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Accessibility:

Apple, Windows, and Android Devices

Windows 10

Friday, March 10th, 2017

10 a.m. to 1 p.m.

Baruch College

**55 Lexington Avenue, Between
24th and 25th Street**

Vertical Campus, Room 3-215

Table of Contents

Windows 10 Accessibility

Accessible Internet Browsing

Microsoft Edge browser enhancements were made like screen reader optimization with Narrator, but also third party screen readers like JAWS and Dolphin. Also, better navigation with PDF reader compatibility.

Accessible Cortana Improvements

Hi. I'm Cortana.

Design improvements have been made like color contrast, legibility, better keyboard navigation, and better supports Windows Speech Recognition.

Narrator

More voices are included with Narrator with support of reading 800 words per minute. Also, with support to other languages such as Finnish, Arabic, Dutch, Turkish, etc.

Other Improvements

Other built in applications improved is Mail, the email application. Screen reader support was improved as well as Groove music player, with better color contrast support and screen readers.

Essential Accessibility Browser for Windows Desktop

What is the essential Accessibility browser? Essential Accessibility for Windows is an accessibility, fully featured web browser that integrates various navigation and magnification tools for users who are **blind, immobilized and with visual impartments.**

System Requirements

- Microsoft Windows® 10, Windows® 8, Windows® 7 (Windows 10 or 8 recommended)

- Processor Pentium III, 600 MHz or higher (Pentium IV recommended)

- 256 MB RAM Memory or more (512 MB recommended)

- 20 MB free space on hard drive for full installation

- An internet connection
Also works with Windows XP SP3, Vista SP1, and 8.1

Currently there is no Mac version available or under development.

What makes it so accessible?

- **Hands-free tracking:** You can control your mouse by moving your head or your hand in front of a connected camera.

- **On-screen keyboard:** virtual keyboard layout like the standard US keyboard with convenient key "www." and ".com" with the regular

- **Page reader:** can read aloud any text, button captions, website texts, links, tags, and other elements that contain text that isn't embedded in graphic

- **XY mouse:** A scanner like functionality that first moves on a latitude axes then longitude axes after mouse inputs. **Can also be called a cross scanner.**

- **What makes it so accessible?(Continued)**

- **Direction mouse:** Using the directional mouse, you can move the mouse in one of eight directions and click it, all using only the left click button on your mouse.

- **Radar mouse:** This mouse alternative "sweeps" the eSSENTIAL Accessibility window much like the line on an airport radar screen. Airport radar displays typically "anchor" their lines in the center of the screen. The apps radar mouse offers that option, as well as that of anchoring the line at the top left corner of the screen.

- **Multiple languages**

- **Speech Over –** Text To Speech feature activated when hovers over an option with the mouse

- **Voice Commands –** command the browser to open certain option by using special commands

Installation

You can access the browser directly from the essential Accessibility website for **FREE.**
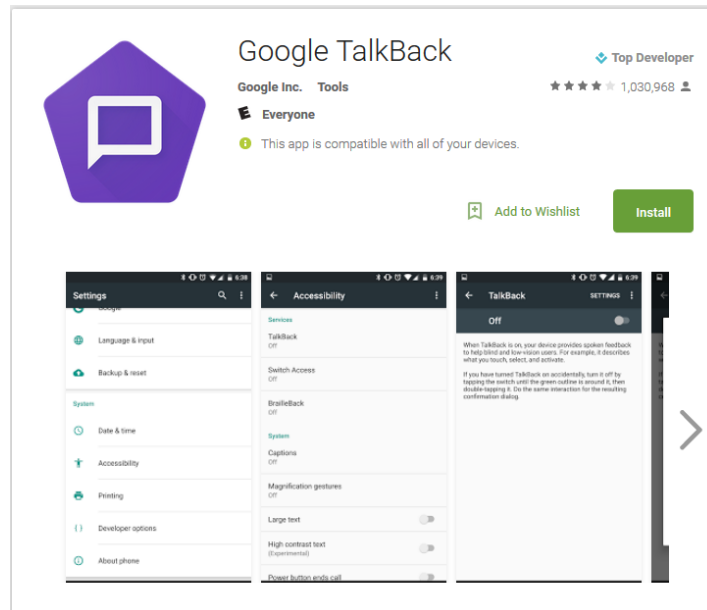
Enabling Android Accessibility

Google TalkBack

"TalkBack is an accessibility service that helps blind and vision-impaired users interact with their devices.
TalkBack adds spoken, audible, and vibration feedback to your device." - Google
Googles TalkBack can be found in the accessibility settings

For blind and low-vision

Installing Google TalkBack

To install, open the Playstore on your phone and search Google TalkBack. This application is free to download.

