



moto g50

User Guide

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Insert or remove SIM and SD cards

About the SD card

Your phone supports an optional microSD card up to 512 GB.

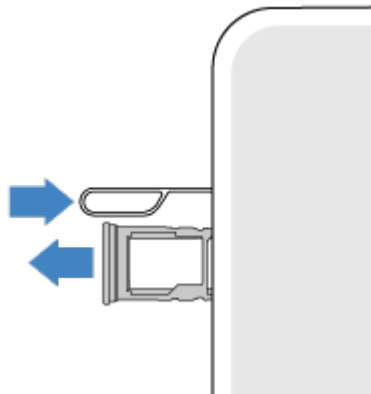
A Class 2, 4, or 6 card is sufficient.

Your phone uses the card as portable storage for media files: photos, videos, and music. Because it's portable, you can easily [swap the card](#) and its content between devices. After you insert the card, be sure to update settings within media apps (like camera, music, and podcast apps), so they use the card to store content you create or download.

You can't store apps on the SD card because it is portable storage.

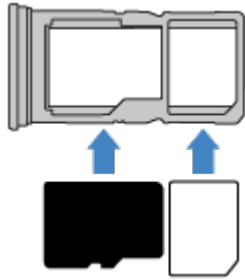
Insert or replace cards

1. If you want to remove the SD card, [eject it](#) first.
2. Insert the SIM tool into the tray hole and gently push to pop it out.

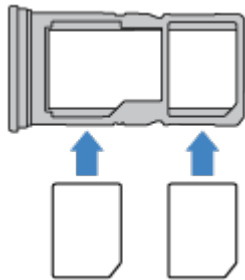


3. Insert or remove the cards as needed.

To use an SD card and a SIM card:

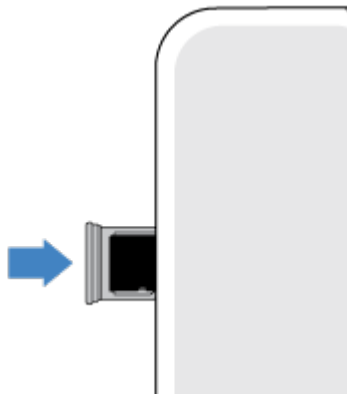


Or, to use two physical SIM cards (not available on all models):



To see if your phone supports two physical SIM cards, go to **Settings > About phone > SIM status**. If you see **SIM Slot 1** and **SIM Slot 2**, then you can use two physical SIMs in your phone.

4. Push the tray back into the phone.



If you inserted two SIMs, you'll receive a notification to set them up. Swipe the notification down and tap it to manage dual SIMs. If you see , [troubleshoot the issue](#).

Note: If you need to activate or resize a SIM, contact your carrier.

Fix an issue

What type of issue do you have?

- [SIM card or calls](#)
- [SD card](#)

Change wallpaper

You can change the background image on your [home screen](#) or lock screen.

Set the wallpaper

1. Touch & hold a blank area on your home screen, then tap  **Wallpapers**.
2. Do one of the following:
 - To set a single wallpaper, select a photo or wallpaper.
 - To use an animated background, select a dynamic wallpaper. Many dynamic wallpapers include settings. Look for  or  to set options.
 - If you select a wallpaper from a category (such as landscapes), you can see a different image every day. Open the category and touch  icon.
3. Tap  or **Set**.
4. Select whether you want to use the wallpaper on your home screen, lock screen, or both.

Use Wallpaper Carousel

To see a different wallpaper every time your lock screen is displayed:

1. Touch & hold a blank area on your home screen, then tap  **Wallpapers**.
2. Tap **Wallpaper Carousel** and turn **Use lock screen carousel** on .
3. Select the wallpaper.

The image will only update over Wi-Fi, unless you turn **Update using mobile data** on .

If your photo is too large

Open the photo and take a screenshot of it. Then edit the screenshot as needed and set it as the wallpaper.

If you selected a dynamic wallpaper

If your battery is low, temporarily change wallpaper to a static image to save power.

Make it yours

This topic lists things that most people want to do with their new phone, with links to instructions on how to do them.

Change its look and sound

- [Set the wallpaper.](#)
- Add apps to your home screen.
- Adjust screen settings, like [font size](#), rotation settings, and [dark background](#).
- You can use either the ◀ ● ■ buttons or gestures to move between apps and screens. [Choose which System navigation to use.](#)
- Assign [ringtones](#) or photos to friends you call.
- Set your schedule for [Do Not Disturb](#), to automatically silence your phone when you don't want to be interrupted.

Protect your phone

- [Set up a screen lock.](#)
- [Set up fingerprint security](#) to unlock your screen safely and quickly with a touch.
- In case you lose your phone, set up Find My Device and record your [IMEI number](#).

Other common set up tasks

- Connect with your [Bluetooth devices](#) and [Wi-Fi networks](#).
- If you [use multiple languages](#), set them up so they appear on your keyboard.

What's new in Android 12?

After upgrading, you'll see the following improvements to the Android operating system and other apps.

Better personalization

Android 12 rethinks the entire user interface, from shapes, light and motion, to customizable system colors that adapt to match you. Redesigned to be more spacious and comfortable, it's the most expressive, dynamic and personal Android ever. It prioritizes simplicity while allowing you to reflect your style:

- Change theme, icons, and wallpapers from the **Personalize** menu. Just touch & hold a blank space on the home screen.
- Now, when you change the wallpaper, your entire phone experience changes to match. Your notifications, settings, widgets and even select apps will match the wallpaper, thanks to Android's advanced color extraction algorithms.

