Wireless Independence Now

An Overview of Smartphone Accessibility Features

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AGENDA

• General Questions
• What is Accessibility
• iOS and Android Accessibility Features
• Assistive and Accessibility Apps
• Accessibility Resources
Questions for the Group

• What type of phone or tablet do you have?
• What do you like about your device?
• What do you not like about your device?
• How did you choose your device?
Accessibility – what does that mean?

• Wireless accessibility is the ability to access and benefit from mobile phones and tablets.

• Accessibility means that a product, device, service, or environment is available and usable to as many people as possible.
Demonstration of iOS & Android Accessibility Features
Apple Accessibility Features
## Apple Accessibility Features

### General

<table>
<thead>
<tr>
<th>Feature</th>
<th>Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>VoiceOver</td>
<td>Off</td>
</tr>
<tr>
<td>Zoom</td>
<td>Off</td>
</tr>
<tr>
<td>Invert Colors</td>
<td></td>
</tr>
<tr>
<td>Grayscale</td>
<td></td>
</tr>
<tr>
<td>Speech</td>
<td></td>
</tr>
</tbody>
</table>

Enabling Invert Colors or Grayscale will automatically disable Night Shift.

<table>
<thead>
<tr>
<th>Feature</th>
<th>Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Larger Text</td>
<td>Off</td>
</tr>
<tr>
<td>Bold Text</td>
<td></td>
</tr>
<tr>
<td>Button Shapes</td>
<td></td>
</tr>
<tr>
<td>Increase Contrast</td>
<td></td>
</tr>
<tr>
<td>Reduce Motion</td>
<td>Off</td>
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</tbody>
</table>

### Accessibility

#### Interaction

<table>
<thead>
<tr>
<th>Feature</th>
<th>Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Switch Control</td>
<td>Off</td>
</tr>
<tr>
<td>AssistiveTouch</td>
<td>Off</td>
</tr>
<tr>
<td>Touch Accommodations</td>
<td>Off</td>
</tr>
</tbody>
</table>

#### 3D Touch

<table>
<thead>
<tr>
<th>Feature</th>
<th>Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>3D Touch</td>
<td>On</td>
</tr>
</tbody>
</table>

#### Keyboard

<table>
<thead>
<tr>
<th>Feature</th>
<th>Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Keyboard</td>
<td></td>
</tr>
</tbody>
</table>

#### Shake to Undo

<table>
<thead>
<tr>
<th>Feature</th>
<th>Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shake to Undo</td>
<td>On</td>
</tr>
</tbody>
</table>

#### Vibration

<table>
<thead>
<tr>
<th>Feature</th>
<th>Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vibration</td>
<td>On</td>
</tr>
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</table>

#### Call Audio Routing

<table>
<thead>
<tr>
<th>Feature</th>
<th>Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Call Audio Routing</td>
<td>Automatic</td>
</tr>
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</table>

#### Home Button

<table>
<thead>
<tr>
<th>Feature</th>
<th>Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Home Button</td>
<td>Default</td>
</tr>
</tbody>
</table>

#### Reachability

<table>
<thead>
<tr>
<th>Feature</th>
<th>Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reachability</td>
<td></td>
</tr>
</tbody>
</table>

Double-tap the home button to bring the top of the screen to the bottom.

### Hearing

<table>
<thead>
<tr>
<th>Feature</th>
<th>Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hearing Aids</td>
<td></td>
</tr>
<tr>
<td>LED Flash for Alerts</td>
<td></td>
</tr>
<tr>
<td>Mono Audio</td>
<td></td>
</tr>
</tbody>
</table>

#### Phone Noise Cancellation

<table>
<thead>
<tr>
<th>Feature</th>
<th>Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phone Noise Cancellation</td>
<td>On</td>
</tr>
</tbody>
</table>

Noise cancellation reduces ambient noise on phone calls when you are holding the receiver to your ear.

Adjust the audio volume balance between left and right channels.

### Media

<table>
<thead>
<tr>
<th>Feature</th>
<th>Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subtitles &amp; Captioning</td>
<td></td>
</tr>
</tbody>
</table>

Audio Descriptions | Off |
Android Accessibility Features
Android Accessibility Features

Services
TalkBack
Off

Switch Access
Off

System
Captions
Off

Magnification gestures
On

Large text

High contrast text
(Experimental)

Power button ends call

Auto-rotate screen

Speak passwords

Accessibility shortcut
On

Text-to-speech output

Touch & hold delay
Short

Display
Color inversion
(Experimental) May affect performance

Color correction
Accessibility Features Helpful for Everyone

Apple Devices (iPhone/iPad):
• Siri – Voice Control
• Accessibility Shortcut

Android Devices (LG, Samsung, HTC Phones/Tablets):
• Google Now and Ok Google – Voice Control
• Accessibility Shortcut
Press and hold the Home button or say, “Hey Siri!”