Note: There is another TalkBack app on the PlayStore that is NOT from Google. Make sure you search for Google TalkBack

Turning on Google TalkBack

Go to Settings

- Android 6.0 and above, search for Accessibility in the search bar

- Android 4.1 and above Touch TalkBack and switch it on

- Android 4.0:

    - Touch TalkBack and switch it on

    - Go back to the previous screen, then turn on Explore by Touch

- Android 3.2 and earlier:

    - Select the Accessibility checkbox

    - Select the TalkBack checkbox

Latest Google TalkBack Features V5.1

- Features and changes in 5.1

- Webpage load progress is announced (Chrome browser version 52 and up)

- Screen stays unlocked while reading text

- TalkBack doesn't interrupt voice search or dictation

- New keyboard shortcut opens custom actions

- "Read from top" and "Read from next" work better

- Scrolling list navigation is improved

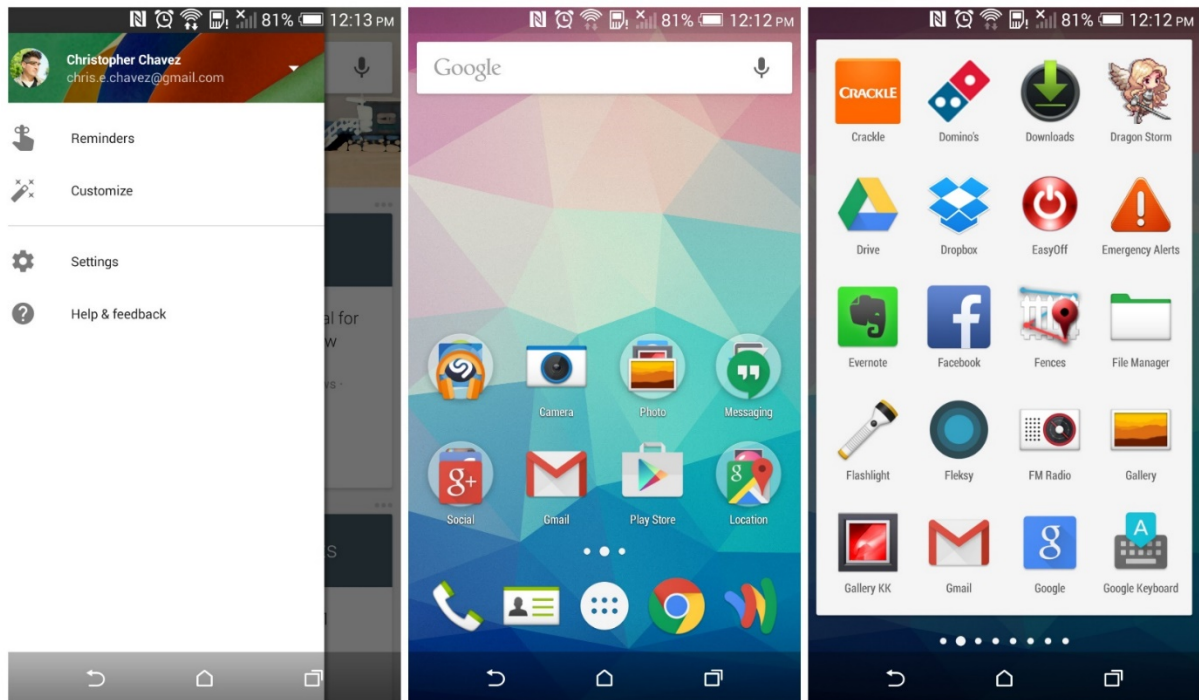- TalkBack volume adjusts to phone volume during calls

eSSENTIAL Accessibility for Android

eSSENTIAL ACCESSIBILITY®

For

Device Requirements

- Android version 5.0 Lollipop and above
- Devices from 2014 till recent will work

