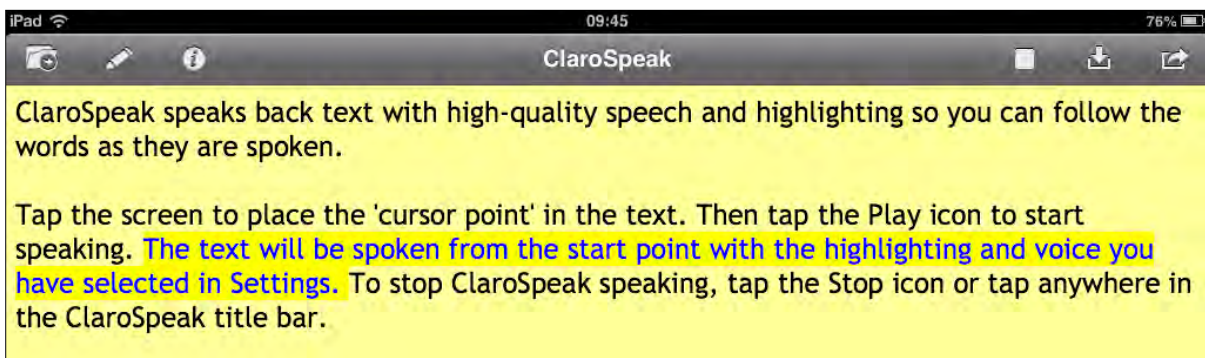


Figure 67: ClaroSpeak includes a range of settings.

Text can also be saved as a text file or copied to the Clipboard, which can then be opened in other Apps such as Pages (ClaroSpeak could be used as an effective proof reading tool). Text can also be saved as an audio file and sent as an attachment by email.

In Settings you can choose from an extensive list of options such as different font styles, sizes and background colours. There are also highlighting options and a choice of four voices including Virginie (French) and Monica (Spanish).

Additional voices (including Scottish Fiona) can be bought from the Claro online store as an In-App purchase (approximately £1.49p). Voices can be downloaded and installed directly into the App.

ClaroSpeak also includes optional 'Ad-ons' e.g. word prediction (£0.69p) with an option to create and save 'subject or 'curriculum specific lexicons/topic dictionaries', i.e. words which are related to a topic appear in the prediction list.



Figure 68: Create topic dictionaries to support writing.

Cumulatively these features make ClaroSpeak both an effective reading and writing App.

Voice Dream

Voice Dream is a flexible text-to-speech App which includes a host of useful features. As well as options for creating and storing text files into different folders (My Folders) text can be imported from different sources, such as Dropbox, Clipboard (copy and paste), Web Browser (Voice Dream has a built-in web browser so you can copy text without leaving the App) and iTunes.

You can also download thousands of free eBooks from the Project Gutenberg Library (out of copyright books) directly into Voice Dream: www.gutenberg.org/

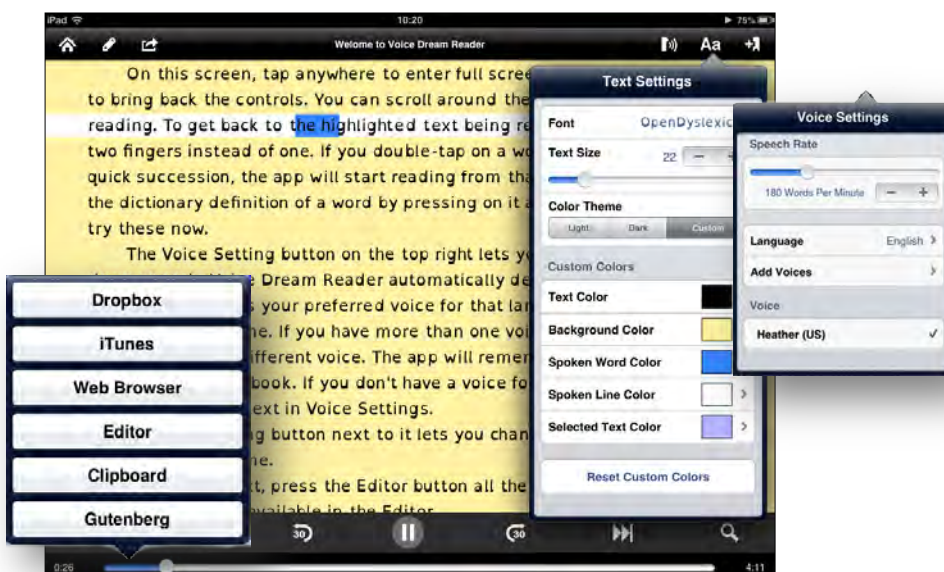


Figure 69: Voice Dream - a flexible text-to-speech App.

As you can see

from the illustration, Voice Dream offers a variety of text size, colour themes and personal customisation options. Included in the download

“is the OpenDyslexic font, the open source font created to increase readability for readers with dyslexia”: <http://opendyslexic.org/>. The default voice is American U.S. but you can buy British/English voices for approximately £1.49 as an In-App purchase. For more information on Voice Dream go to: www.voicedream.com

Web Reader

Web Reader is a stand-alone web browser App which reads text from web pages. It includes two voices (Male and Female), an option to change the speed of speech and colour highlighting as text is read, although there is only one colour, grey, to choose from. Web Reader also has a Bookmarking option so you can save and revisit your favourite web pages.



Figure 70: Web Reader is a stand- alone web browser App.

Situated at the top of Web Reader is the speech control bar which is used for playing, pausing and stopping speech playback. The Bookmark and Options settings are located to the right hand side of the control buttons.

ER Browser

In Chapter 1 (hints and tips) we looked at the Reader feature in Safari, the iPad's built-in browser. Safari Reader strips out the content from a web page making it clearer to read. The ER Browser App does much the same but includes many more options to improve readability, such as font style, size and colour options, using a set of customised themes.

ER Browser works best on Internet pages that have a simple linear layout. On more complicated websites the pre-defined themes can offset the page layout making it difficult to follow. There is no built-in text-to-speech but you can use Speak Selection to have the text read aloud.



Figure 71: A range of colour options in ER Browser.

3. Apps to Support Writing and Notetaking

For pupils who have difficulties with writing, notetaking and general recording there are many Apps available to help. Common difficulties among pupils who struggle with handwriting include illegibility, struggling to keep up with fellow peers in class often resulting in poor self-confidence and disengagement. Forcing a pupil to continue writing by hand when there are easier, faster and more effective methods is not good practice and can prevent them from accessing educational opportunities.

Compared to the traditional keyboard, the iPad's built-in keyboard is not the most efficient way of writing, especially for writing longer extended pieces of work.

There are however numerous Apps that have been designed to help pupils record their work more effectively. Writing and notetaking Apps have greatly improved in the amount and quality of features they now offer; word prediction, speech recognition, spell checking, tools to annotate written notes, high frequency on-screen keyboards, which can be customised with different layouts etc.

Although writing and notetaking Apps differ from each other they tend to offer similar features, such as:

- Text-to-speech - letters, words and/or sentences are read aloud as they are typed.
- Speech-to-text - spoken words are converted to text (sometimes known as speech or voice recognition).
- Recorded speech - when the user records his or her voice (or even the teacher's voice) to compliment or annotate typed notes.
- Synchronised recorded audio - when recorded notes are synchronised or linked to written notes.
- Spell checking.
- Word prediction - when a user types the first (or second/third) letter of a word the App offers a list of possible suggestions (normally in context of what is being written). Word prediction can help to increase the speed typing and improve spelling accuracy. Some apps include linked images (or symbols) to predicted words, e.g. if the word 'cat' appears in the predictive list or words an image of a cat will appear alongside the word. These features can also be combined with audio support - tap or touch the word to hear it read aloud.
- Annotation tools - annotate notes with colour highlighting pens/felt tip pens and recorded audio.
- Customised on-screen keyboards - allowing the user to personalise their on-screen keyboard with different colours, font styles and layouts such as 'lowercase', 'abc', 'high frequency' and with image support.

While some Apps include two or more of the above features, other Apps only offer one dedicated feature such as speech-to-text or word prediction.

Examples in this category include:

Co:Writer

Co:Writer is a trusted writing tool that has been around for many years for Windows and Mac. At the heart of Co:Writer is a powerful word prediction engine providing support for phonetic/flexible spelling, grammar, and topic-related dictionaries.

The Co:Writer App is a cut down version of its bigger and older brother but still contains many of its much-loved features such as text-to-speech, topic dictionaries and flexible spelling ('telefone'/'elefant'), letter omissions, word ending omissions and letter reversals.

Co:Writer has access to thousands of topic dictionaries although this feature requires you to be online, i.e. type a topic and Co:Writer searches the web (mostly Wikipedia) on topics based on keywords, i.e. war poets, Wilfred Owen etc.

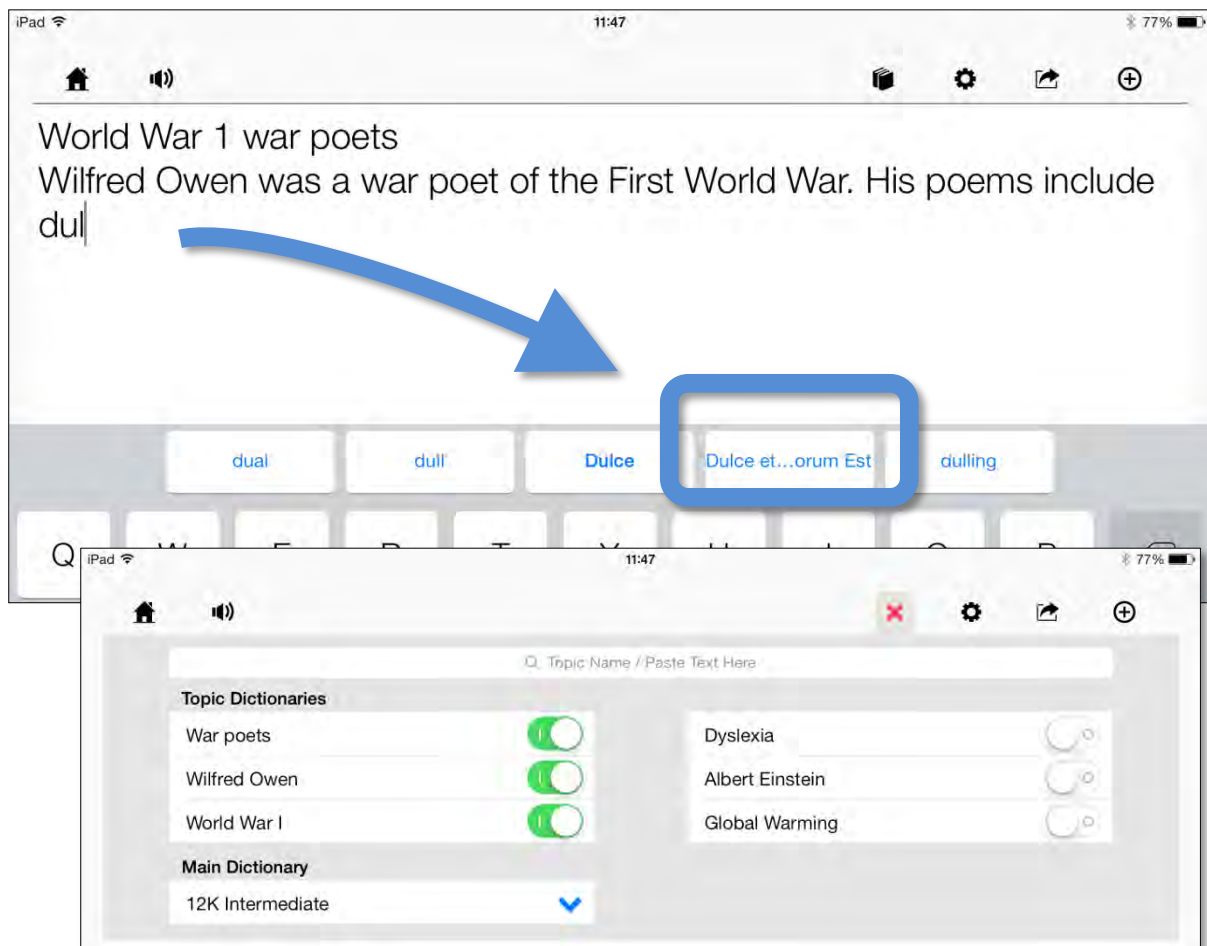


Figure 72: Co:Writer App.

Co:Writer is fully supported with over 10 short introductory Show Me How Tutorials: donjohnston.com/cowriterapp

iReadWrite

iReadWrite supports both reading and writing and included a variety of features and tools to help with auditory and visual processing such as word recognition, homophones, word meanings, text-to-speech, word highlighting and spelling options.

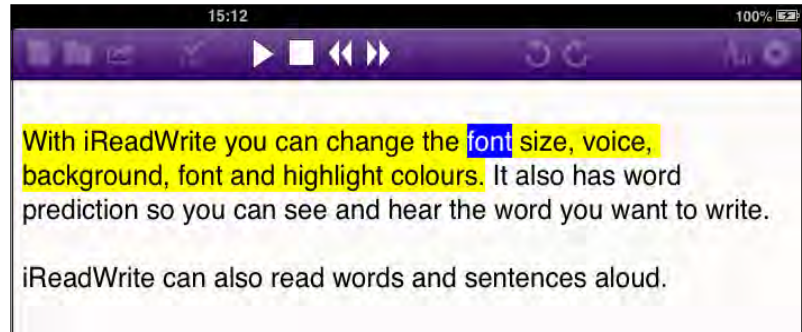
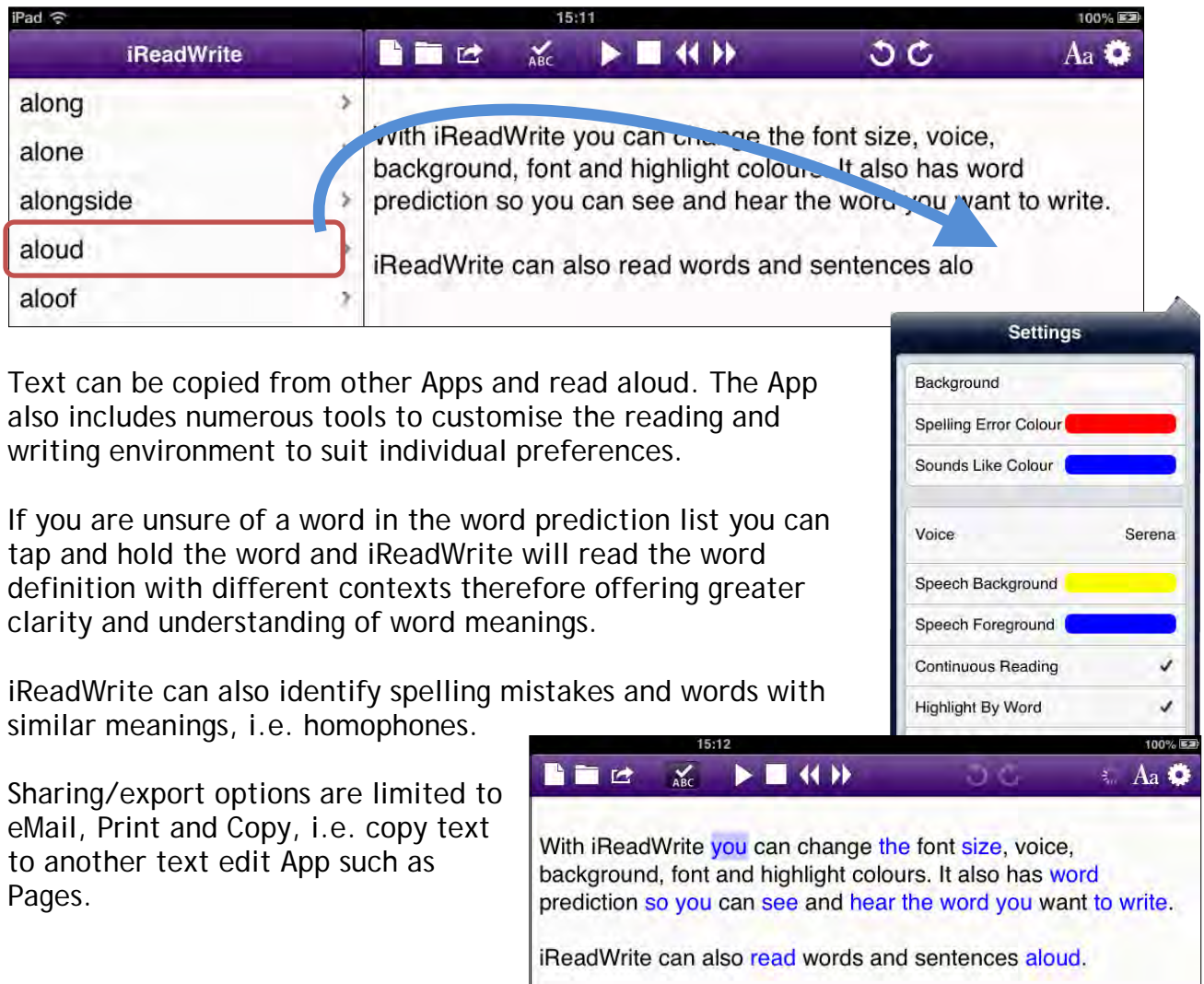


Figure 73: iReadWrite support reading and writing.



Text can be copied from other Apps and read aloud. The App also includes numerous tools to customise the reading and writing environment to suit individual preferences.

If you are unsure of a word in the word prediction list you can tap and hold the word and iReadWrite will read the word definition with different contexts therefore offering greater clarity and understanding of word meanings.

iReadWrite can also identify spelling mistakes and words with similar meanings, i.e. homophones.

Sharing/export options are limited to eMail, Print and Copy, i.e. copy text to another text edit App such as Pages.

Abilipad

Abilipad is a hybrid of many things - a notebook with word prediction, text-to-speech, voice recording and picture support to encourage language and writing development. A strength of Abilipad is its ability to create customised keyboards, i.e. QWERTY, lowercase, high frequency, colour, word family, matching games etc.

Figure 74: Spelling correction and word prediction.



Figure 75: Create custom keyboards in Abilipad.

Keyboards are easy to make by merging cells together so that an entire sentence could fit on a 'button'. Images can be added to the keyboard from the iPad Photo Library or from Abilipad's (limited) built-in library.

Custom keyboards can be used to create simple writing prompts, or to create activities with additional scaffolding support through attaching photos, voice or entire sentences to a single keyboard button.

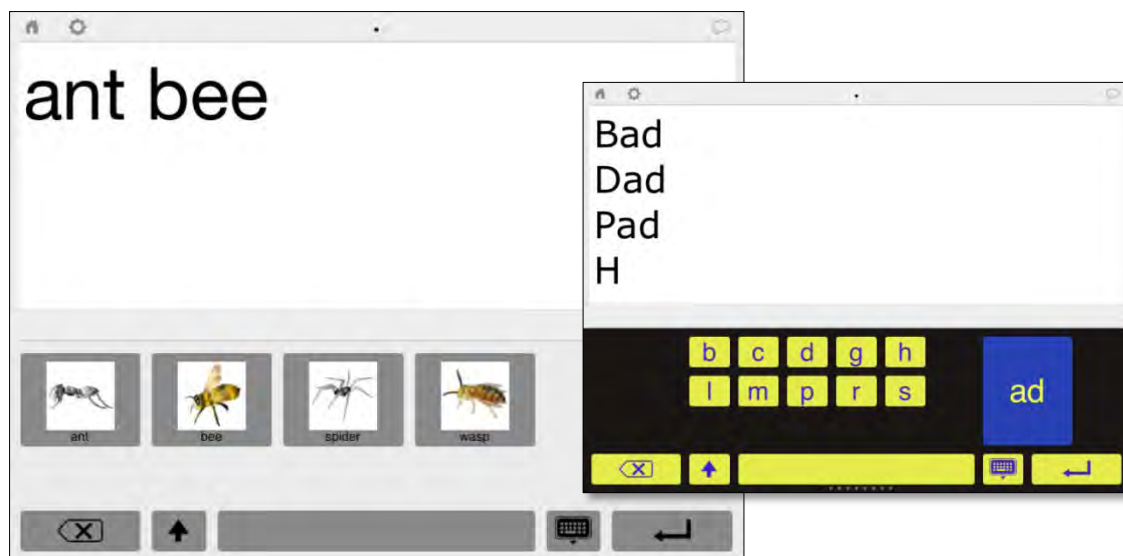


Figure 76: Picture supported writing.

A key feature of Abilipad is the online sharing database, where you can download existing notebooks and keyboards created by a growing community of users. Having some pre-made templates to use as a starting point is something that many teachers will welcome.

To find out more about Abilipad and watch a video tutorial go to the following link: bit.ly/ZgeMTI

Clicker Docs

Clicker Docs provides word banks and word prediction options offering support which is geared towards primary aged pupils. The main features of Clicker Docs include:

- A talking spell checker.
- Word prediction with options to predict next word, set the number of predicted words, sounds like - to support phonetic spelling.
- Options to customise background colours and font styles.
- Text-to-speech with options for speaking individual letter, sentence, word with colour highlighting and choice of voices.
- Spell checking.
- Word banks and word prediction.
- Download ready-made grids from Learning Grids.
- Dropbox and WebDAV integration.

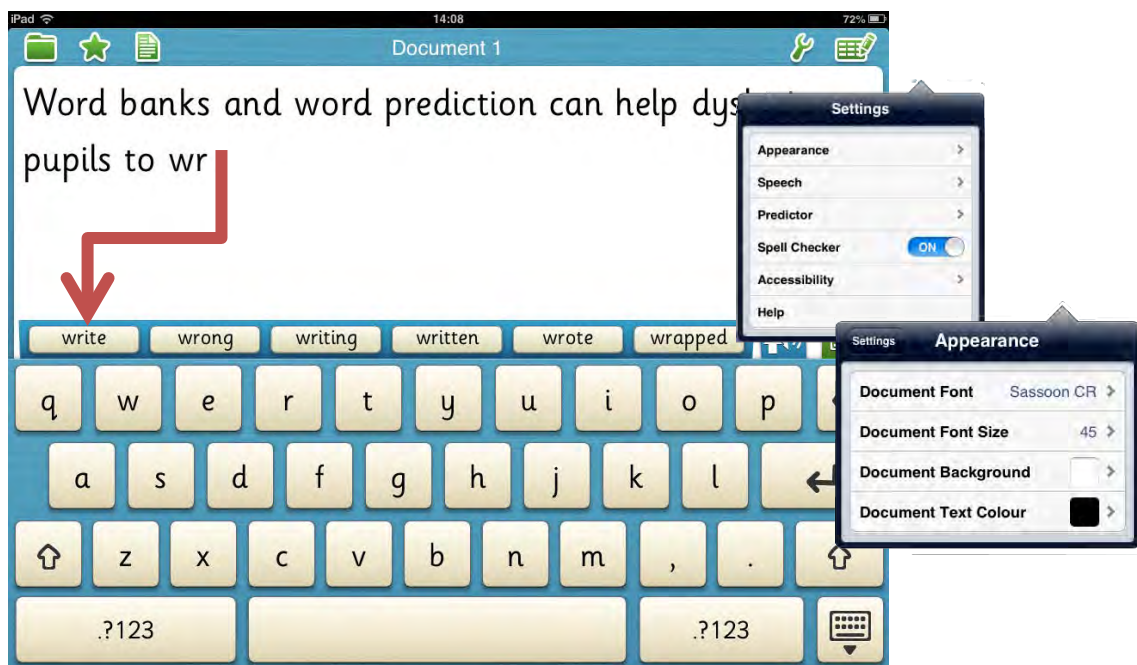


Figure 77: Clicker Docs includes a range of features and settings.

Clicker Docs offers word prediction and word banks to scaffold and support writing - contained in an easy-to-use colourful interface with added accessibility options, 'Swipe Grids' and 'Show Touches' so learners can see and track movements on the iPad.



Figure 78: Example of word banks in Clicker Docs.

Clicker Connect and Write Online make up the remaining Crick Apps. Write Online is similar to Clicker Docs but has a more 'grown up' look to the interface with age-appropriate topics. Write Online could be used as a stepping-stone for those making a transition from Clicker Docs to something more challenging.

You can find out more about each of the Clicker Apps on the Crick website: www.cricksoft.com/uk/products/apps/clicker-apps. You can also download the Clicker Apps Comparison Chart: bit.ly/clickerappscomparison.

AudioNote (Lite version available)

AudioNote combines the functionality of notetaking and voice recording to capture class discussions, lectures or even writing notes in meetings. AudioNote synchronises notes and audio automatically which can then be played back by tapping each of the notes.

You can also add drawings or annotations to the notes (and images from the iPad's Photo Library or camera) to help remember the context in which they were taken. AudioNote also indexes each recording session so recordings are easy to find.

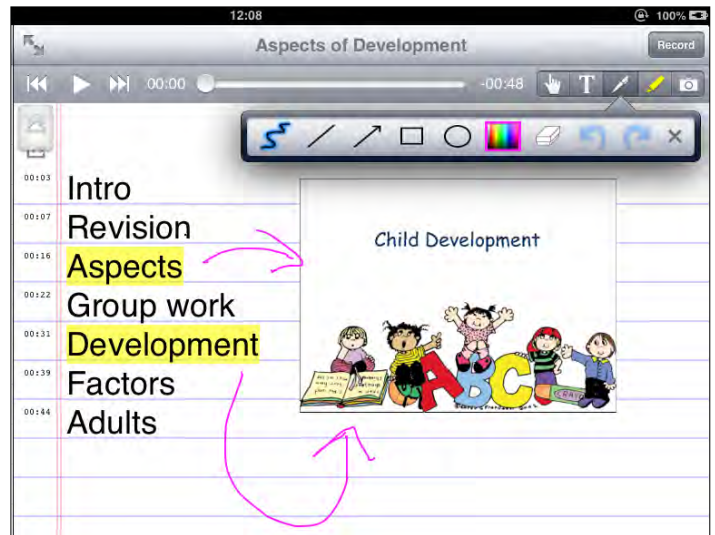


Figure 79: Synchronised writing with AudioNote.

Notes can be saved to the 'Cloud' or shared with peers using the same network. Indexed files can also be saved into folders. Pupils should always seek permission before recording audio in class.

Other Apps to support writing and notetaking include:

Notability

Notability offers a large selection of annotation tools such as highlighting markers, pencil for hand writing and speech recognition for adding voice notes to images, text etc. Notes can be arranged by subject or category and there is a helpful search facility to quickly find saved Notes.



Notability also includes different colour backgrounds as well as lined or graph paper giving it a 'digital jotter' feel. Notes can be exported and shared by email in PDF format or shared to Dropbox, Google Drive, Box and iTunes.

Notability would be ideal for taking notes in class, for gathering and sorting information for topic or research, and for writing short assignments.

There are a few things which could be better with Notability, e.g. 'Speak Selection' does not currently work and so you can't listen to notes with text-to-speech. There is no 'snap to grid' to easily draw straight lines.

To find out more about Notability and how it can be used in class, the following link to a blog post by CALL Scotland entitled 'Digital Jotter for the iPad' provides a valuable insight: bit.ly/119vng0

PaperPort Notes

This free App is similar to Notability, e.g. colour highlighting to annotate notes, voice recording to add voice notes and bookmarking. You can also import existing documents from Dropbox or take clippings (screen/snap shots) from a web browser without leaving the App.

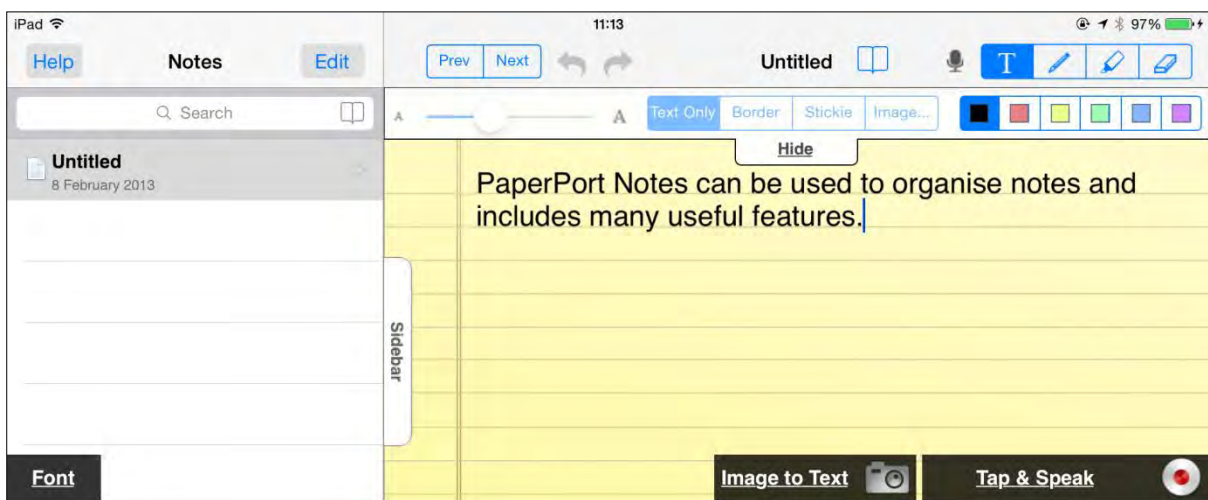


Figure 80: Animate and highlight notes in PaperPort Notes.

iWordQ UK

iWordQ is another App which offers both reading and writing support. A main feature of iWordQ is 'Text Chunking'. Text Chunking is targeted at those children who are bridging between learning to read and reading to learn with an emphasis on the latter.

Text Chunking lets you click anywhere in a sentence or phrase and it will automatically read that word and additional words helping to place the word in context.

Text chunking can be turned 'on' or 'off' in Reading Options. iWordQ has different reading modes, e.g. sentences are greyed out, or read with highlighting.

It will also keep the sentence highlighted for practising individual sentences. Other main features include; word prediction, appearance and vocabulary options i.e. add your own words to the built-in vocabulary.

Dictamus – Dictate and Send

Dictamus is like having your own personal digital Dictaphone on an iPad. Traditional Dictaphones can be challenging to use for some dyslexic learners due to the complexity and array of small buttons to record, organise, bookmark and store audio recordings.

Dictamus overcomes this problem by providing an uncluttered visual layout with large play, record, fast forward and rewind buttons. Audio recordings made in Dictamus can be easily edited, deleted and re-recorded. There are also options to save and export recordings to Dropbox or send by email.

There are two versions of Dictamus to download, a free version which includes all the features but limits the length of recordings to 30 seconds (as opposed to 24 hours) and the amount of recordings to 5 and the full version which costs approximately £12.00.

Using Siri and Dictation to support writing and notetaking

If you have an iPad 3 or a later model you have access to a built-in feature called 'Siri'. You can use Siri as a speech or voice recognition tool (Dictation).

This means that Siri will convert speech into text in any App that you can type or edit text using the iPad's default keyboard.

The accuracy of the conversion from speech to text is not always exact and can vary depending on the user's voice, the noise levels of the environment you are in and the strength of the Wi-Fi (or 3G) connection. Siri and the other speech recognition Apps require either a Wi-Fi or 3G connection to work.

Setting up Siri

Siri is not set as a default setting in the iPad so you need to go to 'Settings', 'General' and tap 'Siri' to activate it. After Siri is turned on it appears as a microphone icon in the on-screen keyboard.