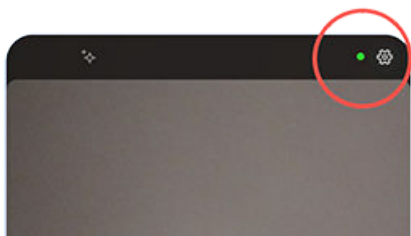
More ways to stay safe

Privacy dashboard

You can now see which apps have accessed your location, camera, or mic over the last 24 hours. Go to **Settings > Privacy > Privacy dashboard**. If you see anything that concerns you, adjust permissions from the dashboard.

Easily see when apps are using your microphone or camera

Check the [status bar](#) to see when an app is using your microphone or camera. [Learn more.](#)



Other improvements

Stay in touch

A new conversation widget puts the messages you care about front-and-center on your home screen so you never miss an important chat. You can even see missed calls, birthdays and more at a glance. Add the widget and check it out!

Enhanced gaming

Spend less time waiting and more time playing. Android 12 lets you play as you download, so you can jump straight into gameplay before the full download finishes.

Accessibility improvements

- **Area magnification:** A new window magnifier lets you zoom in on part of the screen without losing context from the rest of the screen. [Learn more.](#)
- **Extra dim:** Make your display extra dim for night-time scrolling or situations when even the lowest brightness setting is too bright. [Learn more.](#)
- **Bold text:** See text more clearly by switching the font to bold across the whole phone. [Learn more.](#)

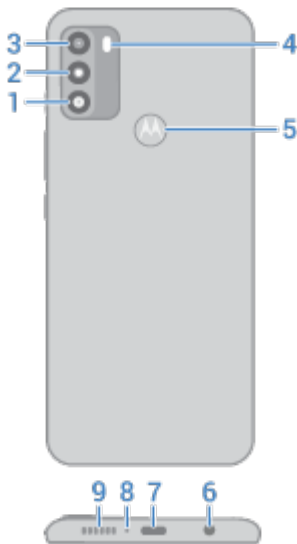
- **Grayscale:** Change all colors to grayscale. [Learn more.](#)

About your hardware

Hardware diagram



1. Tray for [SIM and SD cards](#)
2. Earpiece
3. Front camera ([learn more in Camera help](#))
4. Microphone
5. Proximity sensor
6. My Key button
7. Volume up/down button
8. Power button



1. Depth camera
2. Main camera
3. Macro camera
4. Flash
5. Fingerprint sensor
6. Headset jack
7. USB-C port to [charge phone](#), transfer files, and [share data connection](#) with tethered devices.
8. Microphone
9. Speaker

Care for your phone

To clean the screen:

- While this does not disinfect your phone, the best way to keep your phone clean is to wipe it thoroughly with a dry soft cloth. Avoid abrasive cloths, including paper towels and other materials with rough surfaces.
- If the screen gets drops of liquid on it, wipe it with a clean, dry cloth.

To disinfect your phone:

- It is okay to use wipes or cloths moistened with 70% isopropyl alcohol to gently wipe your screen.
- When disinfecting or cleaning your phone, turn it off and avoid getting any moisture in its openings, including the charging port, headphone jack, microphones and speakers.
- Don't submerge your phone in any cleaning agents, avoid using any cleaners with bleach or abrasives, and avoid spraying cleaners directly on the screen.

Prevent water damage

Your phone is water and splash resistant, but not completely waterproof. Avoid exposing your phone to water or any other liquids, and do not intentionally submerge it in any liquid. Water and splash resistance are not permanent, and the protection performance may continue to decline due to daily use.

Liquid damage is not covered by your warranty.

To prevent water damage to your phone:

- Do not expose your phone to pressurized water, salt water or liquids other than fresh water
- Dry your phone and ports thoroughly with a soft, clean cloth
- Don't try to charge your phone when it's wet
- Don't drop, puncture, or scratch your phone, as this could damage the water repellent features

About Qualcomm aptX audio technology

Your phone features Qualcomm aptX Adaptive audio for robust, high-resolution Bluetooth wireless audio.



Qualcomm[®] aptX[™] Adaptive

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About your home screen

You see the home screen when you turn on and unlock your phone or swipe up from the bottom of the screen.

Swipe right or left to move between home screens.

What's on the screen



1. Status bar: Displays the time and [icons](#) that tell you about your phone's battery and network connections. Swipe down on the LEFT side to see your notifications and swipe down on the RIGHT side for [quick settings](#).
2. Widget: You can add widgets to your home screen for quick access to information or frequent tasks.
3. Shortcut: You can add shortcuts to open apps or web pages you use frequently.
4. Favorites tray: A customizable set of your most used apps, accessible from any home screen.
5. Navigation bar: Use gestures to [move between apps and screens](#). You can use gestures but hide the bar. Or, you can replace the bar with the ◀ ● ■ [navigation icons](#) instead.
6. Folder: Add folders to organize app shortcuts.

Add/remove screens

You can add more home screens to the right. To add a page, drag an app shortcut or widget to the edge of an existing page and place it on the new screen.

To remove a home screen, drag all apps, shortcuts, widgets, and folders off the screen. After you remove the last item, the home screen will be removed.

Customize your home screen

Organize it:

- Touch & hold an item you want to move, then drag it to the new location.
- Group icons into folders.

Change how you get around: You can replace the navigation bar with the ◀ ● ■ [navigation icons](#).

Change how it looks:

- To see options for customizing [wallpaper](#), widgets, and other home settings, touch & hold a blank space on the home screen.

If this is your first smartphone

Learn the basics

To get around your phone, here are the key concepts.

- You can choose how you [move between apps and screens](#): gestures or  icons.
- In addition to tapping the screen to select items, you can use other gestures, such as pinch to zoom.
- The [icons](#) at the top of your home screen tell you important stuff at a glance, like your phone's battery level and network connection, and whether you've missed a call.
- Your phone and apps send you notifications for things like new messages, calendar events, and upcoming alarms. You'll find notifications in several places, and can do a lot with them.