In order for you to have the best accessible environment for Android, its important to use Google made applications. Gboard keyboard for instance, is a free Android keyboard made by Google. This keyboard brings many customization options from color contrast, to Google Now search.
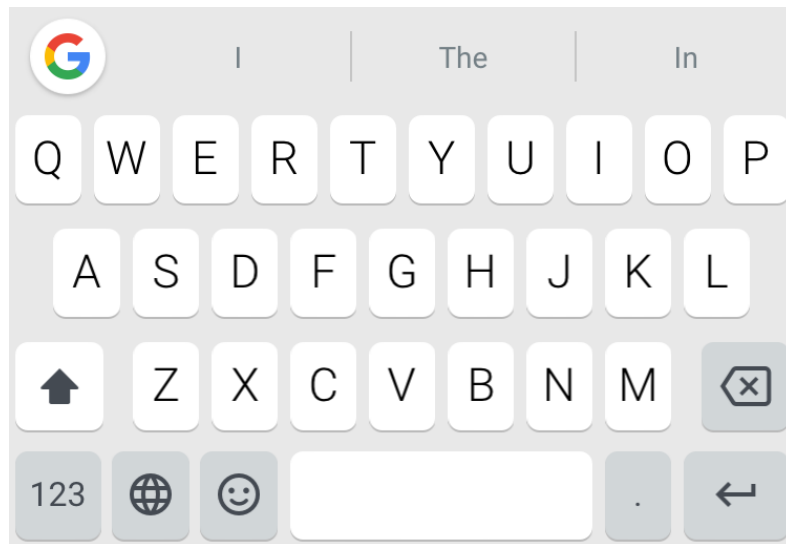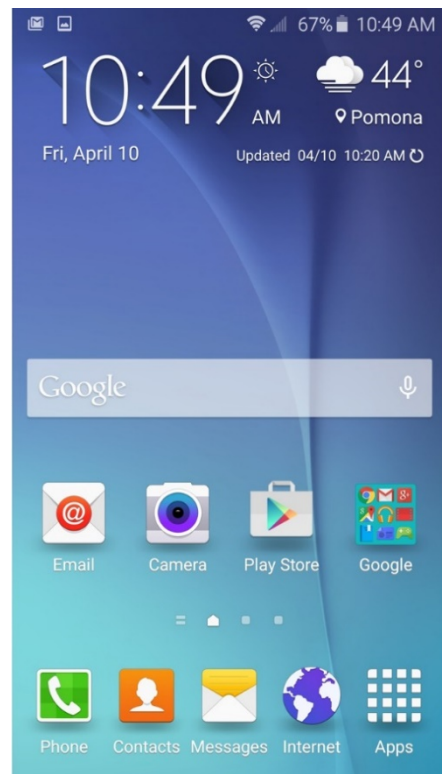

Besides the keyboard, it's important that you install the Google's launcher. What exactly is a launcher? It's an Android user interface that lets users customize the home screen.

1. **Pixel Launcher**
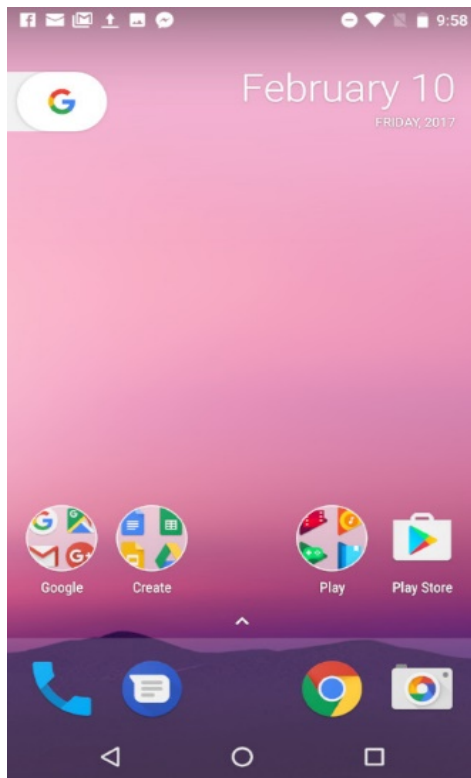
2. **Samsung (Touch Wiz)**

Pixel launcher (image 1) is an example of the new launcher by Google. You see that the layout and look is different than Samsung's launcher (image 2).

What exactly is eSSENTIAL Accessibility for Android?

Essential Accessibility is a navigational app for users who are **blind, immobilized and with visual impartments.**

1.Hands-free-mode
2.Easy grid mode
3.XY mode
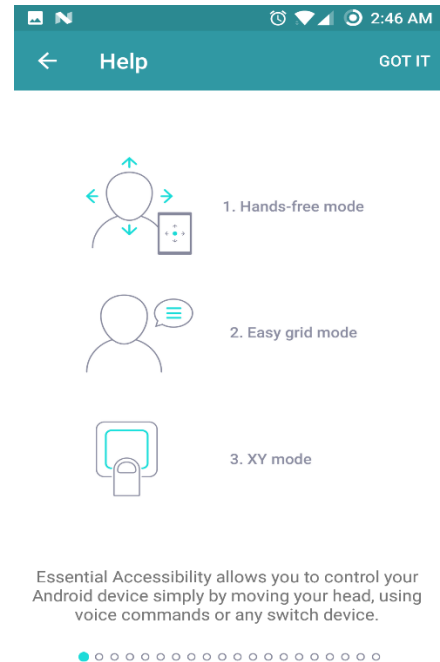
Currently just available for Android but iPhone version coming soon.

Mode 1: Hands-free mode

This mode lets you control a cursor to your device by moving your head in front of the camera with a floating menu.

