

Macintosh OSX Universal Access

Built-in Accessibility for Students with Physical Access Challenges Sticky Keys, Slow Keys, Key Repeat and Mouse Keys

Introduction

Although there are specialized programs that can support students with physical access challenges, the Macintosh Operating System has several built-in features that can assist students in utilizing their computers more effectively.

This tutorial assumes...

- You are using a Mac computer with OS X

Learning Objectives

Completion of this tutorial will give you experience with the following...

- Locating and opening the Universal Access Preferences
- Applying and adjusting the features of Sticky Keys, Slow Keys, Mouse Keys and Key Repeat

Case Study

Gurpreet is an academically competitive Grade 9 student.

He has Cerebral Palsy, which has resulted in a right hemiplegia. This means that he is only able to effectively keyboard with his left hand. As a result of this, Gurpreet has difficulty using the shift key and performing other multi-key commands.

Also, Gurpreet occasionally has key run-ons (eg. ffffff) because of his inability to release his finger from the keys quickly enough.

Because of his age, Gurpreet is sensitive about how he is viewed by his peers and so his team is seeking the least intrusive technology solutions for him.

Apple computers are equipped with a variety of access preferences that can be used to support Gurpreet's access challenges.

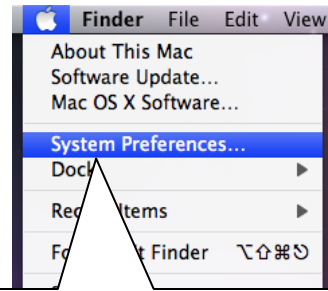
Opening the Universal Access Preferences

1

The Universal Access preferences are located in your Mac OSX System Preferences.

To open your System Preferences, Go to **Apple** > **System Preferences...**

You may also find System Preferences by clicking this icon in your system dock.



Slide down to **System Preferences** and release

2

On the **System Preferences** window that opens, go the **System** area and click **Universal Access**.

Universal Access Icon



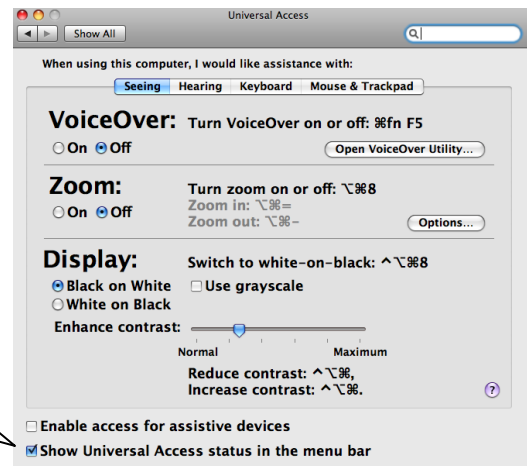
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When the **Universal Access** window opens, ensure that **Show Universal Access status in the menu bar** is enabled.

Having the Universal Access Icon visible on your top menu bar allows you to find which features are enabled.



- Enable access for assistive devices
- Show Universal Access status in the menu bar



Tip...

By turning this feature on, you will always have easy access to the Universal Access preferences by clicking on this icon on the right side of your menu bar.

Using Sticky Keys

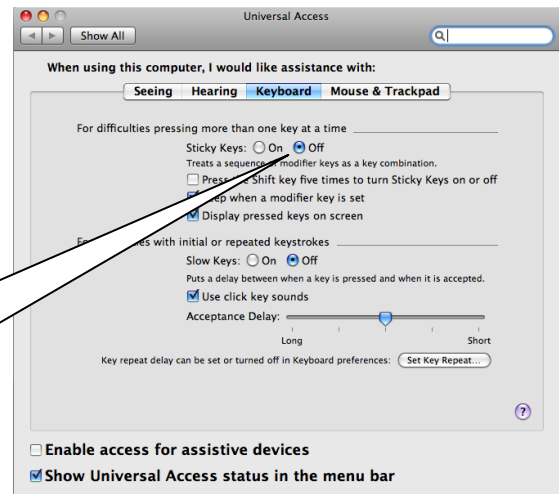
1

Sticky Keys lets you create “key chords” (pressing multiple keys simultaneously, such as Shift-Command-4 to take a screen shot) by pressing them sequentially one at a time.

To turn this feature on, open **Universal Access** and click on the **Keyboard** tab.

Now **click** the Sticky Keys: **On** radio button

Sticky Keys: On Off



2

With Sticky Keys active, each time a modifier key is pressed it is translucently displayed on the top right of the screen.



Tip...

Using Sticky Keys makes it easier for students who have difficulty holding down more than one key at a time. This feature allows them to use the Shift key with one keystroke. It also allows them to easily use keyboard short cuts like pressing “Command” and then “P” to print a document.