To learn about these common tasks, tap one below:

- [Turn the flashlight on/off](#)
- [Listen to music](#)

Get apps

Your phone comes with many fun and useful apps, but you can really unlock its power by installing apps that suit your lifestyle. Go to  App Center to explore free and paid apps that help you be more productive, organized, informed, in touch, and entertained.

Protect your phone

You carry your phone around with you, and accidents happen; phones get lost sometimes. So set up some [security](#) and prevent heartache if you and your phone become separated.

Set up a screen lock. This is your first line of defense in keeping your sensitive information safe. Prefer numbers, shapes, words? Set up a PIN, pattern, or password required to unlock your phone. [Learn how.](#)

A screen lock doesn't prevent you from immediately answering a call or accessing your camera.

Display your owner info. On your lock screen, you can discreetly display a "please return" message with some of your contact info so that, if your phone is lost, someone can return it to you. [Learn how.](#)

Personalize your phone

While [changing your wallpaper](#) is probably your first [customization](#), don't stop there. Be sure to explore your [Settings](#) to set ringtones, font sizes, data usage preferences, keyboard preferences, and much more. It's a great way to learn many of your phone's capabilities while customizing it to suit your needs.

In most apps you can tap , , or your profile icon  for app-specific settings. Be sure to see what options are available to you there, too.

Manage cellular data

Understand your data usage. Keep an eye on your data usage and [learn how](#) to make the most of it. See which apps use [large amounts of data](#) and adjust their settings. If your phone is using too much data, you can also stop accounts from auto-syncing.

Use Wi-Fi to conserve cellular data. When you connect to a Wi-Fi network, your data will use that network connection instead of your carrier's network, saving your cellular data for when you need it. [Learn how to connect to Wi-Fi networks.](#)

Useful to know

Find phone info. To find your phone number, device name, and other information, go to **Settings > About phone**.

Never miss a photo opportunity. Automatically open the camera right from your lock screen. Just [twist](#) your phone twice.

Wi-Fi hotspot. You can [use your phone as a Wi-Fi hotspot](#) to share your internet connection with your other devices that need internet access (for example, a laptop or tablet).

Reboot phone. In the unlikely event that your phone becomes unresponsive, frozen, shows a blank or black screen, or doesn't respond to the [Power button](#), you can reboot it. Press & hold the Power button for 7 - 10 seconds. The phone will restart normally.

Certain features, services, and applications are network or carrier dependent and may not be available in all areas.

Status bar icons

About status icons

The [status bar](#) at the top of the home screen contains icons that help you monitor your phone.

- **On the left**, icons indicate app notifications, such as new messages or downloads. Swipe the LEFT side of the status bar down to see the notifications.
- **On the right**, icons indicate the status of phone settings, such as network connections, ring setting, and battery. Swipe the RIGHT side of the status bar down to make changes in [quick settings](#).

A dot means there are more icons to view. Drag down from the top of the screen to see all icons.

What status icons mean

These are the icons from apps that came on your phone and the phone status icons.

Icon	Meaning
CALLS	
	Active call.
	Missed call.
	Speakerphone on.
	Microphone muted.
NETWORK	
	Connected to cellular/mobile network (full signal). Speed of your network connection is also shown. Possible speeds, from slowest to fastest, are 3G, H, H+, 4G, 5G. Available speeds depend on your carrier and your location.
	Connected to different cellular/mobile network (roaming).
	Data Saver is on, preventing apps from using background data.



Wi-Fi network within range.



Connected to Wi-Fi network.



No SIM card.



Location services are in use.



Airplane mode on.

CONNECTIVITY



Bluetooth connected.



Trusted device connected.



Your phone is a Wi-Fi hotspot. Devices can connect to share your data connection.



Wireless display or adaptor connected.



Connected by USB cable.



USB tethering enabled.

SYNC AND UPDATES



Email and calendar sync in progress.



Upload complete.



Download complete.

SOUND



Vibrate.

DO NOT DISTURB



[Do Not Disturb](#) is on.

BATTERY



Battery fully charged.



Battery charging.



Battery low.



[Overcharge protection](#) is limiting battery to 80%.



Phone is in [Battery saver mode](#).

ALARM AND CALENDAR



Alarm set.



Upcoming calendar event.

EMAIL AND MESSAGING



New text message.



New voicemail.



Important alert.

OTHER ICONS



Privacy indicator. An app is using your microphone or camera.



Animated GIF is available.



Screen recording in process.

Apps that you download might show other icons to alert you about their status.

Certain features, services, and applications are network or carrier dependent and may not be available in all areas.

Use quick settings

Open quick settings

Settings you adjust frequently, like Bluetooth, are “quick settings”, easy to get to from any screen.

To see your quick settings, swipe down from the top RIGHT side of the screen. (If you swipe down from the LEFT side, you'll see your notifications.)

Adjust quick settings

- To adjust settings:
- **Tap** an icon to toggle the setting on/off.
 - **Touch & hold** an icon to adjust related settings.

Icon	Setting
	Internet: Wi-Fi
	Internet: Mobile data
	Bluetooth
	Do Not Disturb (You can add this to quick settings.)
	Auto-rotate
	Wallet
	Audio effects
	Flashlight



Airplane mode



Wi-Fi hotspot (Appears after you turn on hotspot the first time.)



Dark theme (You can [add this to quick settings.](#))



GIF maker (You can [add this to quick settings.](#))



Battery saver



Screen Record



Mic access (You can [add this to quick settings.](#))



Data Saver (Appears after you turn on Data Saver the first time.)



Night Light (You can [add this to quick settings.](#))



Easy mode



Location



Color inversion (Appears after you turn on Color inversion the first time.)