**Does not use facial recognition for head movement
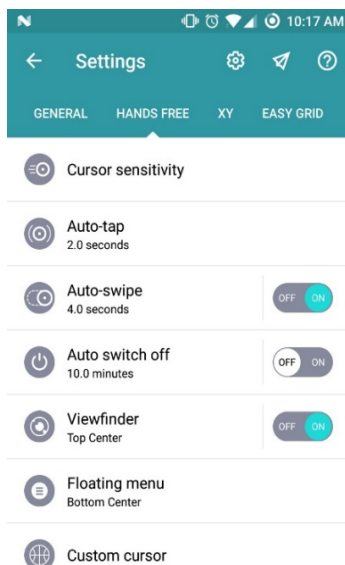
In this application you can customize Hands free mode in various ways. A few are stated below.

- sensitivity
- Auto-tap interval time
- Auto-swipe for navigating pages using horizontal swipes
- Floating Menu positioning

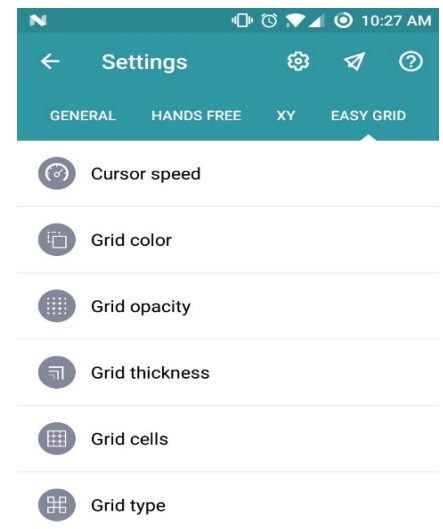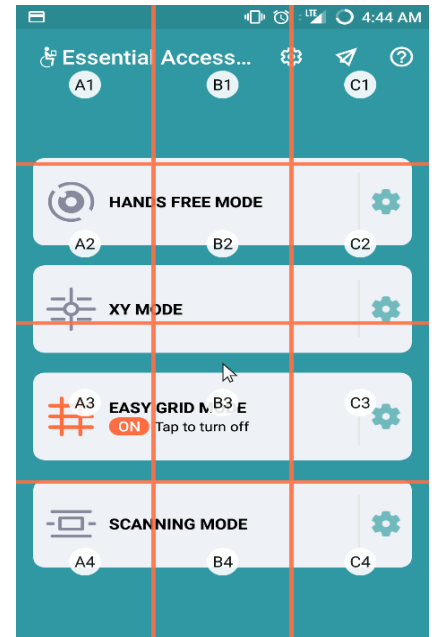# Mode 2: Easy grid mode

Navigate with your cursor by stating commands. This uses a grid layout for better accuracy.

Commands such as "Go to B3", or, "Move up"

From the color to the grid, to the grid type, you get to tinker around with various settings, including others stated below.

- **Cursor Speed**

- **Grid opacity**

- **Grid Thickness**

- **Grid cells**

Mode 3: XY mode

XY mode lets you control your device using on-screen coordinates. Like the Windows desktop version. This **requires to be paired with a switch device.**

Once the switch device is connected, you're given the option to choose between two modes. (Shown on right)

One-button mode - This mode lets you perform horizontal and vertical tasks with each click. You can also access special menu for options like Back, Home, and Volume.

Two-button mode- In this mode you can assign different actions to the switch device.

Ex: The first button is assigned to 'Select' action. The second button is assigned to 'Reverse direction' action." Or the first button is assigned the Select action and the second button is assigned the Show menu action.
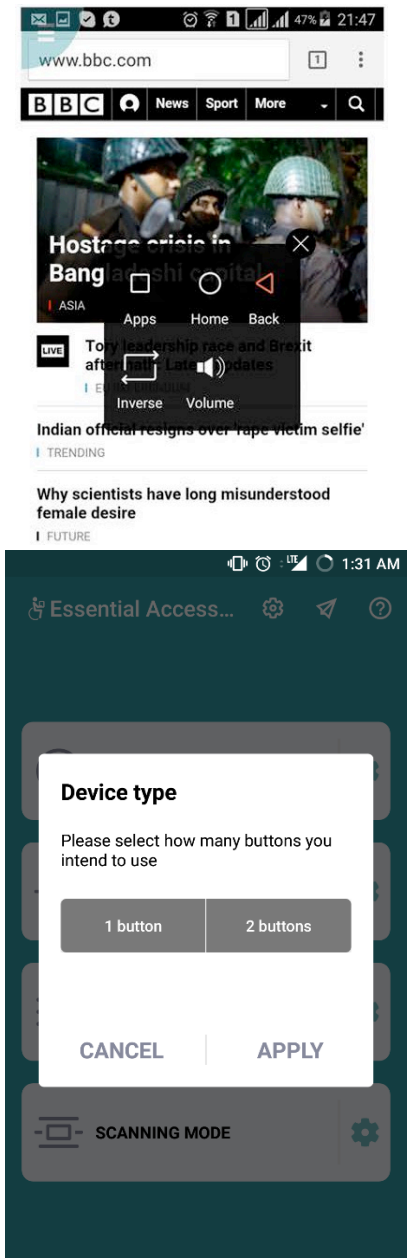
Installation

This app is a **FREE** third party application that can only be downloaded directly from the eSSENTIAL Accessibility website.