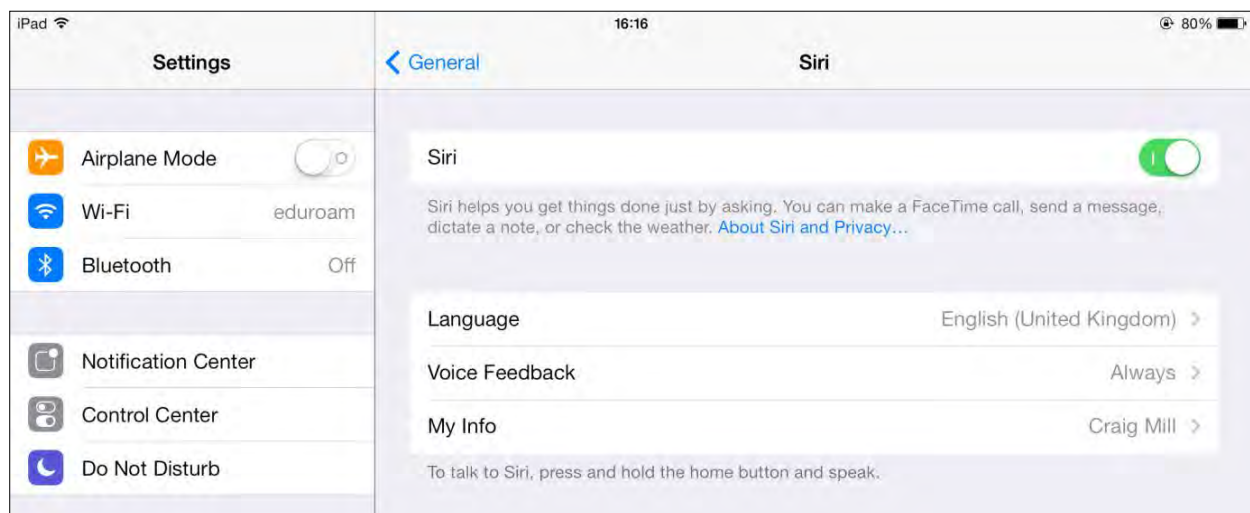


Figure 81: Setting up Siri.

Some Apps use their own integral on-screen keyboard, so Siri may not always be available. If you can see the microphone icon on the keyboard then Siri should be ready to use.

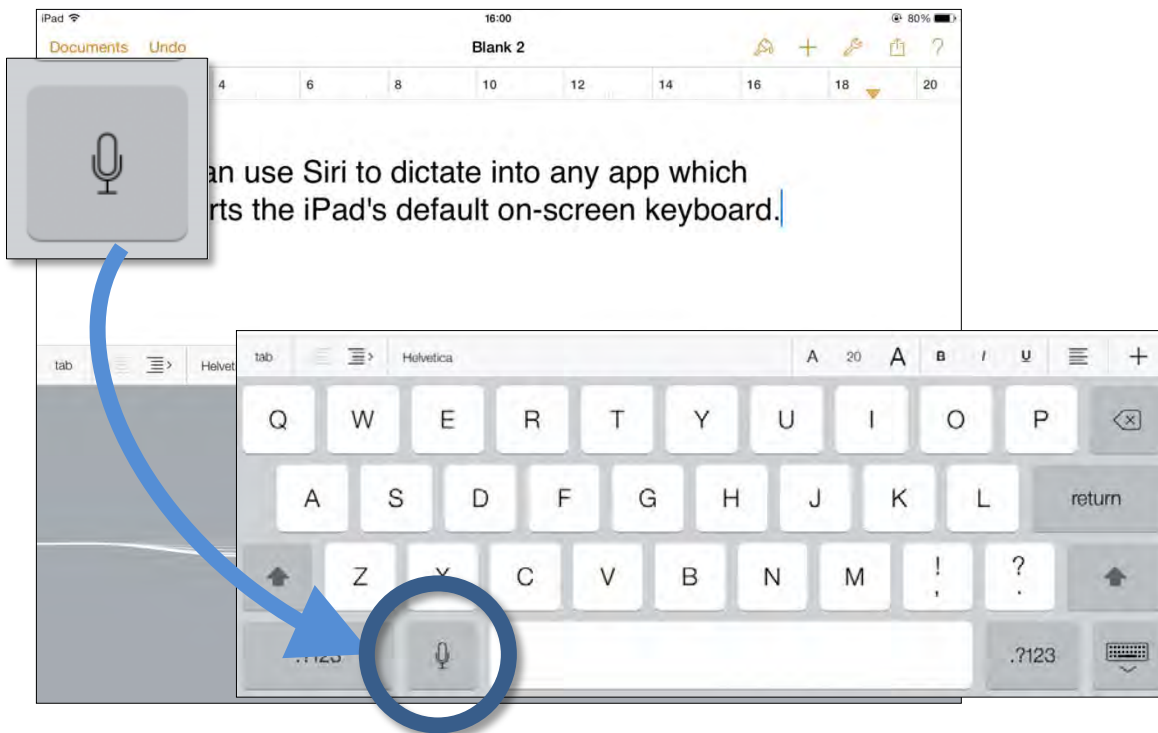


Figure 82: Look for the microphone icon on the keyboard to use Siri.

Microphone accessory

If a pupil relies on speech input for recording notes then it might be worth purchasing a dedicated microphone accessory.

The iPad's built-in microphone provides good quality recording but can be awkward to record long notes due to its positioning - it can involve holding the iPad with both hands close up to the mouth.

This can be avoided by using an external microphone/headset in combination with an adapter, such as a Bluetooth microphone or the Headset Microphone Adapter from Speech Recognition Solutions (providing a dual jack for both a microphone and headset).

speechrecsolutions.com/iPad_audio.html.

Always ensure that you use a good quality microphone as an inexpensive cheaper microphone/headset could impact on the accuracy of the recording.



Figure 83: Microphone accessories.

Pros and cons of Siri

In theory, you should be able to speak to Siri in a normal voice at a normal pace, and it will understand you. Unfortunately, this is not always the case and results will differ from user to user. Siri will perform better if the user pronounces proper names clearly.

Phrasing commands (similar to speech recognition programs) in certain ways delivers better results than others (Siri can easily get confused so the pupil needs to be specific when using commands).

Using Siri as a personal digital assistant (PDA)

Siri also doubles up as a talking assistant. Try asking Siri a question such as “what is 5 + 5?” but if you are unsure what to ask, Siri will prompt you with some example questions, i.e. ‘Some things you can ask me’.

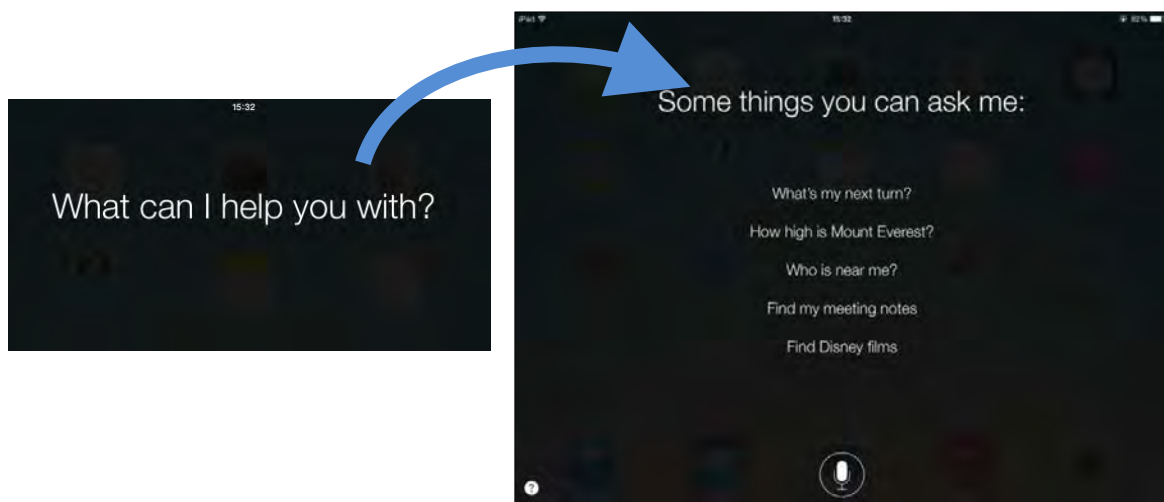


Figure 84: Using Siri as a personal digital assistant (PDA).

Talk to Siri

You can ask Siri a range of questions such as “what is the weather today?”, and it will respond or talk out loud with a short summary and image of the day's weather. Siri is sometimes referred to as a Personal Digital Assistant (PDA) that can be used to help with simple tasks.

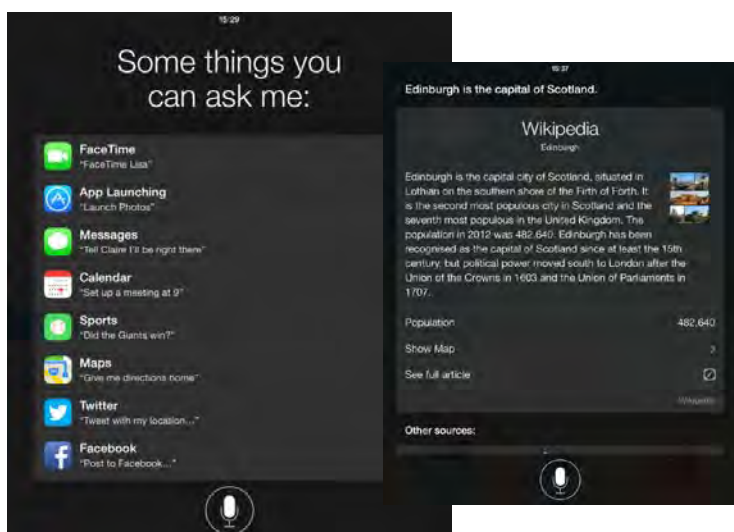


Figure 85: Example of questions to ask Siri.

One example is to ask Siri general knowledge questions such as “What is the capital of Scotland?” and Siri will reply with an answer and other relevant information such as the city population and so forth. In addition you can perform basic commands such as scheduling an appointment, homework and exam reminders etc. and it will add an item to your calendar, then confirm verbally that it has done so. Siri will also open Apps on your iPad – press the Home button until Siri appears and say ‘Launch’ or ‘Open’, e.g. open Safari, launch Mail etc.

Alternatives to Siri

Although Siri is not a feature of earlier iPads, i.e. first and second generation, it is still possible to dictate notes into the iPad using dedicated voice or speech recognition Apps.

Dragon Dictation

One example (and probably the most popular) is the speech recognition App; Dragon Dictation. This App can be used for ‘writing’ memos, short notes, emails and documents.



Dragon Dictation does not let you to dictate into other Apps, instead it uses its own environment so you are limited to speaking into the Dragon App. After Dragon has converted the text it can be copied to other Apps (such as Pages) or sent as text by email.

Like Siri, Dragon Dictation requires a Wi-Fi connection to convert text to speech. Unlike Siri, Dragon will not speak, reply to your questions or launch other Apps.

4. Apps to Support Study and Reference

Increasingly many Apps, particularly e-Book reading Apps, are integrating both study and reference tools as added extras. Apps such as Safari, Kindle, Kobo and Google’s Play Books include features such as ‘look up’ and ‘define’ when single words are selected from within the text. However, dedicated study and reference Apps offer more refined and additional features that dyslexic learners may find helpful to support study and reference skills – as well as benefiting all learners.

Examples in this category include:

EverNote

Evernote is one of the more popular Apps in the App Store. Evernote is a free App which provides a single repository for collecting and storing reference material such as web clippings, web links or URLs, images and/or audio recordings.

References that have been saved and collated or stored in an Evernote ‘notebook’, can also be synchronised between the iPad and Evernote’s online web resource or to other devices.

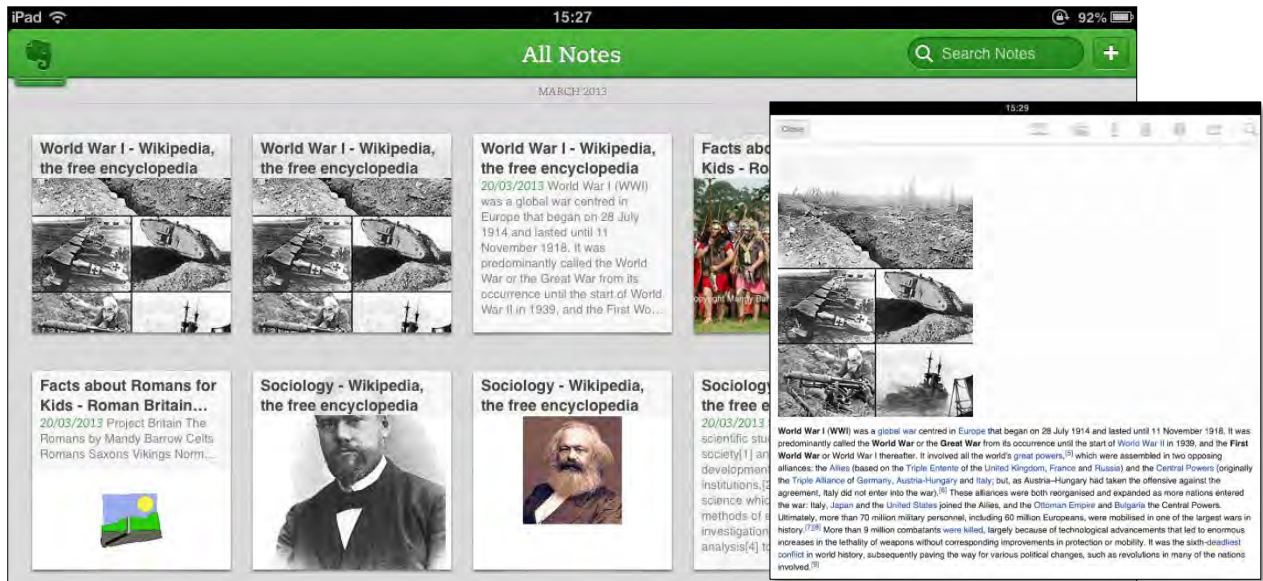


Figure 86: Evernote to organise content such as web clippings.

Clippings and other material can be shared to Facebook, Twitter or sent by email. Although Evernote is free there is a 'Go Premium' option which offers some additional features and storage space.

Dictionary.com (Dictionary and Thesaurus) for iPad

The Dictionary.com App has a crisp and clear interface with accessible and easy to understand word definitions. The free version includes adverts which could be distracting to some pupils.

Colour options are limited (blue for Dictionary and Orange for Thesaurus), but words (not word definitions) can be read aloud, although you can use Speak Selection to read out definitions. Speak Selection can also be used to read the Origin and History section.

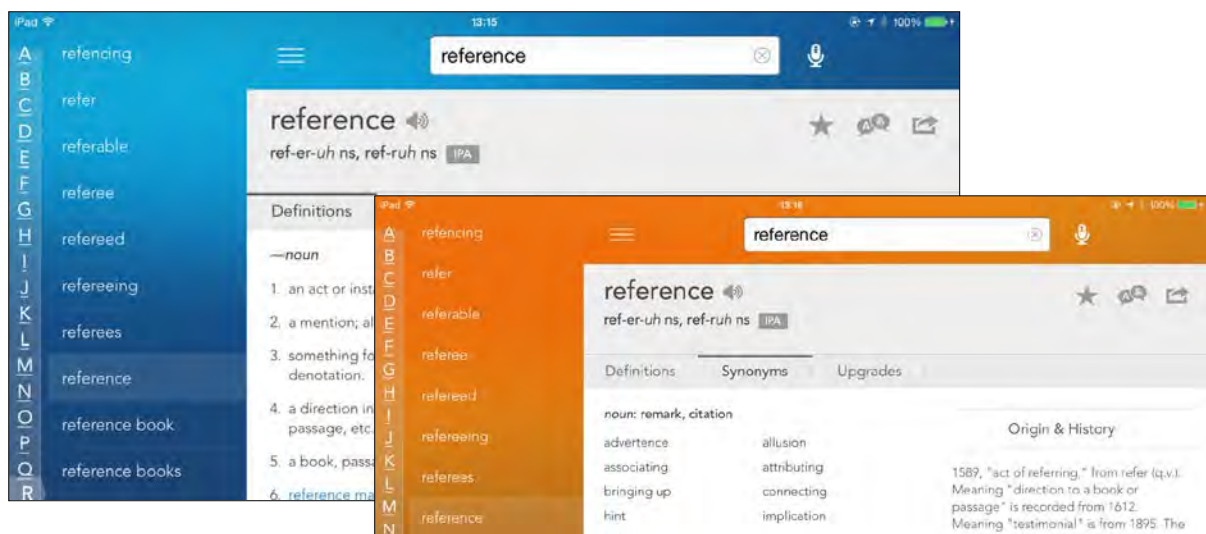


Figure 87: Dictionary and Thesaurus Apps.

There is also a voice search option which is reasonably accurate but, like most voice or speech recognition Apps, it requires a Wi-Fi connection. The App itself does not require a Wi-Fi connection to search for word meanings.

As well as the search facility, users can create a list of 'Favourites' and recently searched words. There is also a fun and novel, but possibly superfluous feature, 'Shake for a word'. Word definitions can also be sent by email.

There are numerous In-App options to upgrade or extend the Dictionary App to include subject specific dictionaries such as Medical, Science, Idioms and Phrases, and Grammar & Tips. While there are many other dictionaries and thesauruses on the App store the Dictionary.com App currently receives a 5 star customer rating.

Side by Side Study Tool

A disadvantage (at the time of writing) of the iPad is that you can only view one App or window at a time. Side by Side helps to overcome this by allowing you to view multiple 'windows' simultaneously on a single screen. This could be helpful for those learners who wish to see more than one source of information while taking notes.

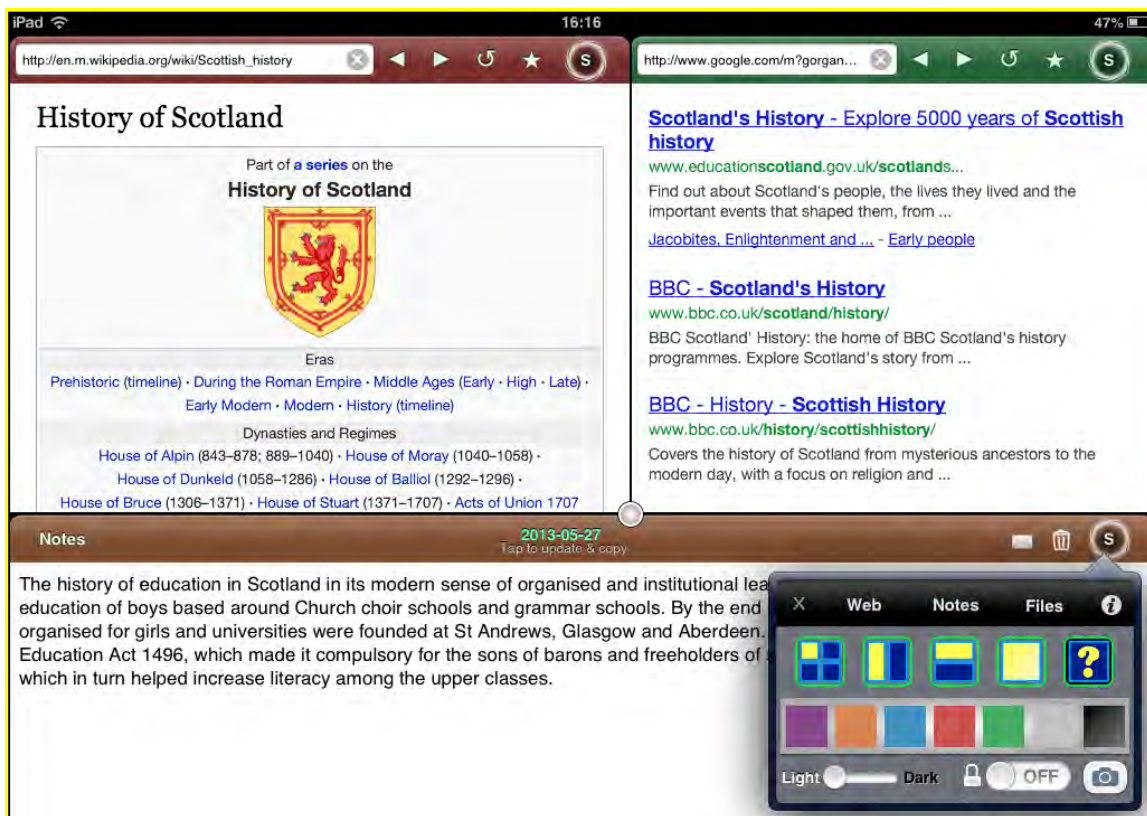


Figure 88: Side by Side offers multiple windows.

Side by Side is a free App with options to split the iPad screen into as many as four windows that can be positioned and resized as required. These windows can be used to view multiple websites or documents such as PDFs. You can also allocate one of the windows as a text editor for note-taking. Text can be copied into a text editor from other open windows. Although Side by Side has no built-in text-to-speech, text can be read aloud in any of the windows via Speak Selection.

Notes written in Side by Side can be sent via email, saved into DropBox or opened into other Apps on the iPad. Side by Side also has a drawing option (draw.html) allowing learners to sketch or draw ideas based on the open web pages which can then be sent via email.

Other Apps in this section include:

PaperHelper

PaperHelper is similar to Side by Side but only has two windows, one for browsing and the other for taking notes. The notetaking window has text formatting, drawing tools giving it a 'word processor' look and feel. The notetaking window can be enlarged and notes can be sent by email or shared on Dropbox etc.

Wikipedia Mobile

Wikipedia Mobile is the official Wikipedia App for the iPad containing over 20 million articles. Features include an option to save articles and read articles at a later date or offline.

The Wikipedia App is less cluttered than the Wikipedia website allowing for bite sized chunks of text rather than long scrolling web pages. The font size can be increased from 100% to 300% and includes a 'Solarized Dark' theme to minimize glare and improve readability.

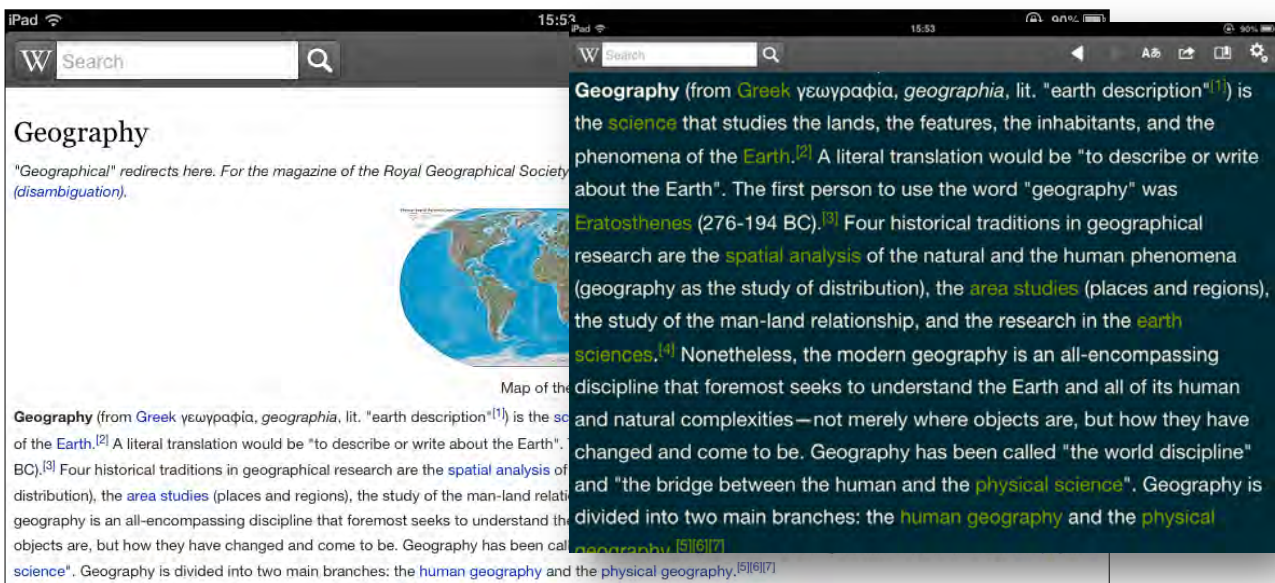


Figure 89: Wikipedia Mobile for the iPad.

WolframAlpha

Find out everything about anything! WolframAlpha gives pupils access to the world's facts and data and calculates answers across a range of topics, including mathematics, physics, chemistry, life sciences, weather, places and geography and more.

WolframAlpha is useful App for researching and gathering specific and precise information.



Wordflex

This App features an intuitive and innovative visual interface for finding word relationships and contexts.

Select a word and the App provides additional information such as 'verbs', 'nouns' 'phrases' (in context) and derivatives.

**ReferenceMe**

Scan the barcode of a Book or Journal using the iPad's built-in camera and ReferenceMe will provide author, date, title and other relevant details in a referencing style of your choice, e.g. Harvard.

If a Book doesn't have a barcode you can enter the ISBN number manually and ReferenceMe will do the rest. ReferenceMe requires Wi-Fi access for the scanning function.

**5. Scanning and Optical Character Recognition (OCR)**

In an ideal world an individual with reading and writing difficulties should always be able to access an electronic copy of a piece of text to re-configure the text into a more manageable and personalised format. This may involve enlarging the text, changing the font, increasing line and word spacing, changing colours, etc. It will often involve the use of text to speech software, e.g. the iPad's built-in Speak Selection feature to allow the user to listen to the text being read out.

But what do you do if there is no electronic version available, for example, if you need to read information from a poster, flyer, or if a teacher only has a paper copy of a worksheet or book.

If you need a high quality scan to create a document that will be used over and over again, it is better to use a dedicated scanner or 'multifunction device' as you will get better results. Also, if you need to scan a book, it is better to use a document scanning service rather than have somebody waste time scanning individual pages. CALL regularly sends books to DDSR (www.ddsr.com/) for scanning into PDF format files. Note that such a service will remove the spine of a book in order to pass it through a high speed document scanner.

If a scanner is not available or you need something converted quickly, there are several iPad Apps that can help by using Optical Character Recognition (OCR) to create a readable document. An App with an OCR facility, such as ReadIris or Prizmo can be used to take a photograph of a piece of text (or use an existing photograph) and then analyse the text in the photograph to convert it into editable text that can be read out loud.

Be careful when you choose an App for this task, there are several Apps which claim to produce a PDF, but just produce an image file, without changing the image to text. This is OK for a pupil with a visual impairment who just needs the image to be enlarged, but will not help somebody who needs text to speech. You may not have to get a dedicated OCR App as some note taking Apps, such as EverNote and PaperPort Notes incorporate OCR facilities.

Do you need to preserve formatting?

The first question to ask when deciding which App to use is whether the formatting of the final scanned text matters, or if you are just trying to extract text so that it can be read out loud, or transferred into another App.

If you need to preserve document formatting as much as possible, for example with a worksheet, there are dedicated OCR Apps, such as ReadIris, that will do the job. On the other hand, if you just need to extract the text, without bothering with the pictures, Abby TextGrabber + Translator, Prizmo, ClaroSpeak and Into Words are good choices.

ReadIris

ReadIris can be used to take a photograph of a page with a mixture of text and images and convert the document into an editable PDF document. Used in combination with ClaroPDF allows this page to be read out loud for by a pupil with reading difficulties. When you open ReadIris you can either use an existing photograph of the text you want to analyse, or you can take a new photograph. When you select your image ReadIris will attempt to define the sections of the document as either text (outlined in orange), or image (outlined in blue). If you tap and hold on a section you can change the definition from text to a graphic, or you can delete it from the document. Be careful if you accidentally convert text into a graphic as you can only change it back again by analysing the whole page again, losing other edits you may have made.

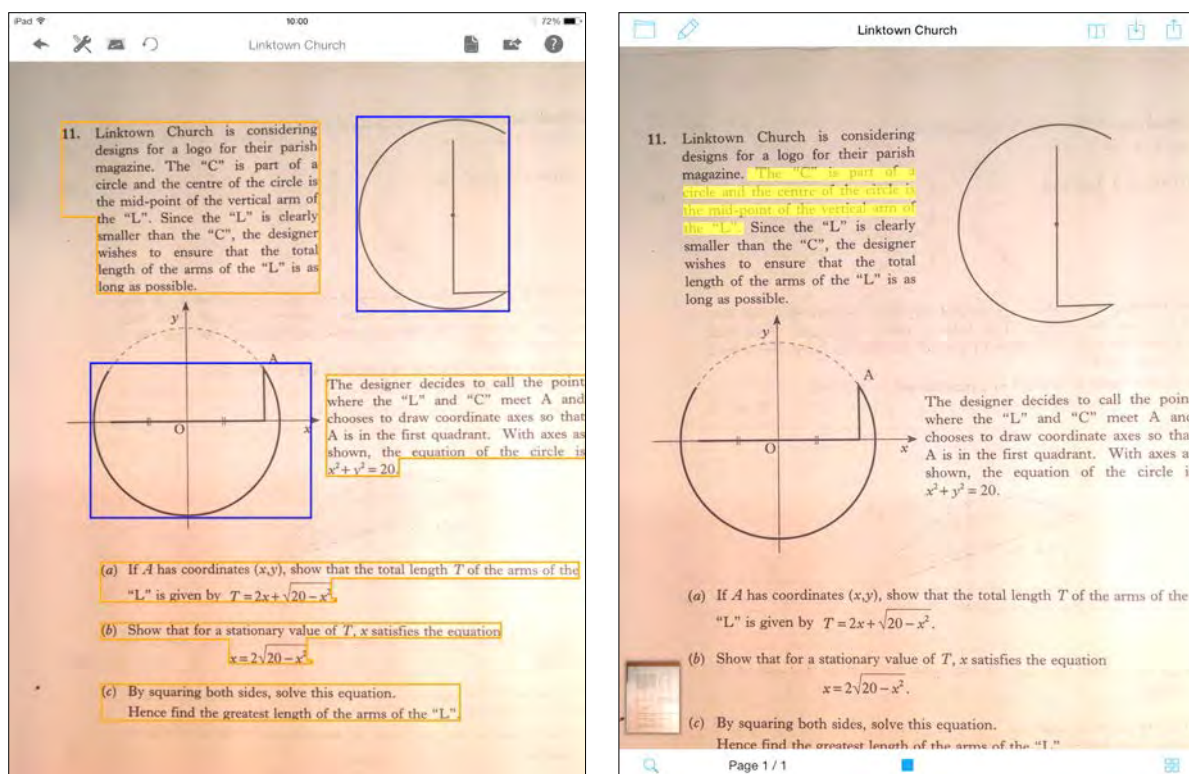


Figure 90: Editing options in ReadIris.

When you are happy that the text you want is all enclosed in orange boxes, tap on the Export button. You can email the document as text, or as a PDF, save it to online storage such as Dropbox, or open it in another App for further editing.

You could open it in an App like Adobe Reader or iAnnotate to make comments or annotations, but if you are wanting to be able to read out the text, ClaroPDF is the best option.

TextGrabber + Translator, Prizmo and IntoWords

If you just want to extract text from a paper copy to allow a pupil to listen to it being read out, TextGrabber, Prizmo and IntoWords are good options.

When you open TextGrabber, tap on Albums to access your Camera Roll, or take a new photo. Pull in the handles at the corner of your image to select the text you want and then tap on Read to convert this into text.

You can edit this text and use the Speak Selection facility to read it out. There is also a facility for translating the text into one of over 60 different languages.