Extra dim (Appears after you turn on Extra dim the first time.)

Open all settings

To open the full list of all settings:

- [Open quick settings](#) and tap .
- Or, [open](#) the  **Settings** app.

Tip: To search for a setting, swipe down on the middle of your home screen to open Global Search.

Customize quick settings

Add, remove, rearrange quick settings

You can rearrange quick settings, putting your most used at the top. You can also add or remove them.

1. Open quick settings.
2. Tap .
3. Drag tiles to rearrange. Or swipe up to add new tiles.

To return quick settings to its original state, tap  > **Reset**.

Change style for quick settings

1. Go to **Settings** > **Home & Lock screen** > **Quick setting style**.
2. Choose the option you want:
 - To see quick settings and notifications together on the same screen when you swipe down from the top, touch **Classic style**.
 - To see quick settings and notifications on individual screens when you swipe down from the top RIGHT (quick settings) or top LEFT (notifications), touch **Modern style**.

Move between apps and screens

Choose how to get around

If you see the navigation bar at the bottom of the screen, or you see no icons at all, you are using **Gesture navigation**.



If you see ◀ ● ■ at the bottom of the screen, you are using **3-button navigation**.

You can change how you move between apps and screens: **Settings > System > Gesture shortcuts > System navigation****Settings > Gesture shortcuts > System navigation**.

Use gesture navigation

Use these gestures to move between screens and apps if you [chose Gesture navigation](#) and see _____ at the bottom of your home screen.

Action	Gesture to use
Switch between apps	At the very bottom of the screen, swipe left or right.
See all recent apps	Drag up from the bottom, hold, then let go.
Go back	Swipe towards the middle from the left or right edge of any screen.
Go home	Swipe up from the bottom of any screen.

Tip: For even more gestures, [turn on One-handed mode](#).

Use 3-button navigation ◀ ● ■

Use these icons to move between screens and apps if you [chose 3-button navigation](#).

- ◀ takes you back one screen.
- returns you to the home screen from any app.
- lets you [switch between recent apps](#).

Tip: For visual assistance, you can add  to open the [Accessibility Menu](#).

Open, close, switch apps

Open and close apps

To open an app, swipe down on the middle of the screen to open Global Search and type the first few letters of the app name, then select it. Or, tap its icon on the home screen.

To leave an app and go to your home screen, just swipe up from the bottom of the screen.

You don't need to close apps. Android manages the memory and battery that apps use, so you don't need to worry about leaving apps open.

To close one app, drag up from the bottom of the screen, hold, then let go. In your recent apps, swipe up on the app.

To close all apps, drag up from the bottom of the screen, hold, then let go. In your recent apps, swipe right until you see the start of the list, then tap **Clear all**.

Switch between open apps

1. To switch between recently used apps, swipe left or right over the [navigation bar](#).
You can also see a list of recent apps: drag up from the bottom of the screen, hold, then let go.
2. In the list of recent apps:
 - To see more apps, swipe left or right.
 - To switch to an app, tap it in the list.

Tip:

Use two apps at once with split screen.

Delete or disable apps

Disable apps provided with phone

You can't remove preloaded apps from your phone, but you can disable and hide apps that you don't need.

To disable an app:

1. Go to **Settings** > **Apps**.
2. Tap **See all # apps** > app you want to disable.
3. Tap **Disable**.

To re-enable a disabled app:

1. Go to **Settings** > **Apps** > **See all # apps**.
2. Tap the app.
3. Tap **Enable**.

You can remove any app from your homescreen.

Delete apps you installed

You can delete (uninstall) apps that you downloaded. For many preloaded apps, you can disable but not delete them.

1. Touch & hold the app's icon.
2. Do one of the following:
 - Drag the icon up and drop it on . This deletes the app and frees storage space.
 - If you don't see a delete option, touch & hold the app icon, then tap  > **Disable**.

Delete apps installed by others

If you are the **owner** of the phone and **shared it** with users or guests, you can uninstall apps they installed. Although their apps don't appear in your app tray or on your home screen, they do reduce available storage space.

1. Go to **Settings** > **Apps** > **See all # apps**.

Apps installed by others show the message **Not installed for this user**.
2. Tap the app name.
3. Tap  > **Uninstall for all users**.

Find problem apps with safe mode

Issues such as apps crashing, unexpected reboots, or fast battery drain could be caused by an app you installed. Use safe mode to start your phone with only the original software and apps. If the issues go away in safe mode, the problem is probably from an app you downloaded.

Step 1: Restart in safe mode

1. Press & hold the Power button.
2. Touch & hold **Power off**. Then tap **OK** to restart in safe mode.

When it restarts, you'll see **Safe mode** across the bottom of the home screen, and all widgets and third-party apps will be disabled.

Step 2: Check if the problem goes away

Use your phone and see if the problem has gone away. Remember, you won't be able to use any downloaded apps.

If the problem goes away, an app is probably causing your problem, so you should exit safe mode and check your apps.

If the problem doesn't go away, an app's not the cause. [Try these performance troubleshooting steps](#) next.

Step 3: Exit safe mode

Press & hold the Power button, then touch **Restart** .

Or, hold the Power button for about 30 seconds, or until your phone restarts.

Step 4: Check your apps

1. One by one, delete recently downloaded apps.
Keep a list of the apps as you go.
2. After you delete each app, restart your phone.
See whether removing that app solved the problem.
3. Once you've found and deleted the problematic app, you can restore the other apps you removed during testing.

Listen to music

Get music

Stream songs or download them to your phone so you can listen when you're on an airplane or don't have an internet connection.

Your phone can play MP3, FLAC, M4A, AAC, AAC+, MIDI, and WAV files.