<u>Not currently available on the Google Play store</u>**.**

In order to install 3rd party applications onto your Android device, you need to enable Unknown Resource. Follow the steps below:

- Navigate to Settings > Security

- Check the option "Unknown sources"

- Tap *OK* on the prompt message

Now you can launch the application to continue the set up.

- **Turning on the application**

- Go to Settings > Accessibility and turn in **Essential Accessibility** or

- For Android 6.0 and above, search for Accessibility in the search bar.

- **System Requirements**

- Android version Jelly Bean (4.3) and above

- App size 2.02

- Needs at least 1GB of storage space

Shineplus, Android ScreenReader For the Blind

System Requirements

- **Android version Jelly Bean (4.3) and above**

- **App size 2.02**

- **Needs at least 1GB of storage space**

What is Shineplus exactly?

It's a magnification tool screen reader for **blind, low vision, and presbyopia users**.

Modes

Mode 1: Voice-oriented and zoom support

- This mode is for **blind users**.

- You can navigate the with through the phone with its screen reader

- With Zoom support options for zooming in on finger pressed options

Mode 2: Zoom-oriented and voice support

This part is support for those with **vision below 0.1.**

As you click on options throughout your phone, you will be show the text of the application (name, description).

This settings also helps with reading web sites and book on your phone.

Mode 3: Vision protection and legibility improvement

This mode brings sight protection for users with bad vision, presbyopia, and other various eye diseases.

A "candy bar" (toolbar) like menu will appear on the screen with different colors representing different settings

This tool bar is very customizable for many preferences from screen lighting, font zooming, and more.

You can access other selections by dragging down the bar from the far right, candy cane like design.

**Make sure to have Google Chrome as your default browser or some settings will not work
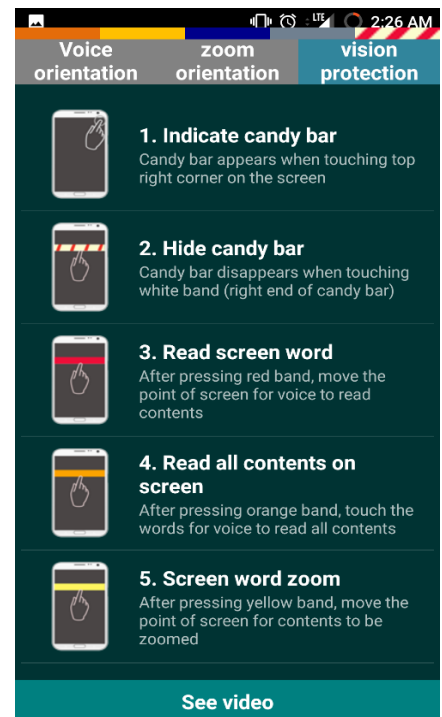
Installation

Find it on the Google Play Store for Free

Search for, **Shineplus** or **Screen Reader for Blind**
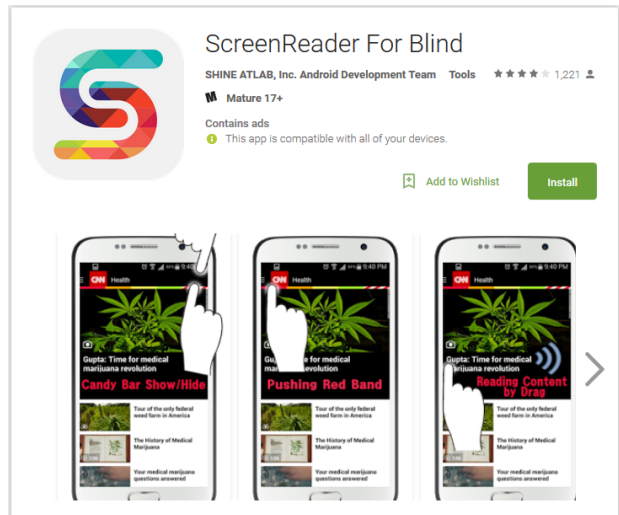
Apple

Accessibility tips and tricks

When asking around finding many people not aware of the "Accessibility tips and tricks" by Apple on your iPhone, iPod touch, iPad, and Mac. The accessibility features that are built into the devices contains Guided Access, VoiceOver, and Assistive Touch. These features can help students with impaired vision, hearing, and also blind and deaf.

Guided Access

Guided Access helps you to stay focused on a task while using your iPhone, iPad or iPod touch. Guided Access limits your device to a single app and lets you control which app features are available.