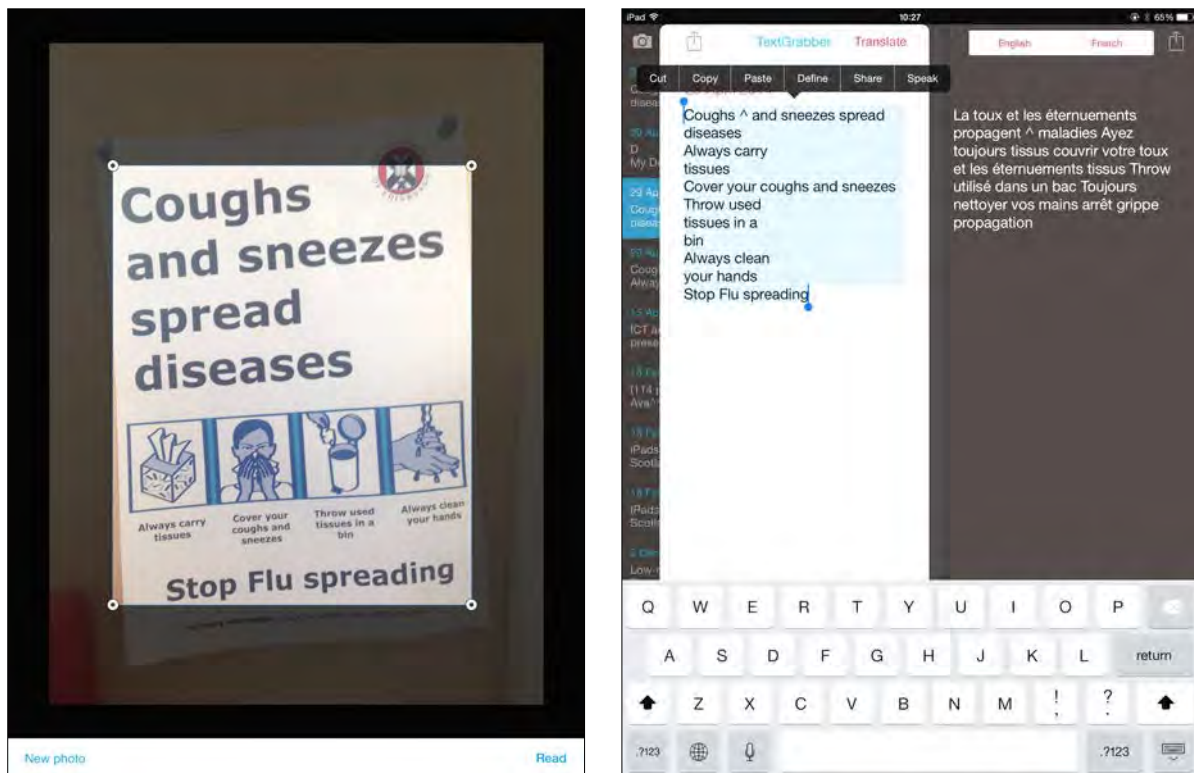


Figure 91: TextGrabber - example of an OCR App.

Prizmo is more complicated than TextGrabber, but can produce a better final result if time is taken. Like ReadIris, above, Prizmo will divide the photograph into text and image sections, each of which can be redefined as text or image and borders can be adjusted.

This stage can take some time, particularly as Prizmo can try to split a large font heading into separate characters. It is a fiddly, time consuming task to sort this, but the end result will be far better.

Like TextGrabber, Prizmo can translate the final text into another language, this time offering around 40 options. Prizmo also includes a built-in text-to-speech facility, though it is not easy to find.

Tap on the Export icon at the top of the screen, then Read Text Aloud. Each word is highlighted as it is read and the current line is also indicated.

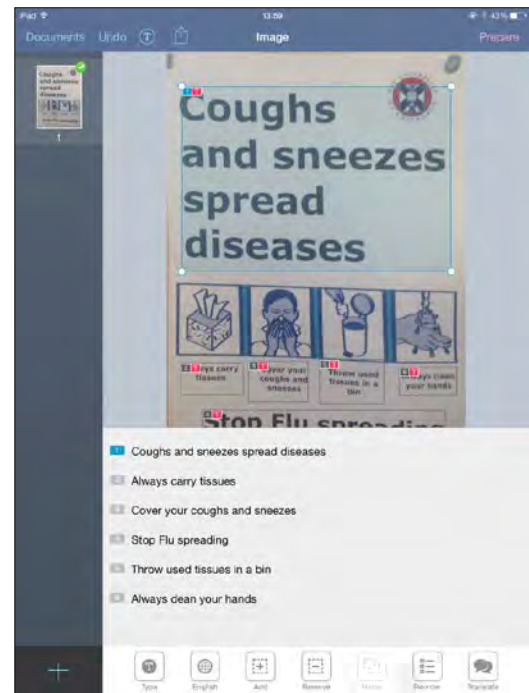


Figure 92: Prizmo - OCR App.

IntoWords provides more support for pupils with reading and writing difficulties than TextGrabber or Prizmo, combining OCR with word prediction, text-to-speech support and other support. The OCR is a little less effective than that in Prizmo and TextGrabber, not coping well with a complicated page with different sizes of text and images, but it works reasonably well with large blocks of text. The addition of word prediction and text to speech provide a powerful combination.

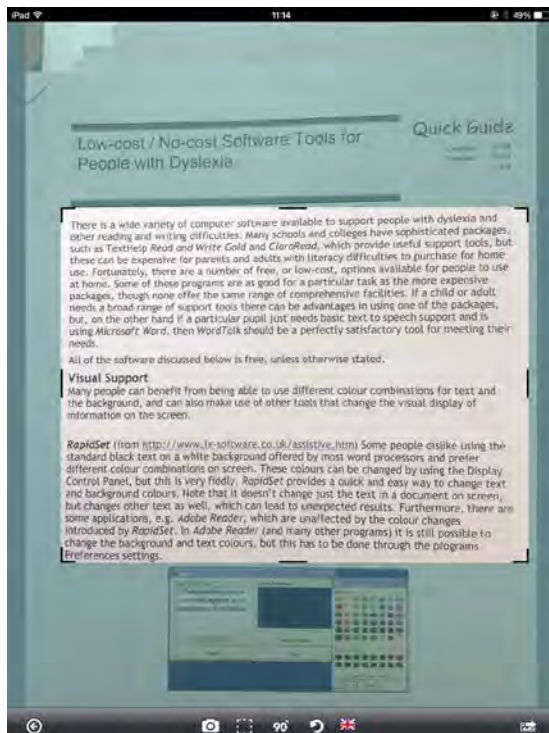


Figure 93: IntoWords combines OCR with word prediction.



In summary, if you want something 'quick and easy', without necessarily being totally accurate, IntoWords and TextGrabber are good choices, but if you want to be able to handle complex documents Prizmo is probably a better option.

Setting up a Scanning Station for an iPad

Getting decent results with scanning and OCR with an iPad is not straight forward. First of all, you need to have a good, high resolution camera - the one in the original iPad and the iPad 2 isn't good enough.

You also need very good lighting as the iPad camera does not have a flash facility. If you try to take a picture under ordinary classroom lighting you are liable to end up with the shadow of the iPad on your image.



Figure 94: Setting up a scanning station.

Using a bright window sill can help; alternatively you could use an external light at the side of the image. You also need to keep the camera steady while taking a picture. It is not easy to hold the iPad perfectly still while taking a picture, so we recommend using some form of stand.

We haven't seen a commercial purpose-built stand for taking photographs for sale in the UK. If you have a mounting system, e.g. for a wheelchair, you could try it, but it is an expensive solution to get such a system for scanning. A technical department in a school should be able to construct something; alternatively, attaching an iPad to a box for photocopier paper with a strong rubber band is a low cost solution.

6. Apps to Support Visual Difficulties

The built-in Accessibility options in the iOS such as Zoom and VoiceOver offer many users with a visual impairment increased access and usability to most aspects of an iPad, including access to Apps such as Safari, Notes and Mail. Increasingly Apps are appearing which aim to simulate traditional hardware devices such as portable magnifiers and CCTV using the iPad's camera. Other Apps include audio alarms or reminders, talking calculators, GPS for navigation and bar code scanners which can read aloud the cost of shopping items or the name and brand of actual items, i.e. TapTap See.

AppleVis Website

A useful starting point is AppleVis: www.applevis.com a "community-powered website for blind and low-vision users of Apple's range of Mac computers, the iPhone, iPad and iPod Touch."

The main focus of the website is that Apps are tested and reviewed by visually impaired users. AppleVis also offers a forum, a blog as well as guides, tutorials, tips and the AppleVis iOS Hall of Fame which showcases Apps that have been nominated and 'inducted' as worthy Apps.

AppleVis also categorises visually supported Apps into different areas such as Books, Finance, Food and Drink etc. There are over 80 Apps listed under Education (reading, writing and numeracy) with an accessibility rating, i.e. fully accessible, inaccessible: www.applevis.com/ios-app-directory/education

Braille Display Support

As well as supporting Braille Display (see Chapter 3: Accessibility Options) there are numerous Apps that provide Braille access without necessarily connecting a Braille Display.

BrailleTouch is described as an "eye-free text entry application for touchscreen mobile devices": bit.ly/brailletouch_iPad. A search for 'Braille' in AppleVis will provide many more results with a brief description of each App.

TapTap See

TapTap See scans everyday items and uses VoiceOver to read aloud the item. The App is designed for the iPhone but works well with the iPad although it requires a 3/4G or Wi-Fi connection.

"Cranberry and
Blueberry
Porridge"



Figure 95: TapTap See scans everyday items.

You need to hold the camera steady to take a useable photo and it can take up to a minute (sometimes more) to find a match - nevertheless, it is very impressive!

JustStand

JustStand is an iPad holder which transforms the iPad into a document camera: www.ipaddocumentcamera.com. Coupled with the free 'Magnifying Glass with Light' App (which uses the iPad's camera to zoom from 1.5 x - 5 x, you have a very cheap alternative to a CCTV device. The Pro version of Magnifying Glass with Light (£0.69p) also features high contrast and an enhanced 'Freeze' feature for capturing images.

Other Apps in this section include:

oMoby

oMoby is a free App which allows you to take a picture of an item or scan its bar code and then search the internet to find more information about the product. oMoby is also compatible with VoiceOver.

Talking Scientific Calculator (Lite version available)

A comprehensive featured calculator that reads aloud buttons and answers - adding, subtracting, multiplication, division, fractions and other mathematical formulae. As well as option for large buttons Talking Scientific Calculator also features high contrast and voice options.

Ariadne GPS

This is a location service centred App which uses VoiceOver to read aloud the names roads and streets by touching the map. Adriane GPS was showcased on AppleVis and received positive reviews.

7. e-Books

The App Store and iBookstore has an astonishing collection of educational books that cover a wide range of subjects for a variety of levels and learning skills.

For many pupils iBooks can offer an exciting and engaging way to encourage and improve reading skills. A large number of iBooks are narrated, some with audio effects to help set the scene, e.g. roaring dinosaurs or the sounds of space.



Some iBooks include a combination of audio, video and other interactive elements to provide an immersive reading experience.

As well as mainstream books the App Store and iBookstore contain dedicated 'Educational Collections' on curriculum topics such as English, Science, Maths, History, Geography, Music, Foreign Languages and a collection of dictionaries, grammar guides and thesauruses.

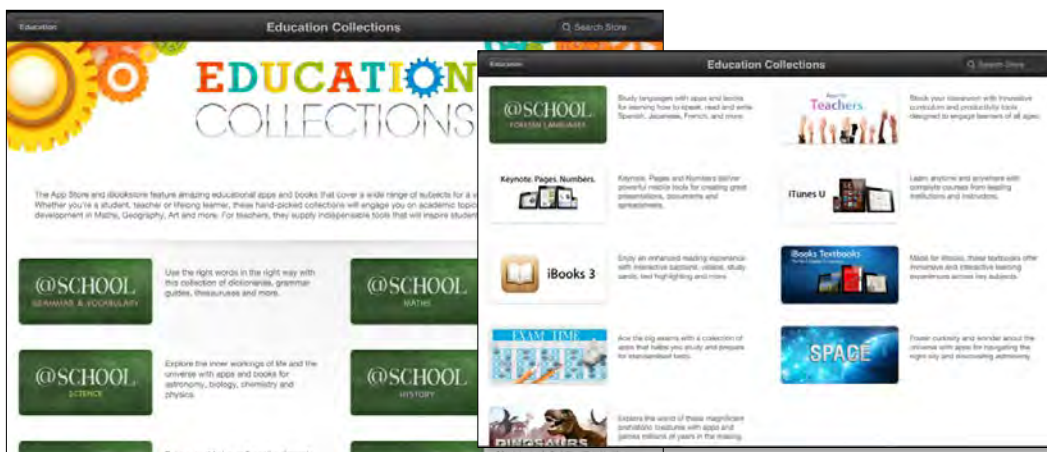


Figure 96: Education Collections in iBooks.

Making the most of iBooks

By tapping and holding down a word or sentence, iBooks will:

- Speak - words or sentences are read aloud.
- Copy - copy a selection of text to another text-based App such as Notes or Pages.
- Define - provide word definitions with the iBook's built-in dictionary or options to 'Search Web' or 'Search Wikipedia'.
- Highlight - option to highlight words/sentences in a range of colours.
- Add Notes - you can add personal notes to any selected text. Both highlighted text and notes can be found in one place by selecting Index.

Books can also be organised into different 'Collections' with appropriate names, i.e. Books, Purchased Books, PDFs, History, Science, etc.

To create new book Collections tap on Collections and tap New at the bottom of the drop down menu.

This will activate the on-screen keyboard so you can type the name of the new book collection.

The Edit option lets you to delete the collection, rename the collection or order the collections above or below each other in a hierarchy.

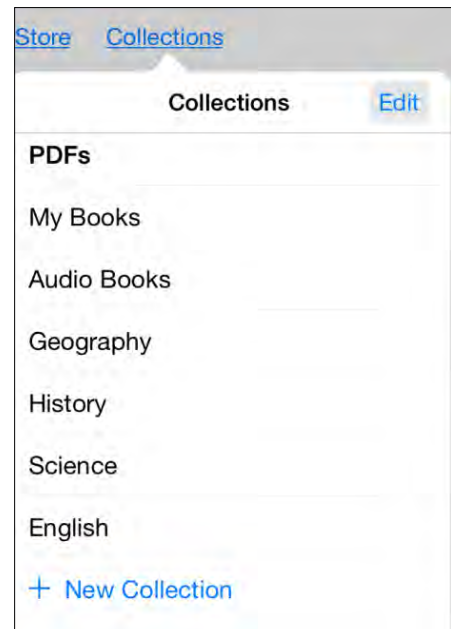


Figure 97: Organising your iBook Collections.

Anatomy of an iBook

The iPad displays electronic books in two sizes depending on how the iPad is held. When held vertically a book is displayed in a single large page. When held horizontally the book rotates into a two spread display.

The iPad displays text in different fonts including Athelas, Charter, Georgie, Iowan, Platino, Seravek and Times New Roman.

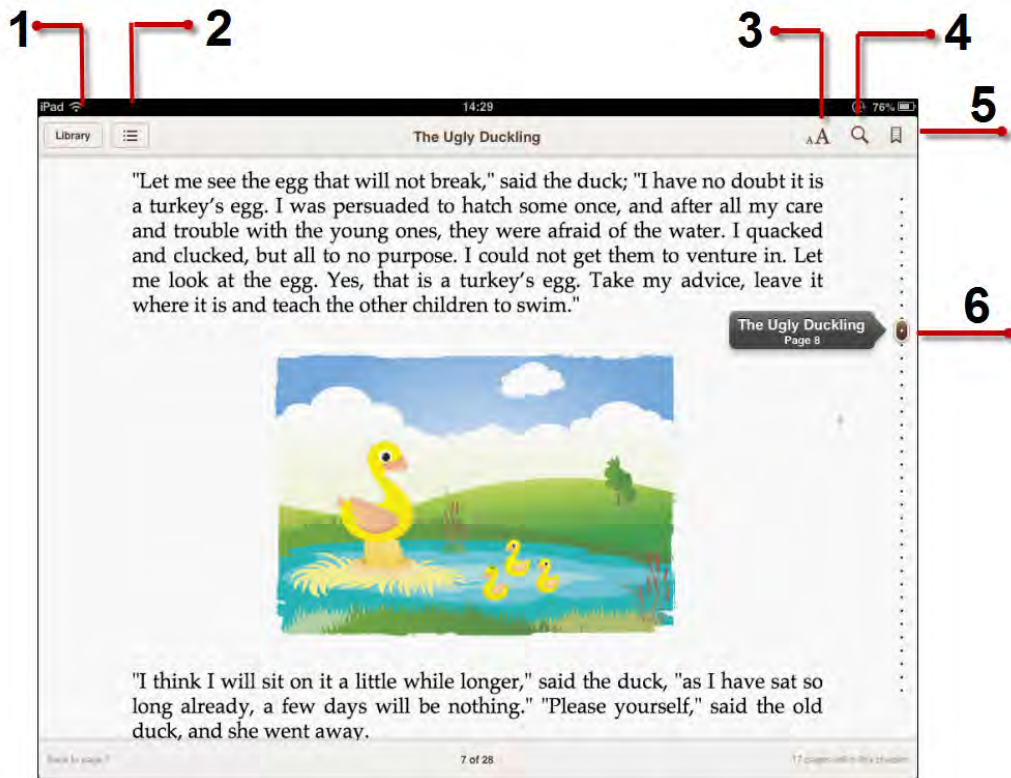


Figure 98: Anatomy of the iBooks App.

1. **Library:** touch or tap 'Library' to return to your iBooks collection.
2. **Index:** you can move between the Index page to navigate to a specific chapter of the book or table of contents. When in 'Index' mode the Index button changes to 'Resume' allowing you to move back to your original page. The Index page also features Bookmarks and Notes. Notes can be created by tapping or selecting individual words or sentences.

3. **Font and Themes:** this provides some useful options for learners with light sensitivity and visual tracking difficulties. Fonts can be increased in size with Sepia and Night (high contrast) themes if required.

There is also a slider button at the top of the panel for increasing and decreasing the display brightness levels. The book can be viewed as 'Book' with turning pages, full screen or by Scrolling through pages by flicking up and down.

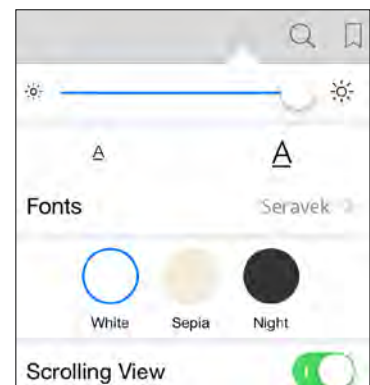
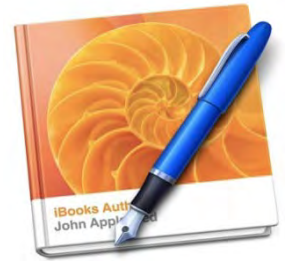


Figure 99: Custom reading preferences.

4. **Search:** search for keywords or page numbers.
5. **Bookmark:** this option lets you to bookmark favourite pages of the book. Selected bookmarks are collated and can be found in the Index section.
6. **Page Slider:** can be used to navigate through the pages of a book. By holding down and sliding the bar pages will be displayed in relative chapters and page numbers.

iBooks Author

A recent initiative from Apple was the release of iBook Author, an application that runs on a Mac and allows educators and teachers to create and produce textbooks that can be read in an iBook format. It is an easy-to-use program even for inexperienced computer users.



iBooks Author opens and converts Word documents and PDF formats retaining the original formatting. This makes it quick to create, compile and share an electronic textbook.

The program integrates text, images, audio and video as well as interactive and engaging elements including 3D objects, multiple choice quizzes and flash cards.

These features provide engaging ways for learners, both young and old to interact with electronic textbooks given the range of auditory and visual learning styles offered.



Figure 100: iBooks Textbooks.

Under the Education Collections there are now a number of educational textbooks (made with iBook Author) to download. Most downloads offer a 'sample' copy for you to try before deciding whether or not to purchase.

Book Creator

Book Creator (see Chapter 2: Apps to Support Teaching and Learning) is an App which helps pupils create and author ebooks.



The tools provided in Book Creator are not only easy-to-use but are flexible to allow pupils to create simple to more complicated ebooks.

Book Creator is an excellent resource for creating a personalised story or a series of in-class social stories for recording events (using the iPad's built-in camera and microphone) external visits and other interesting activities.

Book Creator exports completed books to the iBook Library but they can also be shared on other devices as Book Creator uses the 'ePub' format which can be used on different operating systems and eBook readers.

www.redjumper.net/bookcreator

e-Book Apps

There are also 'e-Book' Apps which have been developed for reading electronic books such as Amazon's Kindle, Kobo and Google Books. These Apps include background colours, font sizes and font style options. Books purchased on Amazon or Google can be synchronised (if you have Wi-Fi) so you can have the same books on the iPad, iPhone or other e-Book readers.



Unlike e-Book readers such as the Kindle which uses 'e-Ink' (text appears as if reading a newspaper or a paperback book) the iPad is backlit and brighter. Some people prefer to read e-Ink as it is much easier on the eye. The iPad's backlit LCD screen could cause eyestrain when used for long periods of time. The Amazon Kindle App integrates the iPad's VoiceOver so pupils can have Kindle books read aloud.

Audio Books

An advantage of using iTunes or the iBook App is that it provides access to a variety of commercial audio books. Publishers such as Audible, Google Books, Overdrive, Barnes & Noble, Kindle and Kobo all offer books in audio only format.

Simply download the relevant App (mostly free) to your device - a full list of publishers and audio book resources are available from the iTunes/App Store book list: bit.ly/wTYXkq

Podcasts

Originally a podcast was an audio format comprising of a series of episodes for streaming online or downloading to your computer or portable device via an RSS (Really Simple Syndication) Feed or Aggregator. Increasingly podcasts now contain video (sometimes known as vodcasts) and are available from the iTunes store in a range of curriculum subjects.



iTunes U

The iTunes U App is a collection of educational resources often in a multimedia format of text, audio and video. Although the iTunes U App is most relevant to college and university students (with over 500,000 free lectures, videos, books, and other subjects), it is worth exploring as an alternative learning resource.



iTunes U also has an option to create 'courses' (iTunes U Courses) with associated 'Course Notes' which can be used and integrated into the classroom so pupils can access content in class or at home.

A good example of how iTunes U is being integrated into the school curriculum is Cedars School of Excellence. The school offers a complete syllabus of 'homemade' iTunes U courses along with materials and assignments that pupils can download and work through at their leisure - or as homework. To find out how Cedars School of Excellence are using iTunes U to support their pupils you can read Fraser Speir's blog: bit.ly/11hPXUj

For more information on the iTunes U App go to: bit.ly/iTunesUApp or to find out how to make the most of podcasts you can visit the Apple Podcasting site: www.apple.com/itunes/podcasts.

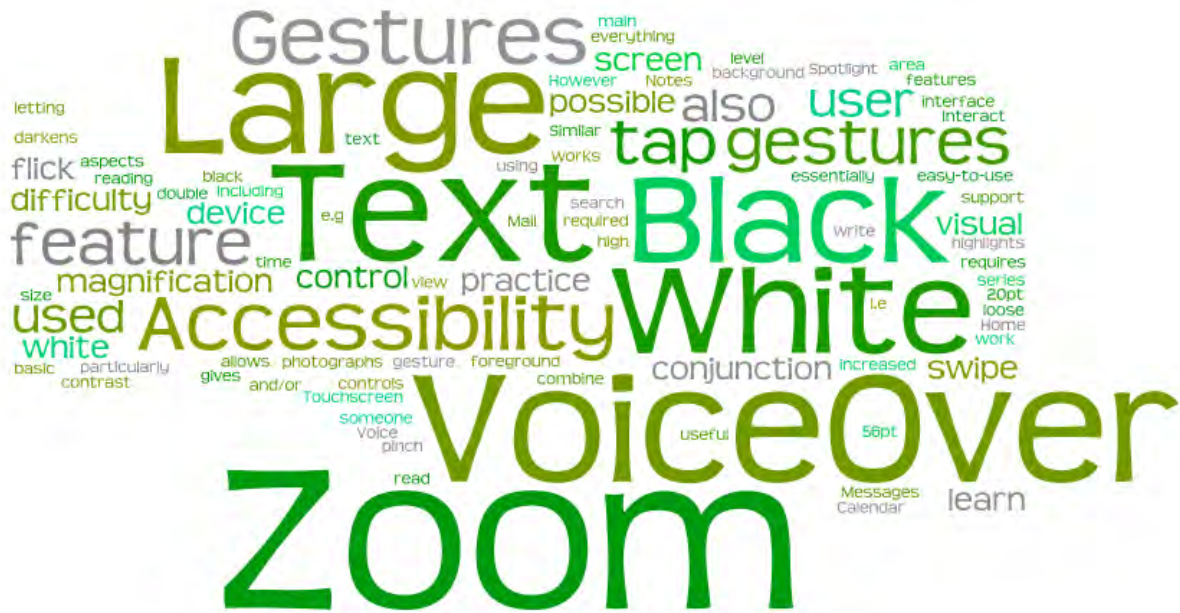
Summary

The discussion above hopefully gives a flavour of the wide range of options available, the potential value of many Apps, some key factors to bear in mind, and features to look out for (or avoid).

There is no doubt that we have powerful tools here to help overcome barriers arising from disabilities, to motivate and engage learners in exciting new ways. However, the ever-growing range of low cost, novel and stimulating Apps is almost overwhelming. In the face of this revolution, are we perhaps just trying to grab 'everything' and failing to evaluate critically enough the worth of the Apps that we introduce to our learners?

As Ian Bean stressed in his presentation to the Inclusive Learning Technologies conference in Australia, there is nothing magical about sitting a child down with technology. The 'one Killer App' that truly transforms teaching, learning, communication and leisure is not anything that can be downloaded from iTunes. The must-have killer App is actually the teacher - or other professional, or parent - that works with the learner day to day.

Chapter 3: Accessibility Options



Introduction

You don't have to look too far in the App Store to see there is a range of magnifiers, text-to-speech and other Apps to support learners with additional needs.

Although most of these Apps are fairly inexpensive there are others which are costly and don't offer any additional benefit compared to some of the built-in features which come with your device.

So before you start downloading, take a minute to look under the bonnet of your iPad or iPad mini and spend some time tinkering with the tools in the 'Settings', in particular 'Accessibility'.

Apple includes assistive technology in its products as standard features but with the latest iOS, there are a number of significant enhancements and improvements.

This guide will explore both the built-in accessibility features and accessories to give you a starting point so your learners are able to maximise the potential that the iPad offers to help access the curriculum.

Accessibility is divided into 4 main categories: Vision, Hearing, Learning and Physical & Motor with each having a sub section of tools. Vision contains the largest selection of accessibility features.

Vision: VoiceOver, Zoom, Invert Colors, Speak Selection, Speak Auto-text, Larger Text, Bold Text, Button Shapes, Increased Contrast, Reduced Motion, On-Off Labels.

Hearing: Subtitles & Captioning, Mono Audio.

Learning: Guided Access.

Physical & Motor: Switch Control, Assistive Touch, Home-click Speed and Accessibility Shortcut.

Getting started

1. The first step is to tap the Settings button. This opens all the options within Settings.
2. When the Settings Panel opens, select General.
3. Scroll down the page until you come to Accessibility.

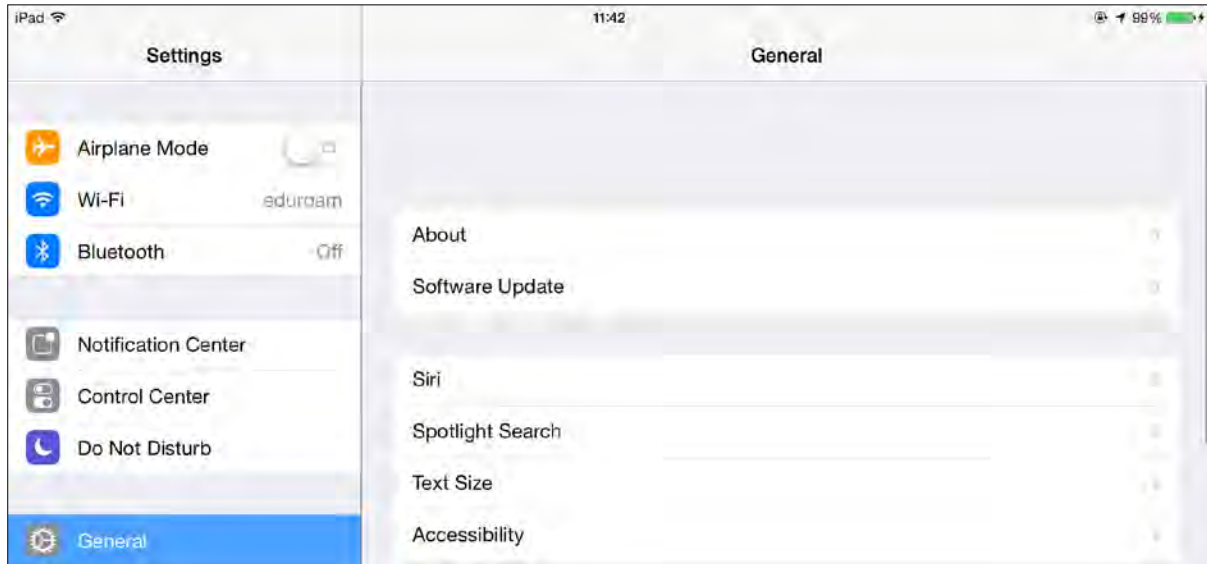


Figure 101: Accessibility in Settings.

Accessibility Shortcut: Triple-click the Home button

A quick way to get to Accessibility Options is to triple-click the Home button. This activates the Accessibility panel on the screen. You need to select each Accessibility Shortcut for it to appear. This can be done in Accessibility and scrolling down to the bottom to Accessibility Shortcut.

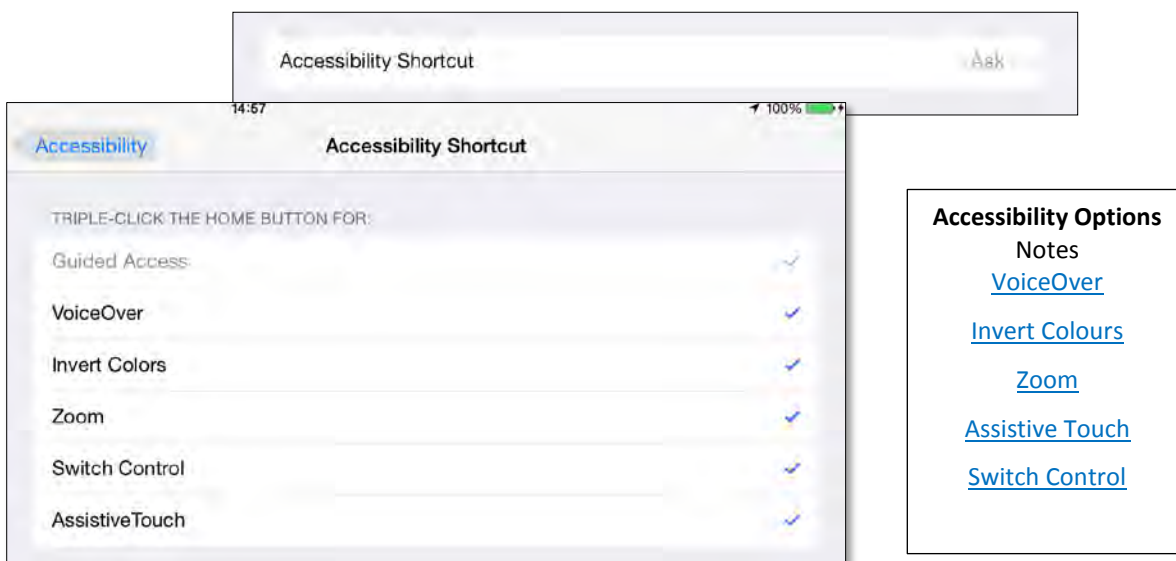


Figure 102: Accessibility Shortcut.

Accessibility

As you can see from the illustration below all the main Accessibility options are located here. However, it should also be noted that there are also some useful 'accessibility' features that are not immediately obvious, such as abbreviation expansion, Siri and Dictation, e.g. see Chapter 1: Getting to Grips with the iPad for some more examples.