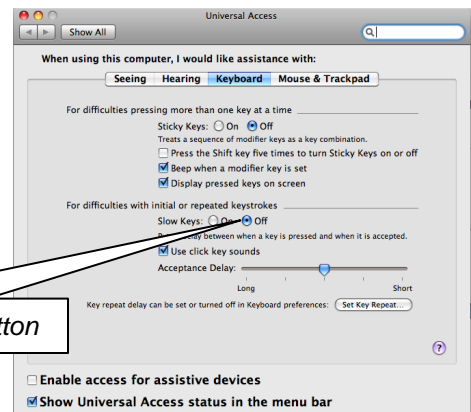
Using Slow Keys

1

Slow Keys allows you to adjust the length of time between when the key is pressed and when the computer responds to the keystroke.

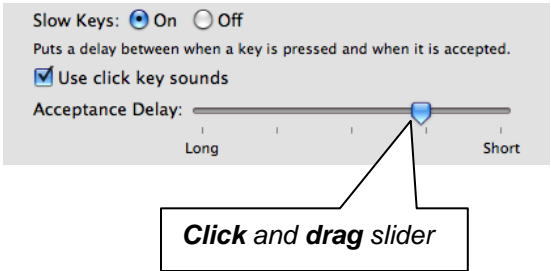
To turn this feature on, click on the **Keyboard** tab on the Universal Access window. Once there, go to **Sticky Keys**: and click the **On** radio button.

Click the Slow Keys **On** radio button

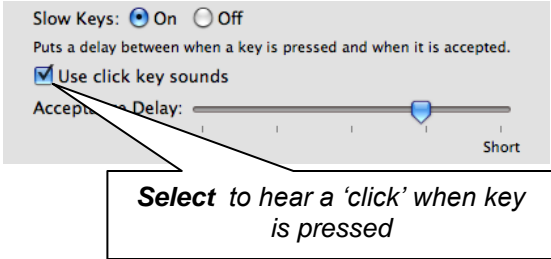


2 You can then adjust the **Acceptance Delay** slider to increase or decrease the length of time that each key must be held down before the computer accepts the keystroke.

Selecting **Long** means you would have to hold down the key for a long time before it was activated and selecting **Short** would have the opposite effect.



3 When you enable Slow Keys, some students may require auditory feedback to tell them that the key they are pressing has been activated. If you want to hear a 'click' when the key is activated, you can enable that feature by selecting **Use click key sounds**.



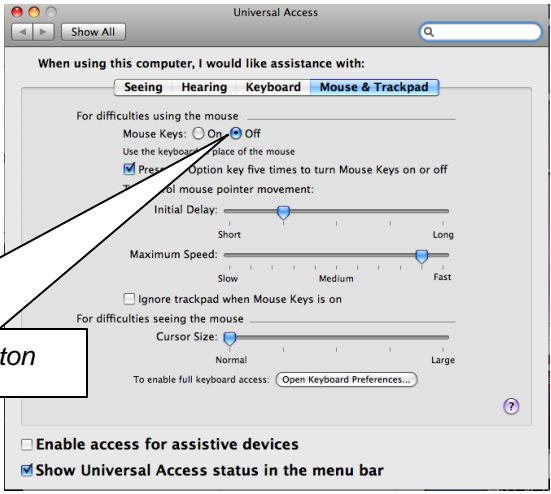
Using Mouse Keys

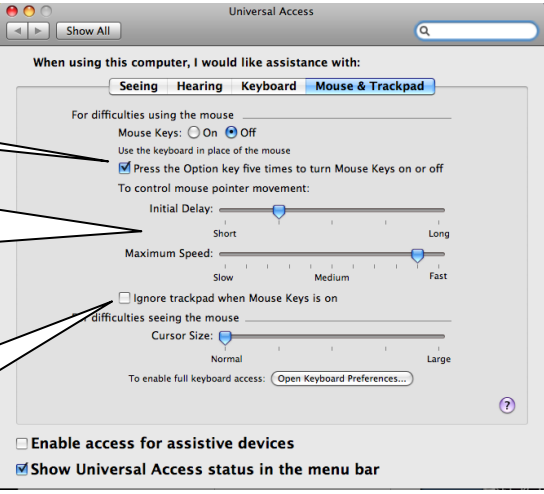

1 **Mouse Keys** allows you to use the keyboard instead of the mouse.


To turn this feature on, open **Universal Access** and click on the **Mouse and Trackpad** tab.

To turn on Mouse Keys, go to **Mouse Keys:** and click the **On** radio button.

Click the Mouse Keys On radio button



2	<p>By selecting this option the student can turn Mouse Keys on or off anytime by pressing the Option key 5 times</p> <p>With the Initial Delay and Maximum Speed sliders you can adjust the delay before the mouse starts to move and the maximum speed that the mouse will move</p> <p>Check this box if you would like to ignore trackpad when Mouse Keys is on</p>	
3	<p>To use the keyboard to move the mouse when Mouse Keys is active, press:</p> <ul style="list-style-type: none"> - 7 - move diagonally up right - 8 - move straight up - 9 - move diagonally up left - u - move sideways left - i - click mouse button - o - move sideways right - j - move diagonally down left - k - move straight down - l - move diagonally down right - m - lock the mouse - . (period) - release the mouse <p>Note: If you are using OS 10.4 or earlier you may need to hold down the function key (fn) while using Mouse Keys.</p>	

 Tip...