You can use Guided Access to:
- Temporarily restrict your iOS device to a single app
- Disable areas of the screen that aren't relevant to a task, or areas where an accidental gesture might cause a distraction
- Disable the hardware buttons

Set up Guided Access

Tap Settings > General > Accessibility > Guided Access to set up Guided Access. From there, here's what you can do:
- Turn Guided Access on or off
- Set a passcode that controls the use of Guided Access and prevents someone from leaving an active session
- Set whether the device can go to sleep during a session

Start a Guided Access session

To start a Guided Access session, follow these steps:
1. Open the app you want to use.
2. Triple-click the Home button.
3. Adjust settings for the session, and then tap Start.

Control apps, screen sensitivity, and motion sensitivity

You can use Guided Access to turn off app controls, parts of the screen, and motion sensing. Follow these steps:

To disable app controls and areas of the app screen, follow these steps:

1. Circle any part of the screen you want to disable.

2. Use the handles to adjust the area.

To ignore all screen touches, turn off Touch.

To keep your iOS device from switching from portrait to landscape or from responding to any other motions, turn off Motion.

End a Guided Access session

If you're using [Touch ID](#) on your iOS device, you can use it to end a Guided Access session. First, go to Settings > General > Accessibility > Guided Access > Passcode Settings and turn on Touch ID. Now, when you're using Guided Access, you can end the session by following these steps:

1. Press the Home button once.

2. Use Touch ID.

If you're not using Touch ID on your device, follow these steps to end a Guided Access session:

1. Triple-click the Home button.

2. Enter the Guided Access passcode.

VoiceOver

Adjust voices for VoiceOver, Speak Screen, and Speak Selection on your iPhone, iPad, or iPod touch

Your iOS device starts out using a compact voice for VoiceOver, Speak Screen, and Speak Selection. You have a few options for the voices you can use for speech.

Adjust VoiceOver voices

1. Go to Settings > General > Accessibility > VoiceOver > Speech.

2. Choose your default dialect. Your options depend on the language your device is set to use.

3. Choose Default or Enhanced Quality.

With VoiceOver, you can enable more than one voice, switch between Default and Enhanced Quality (without needing to download the voice again), and change the speaking rate for each voice:

1. Go to Settings > General > Accessibility > VoiceOver > Speech.

2. Tap Add New Language.

3. Tap the language and dialect you want. This will take you back to the Speech screen.

4. Tap the More Info button for the language.

5. Choose either Default or Enhanced Quality. If you choose Enhanced Quality, the voice hasn't been downloaded yet, and your device is on a Wi-Fi network, the voice will start to download.

6. Move the Speech Rate slider to slow down or speed up the voice.

AssistiveTouch

Use AssistiveTouch on your iPhone, iPad, or iPod touch

You can use AssistiveTouch to control your device, help you perform gestures like a pinch, multi-finger swipe, or 3D Touch, and use Siri.

Turn on AssistiveTouch

When you turn on AssistiveTouch, you'll see the AssistiveTouch menu. You can drag it to any edge of the screen, then tap the menu to open it.

There are a few ways to turn on AssistiveTouch:
* Go to Settings > General > Accessibility > AssistiveTouch, then turn on AssistiveTouch.

* Tell Siri "Turn on AssistiveTouch."

* Go to Settings > General > Accessibility > Accessibility Shortcut and turn on AssistiveTouch.

When Accessibility Shortcut is on, you can turn AssistiveTouch on or off from any screen using Triple-click Home. Just press the Home button three times. To adjust the Triple-click speed, go to Settings > General > Accessibility > Home-click Speed.

Switch Control

Switch Control lets you control your iPhone, iPad, or iPod touch using a single switch or multiple switches. With switches, you can select, tap, drag, type, and even freehand draw. Just use a switch to select an item or location on the screen, and then use the same (or a different) switch to choose an action.

Turn Switch Control on or off

Go to Settings > General > Accessibility > Switch Control and turn the setting on or off. You can also triple-click the Home button at any time to exit Switch Control.

Bigger & Bolder Text

In iOS 7 and later, you can change the size of your font in Mail, Contacts, Calendar, Phone, Notes, and other apps that support Dynamic Type.

Change the font size

1. In iOS 8, go to Settings > Display and Brightness > Text Size.
   In iOS 7, go to Settings > General > Text Size.
2. Drag the slider to make the font bigger or smaller.

You'll see this font size in apps that support Dynamic Type for your version of iOS.

Make the font even bigger

1. Go to Settings > General > Accessibility > Larger Text (or Larger Type in iOS 7).
2. Turn on Larger Accessibility Sizes (or Larger Dynamic Type in iOS 7) for bigger font options.
3. Drag the slider to select the font size you want.

Turn on other Accessibility settings

Go to Settings > General > Accessibility to make the text bold, increase the contrast, or invert the colors on your screen.