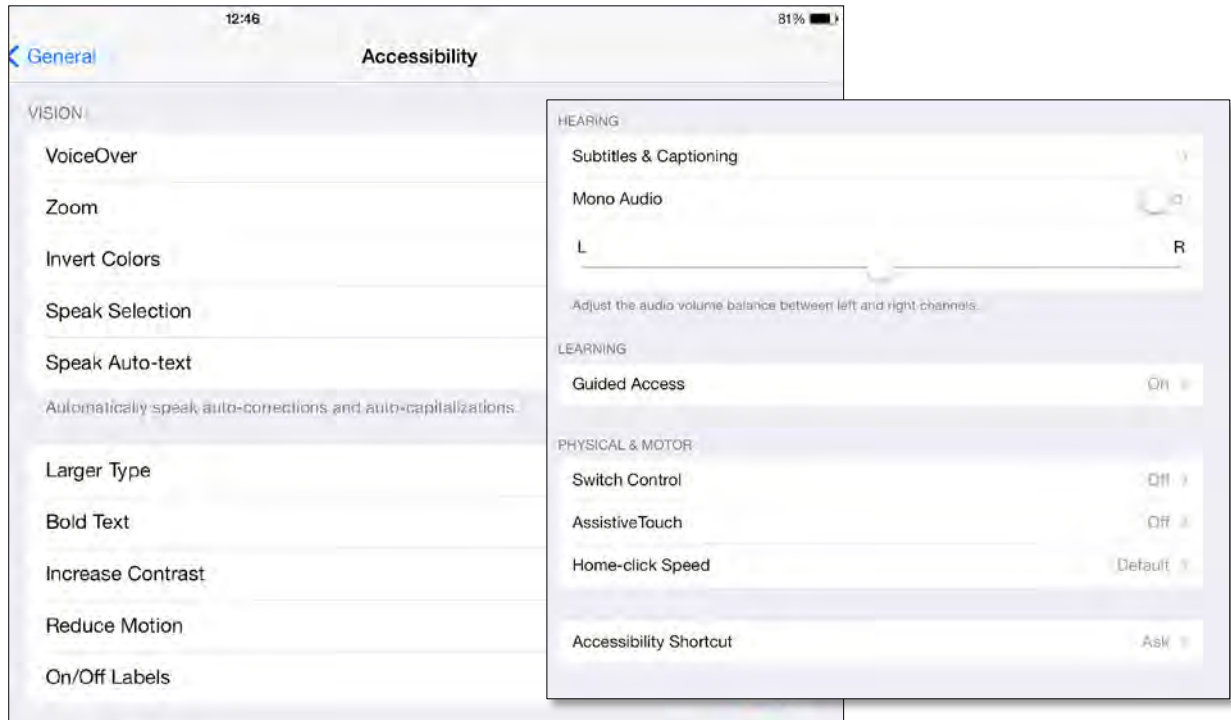


Figure 103: Examples of Accessibility Categories.

Vision

VoiceOver

VoiceOver is the iPad's version of a screen reader, i.e. a feature that will read aloud content on the screen, particularly when an item such as a button or text is tapped or touched. VoiceOver works with those Apps that are pre-installed on a new iPad (see Chapter 1).

The ability of VoiceOver to read Apps which are not developed by Apple will depend if they are VoiceOver friendly.

VoiceOver speaks items on the screen. The speaking rate, pitch and voice can be adjusted to suit different needs.



Figure 104: VoiceOver.

VoiceOver includes a range of options including the speed of the Speaking Rate - from very slow to very fast which might suit experienced screen reader users.



Figure 105: Settings in VoiceOver.

Other options such as Use Pitch Change and Use Sound Effect and Typing Feedback are also available i.e. option to speak individual characters or words when typing with the on-screen keyboard or when using an external keyboard.

You can also change the voice option from British English to other English voices such as U.S. English, Irish English etc. To change a voice in VoiceOver tap Settings > Accessibility > VoiceOver > Language & Dialects, and finally select Default Dialect, to bring up the options.



Figure 106: Choosing a voice in VoiceOver.

A different voice can also be selected for the Rotor - which provides additional functionality to VoiceOver allowing you to use 'pinching movements' to do things like browse a web page (find out how many headings, graphics are on the page) more quickly, or navigate a document to check spelling and grammar. A full list of Rotor options is available from the Rotor item in VoiceOver.

Using VoiceOver

There are some useful but simple gestures that allow a blind or visually impaired user to interact with items on the screen such as tapping, double tapping, three-finger swipe, which will initially require some practice and familiarisation.

1. To start VoiceOver tap Settings > General > Accessibility and VoiceOver. Tap the VoiceOver button to turn it on. VoiceOver will start reading information aloud whenever and wherever you touch or select an item. Double tapping with 3 fingers will switch speech on and off but it will not close VoiceOver. Take care - if you triple tap you will black out the screen (i.e. turn on the Screen Curtain)! To see the screen again triple-tap to turn Screen Curtain off. More information about this in point 3.
2. VoiceOver works more efficiently when you use Gestures. For example, Double tap to activate an item, such as turning VoiceOver On and Off. To navigate back to the Accessibility options, double tap the Accessibility button at the top of page and so on.

To scroll through items or pages, 'Flick' the screen with three fingers. Another way to navigate around the screen is to hold your finger down and glide it along the screen. VoiceOver will read each item aloud - double tap the item to open it.

3. When VoiceOver is activated a new button appears on the screen called 'VoiceOver Practice'. VoiceOver Practice is designed to be a 'safe' area where you can practice taps, double tapping, flicks etc. VoiceOver Practice is supported with speech guidance which speaks relevant commands. We would recommend that you use VoiceOver Practice to familiarise yourself with the different commands and gestures.

Screen Curtain - triple tapping anywhere on the screen will activate Screen Curtain. This will black-out the screen, simulating what it would be like for a blind user. To switch off Screen Curtain, triple tap the screen with three fingers. Most people, if they do it by accident, think they have broken the iPad. Don't Panic!

4. Speaking Rate is a simple sliding bar to increase or decrease the rate of the speech.
5. There are some options in this section that allow you to finely tune VoiceOver. For example 'Typing Feedback' provides options for software keyboards and hardware keyboards (Bluetooth attachment). You can choose to set VoiceOver to speak characters, words, and a combination of both characters and words. Pitch Change will change the pitch of the voice, e.g. when pronouncing capital letters etc.

To turn VoiceOver off navigate to Settings and Accessibility or if you have the Accessibility shortcut set up, triple-click the Home button.

Using the iPad with a Braille display

The iPad supports over 40 Bluetooth wireless Braille displays without any additional software.

In order to connect a Bluetooth Braille display to an iPad you first of all need to 'pair' the iPad with an appropriate Bluetooth Braille display.

To switch on Bluetooth on your iPad go to Settings > General and Bluetooth. Remember that long usage of Bluetooth can impact on the length of your iPad's battery life. For a complete list of iPad compatible Braille displays visit the following link: bit.ly/iPad_Braille_Displays



Figure 107: Using the iPad with a Braille display.

Zoom

Zoom magnifies items on the screen. Buttons, icons and other items can be magnified up to 500% the original size.

To start Zoom tap Settings > General > Accessibility and Zoom. When you tap the Zoom button you will notice it magnifies very slightly to indicate Zoom is active.

Like VoiceOver, Zoom also requires basic gestures to use it properly:

- Double tap three fingers to magnify.
- Drag three fingers to magnify or zoom.
- Double tap three fingers - hold and drag to zoom in or out - this takes practice but worth the time as it gives you greater control over the magnification levels.

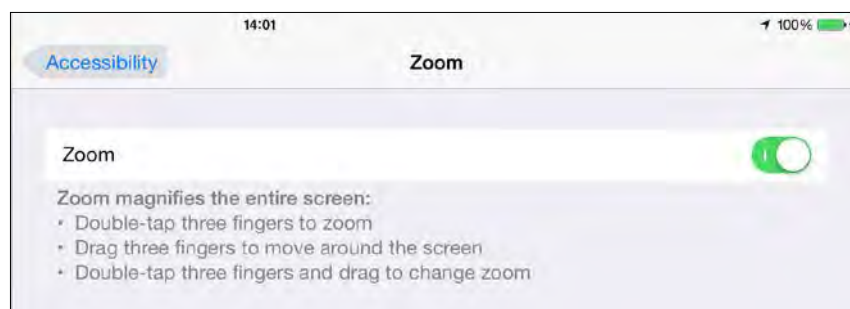


Figure 108: Use Zoom to magnify the iPad's screen.

Zoom can increase icons, icon text, App content and other items on the screen making it easier to see and read. Improvements in screen resolution with Retina display ensures that pixilation is kept to a minimum.

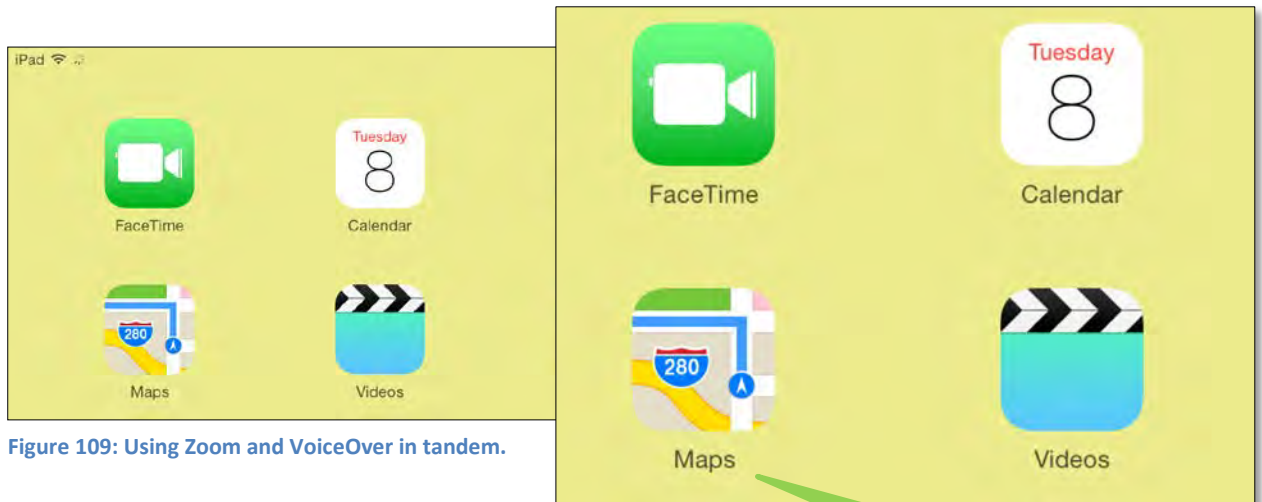


Figure 109: Using Zoom and VoiceOver in tandem.

Zoom and VoiceOver can be used in tandem providing simultaneous speech output and magnification.

To turn Zoom off navigate to Settings and Accessibility or if you have the Accessibility shortcut set up, triple-click the Home button.

Smart Zoom is not labelled as an Accessibility feature but it is a useful and quick way to make content on the screen larger. Wherever you want the content to appear bigger, double tap on the display with one finger. The content automatically and incrementally appears bigger and 'zooms' so it fits evenly on the screen.

Double tapping with two fingers decreases the magnification incrementally. An advantage of Smart Zoom is that you do not have to adjust the screen or move the content around on the screen. Smart Zoom only works in certain Apps such Mail, Photos, Safari, Apple Maps and Google Maps.

Invert Colors

When 'Invert Colors' is activated it will invert screen colour and text. The background becomes predominantly black, text is shown in white. Highlighting and activated buttons are shown with an orange tinge.

To start Invert Colors tap Settings > General > Accessibility and Invert Colors. When you tap the Invert Color button the screen colours are inverted. You can use Invert Colors along with VoiceOver and Zoom.

To turn Invert Colors off navigate to Settings > Accessibility or if you have the Accessibility shortcut set up, triple-click the Home button.

Speak Selection and Speak Auto-text (including Highlight Words)

Although 'Speak Selection' and 'Speak Auto-text' are in the Vision category of Accessibility, they both potentially have benefits to support learners with literacy difficulties, particularly dyslexia. Speak Selection reads selected text aloud. You can define how much text you want Speak Selection to read by selecting and defining the text - tapping and holding/dragging the selection handles.

To activate Speak Selection and 'Highlight Word' move the slider button to 'On'. You can choose to have Speak Selection and/or Highlight Words or both.



Figure 110: Speak Selection reads text aloud.

Speak Selection and Highlight Words work in a range of Apps, such as Pages, Safari (the default internet browser App), Notes and other text-based Apps including iBooks and some other book reading Apps.

Speak Selection can be used to read individual words aloud to help with spelling or used to proof read larger documents. To highlight a word, double tap the word (or tap and hold) until the pop up menu appears. You can highlight individual sentences or paragraphs by double-tapping the text with two fingers in quick succession. You can then press the Speak option to have the sentence read back.

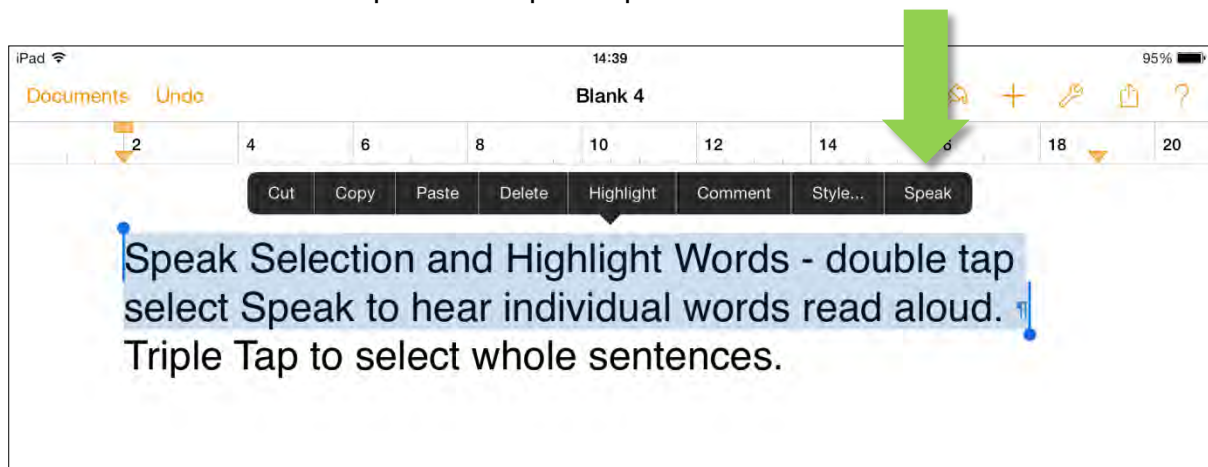


Figure 111: Speak Selection reads aloud and highlights selected text.

There is currently not an option to change the colour of the highlight and it will only highlight on selected text. Nevertheless, Highlight Words could be a useful tool for learners who would benefit from visual tracking as text-to-speech and highlighting is synchronised.



Figure 112: Highlight words.

Can Speak Selection be used with the Scottish voices?

Not at the time of writing. The Scottish voices consist of two high quality synthetic voices which you can download for free from the CALL website and use on a Windows or Mac computer: <http://thescottishvoice.org.uk>.

The Scottish Fiona voice is available to purchase as an Add-on Voice (approximately £1.49) from within the ClaroRead or ClaroPDF Apps. Fiona will only work in the App and cannot be used to speak in other Apps (see Chapter 2).

Can I change the default voice?

Yes, you can change the default voice although the voices are limited to English US, English Australia, English United Kingdom, English Ireland and English South Africa.

- Go to Settings > General > Accessibility.
- Tap Speak Selection and Voices.
- Tap the English option (top of the list) and then choose from the list of English options.

Speak Auto-text (including spelling support)

Speak Auto-text speaks suggested corrections which are generated from the Auto-Correction option, found in Settings and Keyboard (the Check Spelling option is also located here). Auto-Correction is designed to correct spelling mistakes when completing writing tasks by guessing the word it thinks you want to write.

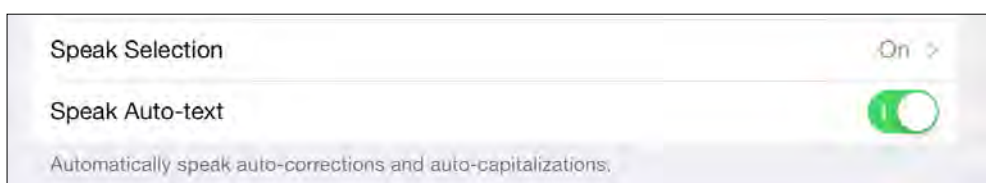


Figure 113: Speak Auto-text.

Auto-Correct is not always accurate and can guess the wrong word. In the illustration below the intended word is 'confusing', but Auto-Correct has suggested 'confused'. On an earlier attempt Auto-Correct replaced 'confusing' with 'Corfu'!

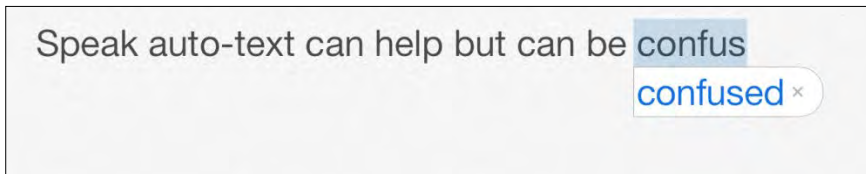


Figure 114: Speak Auto-text can make mistakes.

If 'Speak Auto-text' is active it will read the word aloud thereby providing audio feedback alerting the user of a potential mistake - always be cautious when using Auto-text as it could be more confusing than helpful. It is, therefore, important to think about how best to use Auto-text and for which pupils it would suit. Using Auto-text in tandem with Auto-Correct could help some pupils to type more quickly and accurately as 'suggested' words are spoken aloud when typed.

Auto-Correction and Check Spelling

An additional option is to use Auto Correction and Check Spelling so spelling mistakes are underlined in red. Although this feature is not in itself an 'Accessibility' option it can put to good use. Auto Correction and Check Spelling can be found in the Keyboard section:

- Tap the Settings icon, select General, Keyboard and slide the Auto-correct button to 'On'.
- Repeat the same steps for Auto-Correction and Check Spelling.



Figure 115: Spelling mistakes.

Whenever a spelling mistake is made Check Spelling identifies spelling errors by placing a red 'squiggly' line underneath the spelling mistake. To find an alternative spelling(s) tap the underlined word and suggested words will appear.

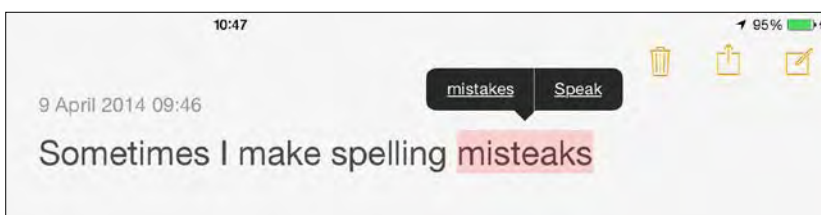


Figure 116: Spelling errors highlighted in red.

Pressing the backspace key will also prompt alternative spellings to appear. However not all Apps use the generic built-in Check Spelling option which means that spell checking is not universal. Some Apps i.e. Pages, uses its own default spell checker. Check Spelling in Pages can be found under 'Tools' and 'Settings' on the drop down menu.

Resetting Keyboard Dictionary – a last resort!

These options can also be disabled if the pupil is experiencing problems with Auto-Correction. If over time, the Auto-Correction dictionary has accumulated too many misspelled words it is possible to reset the keyboard to factory settings, i.e. the iPad's dictionary uses words, nicknames etc. entered into Contacts.

Ensure that your iPad's dictionary is set to British English (not 'English' as this is International English) by tapping Settings > General > International and selecting British English. Check also that in the settings for 'Keyboard' is also set to English - select Settings > Keyboard > Keyboards and select English UK.

To reset the Keyboard Dictionary tap Settings > General > Reset and finally select Reset Keyboard Dictionary. Please bear in mind that this sets your keyboard to default settings and will delete all custom words that were previously added to the dictionary. This is a last resort so please consider carefully before resetting!

Larger Text

Larger Text offers significant visual enhancements for someone with visual difficulties. The size of text can be increased up to 56pt. Larger Text only works in Apps that support 'Dynamic Type' i.e. Calendar, Mail, Messages and Notes. It is not possible to increase the size of the font on the keyboard but it is possible to use Larger Text in conjunction with other Accessibility features such as Zoom and Invert Colors.

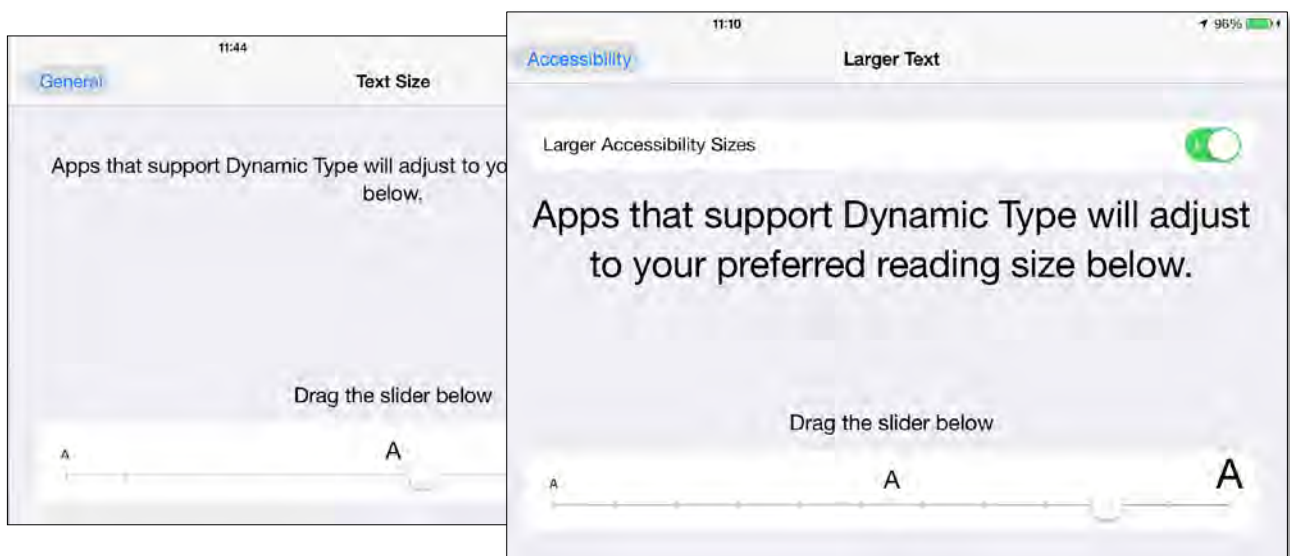


Figure 117: Larger Text to improve readability.

To activate Larger Text tap Settings > General > Accessibility and Larger Text. Use the slider button to adjust your preferred size of text. Larger Text can also be accessed from General Settings, i.e. Text Size.

Bold Text, Button Shapes, Increased Contrast, Reduce Motion and On/Off Labels

Along with Larger Text, Bold Text, Button Shapes, Increased Contrast, Reduce Motion and On/Off Labels combine to make up the last section of Vision and are intended to make items on the screen such as text and shapes easier to identify and see.

Bold Text emboldens or thickens text descriptions under App icons and other text areas on the screen particularly the on-screen keyboard.

Button Shapes is intended to make buttons easier to distinguish from other text on the screen (such as icon labels).

Increase Contrast makes it easier for low-vision users to fine tune display settings by improving the contrast on some backgrounds to increase legibility. Darken Colors uses slightly darker versions of the colours used in some Apps (for example, the light blue used in Safari and Settings becomes a darker shade of blue) and Reduce White Point makes the general 'glare' of the iOS a little duller.

Reduce Motion uses an effect called 'parallax' to create the perception of depth on the iPad's display thereby accentuating the 3D effect/immersion effect of Retina display.

On/Off Labels uses the 'I' or 'O' sign within a label so you can quickly and easily see if you have enabled a feature.

All the above features can be turned on or off in Settings > General > Accessibility and Vision. Some features, i.e. Bold Text will require a restart.

Hearing

Hearing includes several options that could be useful for a user with hearing difficulties, i.e. Subtitles & Captioning, Mono Audio and adjusting the audio volume balance between left and right channels.

Subtitling and closed captioning are both processes of displaying text on a visual display to provide additional or interpretive information. If subtitles or closed captioning are available on films or other visual media streamed via the iPad there is an option to turn these features on for deaf or hearing impaired users.

The Mono Audio feature is designed to be used with headphones, i.e. slide the Hearing slider bar to whichever ear has the best auditory ability. For example, if the user hears best with their left ear then the Hearing slider bar should be set to the left hand side.

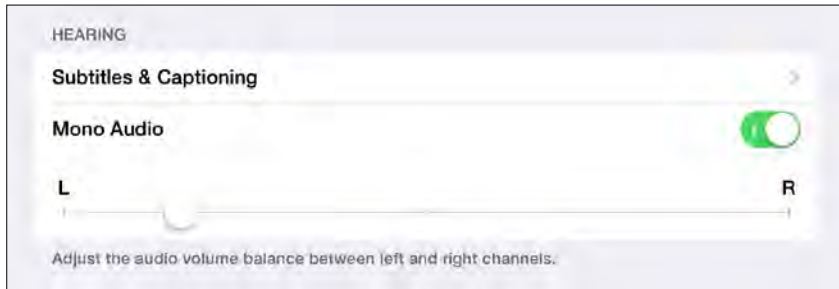


Figure 118: Subtitles & Captioning.

Notification Center

Some deaf or hard of hearing people could find the Notification Center useful for setting up visual prompts, via the Calendar and Reminders Apps (see Chapter 1 for more information).

iPhones and Compatible Hearing Aids

Apple is working closely with a number of Hearing Aid manufacturers to create hearing aids designed specifically for the iPhone. Compatible hearing aids already exist for the iPhone and more are being developed. There is more information on the Apple website at the following address:

www.apple.com/accessibility/ios/hearing-aids/

Learning

Guided Access is the only tool listed under Learning in Accessibility but it is a significant and important option for children with additional support needs. Guided Access was integrated into Accessibility with the release of iOS 6. If you have an older or pre- iOS 6 you will be unable to access it (see also Chapter 2).

Guided Access 'locks' the Home button, so that the user can't exit the App he or she is in, and therefore can't 'go wandering' all over the iPad to distract him/herself from the task in hand. Guided Access also allows you to choose and control which features of the App you want to make available to the user, and which features you might want to 'lock' or disable.

In the illustration below the 'Tutorial', 'Settings' and 'Navigation' buttons have been disabled encouraging the child to keep on task and eliminate potential distractions.

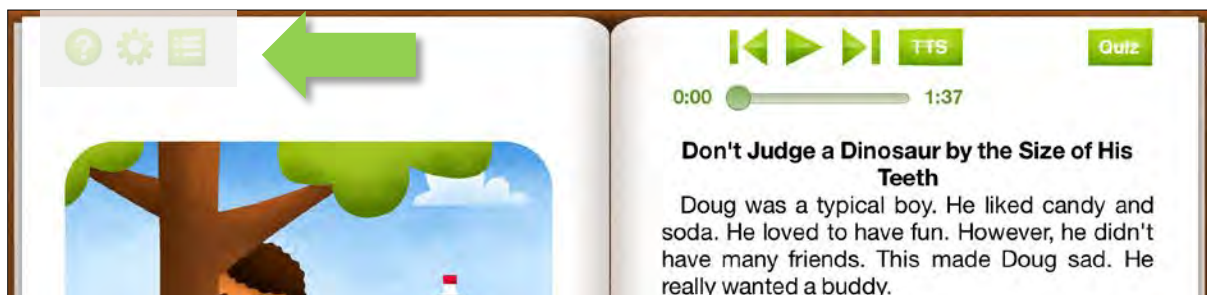


Figure 119: Using Guided Access.

Setting up Guided Access

To set up Guided Access go to Settings > Accessibility > Guided Access. Ensure Guided Access is set to 'On'.

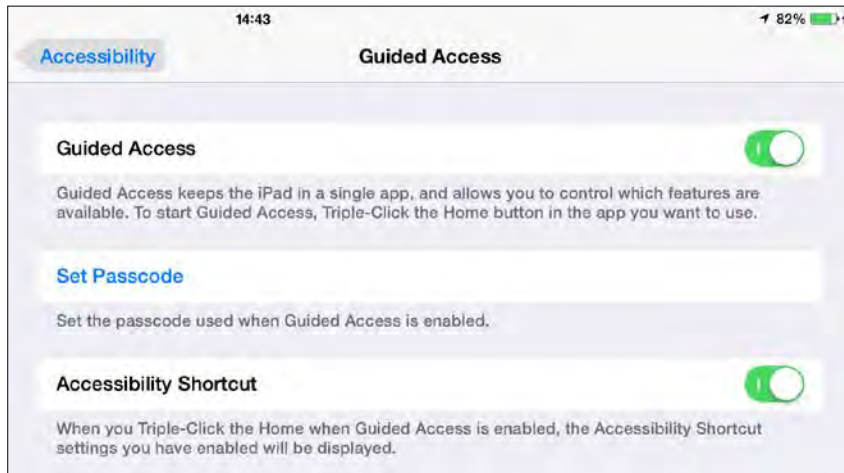


Figure 120: Setting a Passcode in Guided Access.

- Put in a 4 digit Passcode and confirm.
- Go to the App the pupil is going to use.
- Triple-click the Home button (fast); the display will shrink and turn grey.
- Enable Screen Sleep (ON battery life, but OFF is less confusing for the user).
- Hardware Buttons OFF/Touch ON/Motion OFF.
- Draw round the areas on the screen you want to disable, ensuring you cover totally cover the area. Tap the 'x' if you make a mistake and want to start over again.
- Touch Start and Guided Access is activated.
- To turn it off: triple-click the Home button (fast), display will shrink and grey and tap or touch END.

Guided Access Hints and Tips

The main thing is to pick a PassCode that you will remember and that is easy for other people to remember.

(You can use the same one that you've used before on the iPad) e.g. 0000 or 9999. Write it down and keep it somewhere secure but easy for key people to access in emergencies!

But don't let the user see it and make sure the PassCode is not too easy for the user to guess. If you get stuck in Guided Access because nobody knows the password or something else goes wrong, don't panic - instead do a full reboot, i.e. hold the Home button and the Power/On-Off button down at the same time for 15 seconds and slide to Power Off.

Restart by holding the Power On-Off switch ON until the white Apple appears. Finally go into Settings, General, Accessibility and Guided Access and turn it OFF.

Any App that you set up with Guided Access will retain the settings even once you've turned Guided Access off again, so that the next time you want to set it up, you only have to switch Guided Access on; you don't have to do all the settings over again. This means you can pre-prepare the Apps for your user, and they are ready to be used immediately - you don't have to waste time turning Guided Access on and going through the whole set up process in front of the user.

Guided Access tutorials

There are lots of helpful video tutorials on Guided Access for example on Google Docs: bit.ly/howtoGuidedAccess or on YouTube: bit.ly/youtubeguidedaccess.

CALL has also made one (relating to the P2Go App), to be found here: <http://bit.ly/callguidedaccess>.

The OSX Daily website also has a step-by-step guide to making the most of Guided Access: osxdaily.com/2012/09/25/enable-guided-access-ios/

Physical & Motor

Users who have limited hand mobility or difficulties with fine motor skills and find it difficult to use a touch screen can use the features in Physical and Motor for additional support, i.e. Switch Control, Assistive Touch, Home-click Speed and Accessibility Shortcut (see Getting Started of this Chapter).

Switch Control

Switch Control highlights items and item groups one by one on the iPad's screen by scanning horizontally and vertically (see also Chapter 2: Access options).

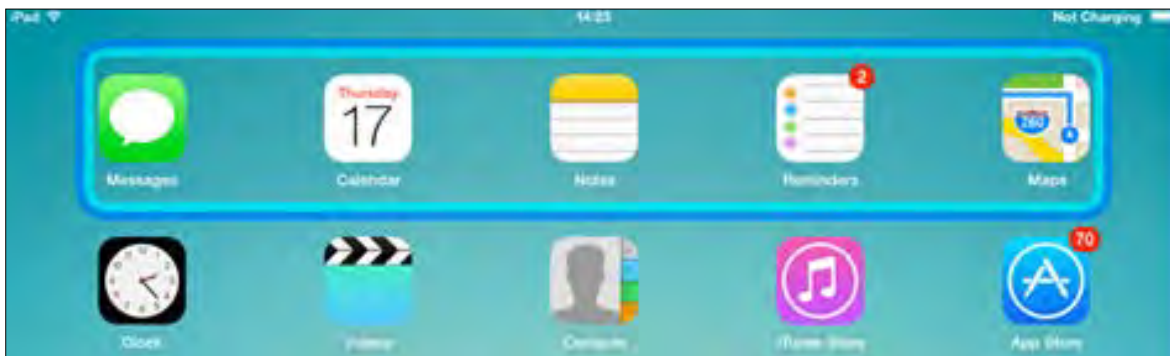


Figure 121: Switch Control for the iPad.

To make a selection, the user activates a switch when the desired item or item group is highlighted. Switch Control sequentially highlights Apps and other items on the screen so they can be activated with a switch press.

In some cases, users may have the option of using iPad screen or the iPad camera as a switch; or even head movements as switches (rather than external switches).

