



# Apple Technology: Uniquely Equipped to Let Every Student Succeed

Built-in solutions that break down barriers to learning.



For more than 25 years, Apple has been dedicated to developing features that engage all students, enhance their studies, and inspire them to achieve their best—regardless of physical or learning disability. The Mac, iPod, and iPhone come packed with assistive technologies, so students everywhere can compensate for learning differences using today's resources and tools.

## No hidden costs.

Every new Mac comes with Mac OS X Snow Leopard, complete with dozens of innovations that accommodate special-needs students. A built-in screen reader supports students with learning disabilities, as well as blind and low-vision students. Speech recognition, text-to-speech, QuickTime closed captioning, screen magnification, keyboard navigation, and more are all included at no additional cost. In fact, a MacBook with all those accessible applications and the VoiceOver screen reader is comparable in price to a single copy of a traditional screen reader for Windows.<sup>1</sup>

## New ways to learn.

Digital media tools integrated into the Mac and into iPod and iPhone devices build confidence and comfort in and out of the classroom. Students who have difficulty with traditional forms of classroom communication can express themselves using iLife software—through slide shows, movies, audio presentations, and music. Hearing-impaired students can use sign language to communicate over video iChat.<sup>2</sup> And blind and low-vision students can take advantage of the world's first gesture-based screen reader built into the Mac, iPhone 3GS, and iPod touch. Because these and other tools are standard, the same hardware can serve everyone in your classroom, no matter how diverse their needs.

## Funding the investment in Apple learning solutions.

The Individuals with Disabilities and Education Act (IDEA) allocates billions of federal, state, and local dollars to help communities offset the costs of providing a "free and appropriate education" to students. By purchasing Apple technology, you can meet IDEA goals and other federal guidelines—and stay within your budget. For example, VoiceOver, which addresses Section 508 of the Rehabilitation Act of 1973, is included in Mac OS X Snow Leopard, iPhone, and iPod touch, so there's no additional cost.



### Literacy and learning

A range of tools that help students get organized, stay focused, and improve reading comprehension.

### Vision

Built-in tools and technologies to help blind and low-vision students.

### Hearing

A variety of features that assist students who have difficulty hearing computer speech, sounds, and alerts.

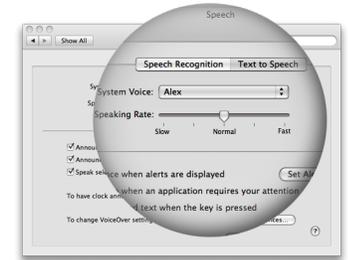
### Physical and motor skills

Features that help students with difficulties using the keyboard, mouse, and trackpad.

## Literacy and Learning

The built-in features of Apple products help students get organized, stay focused, and learn in ways that fit their special styles and capabilities.

- The Finder displays files as images, text, or icons on the Mac desktop, making it easy for students to find assignments and work in progress.
- The Spotlight searching feature is available with a simple keyboard shortcut and finds all files related to a search term by typing just a few letters.
- Using iCal, students get automatic reminders so they stay focused and don't miss assignment deadlines or appointments.
- Text to Speech technology (TTS) on the Mac lets students who have difficulty with reading comprehension hear a word or paragraph as they're reading it onscreen.
- The Oxford Dictionary and Thesaurus integrate with most Mac applications, as do spell and grammar check and word completion.
- iLife, a fully integrated suite of applications on every Mac, makes it easy for students to communicate their ideas using videos, photos, music, speech, podcasts, and websites.
- iTunes provides a convenient way to organize podcasts, spoken tracks, lessons, slideshows, and other audio and video files—and make them accessible on Mac, iPod, or iPhone.
- GarageBand in iLife allows students to record themselves reading a passage and then edit out verbal fillers such as "um," "ah," and trial pronunciations, giving them the opportunity to evaluate their reading fluency and to read along with the edited recording.



Students with reading comprehension difficulties can use Text to Speech to hear the words they're reading onscreen.