Speak Screen

Choose a voice for Speak Screen and Speak Selection

1. Go to Settings > General > Accessibility > Speech.
2. Enable Speak Selection or Speak Screen, or both.
3. Select Voices.
4. Choose the one voice and dialect you would like both Speak Screen and Speak Selection to use.

Dictation

You can dictate anywhere in iOS where you can enter text. For example, you can compose emails, dictate texts, and even dictate search terms in Safari's search field. First, you need to make sure dictation is turned on. To do this, go to *Settings > General > Siri*, and then turn Siri on. Even if you don't want to use Siri's personal assistant features, you need to turn it on for speech recognition to work.
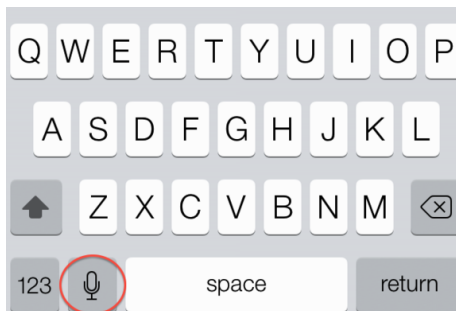

Siri

There are several ways to talk to Siri. To see a list of what you can ask Siri, press the Home button and ask "Siri, what can you do?" Or press the Home button, then tap the question mark in the lower, left-hand corner of the Siri screen.

Go to Settings > Siri and make sure that Siri is turned on. You need an Internet connection through Wi-Fi or cellular data. Cellular data charges might apply.

FaceTime

Open your FaceTime app and sign in with your Apple ID (you can also do this from Settings > FaceTime). If you're using an iPhone, FaceTime automatically registers your phone number. To also register your email address on your iPhone, tap Settings > FaceTime > Use your Apple ID for FaceTime, and sign in. If you're using an iPad or iPod touch, register your email address by tapping Settings > FaceTime > Use your Apple ID for FaceTime, and sign in.
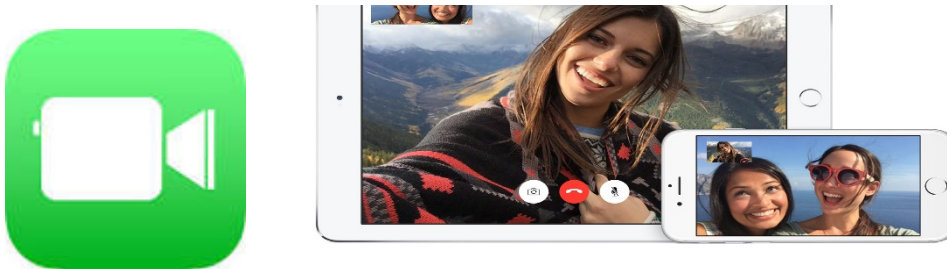
Invert Color

Inverting screen **colors** is an Accessibility feature that makes the **iPhone** and iPad easier on the eyes for some people with a sensitivity to brightness, easier to distinguish for some people with **color** blindness, and easier to make out for some people with low vision. Here's how to set one up to **invert colors** on your **iPhone** or iPad screen. Grab your **iPhone**, iPad, or iPod touch and head to Settings > General > Accessibility and scroll all the way down to the bottom of the list. There, you'll see an option labeled Accessibility Shortcut.

About TapTapSee

TapTapSee is a mobile camera application designed specifically for the blind and visually impaired iOS users, powered by the CloudSight.ai image recognition API. The app utilizes the device's camera and VoiceOver functions to photograph objects and identify them out loud for the user.

Purpose

In TapTapSee, the user double-taps the device's screen to photograph any two or three dimensional object at any angle, and have it accurately analyzed and defined within seconds. The device's VoiceOver then speaks the identification audibly to the user. TapTapSee includes the following additional features: Repetition of the last image's identification, ability to upload images from the camera roll, share identification via Twitter, Facebook, text or email, rotor reader, flash toggle, and the ability to save the identified image to the camera roll with the attached tag.

Best Picture Taking Practices

The following are tips and suggestions for taking quality pictures with TapTapSee:

- The camera on the iDevice is located in the top right corner behind the front facing screen of the phone when the device is in the upright position.

- It is advised to hold the iDevice 8-12 inches (20-30 centimeters) away from the object being photographed. This method will help ensure that the object is in the scope of the camera.

- TapTapSee has an autofocus notification to let the user know when the photographed object is in focus. For best practice, wait until the app beeps before taking a picture. The autofocus notification can be turned ON and OFF in the about menu.

- For best results, pictures snapped with TapTapSee should be taken in a well-lit environment. The app also features an automatic flash, which can be turned ON and OFF in the about menu.

- The barcode on canned goods is almost always located to the left of the seam of the can where the two label ends meet and overlap. Other written information, such as brand, product name and info is usually across from the seam on the opposite side of the can. To get the best results when taking a picture of the label, be sure to keep the camera 8-12 inches (20-30 centimeters) away from the can.