This is an exciting step forward in iPad functionality but it is not always 100% straightforward and easy to set up and get to work. Also, the iPad tends to offer only a limited range of scan options and settings, so someone who is used to a

particularly complex or very finely tuned switch and scan set up may find the iPad takes him/her several steps backwards in terms of efficiency of access, especially for those users with dedicated specialist communication aid software.

What you need to get switch access

1. Ensure that your iPad is upgraded to the latest version of iOS. Earlier versions of the operating system did not include switch access.
2. Get a switch interface. Since the iPad does not have a USB port, most switch interface options are Bluetooth interfaces. These are not cheap (typically between £100 £150), and the range on offer (and the different ways each work) is confusing.



Figure 122: Setting up a switch interface.

The device of choice might differ according to differing needs e.g. of people with visual impairments; cognitively able people who want to execute a wide range of complex iPad functions; children; AAC users who only want to use one or two Apps, for communication.

Centres assessing/working with lots of different users might want a powerful multi-function device, whereas a parent or class teacher might want the simplest device that does the one job needed. CALL tends to recommend the simplest that will do the job.

3. Double check that the App you intend to use is well adapted to switch input, both technically, and also in terms of the internal design of the App and its intended use, i.e. can it be positioned or mounted on a wheelchair?

Two kinds of Switch Access

Rather confusingly, there are two different kinds of switch access:

1. Switch access to a few specific Apps, i.e. AAC Apps, that were specifically designed right from the start for switch access that have settings for scanning and for audio prompts/auditory prompts built-in to the internal settings of the App.

(In other words, they will work with switches even if 'Switch Control' is OFF in the iPad's Settings menu.)

2. Switch control via the iPad's own built-in Accessibility options (only from iOS 7) that should (theoretically) work with all Apps (and is often 'advertised' as such). But in practice, it may work better with some than with others.



Figure 123: Different methods of using switch access.

Which is best?

There's no clear answer to that (and a few Apps will work with either/both.) The main advantage of the iPad's own built-in Accessibility settings is that it offers switch and scan access to the whole of the iPad, not just to one particular App.

The advantage of App-specific switch access is that you can be sure it will work. And - in some cases anyway - you may be offered extra settings (above and beyond what is offered in the iOS) that are desirable.

Features of iOS Switch Control

The built-in Switch Control includes a range of tools and options, such as Auto-Scanning, timing options, auditory scanning and options to change the colour and thickness of the scanning 'Cursor'.

Switch Control is located in Settings > General > Accessibility - under Physical & Motor.

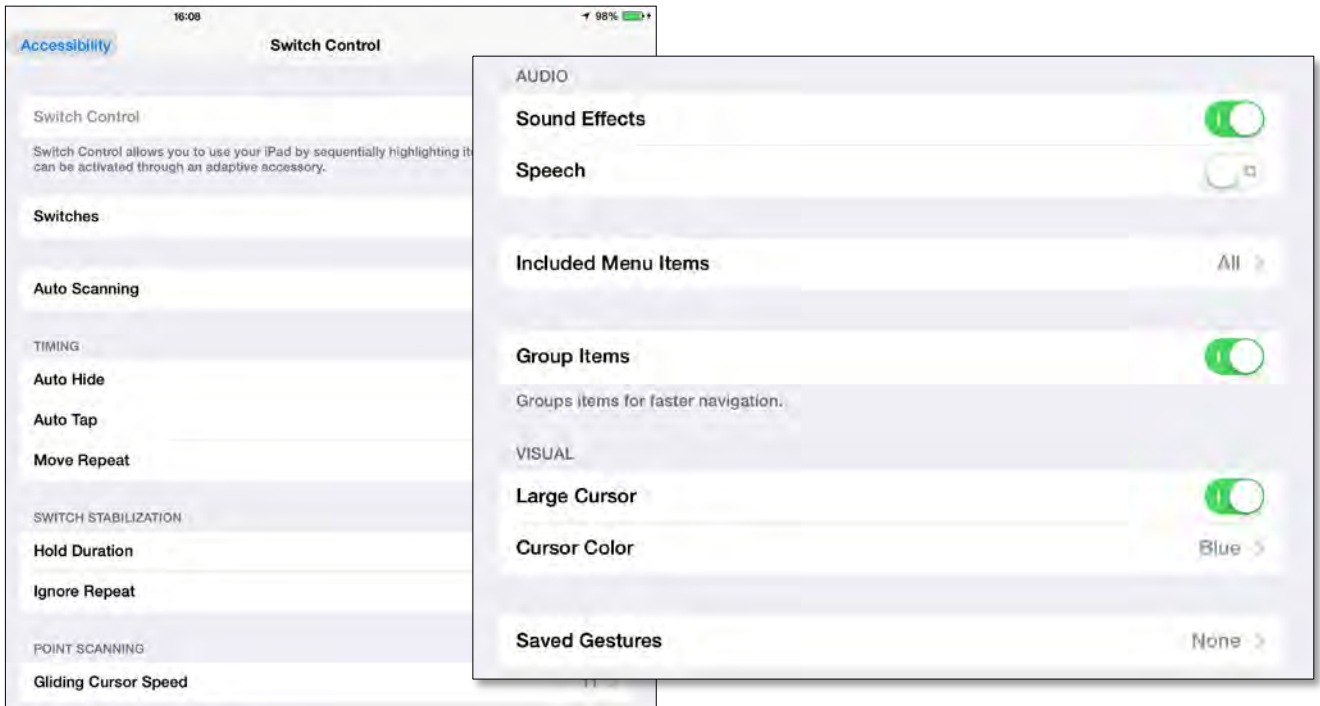


Figure 124: A range of settings in Switch Control.

Switch Control tutorials and resources

Switch Control tutorials and resources are available from:

- the Apple website: support.apple.com/kb/HT5886
- Assistiveware: bit.ly/PRFI0j
- Ablenet (YouTube video): bit.ly/R2Wlwe
- Ablenet's iOS 7 User Guide (PDF): bit.ly/1qiEkva
- Jane Farrall: bit.ly/1qrcxH0
- Inclusive Technology, New Blue 2 switch and APPLICATOR video tutorials: www.inclusive.co.uk/videos
- RJ Cooper: <http://www.rjcooper.com/>

If you would like to know more about switch input systems you can download guides from the CALL Scotland website: bit.ly/calls_switch_guides

Assistive Touch

Assistive Touch allows users to perform gestures and button actions on the iPad with one touch. When Assistive Touch is activated it initially appears as a black transparent square (with rounded corners) on the iPad's screen.

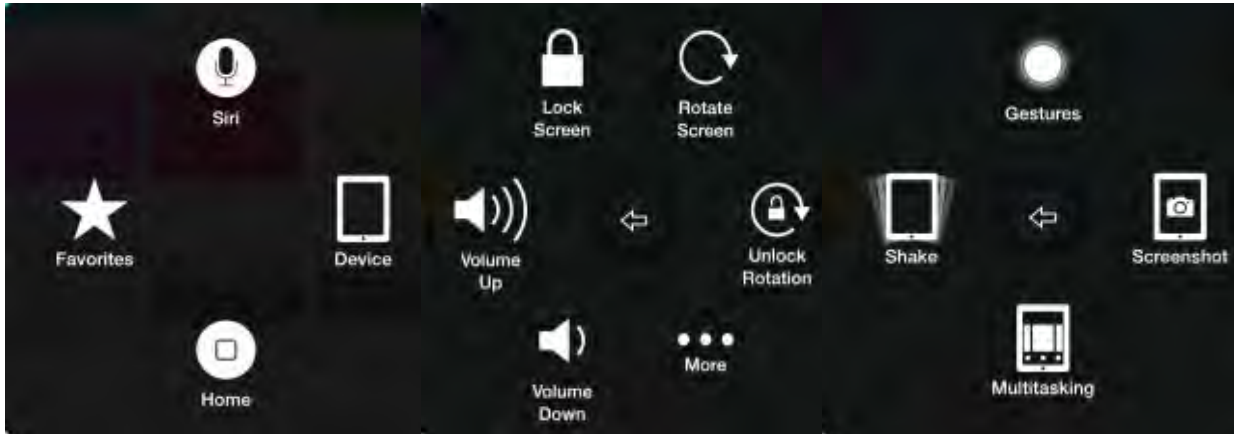


Figure 125: Assistive Touch can help with mobility difficulties.

The transparent square can be placed anywhere on the screen. The Assistive Touch menu appears as a large transparent square which sits 'above' the screen and has four different options; Siri, Device, Favourites and Home.

Assistive Touch provides one-tap access to all of the iPad's functions including rotation, shaking, volume changes and taking a Screenshot.

Gestures such as pinch and swipe can be recalled by a tap, and custom gestures can be recorded and played back on command.

Assistive Touch would be particularly useful for someone who is physically unable to use the hardware features on the iPad, such as volume control, Home button, rotate screen etc.

It has also been designed to work alongside other assistive technologies, such as a head pointer. Assistive Touch allows users with complex mobility difficulties to use the iPad by simple taps.

Assistive Touch can also be used as a replacement option if the Home button becomes 'sticky' or unresponsive to taps - this can sometimes happen on older or faulty iPads. You can replicate taps and double taps by using the Home button on Assistive Touch.

Home-click Speed

Home-click Speed lets you adjust the speed required to press the Home button and to activate Double and Triple-click Home actions. Options include: Default, Slow and Slowest.

Accessibility Shortcut

Accessibility Shortcut provides a quick and easy shortcut for starting certain Accessibility Options without the need to go into the Settings (see also the introduction of this Chapter). To use Accessibility Shortcut select the feature you want to use in the Accessibility Shortcut panel - Settings > General > Accessibility > under Physical and Motor.

Here you can 'Ask' or choose the Accessibility features you would like to appear on the 'triple-click' menu.

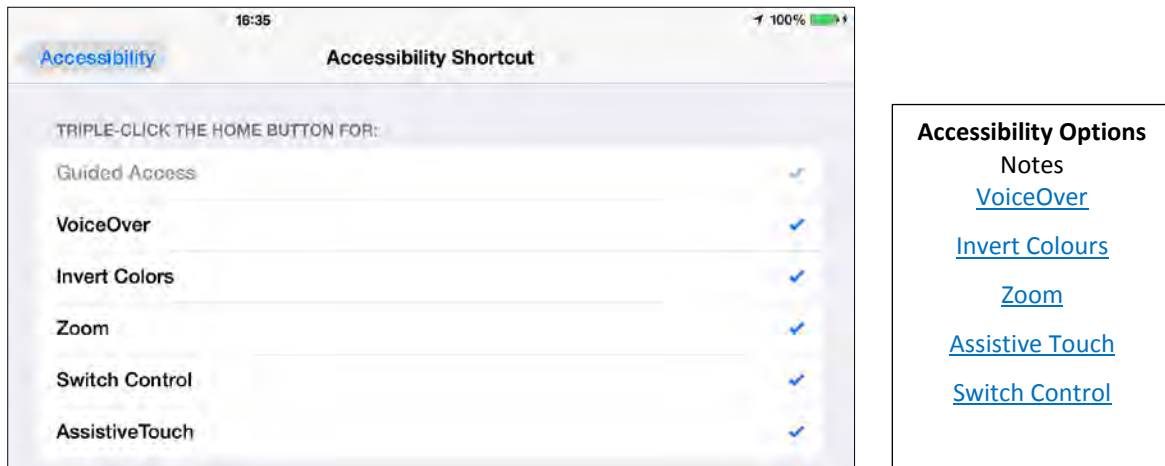


Figure 126: Triple-click the Home button for the Accessibility Shortcut.

It is also possible to use Assistive Touch in conjunction with Accessibility Shortcut. For example, if you have a user who is unable to click the Home button you can create personal 'Custom Gestures' (taps, swipes, etc.) that can be activated from Favourites in the Assistive Touch Menu.

Using a Head Pointer with Assistive Touch

One example of how someone could benefit from Assistive Touch is when it is combined with a head pointer, similar to RJ Cooper's iPad (tablet) Headpointer; www.rjcooper.com/tablet-headpointer/index.html.

Assistive Touch combined with a head pointer can allow someone who has limited hand and touch mobility to control volume, rotation and the Home button.

Connecting the iPad to an external keyboard

There are a number of external keyboards compatible with the iPad. Examples include Apple's Bluetooth keyboard which can connect via a docking station or by simply pairing the USB devices together.

It is possible to connect a Windows keyboard to the iPad using a Camera Connection Kit or via a USB cable. Note: this will depend on the iPad's iOS, i.e. earlier iOS are compatible than recent systems.

The Camera Connection Kit comprises of an SD card reader slot for importing images from a memory card. Camera connection kits are also available with an additional USB slot allowing external accessories such as a USB keyboard, USB microphone/headset to be plugged-in.

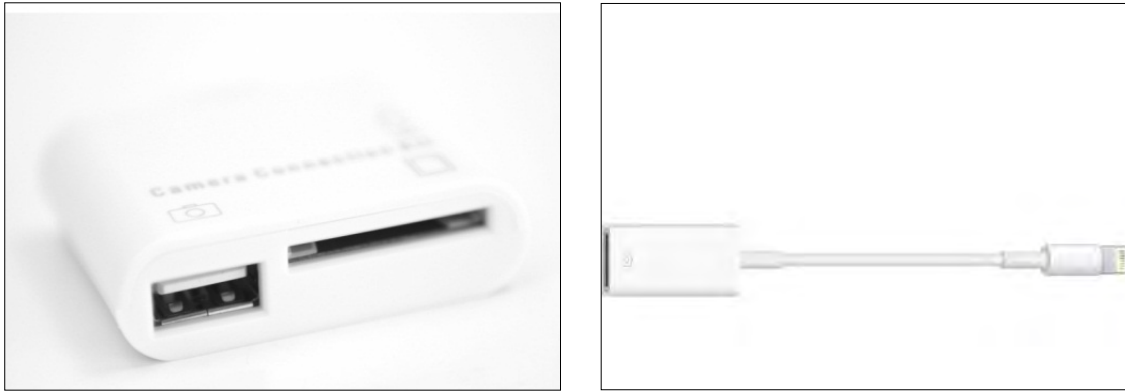


Figure 127: The iPad Camera USB / a Connection Kit for older and recent versions of the iPad.

In Figure 128 below, a compact keyboard is fitted with a keyguard allowing someone with a mobility difficulty to type into Notes, Contacts, Pages and other text editing Apps such as Keynote.

A disadvantage of using a Windows keyboard is that keyboard shortcuts are limited to basic character and word navigation, i.e. Shift + right arrow etc. to move between and through words.

An advantage of using a dedicated Apple USB keyboard is that it will provide greater use of the keyboard's features, such as shortcuts.



Figure 128: Example of a compact keyboard with keyguard using the USB.

In Figure 129 the iPad is connected to a high contrast large key keyboard. The iPad has been set using the 'Invert Colors' setting in Accessibility in conjunction with the Pages App with the font size set to 72 point. This setup could facilitate some users with a visual impairment to access the iPad.



Figure 129: High contrast keyboard connected to iPad.

iPad Keyguards

One of the difficulties of fitting an overlay or keyguard to an iPad is the variety of grid/symbol arrangements particular to each App. This means that keyguards are limited in their use. However, there are companies such as Lasered Pics which sell keyguard overlays for Proloquo2go, GoTalkNow, Assistive Chat, iMean, and other popular AAC Apps (including Co:Writer): bit.ly/iPadKeyguard_categories or alternatively you can download a custom template to create your own: bit.ly/customiPadkeygurads

Styluses and Mouthsticks

As well as switches and head pointers, the iPad can also be accessed using a stylus or a mouthstick. One example is Etsy who supply a range of styluses, e.g. Steady T-Bar stylus, Flex Stylus, Balltop Stylus, Finger Stylus and more: etsy.me/1enCnfk



Figure 130: A range of styluses and mouthsticks.

For users who have better motor control and don't require a T-bar stylus another option worth considering is the robust AluShape aluminium pencil shaped stylus with a hexagonal design and a rubber tip which glides across the screen: www.just-mobile.eu/ipad.html.



Other examples include the Pogo Stylus which is thinner (yet robust) or the iCrayon Stylus, a chunky and sturdy crayon available in different colours - great for encouraging early writing and drawing.



Figure 131: Styluses can be used to support handwriting.

Multitasking Gestures

Although Multitasking gestures are not considered to be an 'accessibility option' they are key to the way the iPad and Apps are used and manipulated.

Multitasking gestures include using four or five fingers to 'Pinch' to quickly move to the Home Screen or to 'Swipe' to activate the Control and Navigation Centers.

'Swiping' left or right between Apps and screens is a quick way of moving between multiple Apps which are in use.

In some circumstances Multitasking Gestures could be problematic for learners with poor fine motor skills as screens and Apps could be accidentally swiped causing a distraction or even confusion as the App disappears and another 'inexplicably' slides in.

Multitasking Gestures can be turned on or off by selecting Settings > General > Multitasking Gestures.

Chapter 4: iPad Accessories



Introduction

As well as the growth in Apps, the range of accessories for iPads has also seen a significant expansion in the shape of protective cases, mounts, stands, pointers, switch interfaces, speakers, amplifiers, remote controllers, styluses and more.

For many learners with additional support needs the 'out of the box iPad' can be a barrier in itself, particularly for those with mobility difficulties or learners who require a wheelchair mount and/or switch access etc.

Chapter 3, Accessibility Options, provides a number of recommendations to enhance access to the iPad. This section expands on some of those ideas and introduces a range of accessories that can either

be used in isolation or in conjunction with other access devices.

Most of the suppliers are based in the UK although as this is an emerging market many suppliers are located in the U.S. Where possible we have provided generic web-based suppliers such as Amazon with a direct web link. In those cases where a generic link isn't possible we have provided a direct link to the supplier.

CALL Scotland does not have any association or interests with commercial suppliers and strives to provide impartial and unbiased information when sourcing accessories and other iPad related equipment. Prices are accurate at the time of writing.

Protective Cases

Protective cases for the iPad are available in a host of different materials, colours, styles and designs. The choice of protective case will ultimately depend on the needs of individual users. While some cases offer protection to the Home button others cases feature integrated sound amplification (which may require batteries), built-in stands, screen protection and harnesses.



Figure 132: Selection of iPad cases.

With the popularity of the iPad increasing protective cases and other accessories are starting to become available in high street shops and supermarkets.

iBallz

This is an appealing 'protective' case - a case which isn't quite a case!

iBallz features an innovative design with four foam shock absorber balls at each corner (with 3 attached one can be used as an angled rest) everything is held together with an adjustable elastic cord.

iBallz can be attached and removed quickly and easily.

iBallz also offer a range of sleeves which provide added protection. A disadvantage of the iBallz is that the foam balls can obstruct the iPad's camera so you may need to position or unhook the top right hand foam ball away from the lens when taking photos.

iBallz does not offer screen protection and the 'case' is easy to remove. You can now buy additional accessories such as soft and hard sleeves/cases for added protection. For more information watch the Promo iBallz video here: bit.ly/1iCzurS.



Figure 133: iBallz protective case.

At a glance

iPad Version	All versions including iPad mini
Material	4 foam balls with adjustable cord
Colours	Pink, Black, Grey and Green
Built-in Speaker	No
Built-in Stand	Use foam ball to provide angled rest
Website	www.iballz.co.uk/
UK Supplier	iBallz UK

Big Grips Frame

The Big Grips Frame case is made of soft rubber and is available in a variety of colours.

Although the Big Grips Frame can be seated in portrait or landscape view you must buy the additional stand as it is sold separately.

The Big Grips Frame is one of the more robust and durable protective cases. It fits snugly but tightly around the iPad giving it maximum protection from daily knocks and falls.

The price is also very affordable and when fitted with a screen protector to avoid scratches, the Big Grips Frame should survive most classroom impacts.



Figure 134: Big Grips Frame - very robust case.

At a glance

iPad Version	iPad 2 - Air including iPad mini
Material	Soft lightweight rubber
Colours	Black, Green, Blue, Pink, Grey, Purple, Red and Orange
Built-in Speaker	No
Built-in Stand	Stand available separately
Website	www.inclusive.co.uk
UK supplier	Inclusive Technology

Griffin Survivor

The Griffin Survivor is a popular case for those looking for maximum protection.

Made from shatter-resistant polycarbonate and shock absorbing silicone, it is designed for 'extreme conditions' and will protect the iPad against sand, rain, humidity, shock and other environmental factors.



Figure 135: Griffin Survivor.

For an additional cost, cases can be customised by colour and material to suit different needs.

At a glance

iPad Version	iPad 2 - Air including iPad mini
Material	Soft rubber casing - washable and shock absorbent
Colours	Multiple colours
Built-in Speaker	No
Built-in Stand	No
Mounting plate options	DaeSSy plate - Mini (only at time of print)
Website	store.griffintechology.co.uk/
UK supplier	See also XMA (Scottish Government procurement for education)

Survivor Harness Kit for iPad

As well as being waterproof, the Harness Kit mounts onto an iPad quickly and easily with reinforced corner bands - useful for protecting the iPad when a pupil is travelling between home and school.

The Survivor Harness Kit is sold separately from the Griffin Survivor and is available from Griffin Technology - see above.



Figure 136: Survivor Harness Kit for iPad.

Gumdrop Tech

Gumdrop Tech provides a range of rugged and versatile protective cases and sleeves including options to customise your own.



Figure 137: Examples of Gumdrop Tech cases.

At a glance

iPad Version	iPad 2 - Air including iPad mini
Material	Hard casing - but also soft sleeves with zip
Colours	Multiple colours - design your own
Built-in Speaker	No
Built-in Stand	Yes, on some models
Website	www.gumdropcases.com
UK supplier	Amazon, eBay

OtterBox Defender Series Case

The OtterBox Defender Series Case provides protection for the front and back of the iPad as well as a touch screen shield that doubles as a viewing/typing stand.



Figure 138: OtterBox Defender Series Case.

The website also features a video overview of each of the protective cases in action. A disadvantage of the Otterbox is that it is awkward to fit the case to the iPad and may take several attempts before achieving the correct fitting.

At a glance

iPad Version	iPad 2, 3, Air and iPad Mini
Material	Soft rubber/plastic casing - washable and shock absorbent
Colours	Multiple colours
Built-in Speaker	No
Built-in Stand	Yes - landscape only
Website	www.otterbox.com
UK supplier	Otterbox, Inclusive Technology

Utility Series Latch II (up to 10" tablets)

Sold separately, the Utility Series Latch fits onto the back of the iPad/iPad mini providing additional protection for indoor and outdoor use.

The hand strap is padded, adjusts to varying hand sizes and rotates to accommodate portrait or landscape viewing.

The Utility Series Latch II includes an 'Accessory Pack' with leg and neck straps for added flexibility.



Figure 139: Utility Series Latch II.

Gripcase

The Gripcase claims to be the ultimate iPad case for portability, handling and protection - and judging from the video clip which demonstrates the Gripcase on the home page, it does look impressive. However, after recently testing one we noticed how easy it would be for a pupil to 'flip' the iPad out of the case - something to bear in mind.

The Gripcase is currently available in a range of colours and features a soft rubber casing. There is no built-in stand but shoulder straps and stands can be bought at an additional cost.



Figure 140: The Gripcase is available in a range of colours.

At a glance

iPad Version	iPad 2 - Air including iPad mini
Material	Soft rubber casing - washable and shock absorbent
Colours	Multiple colours
Built-in Speaker	No
Built-in Stand	No
Website	www.primarytechnologies.co.uk/gripcase/
UK Supplier (s)	Primary Technologies and Amazon

iAdapter (4)

As well as being a protective case, the iAdapter also has an amplifier with dual speakers that can be heard in a range of environments and settings.

It comes with its own separate rechargeable battery and with an amplifier bypass switch for continuous sound output even when the iAdapter's battery runs low.

Other features include a carrying handle, a stand for viewing in landscape view, protection for the Home button and an option for a carrying strap.

The casing is constructed of plastic with rubber corners and offers protection from the toughest impacts.



Figure 141: iAdapter with built-in speaker.

At a glance

iPad Version	iPad 2 - Air including iPad mini
Material	Combination of plastic and rubber
Colours	Black and grey
Built-in Speaker	Yes - built in rechargeable batteries
Built-in Stand	Yes - landscape only
Website	www.amdi.net
UK Supplier(s)	Inclusive Technology/Therapy-Box/SmartboxAT

Aqua Waterproof Case

If you need to use your iPad in situations where it needs protection from water (or even saliva), then this slimline protective waterproof case could be a useful solution.



Figure 142: Aqua waterproof case.

At a glance

iPad Version	iPad 2, 3, 4/Retina
Material	Combination of plastic and rubber
Colours	White
Built-in Speaker	No
Built-in Stand	No
UK Supplier(s)	Inclusive Technology/Therapy-Box/SmartboxAT

iPad External Keyboards

The iPad's on-screen keyboard has many options such as splitting the keyboard in two, docking and undocking. Despite these features the on-screen keyboard can be tricky and sometimes uncomfortable to use, particularly for longer writing activities.

Some pupils may even find the on-screen keyboard difficult or impossible to use.

In Chapter 3, Accessibility, we explained how you can add an external keyboard by using a Camera Connection Kit.

While this is an inexpensive option it provides limited keyboard functionality compared to an Apple compatible keyboard.

There is an increasing range of compatible keyboards which can be attached to the iPad via Bluetooth, e.g. the Kensington KeyFolio or the Leicke Sharon UltraSlim - although there are many more - a quick Google for 'iPad + Bluetooth keyboards' is a good start and it's also worth trying your local supermarket or a mobile phone shop for similar accessories.



Figure 143: Examples of Bluetooth keyboards.

iKeyboard

The iKeyboard is a thin membrane with gel-like buttons which attaches to the iPad, similar to a keyguard.



Figure 144: The iKeyboard.

As well as being lightweight and thin, the iKeyboard could help to avoid mistaken keystrokes as the user must physically press each key. Keys are separated by a thin and supple plastic grid.

The iKeyboard will only work with the default iPad on-screen keyboard and may not be suitable or compatible with other on-screen keyboards which are integrated into AAC or writing Apps. Also, the iKeyboard will only work with text input Apps such as Notes, Pages, email and Internet pages where text input is possible.

To find out more visit the iKeyboard website: www.ikeyboard.com

TouchFire

The TouchFire keyboard is a transparent keyboard which sticks to the iPad using four small magnets positioned at each corner of the keyboard.

Although similar to the iKeyboard the TouchFire is lighter and more flexible, i.e., it can be peeled back and rolled when not in use.

For more information visit the TouchFire 'How it works' website:

www.touchfire.com/how-it-works



Figure 145: The TouchFire overlay.

Flexible Bluetooth Mini Keyboard

In many ways the Flexible Bluetooth Mini Keyboard is reminiscent of the soft plastic and washable 'indestructible' keyboard which proved beneficial for learners with limited control of saliva.

Similar to the indestructible keyboard, the Flexible Mini Keyboard is waterproof and therefore washable.



Figure 146: A washable keyboard.

The Flexible Mini Keyboard uses Bluetooth to connect to the iPad and has a built-in rechargeable battery. The keyboard is compatible with most iPads and iOS. For more details on the Flexible Mini Keyboard visit the iPadxs website:

www.ipadxs.co.uk

iDock Keyguard for Apple iPad Docking Keyboard

The iPad Docking keyboard combines a dock for charging the iPad which can be used with a standard keyboard and keyguard, which would benefit learners with mobility difficulties such as limited hand coordination.

The keyboard also includes special keys that activate iPad features: www.maxessite.co.uk



Figure 147: iDock Keyguard docking keyboard.

Keyguards - Logan Technologies

One of the difficulties of fitting an overlay or keyguard to the iPad is the variety of grid/symbol arrangements particular to each App. This means that keyguards are limited in their use (see Chapter 3: Accessibility for more information).

Microphones and Recording

Many Apps feature audio, either for recording notes, creating social stories or even voice recognition (speech-to-text). The iPad's internal microphone is adequate for most audio recordings. But if you are looking for a microphone to filter out background noise or something which provides a more rounded sound there are numerous external microphones available to suit almost every need ranging from very affordable to more expensive professional microphones.

These can be plugged directly in to the iPad or via a Camera Connection Kit (see Chapter 3: Accessibility Options).

Most USB microphones will work via the USB Camera Connection Kit although there are some which require to be powered from the device.

If the iPad is unable to provide the necessary power then the USB microphone will not be compatible. Always check with the manufacturer to be on the safe side.

Microphone Accessories

Dedicated iPad microphones plug directly into the iPad's power connector. One example is APOGEE's hand-held microphone sold by the MicStore: bit.ly/themicstoreipad.

The APOGEE mic provides studio quality recording and could be used for creating audio tracks within Garageband.

Another option is the iRig Mic which allows you to use a quality hand-held condenser microphone for the iPad.

The iRig series also supplies adaptors to plug-in guitars, effects and other relevant musical instruments: www.ikmultimedia.com/Main.html?ios/index.php



Figure 148: A range of microphone accessories.

If you intend to use a voice recognition App such as Dragon Dictation with a headphone/microphone set then it is worth considering purchasing the iPad Headset

Microphone Adapter from Speech Recognition Solutions (providing a dual jack for both a microphone and headset: speechrecsolutions.com/iPad_audio.html)

See Chapter 3: Accessibility, for more on speech recognition and Siri.

Conductive and Capacitive Access

E-Tip Glove

The E-Tip Glove is a specially designed glove for users with poor touch or who are unable to use the iPad because of a skin condition. The iPad has a capacitive touchscreen which requires an electrostatic field between the screen and the hand. The E-Tip gloves features a conductive tip made of silver metallized nylon on the thumb and index finger that touchscreens are responsive to.

The iPad requires a range of finger gestures particularly one-finger touch which controls many of the iPad's features, such as scrolling.

Normal gloves are not suitable for this process.

The E-Tip Glove benefits users who cannot easily isolate a single finger and provides a 'hand rest' on the iPad as only the metal tips react with the iPad's screen.

The gloves are available from Therapy Box www.therapy-box.co.uk and from the suppliers- North Face: uk.thenorthface.com/

Alternatives to the E-Tip Glove (woollen gloves with conductive thread) can be found on Amazon from as little as £5.00. Another source is IKEA who developed the Beröra (meaning to touch) conductive gloves kit, a DIY sewing kit with a special conductive thread - IKEA's alternative to the E-Tip glove. A cheap DIY option can be found on the 'Instructables' website: bit.ly/glove_ipad.



Figure 149: E-Tip Glove.

iPad Mounts and Positioning

As popularity for the iPad increase the demand for appropriate iPad mounts has also grown.

There is now a wide range of mounts, including wheelchair mounts, which allow an iPad to be safely and securely attached in many configurable positions to allow ease of access for different users.

While the traditional use of clamps and mounting plates (often seen on AAC devices) are still widely available, iPads can be mounted and fixed on different surfaces, including tables, chairs, beds, walls; with brackets, suction devices and vacuum cups. Additionally iPads can even be attached to the wrist with an elasticated wrist band.



Figure 150: A range of iPad mounts are available.

Mounts & More Ltd

With over 15 years of experience the UK based Mounts and More Ltd, recently updated their product range with a new selection of iPad mounts, holders, mounting plates and quick release base plates.

www.aacmounts.com



Figure 151: A range of iPad mounts and mounting plates.

Smile Rehab

Established in 1998, Smile Rehab, based in the UK, supply a versatile range of highly tensile mounts which can be fitted to all types of wheelchairs, tables, beds or any secure surface. Communication devices, tablets, switches and controls are commonly mounted items.

www.smilerehab.com



Figure 152: Smile Rehab supply a range of tensile mounts.