## Vision

Integrated features in the Mac, iPhone, and iPod touch help blind and low-vision students overcome traditional barriers to learning using technologies that range from screen magnification and display contrast to the unique VoiceOver screen reader.

- The built-in VoiceOver screen reader lets students hear a spoken description of what's on a Mac, iPhone, or iPod touch screen. And because VoiceOver supports gestured-based and keyboard controls, students don't need to use a mouse. Settings can be customized, saved to a USB flash drive, and applied to a different Mac, so the student isn't tied to one computer.
- VoiceOver works with more than 40 different models of refreshable Braille displays, including wireless Bluetooth displays. Connect a Braille display to a Mac, and the display exhibits spoken output as onscreen Braille or text, allowing for collaboration with all peers. And with Braille Mirroring, one Mac can control multiple Braille displays—so teachers can lead the entire class even if students are using different models of Braille displays.
- With Zoom on the Mac, iPhone, and iPod touch, students can magnify the entire screen up to 40x using the scroll wheel on a mouse, a "trackpad" gesture, or key commands.
- A breakthrough new capability in Mac OS X Snow Leopard—and the latest versions of iPhone and iPod touch—is gesture-based control on a Multi-Touch trackpad. The entire surface of the trackpad acts as the active window on the computer, so students can use one finger on the trackpad to point at something on the screen—and activate it instantly.
- The iPod nano and iPod shuffle feature spoken-menu technology that makes it easy for students to navigate playlists, find tracks, and listen to lectures and to other downloaded content.
- The "Add to iTunes as Spoken Track" feature converts long text passages to audio files for blind and low-vision students. With VoiceOver compatibility in iTunes,<sup>3</sup> students can download tracks to an iPod or iPhone for listening on their own time.



The built-in VoiceOver screen reader lets students hear what's onscreen.

## Hearing

Every Mac comes with a host of powerful auditory comprehension tools and features designed to assist students who are deaf or hard of hearing.

- With a Mac, displaying open and closed captioning in QuickTime and DVD Player is simple. Students can also download and watch captioned movies and other iTunes content on iPod, iPhone, and even PCs (using QuickTime for Windows).
- Flash Screen uses a visual indication—instead of an audio tone—to let students know that an application requires attention.
- The built-in iSight camera and iChat software on the Mac make it easy for students to collaborate in real time using text messages or video conferencing. They can engage in group chats, share their work, edit documents during a chat session, and even communicate with sign language.
- Photo Booth gives students another way to communicate using sign language. Integrated beautifully with the built-in iSight camera, Photo Booth displays photos and videos the moment they're captured. Students can record a video message with one click, then email it with a second click.
- Mono audio is easily activated on the iPod touch and iPhone.
- To improve auditory comprehension, teachers can use GarageBand to create podcasts of conversational speech. Once downloaded to an iPod, students are able to listen repeatedly, making it easy to study correct inflection and speech patterns.

## Physical and Motor Skills

Apple has invested many years developing interface features that improve keyboard efficiency and make it easier for students with physical or motor-skill disabilities to control the Mac using their choice of keyboard, mouse, or trackpad. And the revolutionary iPhone and iPod touch deliver a variety of innovative features that make them more accessible to those students, too.

- The unique Multi-Touch technology built into every new MacBook and MacBook Pro is ideal for students who have difficulty using the mouse or keyboard. Students can use simple gestures to navigate the screen, zoom in on text, flip through a photo library, or fine-tune an image. The iPod touch and the iPhone are also equipped with a high-resolution Multi-Touch screen—giving students easy access to thousands of educational applications available in the App Store.
- For students who have difficulty using a mouse, Mouse Keys allows them to use the keys on a numeric keypad to control the mouse pointer, menus, windows, and other controls.
- Slow Keys, which adds a delay between the time a key is pressed and when its action is accepted, helps students who struggle with typing avoid unintended multiple keystrokes. And for students who have trouble pressing multiple keys simultaneously, Sticky Keys lets them enter key combinations in sequence.
- Apple's Inkwell technology translates handwriting from a connected graphics tablet into on-screen text. Inkwell supports standard stylus gestures, making it easy for students to select, edit, and delete text on the tablet.
- The Automator application in Mac OS X reduces frustration by performing complex or routine tasks with a single click. Record the task once and Automator will perform each step perfectly, every time.