First Time User Overview

1. Before you begin using the application, you must first turn VoiceOver ON in your device. To turn VoiceOver ON go to Settings > General > Accessibility > VoiceOver. Then switch to ON.

2. When you first open TapTapSee a Privacy Notice pops up that needs to be accepted for app use. Once it's accepted you're taken into the app, which consists of a camera and four buttons at the top of the screen - Repeat, Library, and Share and about.

3. To take a picture, double-tap on the screen and wait approximately seven to 10 seconds to receive an identification. The wait time may fluctuate depending on your network connection. The image is sent to the server where it is identified and sent back to the user. The VoiceOver in the device then speaks the identification to the user. Up to three images at a time can be identified.

TapTapSee gives users a general identification of any picture taken. However, if, for example, the user takes a picture of a can of soup and wants to know the name of the brand, the application will be able to read the label and return the identification with the brand name. Nevertheless, keep in mind that TapTapSee will only be able to recognize the object that is within the camera's scope and in focus. Lighting conditions are also important for the quality of the identification.

TapTapSee includes an autofocus alert that can be turned ON and OFF in the about menu. Once an object comes into focus, the app makes a sound to notify the user that it's in the optimal position to take a picture.

Toolbar Buttons

Repeat Button

Hear the last identification spoken aloud in case it was missed the first time.

Library Button

Access the device's Camera Roll in order to send images to TapTapSee for identification. To access this feature simply click on the Library button and proceed to select an image that you want to have identified from the Camera Roll (Note: If access to the Camera Roll is denied then you must change the privacy setting. Go to Settings > Privacy > Photos > TapTapSee. Toggle the TapTapSee switch ON.

Share Button

Share the image via Twitter, Facebook, Email, or Text. The Share button also includes the option for the user to save the image to the device's Camera Roll. The saved image will include the tag that was provided by TapTapSee.

Talking Scientific Calculator

<u>About</u>

A comprehensively featured calculator that has become a favorite among adults and high school students around the world. Designed for a wide range of users, this calculator has large colorful buttons, optional high contrast, full VoiceOver support, and unique to this calculator; the option to use speech for answers, buttons names and formulas!

Features include:

 Can read answers, entered numbers and formulas aloud.

1,234.56 is spoken as "One thousand, two hundred thirty four point five six" when US pronunciation style selected. UK and German styles also available.

2 + 3 x 5^2 is spoken as "two plus three multiply five squared."

Built in recording studio and script. Requires only 5 minutes to record a new voice. Recordings can be transferred between devices using Bluetooth.

Two entry modes, Standard and Formula. Standard mode emulates traditional calculators. Formula mode takes care of the order of operations for you. You enter a mathematical expression, complete with operators and parentheses (brackets), tap the = button, and the expression is evaluated.

The entire app's feature set is accessible to VoiceOver users (using standard or touch typing input styles) and Switch Control users.

Unique to this app is an Enhanced VoiceOver Speech mode that pronounces large numbers and formula with natural language rather than one digit at a time.

Supports entry and display of Braille on supported devices (thanks to assistance from the Washington State School for the Blind.)

Numeric formatting of results: Max fraction digits (default), fixed fraction digits (useful for currency calculations), and max significant digits (useful for science and engineering lab work), plus international formatting.

Trigonometric, hyperbolic, logarithmic, permutations, combinations, factorial, powers, roots, percent and bit-wise operations, conversion between hexadecimal and decimal, random numbers.

Full support for fractions (simple and mixed), conversion to and from decimal, fraction reduction, and use of fractions with all operators.

Easy access to basic calculator functions, for those who rarely use scientific operations. Paper log feature, designed particularly for classroom use. Calculations can be recorded with a timestamp to be viewed and emailed. IPads get a user interface designed to make use of the large screen area. IPhones and iPod Touches get a user interface designed for the smaller screen. This includes large, easy to read scientific buttons, accessed on a scrolling panel. All the features of the iPad version are included in the smaller design. Looking for statistics functionality? Check out the companion Talking Statistics Calculator on the App Store.

Customizable for each level of vision:

Normal to low vision: Large, clear buttons with optional speech.

Low vision: High contrast display mode, with optional speech.

No vision / blind: VoiceOver reads the button names before they are activated and also calculation results. Entry and display on refreshable Braille devices.

Switch control accessible. Split-view and Slide-over supported.

Why record new voices?

Having your iPad, iPhone or iPod Touch talk with your own voice, or that of a friend or tutor will make the calculator sound more natural to you. The calculator will speak with the accent you are used to hearing.

How good is the sound quality of recorded voices?

Excellent: The microphone in your iPad / iPhone or iPod Touch is of very good quality, and this calculator performs digital signal processing to ensure the audio level is consistent across all recorded words.