BeyondAdaptive

As well as supplying a large range of wheelchair mounting solutions, BeyondAdaptive also supply iPad wheelchair mounts and keyguards. A recent addition to their collection is a basic, hinged keyguard for the iPad but a future plan is that you can build your own mount and keyguard - could be useful for those who have difficulties with fine motor skills and find it difficult to use a touch screen.

www.beyondadaptive.com

CJ Mounting

CJ Mounting feature a wide variety of mounts for iPads, laptops and other tablet devices. Mounts include sturdy floor supports/mounts, wheelchair and smart-wheelchair mounts with a focus on positioning the iPad to meet different needs.

www.cjtmounting.com

DaeSSy Mounting Systems

A U.S. based company with a long history of making quality stands and mounts. The iPad holder is a new addition to DaeSSY range and offers some useful features such as quick release, easy switching between portrait and landscape and a secure attachment.

bit.ly/daessymounts

Prop

For users who are unable to hold an iPad then the iProp could be a useful solution. The iProp is compatible with both the original iPad and second generation; it features a long goose neck extension and can rotate a full 360 degrees. The iProp is also fitted with a heavy V-shaped base.

www.iprop.com

Mount'n Mover

A US based company which specialises in a range of wheelchair mounting and positioning systems. They also provide some useful video overviews and case studies as well as some helpful 'How to' videos. Some of their products are available from Toby Churchill which in the UK.

www.mountnmover.com or www.toby-churchill.com

Ram Mounts

Ram Mounts provide specialist parts for the car industry but they also offer a range of compatible mounts for Apple cradles - a good range of swivel heads, sockets so you can set up and adjust the iPad just the way you need it.

bit.ly/ram_mounts

Assembly of an iPad Mounting for a Wheelchair

CALL Scotland has created a video explaining how to mount an iPad to a wheelchair using components supplied by RAM Mounts.

bit.ly/ipadmountwheelchair

RJ Cooper

RJ Cooper has almost everything there is to attach or clamp to an iPad. If you're looking for iPad stands, pointing devices, switch interfaces, mounts, cases, speakers, remote controllers.

www.rjcooper.com/

iPad Holders

iPad holders consist of either a plastic or leather case fitted with a strap or elasticated hand strap on the rear of the case. The iPad can be firmly and securely held in the hand without the fear of accidentally dropping it. Some iPad holders have a 360 degrees rotating mount so the iPad can be held in landscape and portrait mode.

A search for 'iPad Holder' will give a selection of results to choose from with prices starting from around £20.00.

amzn.to/ipadhandholder

(See also the Utility Series Latch II in this chapter.)

Wallee

The Wallee range of products has more of a focus on suction and vacuum style of mounts. Nevertheless there are some useful ideas on how iPads can be attached to different surfaces.

The Hand Strap is one innovative idea which consists of a strap attached to the back of the iPad case.

You simply place your hand through the strap and then adjust for maximum comfort, support and security.

One advantage of the Hand Strap is it could offer greater freedom of movement to pupils in class, without worrying that the device could be dropped. Teachers can also use it to take the iPad close up to a pupil to illustrate an App or another item on the screen.

www.thewallee.com



Figure 154: The Wallee (and iPad holder (above)).

Finding Apps to support learning and teaching

With so many Apps available for the iPad, it would be impossible to search, find and evaluate the best and most suitable Apps to suit different needs. Below are some useful time-cutting ways to help you find the appropriate Apps without the need to spend hours hunting through the App Store.

Apps and Dyslexia: Apps for iPhones, iPads and Android Devices

The British Dyslexia Association Technology Group site has suggestions on Apps for specific areas of need for people with dyslexia.

bdatech.org/what-technology/small-portable-devices/apps/

Apps for Children with Special Needs

The Apps for Children with Special Needs features a range of appropriate and useful resources to meet different types of abilities and learning needs including examples of 'how to' video clips for over 300 Apps.

a4cwsn.com

Apps Gone Free

This App lists the various Apps that are available free on any particular day as a 'special offer'. Some days there will be nothing that you want available, but on other occasions it is possible to get a real gem.

bit.ly/dailyapp_deals

Apps in Education

Most of us, particularly teachers, just don't have time to spend time browsing through the multitude of Apps. This site helps by breaking down Apps into categories and key learning areas.

appsineducation.blogspot.com

Apps that Make Life Easier

Comprehensive categorised lists of Apps that can be browsed online, or downloaded as a Word document from South Carolina Assistive Technology Program.

www.sc.edu/scatp/apps.html

Apps4Stages

Apps are categorised and recommended according to the Stages[®] Framework based on defining developmentally appropriate, observable learner characteristics for different stages of child development.

apps4stages.wikispaces.com

AppsForAAC

Finding an AAC App to meet individual needs can be time consuming. Luckily the 'AppsForAAC' site provides a detailed informative guide which is organised by category, speech system and symbol system used. The 'Full List' section provides an easy-to-use search facility so you can quickly find the App you're looking for without scrolling through pages of Apps.

www.appsforaac.net

Info Exchange Magazine

Flo Longhorn's web site is a great source of information on iPad Apps, particularly for children with sensory disabilities, or on the autism spectrum. The weekly list of recommended Apps, which you can sign up for, is a very useful guide to the latest fun and engaging Apps for young children with complex needs.

flolonghorn.com/

iPad Apps for Learners with Dyslexia/Reading and Writing Difficulties

CALL Scotland's 'wheel' of Apps that can be used to help learners with reading and writing difficulties is categorised according to area of difficulty and task.

www.callscotland.org.uk/Resources/Posters-and-Leaflets/

iPod Touch and iPad Resources

This resource features the LiveBinders interface (a virtual version of a Filofax or pull out cabinet with a series of tabs/labels) and contains a wealth of resources. Resources include AAC and general learning and teaching Apps. It is also a worthwhile site to find information about educational issues connected to the use of iPads in education.

bit.ly/ipad_binder

Jane Farrall

Jane Farrall's comprehensive and informative list of Apps for AAC used to be part of the excellent Spectronics web site (<http://www.spectronics.com.au/blog/>) but now has a separate existence. The site features AAC Apps that are categorised into 3 areas: Symbols/Pictures only Apps, Symbols and Text-to-Speech Apps and Text Based Apps. Each of the Apps listed is provided with a description, brief overview of features, access options and a rating.

www.janefarrall.com

KinderTown

The KinderTown App is essentially a database App for searching educational Apps for children aged from 3 to 8, including Apps that help with speech and language development. You can also search for Apps by subject, with each App having been reviewed by an educator. Note that some of the more useful search tools require in-app purchase

www.kindertown.com

Power Up! Apps for Kids with Special Needs and Learning Differences

This free downloadable booklet has information on Apps for Communication, Social Interaction, Organisation, Reading, Mathematics and Motor Skills. It was compiled by teachers, speech and language therapists and other experts.

www.common sense media.org/guide/special-needs

Quixey

Quixey is a web-based search tool for finding Apps to suit a particular activity or task. Simply enter a couple of key words, or ask a question as you would with any

web search tool and it will come up with a list and short description of Apps that meet your search criteria. On the whole it is very useful, but be aware that the list will sometimes pull up some unexpected results, e.g. a search for 'dyslexia screening' bringing up cancer screening Apps.

www.quixey.com

SpeechPathology Apps

Although a U.S. resource the site provides Apps which have been researched and tested by users including speech and language therapists. SpeechPathology Apps provides a quick way of finding Apps which are categorised into the following areas: Early Concept Apps, Interactive Book Apps, Reading Apps, Speech & Language Apps, Parenting Apps for Mums & Dads and Special Education Apps.

www.speechpathologyapps.com

SpeechTechies

SpeechTechies is a collaborative resource document (Google Docs) which comprises a comprehensive list of mobile Apps for the iPad and Android devices.

bit.ly/IfA5Nq

The App Academy

The App Academy provides reviews of Apps which are linked to free online training resources. As well as having an extensive list, one of the benefits of The App Academy is the comprehensive list of video tutorials and online training. There are step-by-step tutorials on Apps such as Picatello, Verbally and more, including useful hints and tips on making the most from your iPad.

www.theappacademy.org

Blogs, Tweets, Wikis and Other Social Media Sites

The use of social media sites such as Twitter and Blogs offers a rich variety of information and resources on all things related to the iPad and Apps. This section highlights some the most innovative, engaging and up-to-date blogs, wikis, Twitter feeds and other social media resources.

Digital Learning Team

City of Edinburgh Council Education team's iPad information area, with regular blogs on new Apps and iPad developments, along with video tutorials and other information resources for using iPads in schools.

digitallearningteam.org/iPad/

Fraser Speirs

Fraser Speirs is a teacher at the Cedars School of Excellence, a mainstream independent school in Inverclyde who has introduced iPads for all pupils. Fraser blogs regularly on the project outlining recommended Apps, management problems and even explores issues related to using an iPad with SAQ Adapted Digital Exam papers.

speirs.org

iPads in Education

iPads in Education is a 'Ning' social networking site which is full of useful information, discussion groups, blogs and numerous hints and tips. There is also a lively discussion forum which is available to all members. iPads in Education offers impartial advice, mostly based on the experience of others, on preparing your school for an iPad implementation and managing content and Apps. iPads in Education is free to join.

ipadeducators.ning.com

Lang witches Blog

The Lang witches blog is a general learning and teaching resource which provides some useful insights into implementing iPads and Apps into the school and class environment. The 21st Century Learning section, which focuses on using iPads with learners with poor fluency, is particularly useful. A recent addition to the blog is the iPad Apps and Blooms Taxonomy with Apps accordingly categorised to the areas of 'Creating', 'Evaluating' etc.

langwitches.org/blog

Lauren S Enders

Pinterest site with comprehensive collection of links to over 15,000 web sites relating to iPads, assistive technology and other aspects of the use of technology in education. The iPad sections include folders with information on cases, styluses, keyboards, mounts, speakers, headphones and other accessories, along with details of lots of educational Apps.

pinterest.com/lasenders/

Learning in Hand: Classroom iPod touches & iPads: Dos and Don'ts

Tony Vincent's 'dos and don'ts' provides an easy-to-follow yet detailed guide to making a successful iPad implementation. The site includes basic tips such as giving each iPad a logical name, organising Apps, security issues and even helpful advice on misuse and appropriate policies.

learninginhand.com/do

Meg Wilson @ iPodsibilities

Meg Wilson's Twitter page provides a comprehensive resource for all things Apps which are geared towards learning and teaching. Recent resources include Apps to support spelling, art, music and regular updates on relevant issues to iPads and Apps.

twitter.com/iPodsibilities

Mobile Learning Special Needs

The Mobile Learning Special Needs site features some useful resources including an interesting AAC Apps video presentation. The site also hosts an interactive forum with discussions based around issues such as iPads and autism.

bit.ly/tkYIL5

OTs with Apps

Carol Leynse Harpold's very informative blog provides an Occupational Therapist's perspective on the use of iPads in education. The blog features regular reviews and comparisons of Apps and iPad accessories. The site also includes a very comprehensive 50 page document listing Apps, broken down into categories.
otswithapps.com

Robert Scoble

In this blog post Robert Scoble explains how the iPad is helping his son to communicate. Using Google + (Google's answer to Facebook) Robert is attempting to build a 'Circle of Friends' - a circle of people interested in autism and iPad Apps. The site also features a thought provoking video diary.
bit.ly/robert_scoble

The Website of Luis Perez

Luis Perez provides a comprehensive overview of the iPad's built-in accessibility options (see Chapter 3: Accessibility Options). With text-to-speech, magnification and more this site provides a useful introduction to tools which come readily available on the iOS device. Luis is also a prolific user of Twitter.
luisperezonline.com/

Case Studies and Research

Whenever a new technological innovation that can be used in education comes along, case studies appear quite quickly, but there is inevitably a delay before peer-reviewed research publications and journal articles start to appear. It is now four years since the launch of the first iPad and a few research reports and articles have begun to appear.

APPsolute Fit: Stages Framework

The 'Stages Framework and Apps Support' by Madalaine Pugliese, is a seven stage framework of learning and language development based on the theories of Piaget's Cognitive Development and Chomsky's Milestones and Language Development.

The Framework moves through different stages of learning and development from 'Stage One - Cause and Effect' through to 'Stage Four Early Concepts' and finally 'Stages Six and Seven - Functional Learning'.

At each stage Apps have been identified and matched to determine skills and milestones. Each stage offers advice 'About the Learner' and 'Features to consider' when deciding on what Apps should be introduced at each milestone. With each corresponding App a rationale and description is also provided.
bit.ly/appsoludefit

Edinburgh 1:1 Mobile Evaluation, 2012 - 2013

This report by Kevin Burden and Trevor Male from the University of Hull was published in 2013. It followed on from their earlier, more general report (see below) and looked at the use of iPads in pilot schools in Edinburgh.
bit.ly/1m6MEzH

iPad Scotland Evaluation

Kevin Burden and colleagues from the University of Hull looked at the use of iPads in eight schools across six local authorities in Scotland considering the impact of iPads on learning.

www2.hull.ac.uk/ifl/ipadresearchinschools.aspx

iPadiCan: Trialing iPads to Support Primary and Secondary Students with Disabilities

This research article by Liz Watts and Renata Phelps was published in Australian Educational Computing, Vol 27 No 2 (2012). It documents the practical steps required to implement iPads in the classroom, looks at educationally effective Apps and records the perceptions of students, staff and parents.

bit.ly/1kig7Bi

iPads for Learning

Developed by the Australian Victorian Government, this site provides numerous useful resources including case studies, 21 Steps to iPad success, Classroom ideas and more. The 'Nuts and Bolt's section is particularly good with hints and tips to managing iPads and Apps in a school setting.

www.ipadsforeducation.vic.edu.au

iPads: What Are We Learning?

Summary report on findings of a 'data gathering day' held in Alberta in 2011, looking at the potential impact of iPads on education in the province.

bit.ly/1rJDAQA

Reading in a Technological World: Comparing the iPad to Print

MEd Thesis by Shannon Stewart, Bowling Green State University, Ohio, looking at the potential for a move from a paper-based curriculum to one based on technology, exploring the feelings of students on the use of the iPad.

bit.ly/1ltz0Ef

Rubric and Evaluating Apps for Teaching and Learning

Tony Vincent has developed a rubric to evaluate Apps. According to Vincent some or all of the following features should be present within an App: customisation, feedback, thinking skills, engagement and sharing. The site also provides a Checklist which can be downloaded and used for free.

bit.ly/evaluateapps

60 Minutes

60 Minutes is part of the US CBS News Corporation and provides short films which can be viewed online. This specific video case study explores how iPads and Apps are being used with Autistic children in the class and at home to support communication and learning.

bit.ly/autism_ipads_in_class

Sorting AAC Apps

Developed by Kelly Fonner and Scott Marfilius for the Closing the Gap journal, 'Sorting AAC Apps' includes a checklist of features of AAC applications for iPads/iPods/iPhones and Androids. You can download it here:

bit.ly/sorting_aac_apps

Tablets and Apps: How to Ensure Impact on Teaching and Learning

This report by Ollie Bray and Tim Scratcherd for Oxford School Improvement provides practical support and guidance for school leadership teams who are considering the purchase of tablet devices (iPad or Android) for use in the classroom.

bit.ly/1hOWtKc

The iPad as a Tool for Education: A Study of the Introduction of iPads at Longfield Academy

This Naace publication looks at the introduction of iPads to a secondary school and their use over two terms. As one teacher put it, "The iPads have revolutionised teaching", with appropriate use of iPads helping to enhance learning across the curriculum and encouraging collaborative learning.

www.naace.co.uk/publications/longfieldipadresearch

Unlocking Literacy with the iPad

"It keeps me interested and motivated and I don't zone out like I used to", states a student who is finding the iPad beneficial to his learning. One teacher provides data to suggest that using iPads in teaching and learning is really raising standards among students.

bit.ly/unlocking_literacy_ipads

Using iPads and Mobile Devices for Learning: Some Key Considerations

Dr Tim Rudd's report for Livelab identifies a number of key considerations for educators in relation to the use of iPads and other mobile devices for learning, including cost, security and technical issues.

www.livelab.org.uk/iPad%27s%20for%20learning%20considerations.doc

What the Research Says: iPads in the Classroom

Wilma Clark and Rosemary Luckin review research on the impact of iPads in the classroom on behalf of the London Knowledge Lab. They focus in particular on teaching and learning and implications for decision makers and other user groups.

bit.ly/1fMAe83

Young Children, Apps and iPads

This report from the Michael Cohen Group looks at how children as young as two years old access, play and learn with iPads and other touch screen devices.

mcgrc.com/publications/publications/

eBooks and Tutorial Apps

Some of the most useful guides to using the iPad in educational and other settings come in the form of Apps and eBooks that can be used or read on the iPad.

Autism Apps (by Touch Autism Ltd)

bit.ly/1nZuWLu

Tips & Tricks - iPad Secrets (by Intelligenti Ltd)

bit.ly/1h9XVaP

iPad Basics for the Classroom Teacher by John Patten

bit.ly/QYxePG

iPad for Writing by Simon Pile

bit.ly/1mUe2R9

iPad Teacher Guide by Adam Foster

bit.ly/1pJZBBc

iPads at Elmwood School by Andrew Hutt

bit.ly/QUOiqq

iPads in Education by Kelly Walsh

bit.ly/1iwqSmK

iPads in the Classroom by Annalisa Kelly

bit.ly/1mVROvm

The Teacher's iPadoPedia by Philip Johnston

bit.ly/1kaEgbE

Books on Using the iPad in Special Education

A number of books are available on using the iPad with learners with additional support needs/special needs for people who prefer to access information in a more traditional format.

Apps for Autism: (2012) by Lois Jean Brady

Getting Started: iPads for Special Needs (2012) by Sami Rahman

iPad in Education for Dummies (2013) by Sam Gliksman

iPads, Apps and Special Learners: A-Z for Beginners (2012) by Flo Longhorn

Dyslexia and the iPad - Overcoming Dyslexia with Technology (2013) by James and Linda Nuttall

Mobile Learning for All: Supporting Accessibility with the iPad (2013) by Luis Perez.

Chapter 6: iPad in Assessments and Exams



Introduction

As the iPad becomes increasingly ubiquitous in teaching and learning it is inevitable that questions will be asked by teachers, parents, pupils and many others about the appropriateness of using iPads in assessments and exams.

iPads can be used for internal assessments conducted in school by class and subject teachers provided the Apps used do not give the learner an unfair advantage over other students. The class teacher will use their professional judgement to determine whether an iPad or a particular App can be used for assessing a particular skill during class tests and assessments.

For example, in a spelling test it might be appropriate to turn off autocorrect and the spellchecker, or the use of a graphing calculator App might not be allowed for a maths

question that involves drawing a graph manually. A common question is whether text-to-speech can be used in an English comprehension assessment.

In Scotland, there is nothing that we could find within Curriculum for Excellence, SQA or Education Scotland guidance to indicate that text-to-speech cannot be used, and since SQA explicitly say that technology and text-to-speech can be used in the assessment of reading at National 3 and 4, the implication is that it can also be used for assessing reading at other levels.

Refer to bit.ly/sqadigitalexams for more details on assessment in national literacy units.

The use of iPads (or any other technology) in external, formal examinations is governed in Scotland

by the Scottish Qualifications Authority. A learner with a disability or additional support need who has difficulty accessing the published assessment paper can use an 'Assessment Arrangement'¹ to alleviate the difficulty. This could be for example extra time, use of a human reader or scribe, or ICT, including an iPad. A learner might use an iPad for reading and answering digital versions of the question paper, or use a word processing App on the iPad for writing or responding.

Apps for Digital Question Papers

In Scotland, the SQA (Scottish Qualifications Authority) have offered Digital Question Papers (DQPs) for candidates with disabilities or additional support needs since 2008. The Digital Papers are interactive PDF files with answer boxes (form fields) so that students can type their answers on-screen using a computer or an iPad.

The papers were developed and piloted by CALL Scotland and SQA and they have been extremely successful since their introduction, with more than half of Scottish secondary schools using them by 2013, and we believe that the examination boards in the rest of the UK will be introducing them in 2014. Visit CALL's web site for more advice and research on Digital Question Papers:

www.adapteddigitalexams.org.uk.

A school or presenting Centre requests Digital Question Papers from SQA using the Assessment Arrangements Request² (AAR) online system: DQPs are a type of adapted paper and so can only be used by pupils with disabilities or additional support needs.

The SQA Digital Question Papers are PDF files which can be accessed using many different Apps but we suggest either ClaroPDF (69p plus £1.49 for each voice) or PDF Expert 5 (£6.99) because they let you type into the answer boxes on the iPad and have text-to-speech for reading the text and questions. Most other Apps that can read PDFs, such as iBooks or GoodReader, for example, don't have this facility.

You could also use the free Adobe Reader App but it's pretty basic and it can't read the questions out to you, unlike ClaroPDF or PDF Expert 5. Cedars School of Excellence used PDF Expert for the 2012 exams.

Opening and viewing papers

With both ClaroPDF and PDF Expert, you can open the paper and tap or pinch to zoom in and out. ClaroPDF has the option of showing you page thumbnails at the bottom of the screen, while PDF Expert has a full screen page thumbnail view.

One good feature of ClaroPDF is that you can choose from 8 different coloured backgrounds, which may be useful for candidates who have visual stress or other

¹ SQA Assessment Arrangements <http://www.sqa.org.uk/sqa/14977.html>

² Requests for adapted question papers and other Assessment Arrangements <http://www.sqa.org.uk/sqa/68739.html>

visual difficulty - PDF Expert is more limited with only white-on-black; black-on-white; and black-on-sepia colour options. An advantage of PDF Expert, on the other hand, is that you can open two files at the same time (e.g. question paper and also an answer booklet) and use tabs at the top of the screen to easily swap between them. With ClaroPDF, you have to go back to your documents and then open the other file, which takes a little longer.

How do you get Digital Question Papers on to the iPad? Both Apps let you open papers via Dropbox, from the internet or emailed as attachments. However, DropBox is not available in many local authorities and so PDF Expert may have an advantage here because it can access files from a much wider range of sources including iCloud, Box, Office 365, SkyDrive, Google Drive and other cloud storage facilities.

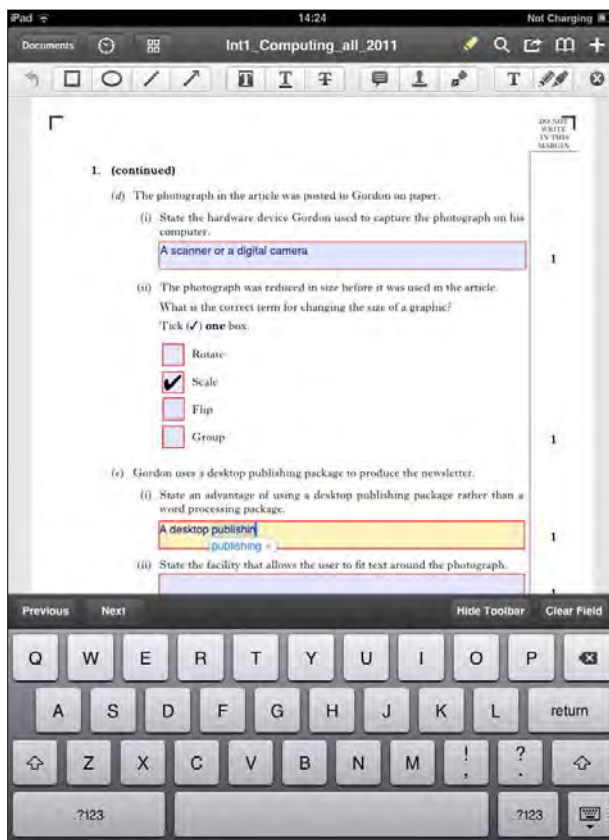


Figure 155: Typing and answering tick boxes with PDF Expert.

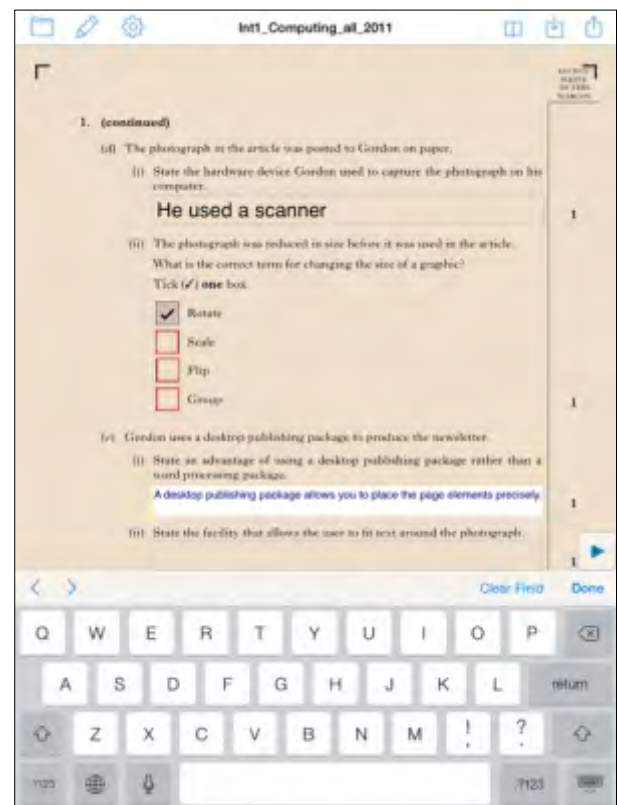


Figure 156: Typing answers with ClaroPDF.

Typing answers

With ClaroPDF and PDF Expert, text can be typed into the answer boxes on the Digital Question Paper. To 'tick' an answer box, tap with your finger. PDF Expert is slightly easier to use in that the red borders around the answer boxes are visible, whereas they aren't in ClaroPDF (Figures 156 and 157). With both Apps, you can read back your answers using text-to-speech.

Dictating answers with Siri

If you have an iPad 3 or later, or Mini, you can use Siri speech recognition to dictate answers (see Chapter 3) provided you are connected to the internet. Siri works even if you are locked into ClaroPDF or PDF Expert with Guided Access; i.e. you can keep the assessment secure and still use Siri. For short answers in particular, Siri has good potential for students with significant writing or spelling difficulties because it is so simple to use, the accuracy of the speech recognition seems to be very good, and answers can be dictated and then read back using text-to-speech.

Spellchecker

SQA's policy on spellcheckers is that "all software such as spellchecks, predictive software etc. must be disabled, unless it has been approved by SQA."³ However, if a candidate has "substantial difficulties in writing (for example, spelling, handwriting, speed and/or legibility)" then ICT, including a spellchecker, can be requested and used.

You can use a spellchecker in almost all subjects apart from the writing papers in Modern Languages and Gaelic (Learners) and Gàidhlig⁴. The Writing papers for these subjects assess spelling and so spellcheckers, word prediction or speech recognition are not allowed for any candidate.

It is therefore necessary to be able to turn off spellchecking on an iPad, and this can be done by going to Settings > General > Keyboard.

Note that SQA provide two versions of each Digital Question Paper: one with spellcheck enabled and one with spellcheck disabled. On a Windows computer, the Adobe Reader spellchecker will not work at all on the spellcheck-disabled file; on the iPad, however, the spellchecker will always work regardless, and so must be turned off in the iPad Settings. Of course, the candidate may know how to turn the spelling tools back on in Settings, in which case you may want to use Guided Access to lock them into the PDF Expert or ClaroPDF App. AutoCorrect and spellchecker can both be used for assessment of Literacy at National 3 and 4.

Word prediction

Word prediction is classed as a form of linguistic support (like a spellchecker or speech recognition) and so can only be used by pupils with a specific difficulty, and where that difficulty would adversely impact on their ability to demonstrate their knowledge and skills. For example, word prediction can be used to help a pupil with a physical impairment speed up their typing, or reduce fatigue; or by a dyslexic pupil to improve spelling accuracy. Permission to use word prediction must be sought from SQA.

³ Assessment Arrangements Explained

http://www.sqa.org.uk/sqa/files_ccc/AA_AssessmentArrangementsExplained.pdf

⁴ Assessment Arrangements Explained (as above).

http://www.sqa.org.uk/sqa/files_ccc/AA_AssessmentArrangementsExplained.pdf

With an iPad you can only see one App on screen at a time, and so you can't use a word predictor 'on top' of the DQP to type straight into an answer box. You can type up answers in the word predictor and then copy the text and paste into the digital paper, but this does mean either remembering the question while typing the answer, or copying and pasting the question into the word predictor so it can be read, or referring to a paper copy of the paper. Apps that provide word prediction include: Co:Writer BE, iReadWrite, iWordQ, AppWriter and IntoWords.

Drawing and equations

The digital papers work very well for question and answer exam papers which require short text answers but maths and science, where the learner has to produce equations and formulae, can be tricky to do digitally. It is possible to draw diagrams, graphs and maths and science expressions on the digital paper: Figures 157 & 158 below show an attempt to draw a graph and work through an equation with the stylus using PDF Expert. Note that candidates have the option of hand-drawing diagrams, graphs and equations on a hard copy of the paper.

Both ClaroPDF and PDF Expert provide a good range of drawing and annotation tools: you can highlight, underline and strikethrough text; add 'sticky notes' to the paper; click and type anywhere on the paper; draw free-hand with different sizes and colours of pen; and draw rectangles, ovals and lines. You can insert images from the camera or your photo library, and you can also record audio comments into the PDF. This latter facility is not relevant for exams, but can be very helpful for classwork where learners with significant writing difficulties can record their responses using audio.

Handwriting and drawing with PDF Expert is slightly easier because it has 'wrist protection' that allows you to rest your palm or wrist on the screen as you draw. PDF Expert has a 'stamp' tool that also lets you import stamps as images; while ClaroPDF has a polygon tool which makes it very easy to draw shapes, and a 'linked line' tool which is useful for quickly drawing line graphs, for example.

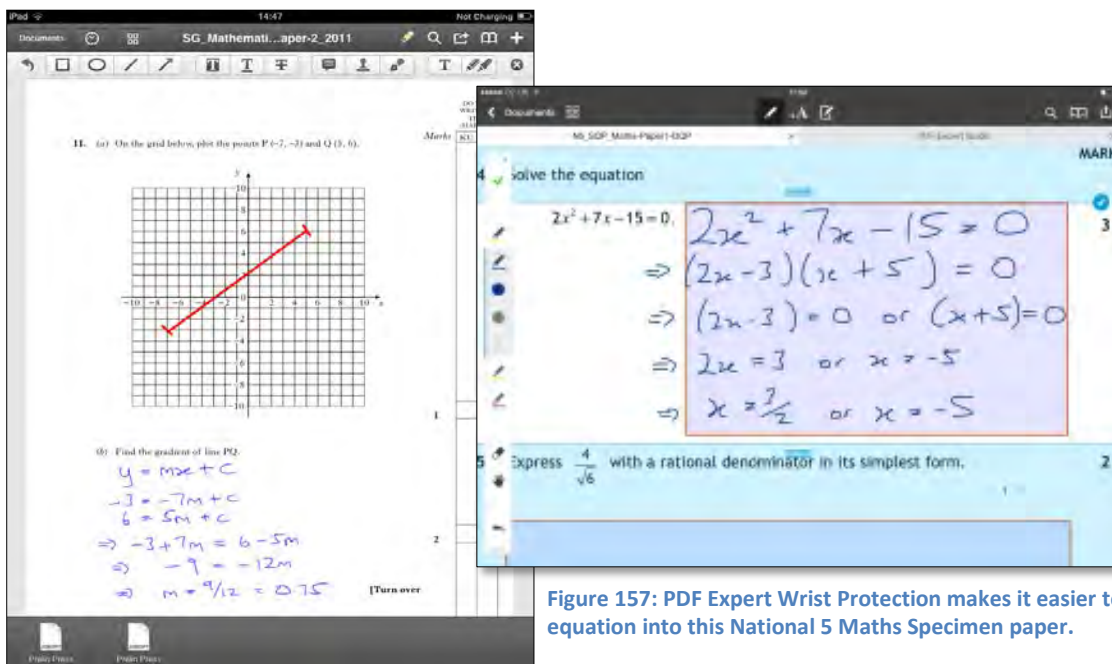


Figure 157: PDF Expert Wrist Protection makes it easier to write and equation into this National 5 Maths Specimen paper.

Figure 158: Completing a graph and equation in a maths paper.

Reading the paper with Text-to-Speech

Both ClaroPDF and PDF Expert provide good text-to-speech facilities. ClaroPDF is probably quicker and easier to use than PDF Expert, for Digital Question papers: you can switch on **Speak on tap** and then tap on a sentence or paragraph and it will be read out, whereas with PDF Expert you have to select the text and then tap **Speak** or **Read from here**.

Similarly, to read back your answer with ClaroPDF, you tap on the **Play** button; PDF Expert requires you to select the text and then choose **Speak** from the pop-up menu.