To get music, do any of the following:

- Purchase it in a music app. Then stream it or download it using that app.
- Transfer it over USB or Bluetooth from your computer to your phone's Music folder.
- Upload it from your computer to the cloud and listen on any internet-connected device.

Use Volume buttons to switch tracks

When the screen is off, you can use the [Volume buttons](#) to switch tracks.

To set it up:

1. Go to [Settings](#) > **Sound & vibration**.
2. Tap **Media controls** and turn it on .

To switch tracks when the screen is off:

- For the next track, press & hold the Volume up button.
- For the previous track, press & hold the Volume down button. If this restarts the current track, press Volume down again.

Connect to Wi-Fi networks

Turn on and connect

Open [quick settings](#) and tap .

Your phone will automatically connect to Wi-Fi networks you've used before. If there aren't any, you can [search for nearby networks](#) and connect with one.

When you're connected, you'll see  in the [status bar](#).

Change, share, remove networks

After connecting to a Wi-Fi network, your phone saves its details to automatically connect to previously used networks. You can manually connect to a different nearby network, share a network, or remove a saved network you no longer want to connect automatically.

Search for new networks

To scan for nearby available networks that you haven't connected to before:

1. [Open quick settings](#), then touch & hold .
2. Turn **Wi-Fi** on .

You'll see a list of available networks. If a network needs a password, you'll see .

3. Do one of the following:
 - If the network is open (no ) , tap its name to connect.
 - To type a password from the network owner, tap the network to connect to, then enter the password. For your home network, get the password from the label on the Wi-Fi router. For a public network, get the password from the business or organization.
 - To connect using a QR code, swipe to **Add network**, then tap  and scan the code.
 - If the network is hidden, you'll need to [set it up](#) before it'll show up in the list of available networks.

Change networks

To switch to a network you've used before:

1. [Open quick settings](#) and tap **Internet**.
1. [Open quick settings](#), then touch & hold .
2. In the list of nearby networks:
 - To connect to a different network, tap its name.
 - To change settings for the currently connected network, tap  > .
 - To change settings for a saved, disconnected network, touch & hold its name, then tap **Modify**.

Share a network

You can share connection information with a friend so they can connect to the same network.

1. [Open quick settings](#), then touch & hold .
2. Tap the network you're connected to, then tap .
3. Show the person the code to scan or the Wi-Fi password to type.

Remove a network

If you don't want to automatically connect to a saved Wi-Fi network, you can forget that network.

1. [Open quick settings](#), then touch & hold .
2. If the network appears in your list of nearby networks, tap its name, then tap **Forget**.
3. To review all of your saved networks, tap **Saved networks**. For each network you want to remove, tap its name, then tap **Forget**.

Turn Wi-Fi off

To save battery life, turn off Wi-Fi when you're not near a Wi-Fi network.

[Open quick settings](#) and tap  to turn it off.

Advanced Wi-Fi settings

Disable Wi-Fi scanning

1. Go to [Settings](#) > **Location**.
2. Tap **Location services**.
3. Tap **Wi-Fi scanning** and turn it off .

If you turn this off, apps that [use your location](#) won't work as well.

Connect to hidden networks

1. [Open quick settings](#), then touch & hold .
2. Swipe down and touch **Add network**.
3. Enter the SSID (network name), security type, check **Show password** and enter the password.
4. Tap **Advanced options**, and change **Hidden network** to **Yes**.
5. Tap **Save**.

The hidden network is now visible in the list of available networks, and if you weren't connected to Wi-Fi previously, you're now connected.

6. If you were connected to Wi-Fi when you added the hidden network, in the list of available networks, tap the name of the saved network, then tap **Connect**.

Connect with Wi-Fi Direct

If you have a device, like a [printer](#) or TV, that supports Wi-Fi Direct, you can connect your phone without a wireless router or cable.

When you turn on your phone's [Wi-Fi](#), Wi-Fi Direct is automatically enabled.

To connect to a Wi-Fi Direct device:

1. On the device you want to connect, set up Wi-Fi Direct. For instructions, see that product's user guide.
2. On your phone, go to [Settings](#) > **Network & internet** > **Internet** > **Network preferences**.
3. Tap **Wi-Fi Direct**.

You'll see a list of Wi-Fi Direct devices that are within range and compatible.

4. Tap the device's name to connect.

Control data usage

Turn mobile data off/on

Open [quick settings](#) and touch .

When you turn off cellular data, you can still [use data over Wi-Fi](#).

Cellular data must be ON if you want to:

- Receive or send multi-media messages
- [Share your phone's internet connection](#) with other devices

Set data warning and limit

Data plans often have limits, and it's easy to exceed them. Setting up a usage warning can prevent surprises by alerting you when approaching your limit. You can even set a usage limit to turn off cellular data when it's reached, eliminating unexpected charges.

1. Go to [Settings](#) > **Network & internet** > **Mobile network**.
2. Tap the SIM name.
3. Tap **Data warning & limit**.
4. To set a warning, turn **Set data warning** on , then tap **Data warning** and enter the amount of data.
5. To set a usage limit, turn **Set data limit** on , then tap **Data limit** and enter the amount of data.

Restrict background data

Even when you're not actively using them, most apps use data in the background to sync information and deliver notifications.

To conserve data when you're running low, use Data Saver to turn off background data for all apps. You can also prevent specific apps from ever using background data, whether Data Saver is on or not.

Notifications stop: When you turn off background data for an app, you won't receive ANY notifications from the app until you open the app so it can sync.

Restrict for all apps when you're low on data

1. Go to [Settings](#) > **Network & internet** > **Data Saver**.
2. Turn **Use Data Saver** on .

You'll see  in your status bar and all apps are prevented from using background data.

3. To allow certain apps to continue using background data, tap **Unrestricted data**, then next to the app name, slide the switch on .