Having the **Press the Option key five times to turn Mouse Keys on or off** box checked may cause problems if your student tends to repeatedly press random keys.

Having the **Ignore trackpad when Mouse Keys is on** checked might be helpful if your student could inadvertently brush against the trackpad and move the mouse.

4

If you use a keyboard with a numeric keypad, you can use it to access Mouse Keys.

- 7 - move diagonally up right
- 8 - move straight up
- 9 - move diagonally up left
- 4 - move sideways left
- 5 - click mouse button
- 6 - move sideways right
- 1 - move diagonally down left
- 2 - move straight down
- 3 - move diagonally down right
- 0 - lock the mouse
- . - release the mouse



Tip...

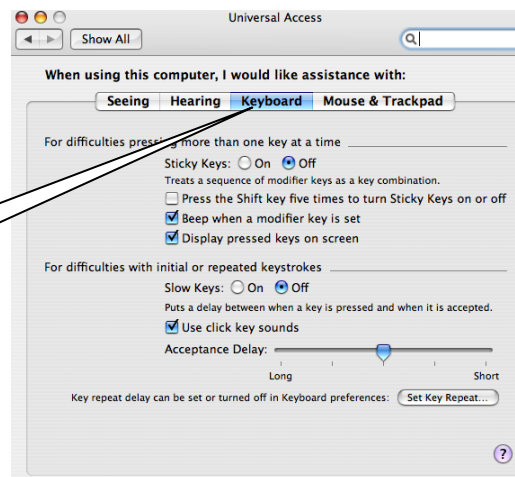
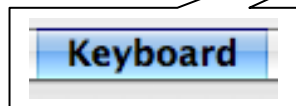
Using Mouse Keys disables the rest of the keyboard - for students who also need to type, they would require an on-screen keyboard.

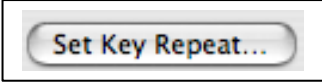
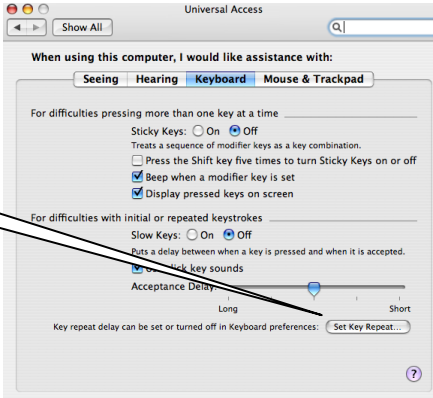

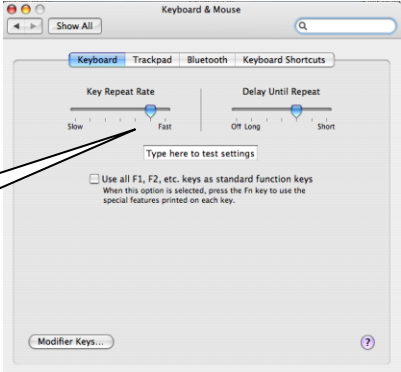
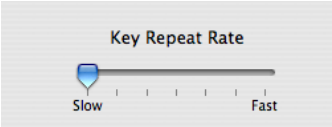
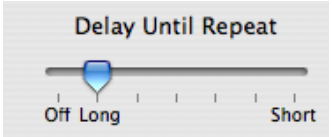
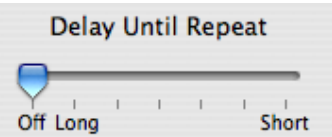
Using Key Repeat


1

Adjusting the Key Repeat feature helps customize the keyboard to accommodate students who have difficulty removing their finger from a key once it has been pressed (avoids the “gggggggggggg” type error).

From the Universal Access window select the Keyboard tab



<p>2</p>	<p>Click the Set Key Repeat button at the bottom of the page.</p> 	
<p>3</p>	<p>This will take you to the Keyboard & Mouse preferences. Adjust the Key Repeat Rate and Delay Until Repeat sliders. You can test your adjustments by typing in the test box below the slider area.</p> 	
<p>4</p>	<p>Slowing the Key Repeat Rate will adjust how quickly the characters are repeated when the key is held down.</p>	
<p>5</p>	<p>Moving the Delay Until Repeat slider will adjust the length of the delay until a character begins to repeat.</p>	
<p>6</p>	<p>Turning the Delay Until Repeat preference Off will keep the key from repeating until the key is released and pressed again.</p>	

 **Tip...**

Turning the **Delay Until Repeat** off will slow the deletion of a word. It will require the pressing and releasing of the delete key for each letter as opposed to just holding down the delete key.

Checklist of Skills Developed in this Tutorial

- ❑ Access Universal Access Preferences
- ❑ Place Universal Access Preference icon in the menu bar
- ❑ Turn on Sticky Keys
- ❑ Turn on Slow Keys, adjust the acceptance delay time and give the student auditory feedback for key activation
- ❑ Turn on Mouse Keys and use for mouse movement
- ❑ Set the Key Repeat feature and adjust the rate and delay settings