Closed captioning support in QuickTime and DVD Player lets deaf and hard-of-hearing students watch captioned movies and other iTunes content.



The Automator application records complex or routine tasks, then performs each step perfectly, every time.

### Mac OS X accessibility at a glance.

Mac OS X Snow Leopard is a cost-effective solution for supporting individualized instruction. The Universal Access features in Snow Leopard are designed to work together and with other applications to provide accessibility to all learners.

BV	DH	PM	L&L	Feature	Function	Mac	iPhone	iPod
•		•	•	VoiceOver	Provides access to the Mac and iTunes through speech, audible cues, and keyboard and gesture-based trackpad navigation. Includes captioning and supports eight languages.	•	•	•
•				Braille	Supports contracted and uncontracted Braille. Delivers plug-and-play Braille display support for more than 40 USB and wireless models, a Braille font, and onscreen Braille/English translation. With Braille mirroring, multiple USB Braille displays can be connected to one computer simultaneously.	•		
•	•	•	•	Zoom	Magnifies part or all of the computer screen.	•	•	•
•		•	•	Spoken Menus	iPod shuffle (third generation) and iPod nano (fourth generation) support spoken menus.			•
•		•	•	Text to Speech	Speaks highlighted text as well as text in dialogs and alert messages.	•		
•		•	•	Voice Recognition	Operate the Mac or iPhone with spoken commands.	•	•	•
•			•	View and Magnification	Increase icon, text, and cursor size, and magnify items in the Dock.	•		
•			•	Display Adjustment	Adjust the display to enhance readability (for example, grayscale, monochrome, or high-contrast video display). Control the size of text and icons in the Finder.	•	•	•
•			•	Keyboard Navigation	Manipulate the user interface using only the keyboard, and create keyboard shortcuts.	•		
		•		Sticky Keys	Press a set of modifier keys as a sequence rather than all at once.	•		
		•		Mouse Keys	Perform mouse functions with the numerical keypad.	•		
		•		Slow Keys	Creates a delay between when a key is pressed and when it's accepted, accommodating users who frequently press wrong keys accidentally.	•		
		•		Key Repeat	Prevents accidental entry of multiple single keystrokes.	•		
	•		•	Flash Screen	Flashing screen indicates an alert sound.	•		
	•		•	QuickTime Text Track	Enables text access to audio in video or audio-only content.	•	•	•
•	•	•	•	Multiple Users	Computer can retain preferred accessibility settings for each student.	•		
•		•	•	Keyboard Viewer	View and use the keyboard on the computer screen.	•		
•		•	•	Talking Clock and Calculator	Announces the time on the hour, half hour, or quarter hour. Also announces each button clicked on the calculator and the results of calculations.	•		
•	•	•	•	Automator	Creates workflows easily to automate repetitive tasks.	•		
•	•	•	•	AppleScript	Write scripts that automate actions of the Mac computer and applications.	•		

BV= Blind and low vision      DH = Deaf and hard of hearing      PM = Physical & motor disabilities      L&L = Literacy & learning challenges

To learn more about Apple technology for special needs, visit [www.apple.com/education/special-education](http://www.apple.com/education/special-education).  
Or contact an Apple representative at 1-800-800-APPL.

<sup>1</sup>Comparison based on Apple Store for Education price of the 2.26GHz MacBook vs. Freedom Scientific website price of JAWS 11 Standard edition as of January 4, 2010. Prices are subject to change, and do not include taxes or shipping. <sup>2</sup>Broadband Internet access required for video chat; fees may apply. <sup>3</sup>The iTunes Store is available only to persons age 13 or older in the U.S. and many other countries; see [www.apple.com/support/itunes/ww](http://www.apple.com/support/itunes/ww) for a list of countries. Requires compatible hardware and software, and Internet access (fees may apply). Terms apply. See [www.apple.com/itunes/store](http://www.apple.com/itunes/store) for more information.