Restrict for specific apps indefinitely

1. Go to [Settings](#) > **Network & internet** > **Mobile network**.
2. If you're using two SIMs, tap the SIM name.

3. Tap **App data usage**.
4. Tap an app, then turn **Background data** off .

Dual SIMs

If your phone has two SIMs, cellular data is active on only one SIM at a time. You can control which SIM is used.

Share your internet connection

When you need an internet connection for another device, share your phone's:

- For wireless sharing with another Wi-Fi capable device, turn on your [Wi-Fi hotspot](#), which is great for range and speed. This uses more power, so it's best when you can plug in.
- For wireless sharing with a device in close proximity (like a phone next to a computer), you can use [Bluetooth tethering](#), offering you less interference in crowded Wi-Fi environments, more privacy, and less power consumption than your Wi-Fi hotspot.
- To share over a physical connection, connect your phone to a device with a [USB cable](#), providing a more stable, speedy, and safe connection in some situations than sharing over wireless connections.

Your cellular plan must support data sharing. If you don't know, contact your carrier.

Use your hotspot

Step 1: Set it up

1. Check that:
 - [Cellular data is on](#). (If cellular data is off, your phone doesn't have an internet connection to share.)
 - [Data Saver is off](#).
2. Go to [Settings](#) > **Network & internet** > **Hotspot & tethering**.
3. Tap **Wi-Fi hotspot** and do any:
 - Make it easier to find and connect to your hotspot. Tap the name for your hotspot and change it.
 - Prevent others from seeing your phone's network name. Check **Hide my device**.
 - See your current password or change it. Tap **Hotspot password**.
 - Help other devices find your hotspot. Be sure **Extend compatibility** is on .
 - Increase the hotspot connection speed. If you no longer need to assist others in finding your hotspot, turn **Extend compatibility** off.
 - Limit the number of devices that can connect, or restrict access to only devices you specify. Tap **Manage devices**.
 - Save battery life. Tap **Timeout settings** to configure when the hotspot should automatically turn off if no one is using it.

Step 2: Connect devices

1. Check that [cellular data is on](#). If cellular data is off, your phone doesn't have an internet connection to share.
2. Go to [Settings](#) > **Network & internet** > **Hotspot & tethering**.
3. Tap **Wi-Fi hotspot**.
4. Turn **Use Wi-Fi hotspot** on , then plug in your phone to charge. Using the hotspot really drains the battery!

When your hotspot is active, you'll see  in the [status bar](#).

5. Set up the connection.

To connect	Do this
A phone	a. On your phone, next to the hotspot's name, tap  and unlock if prompted. b. Use the other phone's camera to scan the QR code that provides the password.
Other device	a. Open the device's Wi-Fi settings. b. Select your phone's hotspot. c. Enter the hotspot password. Learn how to find the hotspot's password.

View or change password

1. Go to [Settings](#) > **Network & internet** > **Hotspot & tethering**.
2. Tap **Wi-Fi hotspot**.
3. Tap **Hotspot password** to see the current password.
4. To change the password, type over the current password.

Note: Although you can turn off passwords for your hotspot, keeping a password prevents unauthorized usage of your cellular data.

Manage hotspot connections

View number of connections

To see the number of devices connected to your hotspot:

- In [quick settings](#), look below .
- Or, go to **Settings** > **Network & internet** > **Hotspot & tethering** and look under **Wi-Fi hotspot**.

By [assigning a password](#) for your hotspot, you ensure that people can't connect to your hotspot without your knowledge or permission.

Disconnect everyone

To disconnect all devices and prevent them from reconnecting:

1. Turn the hotspot off.
2. [Change the password.](#)
3. Turn the hotspot back on to continue using it.

Control who can connect

If you're experiencing performance issues, you can limit the number of connections allowed or temporarily disconnect devices.

1. Go to **Settings** > **Network & internet** > **Hotspot & tethering**.
2. Tap **Wi-Fi hotspot** > **Manage devices**.
3. Do any of the following:
 - To limit number of devices allowed, tap **Device limit**.
 - To temporarily disconnect devices until your next hotspot session, under Connected devices, tap the device's name > **Disconnect**. The device will remain unable to connect until you turn off and restart the hotspot.

To allow only specified devices to connect:

1. Get the MAC addresses of the devices you want to allow to connect. (Connect devices to the hotspot normally, then go to **Manage devices**, and tap the name of each connected device to view its MAC address.)
2. Tap **Manage allowed devices** > **Add allowed device**.
3. For each device, enter the MAC address and device name.
4. Once you add allowed devices, they are saved unless you delete them, and you can turn this feature on and off by checking or unchecking **Allow all devices** any time.

To restrict access for a previously allowed device, tap the device name, then tap **Delete**.

USB tethering

To connect a device to the internet using your phone's cellular data and a USB cable:

1. Check that **cellular data is on**. If cellular data is off, your phone doesn't have an internet connection to share.
2. **Connect** your phone to your computer with a USB cable.
3. On your phone, go to **Settings**.
4. Tap **Network & internet** > **Hotspot & tethering**.
5. Turn on **USB tethering** to start the connection.

You'll see  in your notifications.

To stop the connection, tap the notification and turn off **USB tethering**, then disconnect your phone and computer.

Bluetooth tethering

To connect a device to the internet using your phone's cellular data and a Bluetooth connection:

1. Check that **cellular data is on**. If cellular data is off, your phone doesn't have an internet connection to share.
2. Turn on Bluetooth on your phone and **pair** with the other device.
3. Set up the other device to get its network connection via Bluetooth.
4. On your phone, go to **Settings**.
5. Tap **Network & internet** > **Hotspot & tethering**.
6. Turn on **Bluetooth tethering** to start the connection.