For reading longer texts, ClaroPDF has an option to 'carry on speaking' after you have tapped, or just play the entire page. Claro can highlight each word, or sentence or can leave a 'word trail' of highlighter as each word is read. You can choose the highlight colour.

You can read answers typed into the answer boxes. ClaroPDF comes with four high quality UK and US English voices, and many more voices can be bought for £1.49 each.

There is a good Scottish voice ('Fiona') which is not quite as clear as CereProc's Heather voice, but is a welcome alternative to the 'RP' English voices.

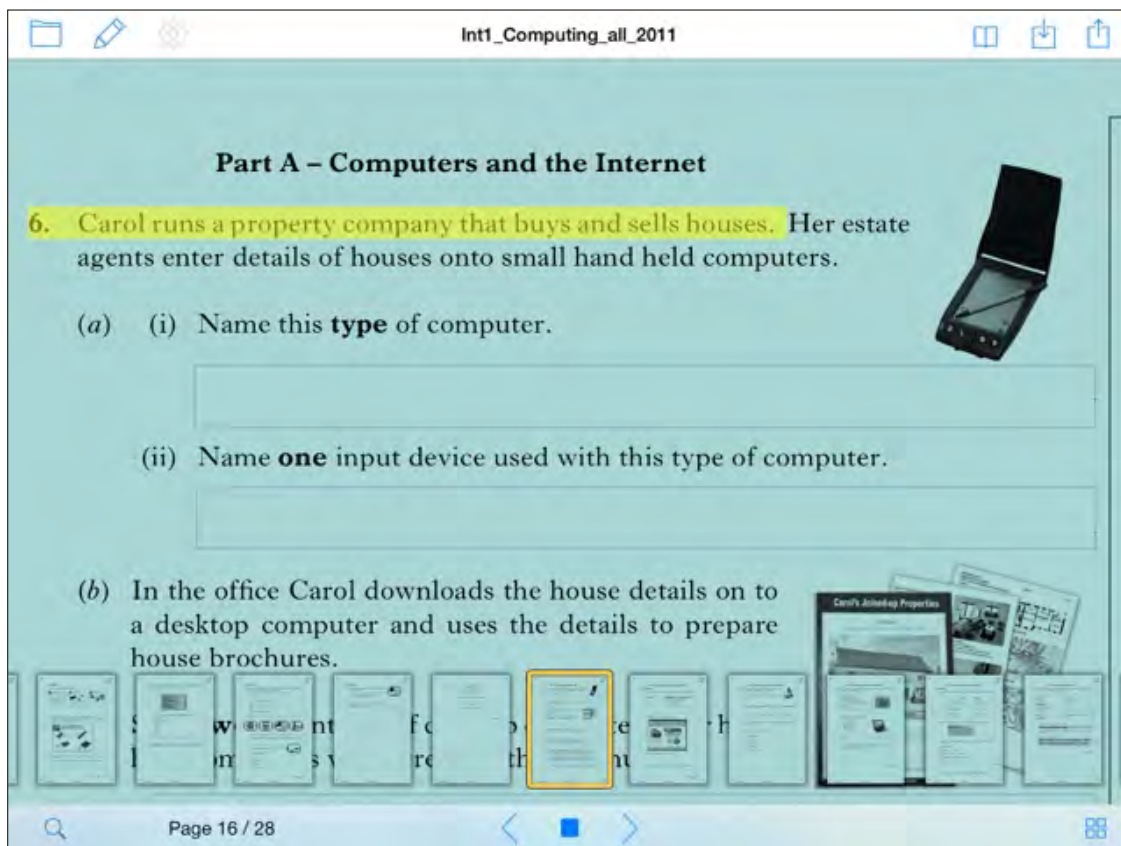


Figure 159: Reading the questions with ClaroPDF's text reader.

With PDF Expert, you select the question to be read and then either choose **Speak** or **Read from here** from the options, and the text will be read out. **Speak** is the built-in **Speak Selection** facility that is part of iOS 7, and so it will use whatever voice you have selected in your Settings. **Read from here** is PDF Expert's text-to-speech facility. It also uses the built-in iOS 7 voices.

PDF Expert also has a reading mode for reading an entire page or document. PDF Expert highlights each word as it reads and uses the voices that are supplied with the iPad, and so you have a choice of Australian, Irish, South African, UK or US English voices.

Printing

The SQA digital question papers must be printed out so they can be sent to SQA for marking. If you have prevented access to the school Wi-Fi network, an alternative method of printing the completed digital papers is required. There are two methods:

- buy and locate an AirPrint printer in the exam room so that the iPads can print direct using Wi-Fi,
- connect the iPad with Wi-Fi to a Mac or PC with a printer attached, and send the paper to the computer for printing using an App such as Printopia or Presto.

Digital Answer Booklets

Only some Digital Question Papers have answer boxes for typing answers on screen - most of the Higher papers, for example, are answered using a separate paper or digital answer booklet, or a word processor. Pre-formatted Digital Answer Booklets (DABs) can be downloaded in PDF and Word format from the SQA web site at: bit.ly/sqadigitalpapers

ClaroPDF

ClaroPDF can only display one file at a time, and so swapping between question paper and answer booklet involves several taps and swipes, which is time consuming and inconvenient. Of course, many candidates may not need to use digital versions of both papers - a student might read the hard copy question paper, and type answers on the iPad, or use the iPad to read the questions and handwrite their answers.

But if we assume that the learner wants to access both question and answer paper on an iPad, the best arrangement is probably to use one App to read the question paper and a different App to access the answer booklet. (Or two iPads!). The student can then double-hit the Home button to swap between them, or use four or five fingers to swipe between Apps (Settings > General > Multitasking Gestures).

This does of course mean that Guided Access cannot be used, and so other measures are required to provide security (see below).

Since DABs are available as Word files, students could for example use Pages, Microsoft Word for iPad or another word processor that can open and edit Word files to type answers, and read the DQP with ClaroPDF or other PDF reading App. (Note that at time of writing in April 2014, the DABs would require some re-formatting to work well in Pages. Alternatively a school could create their own answer booklet formats.)

PDF Expert

PDF Expert can open a DQP and DAB simultaneously and the learner can swap quickly between them using the tabs at the top of the screen. It is not possible to view both files at the same time, however.

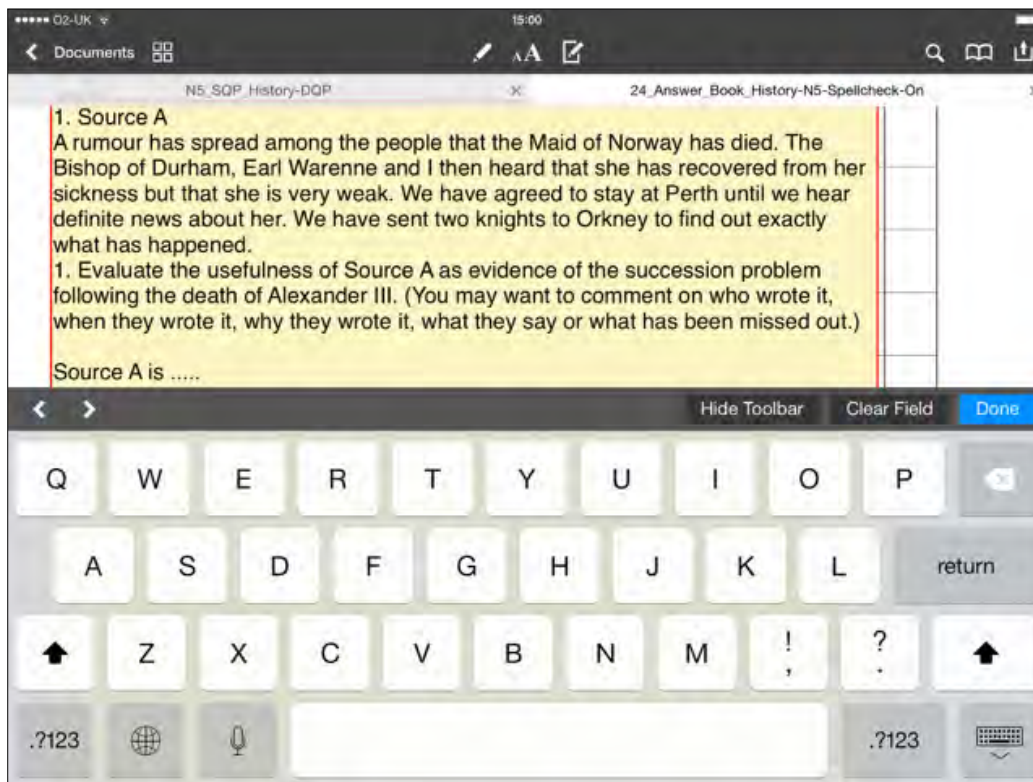


Figure 160: Typing into a PDF Digital Answer Book with PDF Expert (the question has been copied and pasted from the question paper.

ClaroPDF or PDF Expert 5?

Both Apps are excellent tools for accessing Digital Question papers. PDF Expert is slightly better at handling and organising PDFs, and the wrist protection is good when drawing and annotating, while ClaroPDF is cheaper, has better text-to-speech facilities and more voices, and lets you change the background colour of the page.

So if text-to-speech is important to you, Claro is probably best, whereas if you want to annotate and manage a lot of PDFs or use specific cloud storage facilities, PDF Expert may be better. For most learners, ClaroPDF is probably a better option. Why not download some past papers from SQA's website: bit.ly/sqadigitalpapers and try them out?

Security

Using iPads in examinations raises questions and issues particularly in relation to security. For obvious reasons, it is important that candidates cannot access files stored on the iPad or on the internet or on other electronic devices that could connect to the iPad. In Scotland, SQA state that it is the school's responsibility to ensure that candidates cannot access any electronic sources or files via the internet or on USB drives or mobile devices. You can either adapt the learner's own device, or use an iPad which has been set up specifically for the exam.

In an external-assessed examination, any writing tools that may help the pupil, such as spellchecker or AutoCorrect must be turned off, unless you have requested permission for the student to use them through the SQA online AAR request system.

Note that this restriction on spellcheckers only applies to the external assessments - to National 5, Intermediates, Higher and Advanced Highers - for internal assessments, such as the National 3 and 4 Literacy Units, spellcheckers can be used.

Guided Access

Recent iOS have a feature called Guided Access (see also Chapters 2 & 3) which locks the iPad into one App, and therefore prevents the learner from accessing any others. So if you were using PDF Expert or ClaroPDF to access the question paper, you could use Guided Access to stop the candidate accessing other files or the internet. Note that the Siri dictation will still work to use the internet to recognise speech and convert it to text, even when Guided Access is on.

Although Guided Access prevents the student using other Apps, it still allows access to the internet from within the App. This is good news for Siri, but it means that the user can get access to files in cloud storage on for example DropBox, Google Drive or SkyDrive. Therefore, access to any such storage should be disabled by either removing the DropBox (or other) App from the device, by password-protecting the drive, or by preventing Wi-Fi access completely.

Also, for exams where the question paper is not in question-and-answer format, the learner may need to use one App to read the question paper and another to write their answers, and so locking them into one App only is not helpful. You therefore need to be able to restrict access to other Apps and to the internet in other ways.

Securing the iPad

There are a number of methods that you can use to make your iPads secure. The best approach is probably for the school technician or engineer to use the Apple Configurator or iPhone Configuration Utility or a Mobile Device Management system such as Meraki or Casper to set up 'exam iPads' that have only the Apps required for the assessment, and restrict access to the internet or stored files.

See Fraser Speir's blog: bit.ly/1f9veQ0 to read how he set up the Cedars iPads, and how it went.

Alternatively, you can set up each iPad individually using the instructions below. Note that this information is provided for guidance - we are not network security experts and so you should consult your technical specialists.

Back up the iPad

1. Delete all the Apps on the iPad that are not required in the assessment. This leaves only the Apps required for the assessment (e.g. ClaroPDF, PDF Expert, maybe Pages etc.) plus the built-in Apps on the device.
2. Delete all photos, music files, videos, contacts, reminders and other documents. Clear the browser history.
3. Go into **Settings > Mail, Contacts, Calendars** and delete all the accounts. This prevents access to Mail, Contacts and Calendar.
4. If the iPad is a cellular model, remove the 3G SIM card.
5. Turn off access to the school Wi-Fi using the school network settings and check that there are no other Wi-Fi internet access points available (unless you intend to use Siri speech recognition).
6. Turn off Bluetooth: **Settings > General > Bluetooth > Off**.
7. Now you need to prevent access to the built-in Apps.
 - a. Go to **Settings > General > Restrictions**.
 - b. Click on **Enable Restrictions** and enter a passcode
 - c. Turn off any system Apps that you don't want the candidate to be able to access (i.e. all of them apart from perhaps Siri). This will remove the following Apps from the iPad screen: Safari, Camera, FaceTime, iTunes Store, iBook Store and installing and deleting Apps, in-App Purchases, AirDrop and CarPlay (if these are on the iPad). Note this still leaves Mail, iMessage, Calendar and Contacts that the pupil could access the internet to find previously hidden answers, which is why you need to prevent access to Wi-Fi or the internet.
 - d. In **Privacy > Location Services** turn off Location Services and then **Don't Allow Changes**. Work your way down the other Apps (Contacts etc) and set them to **Don't Allow Changes**.
 - e. In **Allow Changes > Accounts**, **Don't Allow Changes** (this prevents anyone adding a new mail or other account).
 - f. In **Game Center**, turn off Multiplayer Games and Adding Friends.
 - g. Turn off Auto-Correction and spellchecking (unless you have permission to use them in the exam):
 - i. **Settings > General > Keyboard > Turn off Auto-Correction and Check Spelling**. (Note that the candidate can easily turn them back on - we haven't found a way to prevent this.)

8. You should now have an iPad with:
 - a. no stored files, emails, photos, videos, sound recordings or other documents;
 - b. only the Apps which are required for the assessment;
 - c. no spellchecking or auto-correct;
 - d. no access to files or information on the internet or Wi-Fi.

You should now have an iPad which is secure for use in the examination.

Attack Tree

Fraser Speir's 'Attack Tree' is a helpful diagram that covers a range of possible cheating scenarios to prevent 'coordinated attacks' from inside and out with the school.

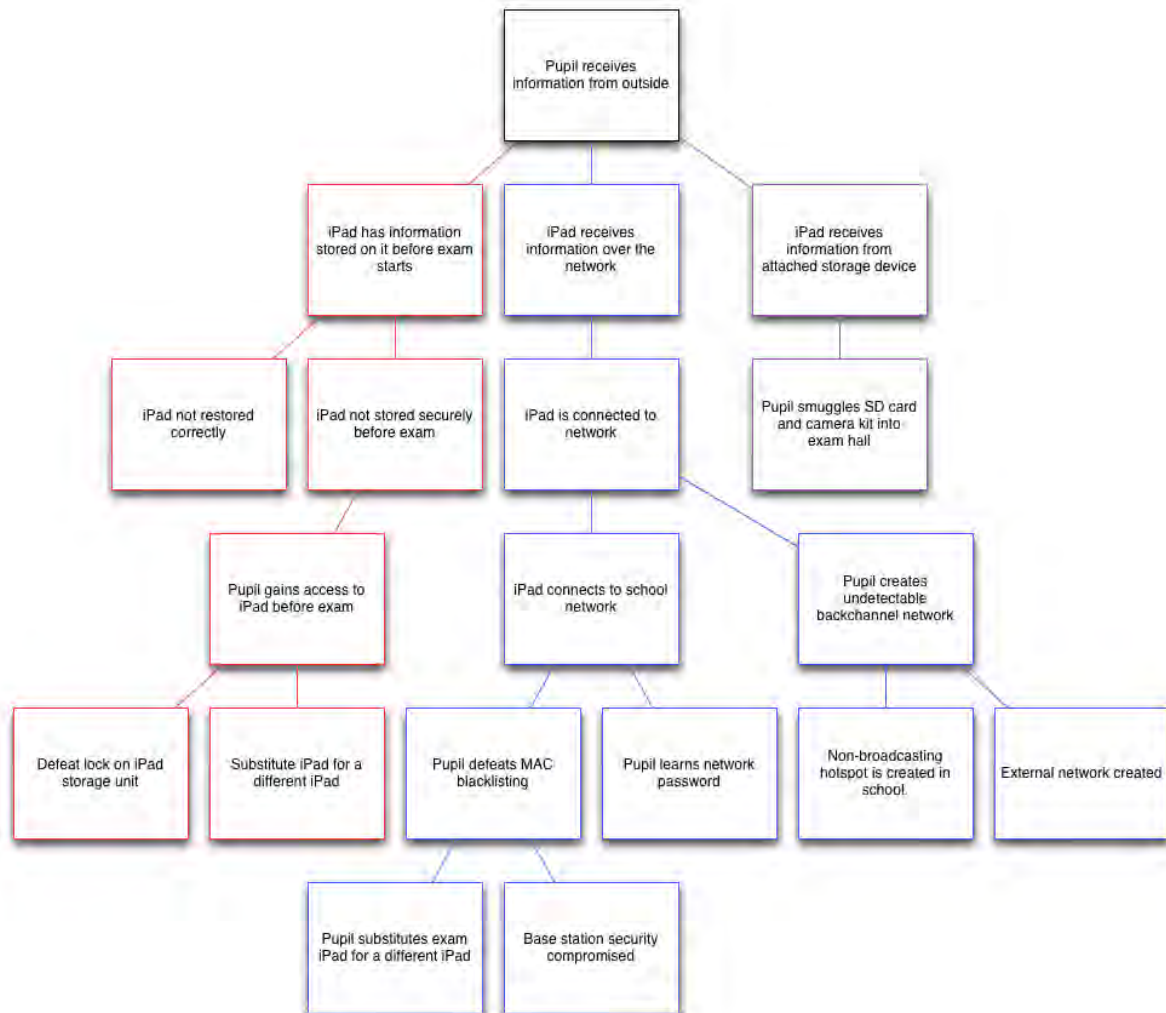


Figure 161: Fraser Speirs Attack Tree (thanks to Fraser Speirs for permission to use his diagram).

Chapter 7: Managing and Implementing the iPad



Introduction

An aspect of the iPad is to ensure that data such as photographs and videos, music, notes, documents, Apps and other content is stored safely and backed-up securely. This is particularly vital for you as an individual user and where large numbers of iPads are being implemented and managed in larger numbers such as a school.

This Chapter will explore management and implementation issues surrounding iTunes and iPads. iTunes can be best described as an App or computer program which is used for playing, downloading, saving, and organising digital music and video files on desktop or laptop computers and for synchronising content to the iPad, whether that be for individual iPads or larger numbers. iTunes is the primary method for transferring purchases from the iTunes or Apps

Store between your iPad and computer.

In earlier versions of the iOS synchronising content meant that the iPad and computer had to be connected using the iPad's connection/charger cable. With the introduction of the iCloud (www.icloud.com), a free wireless service, you can now get access to 5 gigabytes of free 'cloud' storage space.

For those users who have access to Wi-Fi it means that there is no manual transferring of files or data as everything can be set to synchronise and backup wirelessly and automatically. However, regardless of whether you synchronise data manually or wireless you will need at some point to create an iTunes account.

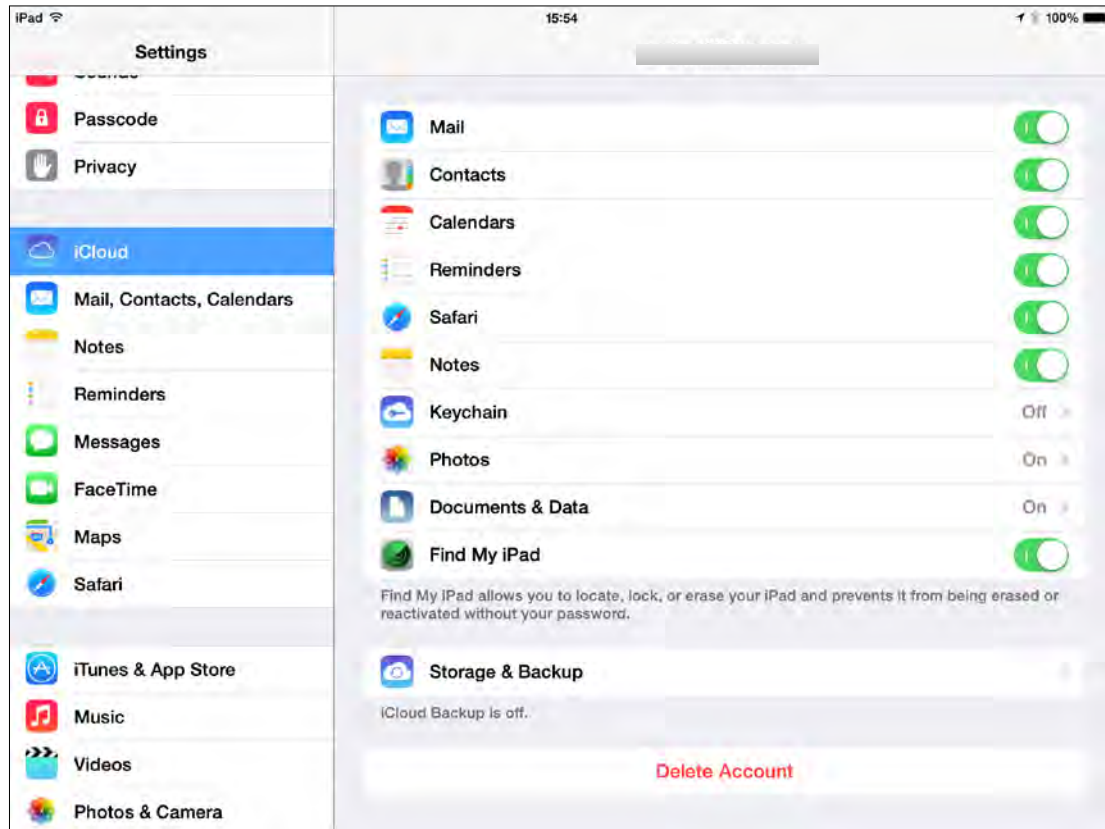


Figure 162: iCloud on the iPad.

The following section explores how to set up and manage an iTunes account for an individual user. If you are considering implementing and managing a larger number of iPads, for a class or across the school, please continue to the School Implementation and Management Section.

See Appendix 2: iPad Management using iTunes: some useful tips, for more detailed and comprehensive information.

Getting started with your iPad and iTunes

When you start your iPad for the first time you're automatically prompted to connect to iTunes.

The process of setting-up the iPad in iTunes for the first time is straightforward, but if you are unsure how to do this, follow the steps below.

1. Registering your iPad

During the first stage of setting up your iPad you'll see a welcome 'Let's get started' screen which will guide you through the steps of registering your iPad.

This process also includes agreeing to Apple's terms and conditions and it also serves as a way of protecting yourself too - so that Apple will have a record of your device - you'll also be prompted to complete the iPad Software Licence Agreement.



Figure 163: Registering your iPad.

2. Setting up an iTunes account

The second stage takes you through the process of setting up an account with the iTunes Store, again this is straight forward but just in case you're unsure how to do this then you can watch this step-by-step video guide to get you started: bit.ly/itunes_account

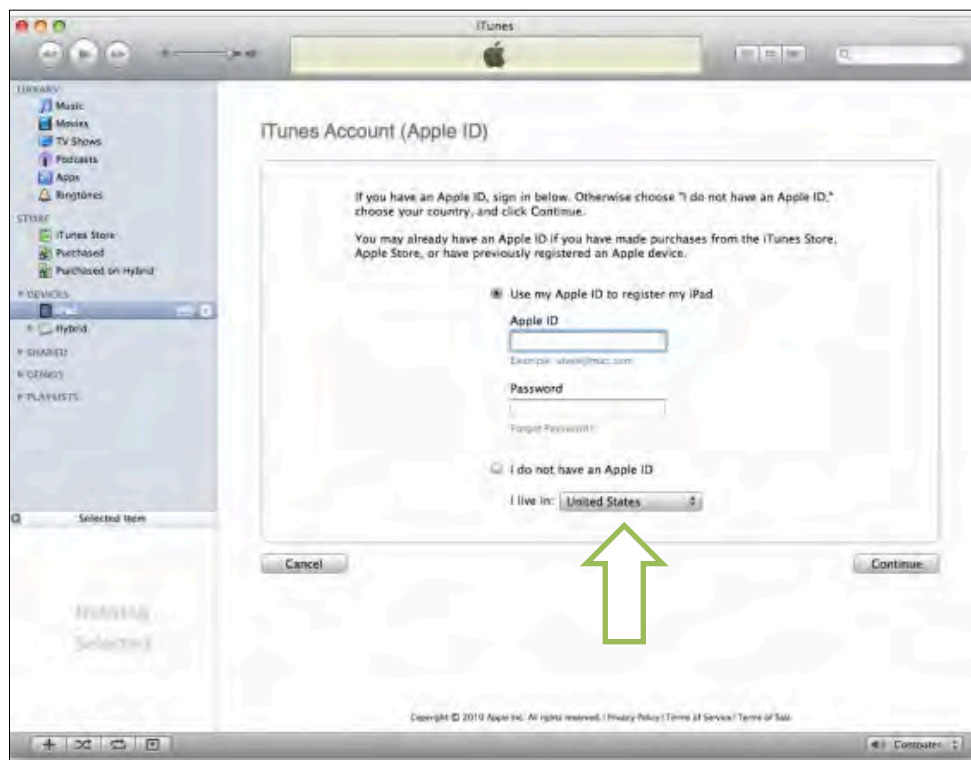


Figure 164: Setting up an iTunes account

In Figure 164 you can see that the iPad's default setting is 'I live in 'United States' - remember to change this to the United Kingdom. If you already have an iTunes account, then complete the 'Use my Apple ID to register my iPad' fields. If not, then select the 'I do not have an Apple ID'. This option will prompt you to create an account. If you want to use this option you will need to have a credit card ready!

Do I need a credit card?

If you don't have a credit card there are other options such as PayPal. But what if you don't have a credit card or a PayPal account?

A credit card is not always required to set up your iPad. In order to create an account without a credit card, you must make sure you are in the App Store, not the iTunes Store - look at the following link to find out how more: bit.ly/ipad_withoutcreditcard.

An alternative method of buying Apps is to use iTunes gift vouchers which can be purchased at supermarkets, music stores etc. iTunes gift vouchers can be used by selecting the 'Redeem' button in iTunes. You will then be prompted to 'Enter your Gift Card or Download Code', similar to the illustration below.

One advantage of redeeming vouchers or gift cards to buy Apps through iTunes is that you can create an account and download Apps without using a credit card.

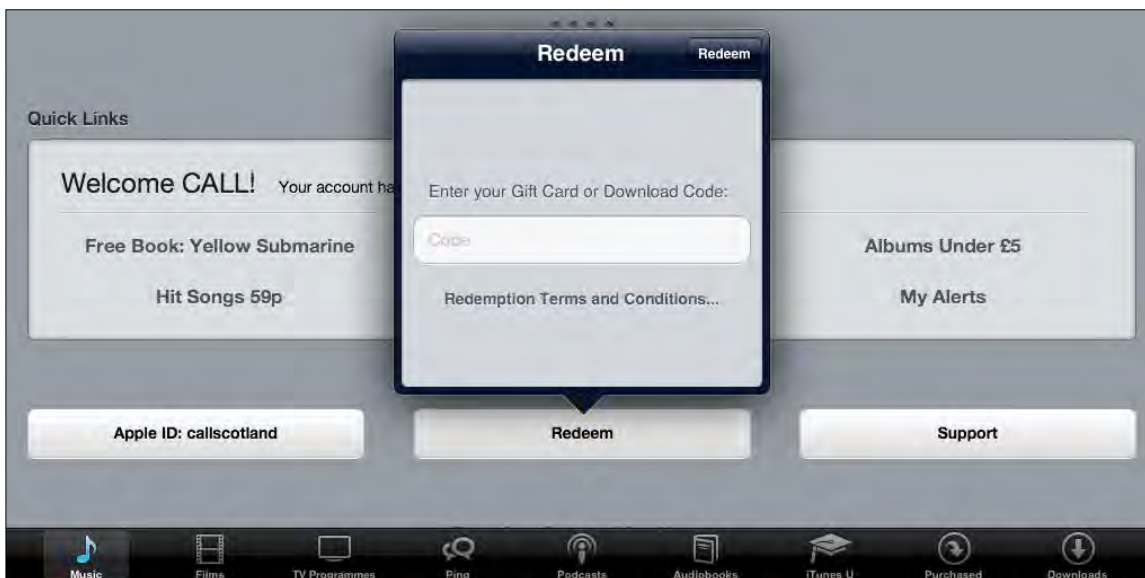


Figure 165: Select Redeem in iTunes to redeem gift vouchers.

3. Synchronising/backing up your iPad

During the set up process you also have an opportunity to synchronise your iPad. This means that you get to choose whether to set up your iPad from scratch or restore from a previous backup, for example, an iPhone.

This would be particularly useful and time saving if you already have an extensive collection of Apps (and their relevant settings) that you want to transfer over to your new iPad.

If you are synchronising or backing up from a previous iPad or other device remember to select the option; 'Restore from the backup of' and select the device you want to backup from. Otherwise, select 'Set up as a new iPad'.



Figure 166: Synchronising and backing up the iPad.

4. Naming your iPad

As you head towards the final stage of setting up your iPad for the first time you'll be prompted to give your iPad a name. If the iPad is for personal use then it's entirely up to you the name you give it.

However, if the iPad is part of a larger group of iPads you should consider giving each iPad a logical name, iPad1, iPad2 etc.

Don't worry if you want to change or rename your iPad at a later date as this can be done in iTunes when you connect your device. See the following tutorial for more information: support.apple.com/kb/ht3965.

5. And finally...

The final stage or screen of the iPad set will be familiar to those who have used iTunes. This is where you can synchronise your contacts and calendar, organise your music collection as well as all your favourite Apps.

However, if you're new to iTunes then you can follow the step-by-step guide below. This screen has been divided into sections so you can follow it more easily but as you do so, try to think of it as whole screen or page.

The Summary tab provides a detailed overview of your iPad - most of the detail here is based on the information you gave during the initial set up process.

1: iPad (Summary)



Figure 167: The Summary Tab.

Other tabs such as Apps, Music allow you to select and organise your music collection and choice of Apps.

2: Version

The Version section provides information on your iPad software. For the best performance and security of your iPad always try to keep your software updated. Select the 'Check for Update' button and iTunes and your iPad will do the rest.

You can also restore your iPad to its original settings, this can be useful if you experience a problem with your device. You should always backup your iPad before restoring it to its original settings.

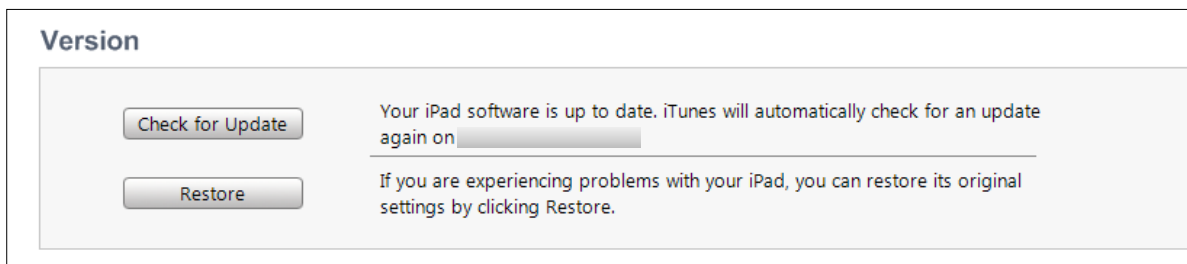


Figure 168: Checking the iOS Version.

3: Backup

You can also backup or synchronise your iPad wirelessly to the iCloud (a cloud/remote storage and cloud computing service) which offers up to 5 GB of free (online) storage. Backing up your information can be particularly useful if you lose your iPad - all your Calendar entries and Contacts are backed up in iCloud or iTunes.