Image courtesy of Apple
Android: Ok Google – Voice Control

Type in the search bar on top or just say, “Ok Google!”
Apple: Accessibility Shortcut

- Guided Access
- AssistiveTouch
- Call Audio Routing
- Home-click Speed
- Reachability
- Accessibility Shortcut

TRIPLE-CLICK THE HOME BUTTON FOR:
- VoiceOver
- Invert Colors
- Grayscale
- Zoom
- Switch Control
- AssistiveTouch

Double-tap the home button to bring the top of the screen into reach.
Android: Accessibility Shortcut

When this feature is turned on, you can quickly enable accessibility features in two steps:

Step 1: Press and hold the power button until you hear a sound or feel a vibration.

Step 2: Touch and hold two fingers until you hear audio confirmation.

If the device has multiple users, using this shortcut on the lock screen temporarily enables accessibility until the device is unlocked.
Accessibility Features for People who have Difficulty Concentrating

Apple Devices (iPhone/iPad):
• Guided Access
• VoiceOver – Screen Reader
• Text-to-Speech
• Speak Selection
• Dictation
• Video Calling (FaceTime)
• Reminders

Android Devices (LG, Samsung, HTC, Motorola Phones/Tablets):
• Talk Back – Screen Reader
• Speak Passwords
• Text-to-Speech Output
• Dictation
• Video Calling (Hangouts)
• Google Keep
Apple: Guided Access

Guided Access keeps the iPhone in a single app, and allows you to control which features are available. To start Guided Access, Triple-Click the Home button in the app you want to use.

Passcode Settings

Time Limits

Accessibility Shortcut

When you Triple-Click the Home button while Guided Access is enabled, your Accessibility Shortcut settings will be displayed.
Apple: VoiceOver – Screen Reader

VoiceOver:
- VoiceOver speaks items on the screen:
  - Tap once to select an item
  - Double-Tap to activate the selected item
  - Swipe three fingers to scroll

Speech
- Braille
- Rotor

Typing Style
- Standard Typing

Phonetic Feedback
- Character a...

Typing Feedback
- Always

Always Speak Notifications
- Always

Navigate Images
- Large Cursor
Android: TalkBack – Screen Reader

When TalkBack is on, your device provides spoken feedback to help blind and low-vision users. For example, it describes what you touch, select, and activate.
Apple: Text to Speech & Speak Selection

Speak Selection Settings

- **VoiceOver**: Off
- **Zoom**: Off
- **Invert Colors**: Off
- **Grayscale**: Off
- **Speech**: Off

Enabling Invert Colors or Grayscale will automatically disable Night Shift.

- **Larger Text**: Off
- **Bold Text**: Off
- **Button Shapes**: Off
- **Increase Contrast**: Off
- **Reduce Motion**: Off

- **Speak Selection**: On
  - A Speak button will appear when you select text.
- **Speak Screen**: On
  - Swipe down with two fingers from the top of the screen to hear the content of the screen.
- **Voices**: 

- **Speak Screen**: On
  - Swipe down with two fingers from the top of the screen to hear the content of the screen.

- **Speak Screen**: On
  - Speak screen content.

- **Speak Screen**: On
  - Highlight content as it is spoken.
Android: Speak Passwords
Android: Text-to-Speech Output

- Power button ends call
- Auto-rotate screen
- Speak passwords
- Accessibility shortcut
- Text-to-speech output
- Touch & hold delay
  - Short
- Display
- Color inversion
  - (Experimental) May affect performance
- Color correction

Preferred engine
- Google Text-to-speech Everyone

General
- Speech rate
  - Speed at which the text is spoken

Listen to an example
- Play a short demonstration of speech synthesis

Default language status
- English (United States) is fully supported
Android: Dictation
Apple: Video Calling (FaceTime)

Image courtesy of Apple
Android: Video Calling (Hangouts)
Android: Google Keep

- Keep app icon
- Notes with quick note feature
- What's new in Google Keep: Google Wear, notes, reminders, and lists on Android wearables
- Actual note: actually oh right no no I'm not coming nevermind
- Boat trip reminder: Sad for laptop, Battery for router, Finn, mask, snorkel (snorkel), Em's, Daniel's mask, Dramamine, Router? Wikipedia image
<table>
<thead>
<tr>
<th>Evernote</th>
<th>PillBoxie</th>
<th>Remember the Milk</th>
<th>Mint</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Take notes in a variety of formats, including: text, sketches, photos, audio, video, PDFs, web clippings and more</td>
<td>• Customizable medication reminder</td>
<td>• Note taking app designed for people with substantial loss of vision</td>
<td>• Simple spending tracker, budget creator and bill reminder</td>
</tr>
</tbody>
</table>

Examples of Apps for Cognitive Impairments
Accessibility Resources

• AT&T Accessibility (download presentations) – att.com/accessibility
• AT&T Digital You – digitalyou.att.com
• AT&T for Disability and Aging for Wireline Services – Voice: 1-800-772-3140; TTY: 1-800-651-5111
• Wireless RERC – wirelessrerc.org
• LiveWell RERC – livewellrerc.org
• FCC Accessibility Clearing House – ach.fcc.gov
• Global Accessibility Reporting Initiative (GARI) – gari.info
If you have any questions, contact:
– Ben@imtc.gatech.edu
– 404-894-7034