You'll see  in your notifications.

To stop the connection, tap the notification and turn off **Bluetooth tethering**.

Connect to VPNs

A virtual private network (VPN) lets you access files on a secure network like an office network with a firewall. Contact your network administrator for VPN settings and any additional apps or requirements.

To set up a VPN connection:

1. Go to **Settings** > **Network & internet**.
2. Tap **VPN**. If prompted, set a screen lock PIN or password.
3. Tap .
4. Choose the type of VPN and enter settings from the network administrator.
5. To always remain connected to the VPN, check **Always-on VPN**.
6. Tap **Save**.

The network is stored in the VPN list so you can select it when you need to connect.

Add a Private DNS service

Private DNS protects you when you browse the internet and use apps on your phone. It:

- Encrypts your data over a secure channel
- Prevents you from being redirected to fraudulent websites that appear legitimate
- Prevents you from receiving fraudulent communications from sources that appear legitimate (phishing)
- Prevents others from stealing your information as it's being sent or received (snooping)

Your phone is set to **Private DNS > Automatic** by default. So, as long as your mobile or internet service providers offer encrypted DNS, you're protected. Check with your mobile and internet providers.

Private DNS services

The only time you need to change this setting is if you have a free or paid DNS service to use, instead of relying on your mobile or internet providers. To add the service to your phone:

1. Go to **Settings > Network & internet > Private DNS**.
2. Select **Private DNS provider hostname**.
3. Touch **Enter hostname of DNS provider**.
4. Enter the URL for your DNS provider and touch **Save**.

If you no longer want to use the private DNS service:

1. Go to **Settings > Network & internet > Private DNS**.
2. Select **Automatic**.

We don't recommend turning Private DNS off.

Connect with Bluetooth

You can use Bluetooth to connect your phone to other devices without a cord. After you pair a Bluetooth device for the first time, your devices can connect automatically.

Turn Bluetooth on/off

Bluetooth uses more of your battery, so turn it off when not in use.

1. [Open quick settings](#).
2. Tap  to switch it on/off.

Pair with and use devices

To connect with a new Bluetooth accessory or other device, you need to pair with it. You only need to do this once for each device.

Your devices stay paired until you unpair them.

Pair with a device

1. Set the device you want to pair (accessory, computer, other phone, etc.) to Bluetooth discovery mode so that your phone can find it. See the device manufacturer's instructions.
2. On your phone, go to [Settings](#) > **Connected devices**.
3. Tap .

As the phone searches for available devices, you'll see .

4. Tap an available device to connect.
5. Do any of the following:
 - If a pairing code appears on your phone and Bluetooth device, make sure the codes match. (If they don't, tap **Cancel**, verify the name of the device you want to pair with, and try again.)
 - If your device shows a passkey (like 0000 or 1234), enter it on your phone. If you don't see a place to enter it, swipe down from the top LEFT of your screen and touch the Bluetooth notification.
 - If your device doesn't show a passkey and you must enter one for the device to pair, see the device manufacturers' instructions.
6. Tap **Pair** on your phone. Check the other device for a pairing prompt as well; if it has one, you'll need to confirm on both devices or pairing will fail.
7. [Set sharing options](#) if you'll want to share contacts, phone audio, media audio, or internet access.

Can't pair? [Troubleshoot the issue](#).

Use paired device

Tip: Bluetooth connections can really drain your battery. Save power by [turning Bluetooth off](#) when you're not connected to a device.

After pairing with a device, you'll need to set sharing options and then you can use Bluetooth to:

- Make or receive calls with a headset
- Make or receive calls and play music over your car's audio system
- Transfer music
- Share photos
- Share contacts
- Share [your phone's internet connection](#) with your computer

Reconnect with a device

1. [Open quick settings](#) and turn  on.
2. Turn on the Bluetooth device.

Configure, rename, or remove

Set sharing options for paired device

1. Go to [Settings](#) > **Connected devices**.
2. Tap  by the device's name.
3. Turn sharing options on or off.
4. On the paired device or in the device's app, look for Bluetooth settings to review and adjust. For more information, see the paired device manufacturer's instructions.

Change phone's name

You'll see your phone's name on other Bluetooth devices when you're pairing with them. You can change the name.

1. Go to [Settings](#) > **Connected devices**.
2. Tap  > **Device name**.

Remove (unpair) a device

1. Go to [Settings](#) > **Connected devices**.
2. Next to the device, tap  > **FORGET**.

Turn off Bluetooth scanning

When [Bluetooth is off](#), your phone can still scan and automatically connect to a [previously paired device](#). To prevent this, turn off Bluetooth scanning.

To turn off scanning:

1. Go to [Settings](#) > **Location**.
2. Tap **Location services**.
3. Turn **Bluetooth scanning** off .

If you turn this off, apps that [use your location](#) won't work as well.

Print from your phone

Set up printing

To connect your printer and phone:

1. Before you begin:
 - If your printer is connected to a Wi-Fi network, be sure the phone and your printer are connected to the same network.
 - If your printer supports Wi-Fi Direct, [set up a direct connection](#) between the phone and printer.
2. Go to **Settings** > **Connected devices** > **Connection preferences** > **Printing**.
3. Touch **Default Print Service** to automatically find your printer.

Once your printer is found, it is ready to print.

If your printer isn't found in Default Print Service:

1. Touch **Add service**.
2. In App Center, search for "[printer brand] print service" and install the app for the printer's service plugin.
3. Once installed, return to **Settings** > **Connected devices** > **Connection preferences** > **Printing** and touch the print service plugin name to automatically find your printer.
4. If your printer isn't found automatically, touch  > **Add printer** > .
5. Enter the printer's name and IP address (found in your printer settings on connected computer).