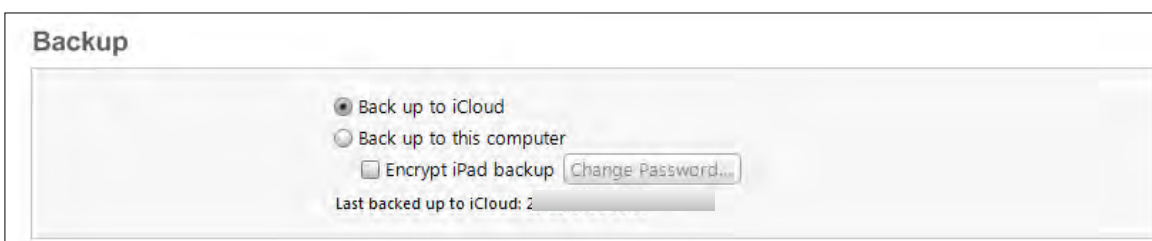


Figure 169: Backing up information via iCloud and/or a computer.

4: Options

The final section provides a range of options, such as how you want iTunes to start, syncing over a Wi-Fi and manually choosing to manage music and videos. Options also provides an opportunity to configure the Accessibility settings (Universal Access), however, this covered in more detail in Chapter 3: Accessibility Options.

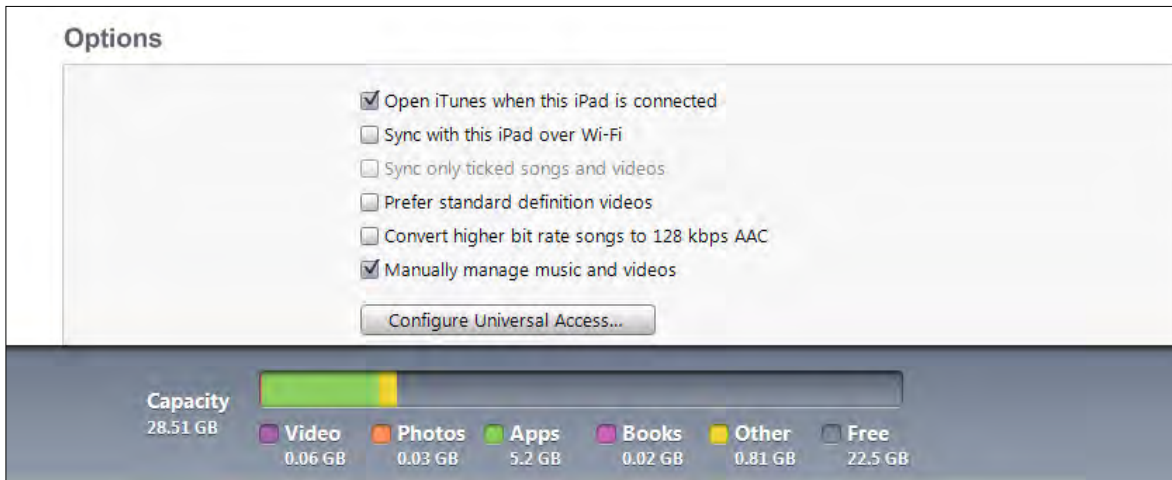


Figure 170: Configuring Options.

5: Capacity

Just below the Options section you can see how much storage your device is using. Ultimately this will depend on the capacity or size of memory in your iPad (16 GB, 32 GB, 64 GB, 128 GB accordingly) but the capacity display also breaks down each component by relevant colours - Video, Apps, Photos etc.

You should always check to make sure you have plenty of 'Free' space on your iPad so that it runs efficiently and maximises battery life.

Organising Apps, Music and other tabs

The remainder of the tabs in iTunes, such as Apps, Music etc. allow you to manage what you want and don't want to have on your iPad. For example, you can delete an App by pressing and holding the App till it starts 'jiggling' and pressing the cross (see Hints & Tips for more information) but it is far better to organise your Apps from within iTunes.



Figure 171: Synchronising Apps.

You can do this by selecting Sync Apps (on the Apps tab) which allows you to decide which Apps you want to install. You can also drag or move Apps from page to page (or screen to screen) by using this method.

For a more detailed overview of syncing Apps via iTunes select the following link: support.apple.com/kb/PH12315.

School Implementation and Management

There are so many things to keep in mind when considering a class or school iPad implementation, especially if you want everything, including the devices, to run smoothly in the classroom.

Deciding on how you intend to implement and manage a large number of iPads will be dependent on which route your organisation or school chooses, i.e. synchronising iPads manually or using Wi-Fi with iCloud.

For example, if you are intending using the same Apps on a large number of iPads you will need to consider appropriate licencing.

You will be breaking the licence agreement if you purchase one App and use it (or synchronise the App) on multiple iPads.

Apple Volume Purchase Programme for Education

What is the VPP?

The Volume Purchase programme (VPP) for Education (a programme is also available for business) allows educational institutions to purchase Apps and books in volume and deploy them to Apple mobile devices.

Through the programme, you receive a discount of 50% off their standard App store price when purchasing 20 or more Apps/books. So, you can purchase 20 copies of an App for £2.99 each instead of £5.99 (If you purchase 19 copies of that App then they will still be £5.99 each).

The VPP allows school administrators/ICT staff to search for Apps via the VPP store: volume.itunes.apple.com/gb/store, choose the quantity needed and pay for them in a single transaction.

The buyer can then email or distribute the App redemption codes to whoever manages the iPads, i.e. ICT staff or even a teacher, so they can be installed on each device.

How it works

Step 1: Decide who is going to manage the programme and enrol

Designate a person to be the 'Programme Manager' (i.e. Head Teacher or Head of Finance) and ask them to complete the VPP enrolment form:

deploy.apple.com/qforms/open/register/index/avs.

If anyone else (i.e. heads of department or teachers) in the school needs to be able to purchase Apps in volume, the Programme Manager will need to set them up as a Programme Facilitator.

Step 2: Setup your payment method

During the enrolment process you will have to choose between the following payment methods:

- Credit or debit card;
- ClickandBuy.

ClickandBuy (www.clickandbuy.com/WW_en/home.html) may be of most interest to schools as it allows you to setup up an account and then top up by local bank transfer, wire transfer or credit/debit card.

Step 3: Browse and purchase Apps and books via the VPP store

The first thing to understand is that the VPP store (volume.itunes.apple.com/gb/store) is not the same as the iTunes App store. You do not purchase your App or book via iTunes (on your computer) or App store (on the iPad).

The VPP store is designed for purchasing multiple copies of the same App or book (although you can still buy single copies) and allowing you to distribute the App codes easily and efficiently.

Although not all App developers will offer the 50% discount (most do) when you purchase 20 or more Apps, all the Apps can still be purchased. You can purchase as many Apps as you like but you may as well purchase 20 rather than 10 as it will likely cost the same.

Once you have purchased the App(s) you will receive an email from Apple letting you know the progress of the order. When complete you can redeem your codes from the VPP store in the form of a downloadable spreadsheet containing all the codes.

Step 4: Distribute the Apps and books

Now that you have your redemption codes you can distribute the content to the Apple mobile devices such as an iPad. This can be accomplished in a few ways:

1. Mobile Device Management

Mobile device management (MDM) is a type of security software used by an IT department to monitor, manage and secure employees' mobile devices. Therefore, it can easily be used to control your iPads without user interaction!

2. Email

Send the redeemable code to each user. They can simply click or tap the URL for each App or book, either from their mobile devices or from a Mac or PC.

3. Internal website

A secure website within your organisations intranet can provide a centralised location where users can access redemption URLs.

4. iOS device management software (such as Apple Configurator)

Another option for distributing Apps is to use management software such as Apple Configurator (although there are others available). Spreadsheets of redeemable App codes acquired through the VPP store can be imported by the software, tracking the number of Apps installed on each device. You plug your devices into the computer via USB and start syncing.

Apple Configurator

When it comes to iOS device management software there are a number available. However, to understand their pros and cons its best to have an understanding of Apple Configurator (bit.ly/POaO2R) which is a Mac OSX program provided free by Apple and which was the first on the market.

Apple Configurator is an application for deploying, managing and configuring iOS devices. It is perfect where devices need to be quickly refreshed and kept up to date with the correct settings, approved policies, Apps and data. Apple Configurator can also be used to personalise devices with data and documents for specific users.

Here is what Apple Configurator can do:

- Update iOS devices to the latest version of iOS.
- Rename devices using a numbered scheme (e.g. iPad 1, iPad 2, etc.).
- Erase (wipe) iOS devices.
- Backup and Restore iOS devices.
- Deploy profiles/policies (e.g. no Siri for you, disable cameras, setup wireless, etc.) to iOS devices.
- Export profiles.
- Activate devices.
- Push any kind of App to devices.
- Track Volume Purchase Program (VPP) codes used on devices.
- Revoke VPP codes used on “Supervised” devices.
- Assign users from directory services to devices.
- Load content (such as books) to Apps on devices.
- Connect 30 devices at once.

Some alternatives to Apple Configurator

iPhone Configuration Utility for Windows

This is Apple’s device management software for Windows. It is limited compared to Apple Configurator (for the Mac) but still offers many features.

support.apple.com/kb/dl1466

Casper Suite

An enterprise-grade Mobile device management (MDM) service, the Casper Suite is available for Mac OS X and includes all of the tools to build packages, configuration profiles, and other components. It lets you secure and manage devices automatically across your entire organisation.

www.jamfsoftware.com/products/casper-suite

Meraki

An MDM service which provides cloud based centralised management, diagnostics, and monitoring for the mobile devices managed by your organization - from iPads and Androids to Macs and PCs. Systems Manager monitors each of the organisation’s devices, showing useful metrics such as client hardware/software information and recent location, and even lets administrators remotely lock and erase devices.

meraki.cisco.com

AirWatch

An MDM service which can track all mobile (i.e. Android, Windows and iOS) assets across your organisation, configure policies and settings, distribute Apps and secure access to school networks and resources all through a web-based console.

www.air-watch.com

Which solution you pick depends on a few factors:

- Hosted vs Local.
- Paid vs Free.
- Apple only vs multi-platform.

Alternative ways of buying Apps

If there is no credit card holder which is tied to an iTunes account, i.e. a school iTunes account, or no one in the school has the authority to purchase large amounts of Apps other methods of buying Apps include:

- Buying iTunes Store gift vouchers from supermarkets or other appropriate outlets.
- Buy iTunes vouchers and gift the vouchers (with redemption codes) to other users/iPads.

Managing iTunes and iPads

Once you have decided how you intend to purchase a large volume of Apps the next issue to consider is how you manage the Apps on both iTunes and the iPads. One possible approach is to give each device a unique name during the set-up process, i.e., an individual name that can be easily recognised, such as a numeric sequence, iPad 1, iPad 2, iPad 3 etc. If you have more than 10 iPads use iPad 01, iPad 02 and so on. You can always change the name of the device in iTunes at a later time.



Figure 172: Number iPads to help keep track.

As well as naming each individual device it is also recommended that all devices are synchronised to one iTunes account on a computer (preferably the same computer each time) using the unique name of each iPad.

This ensures that data is mirrored across each iPad. Every time you add or change media and data it can be synchronised with each of the devices.

This is vital for backing-up valuable data. The best way to synchronise multiple iPads to one computer is to use a USB hub similar to Figure 173, which can take up to 10 USB connections.



Figure 173: A multiple USB hub can help.

Battery life and charging iPads

With the release of the iPad Air and iPad mini the battery life is greatly improved. Nevertheless keeping iPads charged for a day's use is important if learners are using them constantly.

While the USB hub is one way of charging multiple iPads simultaneously a dedicated charging/synchronisation trolley or cart, which can also provide security, is also worth considering.

The Bretford Powersync Cart: bit.ly/powersync_cart is one example, another is the UnoCart: bit.ly/unocart - allowing large numbers of iPads to be simultaneously synchronised, charged and kept securely locked.



Figure 174: Syncing, charging multiple iPads securely.

Another example is the MultiDock, Griffin Technology's modular charge/sync/security solution. Up to 30 iPads can be linked and synced at once using the USB hub that connects to any computer with an iTunes account via a single USB connection.

The MultiDock also comes with a desk locking system for security. For more information on the Griffin MultiDock visit the Griffin MultiDock website:

www.griffintechology.com/business/multidock



Figure 175: The Griffin MultiDock.

Policy and procedures

Just like any other ICT equipment, implementation and management of iPads requires a workable policy and procedures for issues such as prevention and consequences of misuse, restriction of Apps, iPad class-pupil distribution and collection.

Policies and procedures will most likely be unique to each school for example, schools will differ in the amount of 'Restrictions' they make available or whether a 'Passcode Lock' (in Settings) code is set on some or all of the iPads. Restrictions, also known as Parental Controls, on an iPad prevent access to specific features and content.

Useful Resources

Online resources such as Tony Vincent's Learning in Hand: learninginhand.com/do (good tips on creating a 'usage contract') and Sam Gilksman's social media site iPads in Education: ipad_implementation provide useful information on a range of issues such as infrastructure considerations, group device management, application usage and much more.

The iPads in Education also provides some useful thoughts on pedagogical considerations in terms of how iPads are to be integrated into educational processes and the curriculum.

Personal iPads

As iPads become increasingly ubiquitous increasing amounts of learners are bringing their own iPads into school. It is therefore important that the school also considers potential problems and scenarios such as technical issues, theft, breakage, loss, insurance etc. A possible scenario is a pupil who brings an iPad into school but the 'Restriction' settings to content is different to the schools. Personal iPad usage should therefore be considered as part of the school's overall iPad policy.

For further information see Appendix 2: iPad Management using iTunes: some useful tips.

Glossary of Terms

3G and 4G	Third and fourth generation data networking used by phones and mobile devices to be able to connect to the Internet or other IP networks anywhere, anytime iPhones have it built-in, for iPod touch and iPad, you need to buy the 3G version or dearer 4G
AAC	Augmentative and Alternative Communication, is an umbrella term that covers all / any communication methods used to supplement or replace speech or writing for those with impairments in the production or comprehension of spoken or written language, e.g. a symbol communication book, voice output communication aid.
Adobe Flash	Adobe Flash (formerly Macromedia Flash) is a multimedia platform used to add animation, video, and interactivity to web pages. Adobe Flash is currently not supported in iOS and is increasingly being replaced with HTML 5, designed for mobile devices.
AirDrop	AirDrop is way to share content such as photos, videos, contacts and more between other iOS devices.
AirPlay	Wirelessly stream films and other digital media from an iOS device using iTunes to Apple TV.
AirPrint	Wirelessly print from an iOS device using AirPrint compatible printers.
App	Short for "application." The programs you download and run on an iPad (or any smart phone or tablet PC).
App Store	An online place to buy Apps and games for iOS, part of iTunes on Windows and Mac, and a built-in App on iPhone, iPod touch, and iPad.
Apple TV	A small media console providing films and other entertainment.
Apple ID	An email address registered with Apple, typically for iTunes, the Apple Online Store, or Apple Discussion groups. Useful to have this in addition to your 'ordinary' email address.
bit.ly	A web service owned by 'bitly' that allows you to shorten long complicated URLs. See bitly.com/
Blog	(weB LOG) an on-going internet-based publication, in chronological format, often focusing on a mix of news, commentary, and analysis, with frequent links to other sites on the web.
Bluetooth	A wireless technology used for exchanging short-range data between electronic devices.
Facetime	Apple's video calling service that requires Wi-Fi.
Folders	An icon representing a group of Apps, created by dragging on App on top of the other in Jiggly Mode, and deleted by removing all the Apps.

Freemium	An App that allows a customer to check out the basics or try out a game for free, with upgrades available for a price.
GB	Gigabyte - a measure of disk storage capacity. Gigabyte - a measure of disk storage capacity. As a guide, Windows 7 itself requires 1 GB, and most computers you can buy today would have minimum 2GB, usually much more.
Gestures	Some functions on some touchscreen devices can be operated by multi-touch gestures and animations.
Google	The biggest company on the net and the provider of the maps data, YouTube videos, and Gmail for iOS users.
Home button	The physical hardware button on the front of the iPhone, iPod touch, and iPad, beneath the screen. Used to wake, return to the Home Screen, cycle between the Home Screen and Spotlight Search screen, open the Fast App Switcher, and optionally enable Accessibility features.
Home screen	The front end of Apple's App launcher that consists of numerous screens that hold App icons, Folders, the Dock, the Fast App Switcher, and the Spotlight Search screen.
iCloud	Apple's online service, that allows users to store and synchronise data such as music files on remote computer servers for download to multiple devices.
ICT	Information and Communication Technology.
iOS	Apple's mobile operating system and the software that powers the iPhone, iPod touch, iPad, and Apple TV.
In-App purchase	While you are running an App, some will offer you upgrades, new content, or complementary features that you can purchase directly from within the current App (rather than having to go back to the App Store).
iPad (Air)	Apple's first tablet device, that runs a modified version of iOS optimized for its larger screen. The iPad Air is the latest model.
iPad mini	Smaller than the iPad but larger than the iPhone and iPod Touch with full iOS functionality.
iPhone	Apple's line of Internet-based and multimedia-enabled smartphones.
iPod	Apple's line of portable media players: Nano, Shuffle, Classic, iPod touch.
iPod touch	iPod handheld with a 3.5" screen.

iTunes	Mac and Windows software used to activate and sync iPhone, iPod touch, and iPad. Also used to manage music, movies, TV shows, Apps, books, and other media, and access the Ping social music network.
Jiggly mode	Tap and hold an App and it will begin to “jiggle”, indicating you can move them around the Home Screen, from screen to screen, put them into folders, delete them by tapping their X badge (App Store Apps only), or Force Quit them if they’re in the Fast App Switcher.
Lite	An App type that allows a customer to check out the basics or try a game for free, with upgrades available for a price.
PDF	Portable Document Format - an open standard for document exchange.
QR code	Quick Response Code— is the trademark for a type of matrix barcode. Users with a camera phone equipped with the correct reader application can scan the image of the QR Code to display text, contact information, connect to a wireless network, or open a web page in the telephone's browser.
SIM card	The little card used in GSM phones that connects the phone to the network.
Siri	A digital personal assistant based on voice commands. Siri is also integrated into the on-screen keyboard allowing users to use speech to text. Only found on recent iOS versions.
Sleep/Wake button	Physical hardware button on top of the iPhone, iPod touch, and iPad. Used to power on, wake from sleep, put to sleep, and power down iOS devices.
Spotlight search	A utility for finding Apps, Contacts and other content.
Sync	Short for synchronise: content on device can be synchronised with desktop applications such as Calendar, images, music and contacts. Also the mechanism whereby backups would be made on your computer.
Tethering	Sharing your iPhone’s data connection with your laptop via USB (dock cable) or wirelessly via Bluetooth. Not available on all mobile networks and some charge extra for it.
Twitter	One of the most popular social networks built around a follower/following system rather than friends, and limited to 140 characters (think micro-blog meets SMS).
Universal	A universal App that runs on both the iPhone/iPod Touch and the iPad.
URL	Universal Resource Locator - a specific internet address for any web site, documents or other resources. Usually looks like this: www.callscotland.org.uk/Resources/Books/
USB	Universal Serial Bus - a widely used method of connecting devices (e.g. keyboard, mouse, memory stick, camera etc.) to a computer.

WebDAV	WebDAV (Web-based Distributed Authoring and Versioning) is a set of extensions allowing documents to be stored, edited, updated and shared on a remote web server.
Wi-Fi	A mechanism that allows electronic devices to exchange data wirelessly over a computer network. Widely available in homes and workplaces, public places.

Appendix 1: Managing Curriculum Materials between Windows and iPads

Many teachers use Microsoft Office (i.e. Word, Excel, PowerPoint) to create curriculum resources, and so a fundamental question is “how can learners access my DOCX files”? (One might ask whether there are more creative and exciting tools and formats to use to engage your learners with iPads, but for this section let’s assume we have an environment where text files created in Word are the norm.)

One approach is to save your Word file in a cloud storage such as DropBox, Glow, OneDrive or Edmodo, or email it to the student, who can then open it using an app that can read and edit Word files such as Pages, Word for iPad, Doc2, or CloudOn. Pages is now supplied free with iPads and for older iPads costs £6.99.

Pages is a great app and can import Word files, but the layout of files with elements such as floating text boxes and images may be altered when you open them in Pages. This can be an issue if you want to send files back and forwards between the iPad and a PC.

Word for iPad is a new app from Microsoft, and is probably the best app for maintaining the layout and properties of the original file. To edit a Word file you must have a subscription to Office 365 either as a home user or through your school, college, university or business. Learners in Scotland now have Office 365 subscriptions through Glow and so Word for iPad is a good option (provided your Glow account gives you access).

Doc2 (£2.49 or £3.99 as part of Office2 which includes apps for editing Excel and PowerPoint files) has got many of the tools and features of Word (e.g. text formatting; autocorrect; spellchecker; tables; images; floating text boxes; and also tracks changes). It does a fair job of preserving the original Word layout.

CloudOn is a free app that looks very like MS Office and can edit Word files. It requires a good internet connection and it can be slow to use because it operates across the internet rather than on the iPad.

Making more of PDF

An alternative to Word is to use PDF for your learning resources. PDF is a good format for booklets, assignments and assessments because the visual layout of your resource is maintained, and because learners can use apps like ClaroPDF, PDF Expert or Adobe Reader to add highlights, comments and drawing, type answers and insert photos and audio notes.

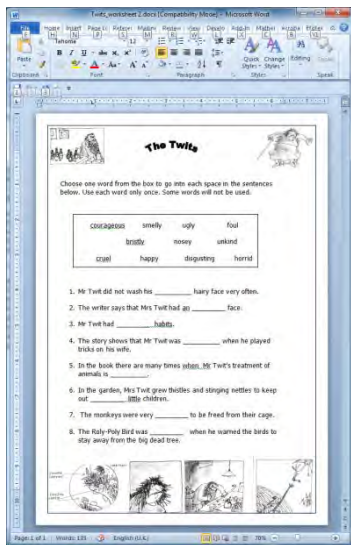
The use of audio notes is particularly helpful for learners with literacy difficulties because the teacher can record instructions or comments into the PDF, and likewise the learner can respond by recording their own audio notes.

(Pages does not have a facility to record audio notes.) PDF is also cross-platform in that files can be opened on almost any device and operating system (Windows, MacOS, iPad, Android etc.) and so if you are working in a 'Bring Your Own Device' environment, PDF will give some consistency.

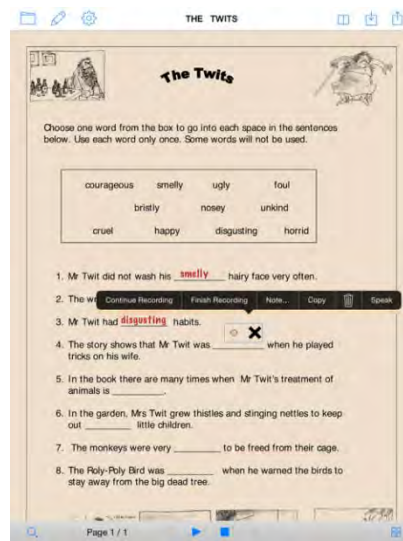
Furthermore, teachers can save PDF files directly from Microsoft Word 2010 and 2013. Lastly, the latest Adobe Reader XI provides commenting tools that can be used on any PDF.

A workflow for digital resources in PDF therefore looks like this:

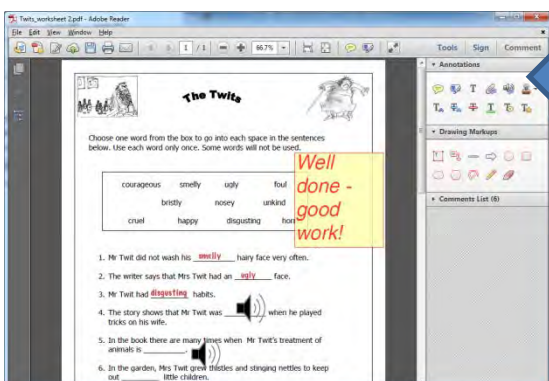
1. The teacher creates the resource using Microsoft Word, saves it as a PDF and emails it or makes it available to the class via online storage.
2. Pupils then access the resource and use commenting tools to insert answers or otherwise respond; and then send/save the file.
3. The teacher opens the students' files using Adobe Reader, reviews the responses, and uses the commenting tools in Adobe Reader to mark the submission, or provide feedback.
4. The teacher's comments can be typed, drawn or recorded as audio. The marked work can then be given back to the pupil who can open it and read or listen to the feedback.



The teacher creates the resource in Word and saves as PDF.



The learner uses ClaroPDF to read with text-to-speech and type, draw or record audio answers.



The teacher marks and provides feedback using Adobe Reader.

The main disadvantage of PDF is that it can be difficult to edit the actual text of the PDF, and so Word is a much better format for extended writing or other work produced by the learner that will require re-drafting.

Appendix 2: iPad Management using iTunes: some useful tips.

All of the following management tips are using iTunes on a computer but you can also use iCloud (www.icloud.com/) if your device is on a recent iOS and you are happy with your Wi-Fi network.

In Chapter 7, Managing and Implementing the iPad there is an illustrated guide to setting up and using iTunes for first time users. This Appendix provides a more detailed overview of synchronising and managing iTunes accounts.

1: Disabling auto sync on iTunes

By default iTunes will create an exact mirror of the iTunes library on the device. So, if content on iTunes is deleted then it will also be deleted on the device! If you would prefer to control when your device syncs with your iTunes library on your computer then it's best to turn this feature off.

On a PC:

1. Edit > preferences > devices.
2. Tick the 'Prevent iPods, iPhones and iPads from syncing automatically' checkbox.

On a Mac:

1. iTunes > preferences > devices.
2. Tick the 'Prevent iPods, iPhones and iPads from syncing automatically' checkbox.

Tip 2: Authorise your iTunes store account(s) on your computer

Authorising (and deauthorising) a computer allows you to manage which computer can sync your Apps, music and movies to your device. If you don't authorise your computer then you won't be able to upload your Apps to your device. You can authorise five different computers with your iTunes store account.

To authorise a computer:

1. Store > Authorise This Computer.
2. When prompted, enter your Apple ID and password.
3. Click 'Authorise'.

To deauthorise a computer:

1. Store > Deauthorise This Computer.
2. When prompted, enter your Apple ID and password.
3. Click 'Deauthorise'.

To deauthorize all computers associated with your computer at the same time:

1. Store > View my Account;
2. When prompted, enter your Apple ID and password.
3. Click the 'Deauthorize All' button on the right hand side of the page under 'Apple ID Summary'.

Tip 3: Check for App updates on iTunes and download

When an App(s) is updated by the producer, iTunes will notify you of this update. Under 'Library' on the left hand menu click you will see a number (representing number of App updates) beside 'Apps' if any updates are available.

To download the latest updates:

1. Under 'Library' on the left hand menu click on 'Apps' which will display all your downloaded Apps.
2. Click on 'x Updates available' (x is the number of updates) in the bottom right hand corner.
3. Click on the 'install all free updates' button to download them all.

If you have multiple accounts on iTunes then you will have to do this for each by logging into each account in turn. This is why in iTunes it can still display updates as still needing downloaded even if you have just downloaded them.

Tip 4: Transfer purchases from your iPad to your computer iTunes account

It's possible to purchase Apps, music and movies on your device and download them without actually connecting and performing a sync on your computer.

Consequently they are only stored on the device and so you may want to transfer them to your computer to protect against losing them.

To transfer them to your computer you first need to log out of your account on the device as it can cause problems if you have Apps purchased under multiple accounts. To do this, on the device:

1. Select Settings > Store.
2. Click on the 'Apple ID: username' button and log out.

Then to transfer onto your computer connect the device to iTunes with the USB cable. At this stage a popup box may appear prompting you to transfer your purchases. However, the manual way to do this:

1. Right-click (Windows or Mac) or Control-click (Mac only) your device from the left hand menu.
2. Click on transfer Purchases from "Your device name" from the menu.

Tip 5: Backing up your device

It's possible to keep a copy of all your App data, settings, Calendar accounts, Contacts, etc. in a backup file. However, the backup file will not contain all of your Apps but this is not a big issue as iTunes on the computer has a copy of each (as well as on your device!).

If you end up losing some App data or making changes that you wished you hadn't then you can restore the device from that backup.

To create a backup

1. Plug the device into the computer.
2. Select the device in iTunes (left hand menu).
3. Right-click (Windows or Mac) or Control-click (Mac only) your device from the left hand menu.
4. Select 'Backup'.
5. The indicator at the top of iTunes will notify you of the progress.

iTunes will store one backup copy per device and so if you wish to make a number of backups (restore points) then you may wish to make copies and put them elsewhere such as a backup disk. Why? It is very easy to run a backup, modify a device and then accidentally run another backup which overwrites the previous backup. You then realise that you actually needed that one to restore the device!

The location of the iTunes backup directory:

- **Mac:** Users\Your Name\Library\Application Support\MobileSync\Backup.
- **PC (XP):** C:\Documents and Settings\Your Name\Application Data\Apple Computer\MobileSync\Backup.
- **PC (Windows Vista, 7, Windows 8):** C:\Users\Your Name\AppData\Roaming\Apple Computer\MobileSync\Backup.

If there has been a backup taken there will be a folder in this directory with a 40 character long filename. This name represents the unique identifier for the device.

If you have multiple devices then the best way to identify it is look at the 'modify date' of the folder after you take the backup and simply copy that folder to the backup drive. When you need it again simply copy it back overwriting what is there.

To restore a device from a backup

1. Plug the device into the computer.
2. Select the device in iTunes (left hand menu).
3. Right-click (Windows or Mac) or Control-click (Mac only) your device from the left hand menu.
4. Select 'Restore'.

Note: This will restore your settings, App data, etc. but not the actual Apps. So, if you have removed some Apps since the backup then you will have to sync the Apps back on after the data restore.

Tip 6: Multi syncing with a USB hub

It's possible to connect multiple devices up to your computer and sync via iTunes at the same time. To do this you will require a powered USB hub connected to the computer. When you connect the devices via their USB cables to the hub they will all show up in iTunes at the same time and can be individually manipulated which can save time and fuss.

One thing you will notice on each device is the words 'not charging' in the menu bar of the device. The reason for this is that there is not enough power to charge multiple devices at one. However, you can still sync them all but just ensure that they all have enough battery life for the sync.

Tip 7: File Sharing between Apps

Some Apps will allow data to be transferred (or stored) from one device to another. You may then wish to transfer this App data to another device with the same App. This can be good if you wish to save a template(s) for an App to be used at a later date when required. I will use the App 'MyPics' as an example of how to do this.

1. Plug the device into the computer.
2. Select the device in iTunes (left hand menu).
3. Select 'Apps' from the top of the page.
4. Scroll down the page to 'File Sharing'.
5. Select the App.

You will see all the files associated with that App in the 'Documents' window. You can then select all of these and send them to your desktop using the 'Save to' button.

To transfer these files to your other device repeat the steps above and then click on the 'add' button and select all the files from the desktop. You will be prompted that it will overwrite any existing files (i.e. any data on that device will be lost) so if you are happy to do so then proceed. You may have to shut down the App and start it back up to see any changes.

Tip 8: Transferring images and videos between your device and computer

There are two scenarios for this:

1. Transferring images or videos from the computer to your device.
2. Transferring images or videos from the device to your computer.

To transfer images or videos to the device from your computer you will need to setup a folder to sync it from first:

1. Plug the device into the computer.
2. Select the device in iTunes (left hand menu).
3. Select 'Photos' from the top of the page.
4. Click on the 'Sync Photos from' check box and choose a folder where the photos and videos will be 'pulled' from.
5. To include videos ensure that you also check the 'Include videos' checkbox.

Next time you perform a sync these will be uploaded to the device.

Caution: a synchronisation will make a mirror of the files on your computer to the device so any images or videos on the device not on the computer will be deleted! See the next step to prevent this.

To transfer images or videos from your device to the computer you:

On a Mac

1. Plug the device into the computer.
2. Open iPhoto.
3. Select the device name in the left hand column.
4. All the images which have been downloaded or taken via the camera will be displayed.
5. Drag and drop them to your desktop or to the folder where you will sync to the device in future.

Note: only images taken with the camera or downloaded will be shown. Previous items that have been synched will not.

On a PC

1. Plug the device into the computer.
2. Open 'My Computer'.
3. Select the device.
4. Navigate the folders and retrieve and images to your desktop or to the folder where you will sync to the device in future.

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