Print

1. Open the item to print, such as:
 - A photo in Gallery
 - An email
 - A document in Drive
 - A web page in Browser
2. Tap  or  > **Print**.
3. Select printer options if needed.
4. Tap .

Charge phone

Some apps and features use more power than others. So, depending on what you use, the amount of time before you need to charge will vary.

How to charge

Your phone doesn't support wireless charging. Use a USB charger or connect it to a power source with a USB cable.

Connect to charger

1. [Connect](#) your phone to the charger that came with your phone, or to a charger that is compatible with your phone.

Other chargers, including laptops, can charge more slowly.

2. Insert the plug into an electrical outlet.

See if your phone is charging

When the phone is off and charging, you'll see the outline of a battery and a percentage. If the battery is completely discharged, this will not appear until the phone has received the minimum voltage required to boot.

When the phone is on and charging, you'll see  in the [status bar](#).

Tips for charging phone

- You can use your phone while charging. To charge faster, don't use your phone while charging.
- If you can't turn the phone on while it's charging, wait until it receives enough voltage before turning it on.
- When the battery gets low, the phone sends a notification.
- Use [Battery saver mode](#) when the battery is low.
- You can turn off charging sounds.

Extend battery life

Choose settings that use less battery

To get the most life from your battery:

- **Connections:** Turn off [Bluetooth](#) and [GPS](#) when you're not using them.
- **Wi-Fi:** Turn on [Wi-Fi](#) when the phone is in a location with Wi-Fi coverage.
- **Screen:** Turn down [screen brightness](#), change to [Dark theme](#), and set a shorter screen timeout.
- **Sync:** If you don't need it, turn off automatic syncing for all accounts. This means you won't receive notifications when updates occur and you'll need to manually sync to get new emails.

Temporarily conserve battery power

Use [Battery saver](#) mode to keep going on a low battery.

Also, avoid these battery-intensive activities until you can [charge](#):

- Recording or watching videos
- Listening to music
- Taking pictures
- Using Live (animated) [wallpaper](#)

See what's using your battery

To see if a specific app or service is draining your battery:

1. Go to [Settings](#) > **Battery** > **Battery usage**.
2. Swipe up to view the list of apps and features using power since the last full charge.
3. Tap the app or feature using a lot of power.
4. Under **Manage battery usage**, tap options for reducing the power usage.

Use optimized charging

Optimized charging reduces stress on your battery and extends its overall life by limiting time spent charging it over 80%.

If your phone has been plugged in for a few days, it limits charging.

1. Go to [Settings](#) > **Battery**.
2. Tap **Optimized charging**.
3. Turn **Use optimized charging** on .

Prevent overcharging

Leaving your phone plugged into a charger can lead to overcharging, which over time shortens your battery's life. Overcharge protection keeps your battery healthy by limiting its charge to 80% if it's been plugged in for three days.

When Overcharge protection is limiting your charge, you'll see  in the [status bar](#).

To fully charge your phone from 80%, just disconnect it from the charger and plug it in again.

To turn this feature on or off:

1. Go to [Settings](#) > **Battery** > **Overcharge protection**.
2. Turn it on  or off .

Use Battery saver

Battery saver helps extend battery life until your next charge. Your phone can prompt you to activate it when the battery is low, or you can enable it anytime.

When Battery saver is on

When the phone is in Battery saver mode, you'll see  in the status bar.

To save power, your phone will:

- Turn on Dark theme (You can [turn it off](#), but that uses more battery.)
- Lower the [refresh rate](#)
- Wait until you use an app to refresh its content, like email or news
- Stop apps from doing things in the background
- Stop using Location services when your screen is off

Turn Battery saver on/off

[Open quick settings](#) and tap  to manually turn Battery saver on/off.

Turn Battery saver on automatically

1. Open quick settings, then touch & hold .
2. Touch **Battery saver**, then do either:
 - Turn **Follow schedule** on , then tap **Follow schedule** and enter start/end times.
 - Turn **Follow battery percentage** on , then tap **Follow battery percentage** and adjust the percentage at which Battery saver turns on.

Tip: Battery saver turns off while your phone is charging. It turns back on when you unplug the phone.

Show battery percentage in status bar

To show the percentage of battery power remaining in the status bar:

1. Go to **Settings** > **Battery**.
2. Turn **Battery percentage** on .

Turn notifications on/off

Turn off app notifications

When you receive unwanted notifications from an app, touch & hold the notification, then tap **Turn off notifications**.

To review all apps and adjust whether they can send notifications:

1. Swipe down from the top LEFT to view your notifications.
2. At the bottom of the list, tap **Manage notifications**.
3. Tap **App settings**.
4. Do one of the following:
 - To stop all notifications from an app, turn it off .
 - To stop certain notifications from an app, tap the app name, then turn notifications  or off  for each category.
 - To stop an app from showing notifications as a banner across the top of an unlocked screen, like those for incoming calls, tap the app name, (if needed, tap the notification type), then turn **Pop on screen** off  for the category.

Tip: To prevent notifications from all apps during certain times or calendar events, use [Do Not Disturb](#).

Turn on app notifications

If an app isn't sending notifications but you want it to:

1. Go to [Settings](#) > **Notifications**.
2. Tap **App settings**.
3. At the top, tap ▼ and select **Turned off**.
4. Turn notifications on  as needed.

Control lock screen notifications

If you've [set a pattern, PIN or password](#), you can control which type of notifications show on your lock screen and prevent them from revealing private information.

To adjust notifications for all apps:

1. Go to [Settings](#) > **Notifications**.
2. To hide sensitive content on your lock screen, turn **Sensitive notifications** off .

You'll get lock screen notifications for an incoming email or chat, but they won't include message details.

For finer control, leave this on  to allow details, and instead hide sensitive content from specific apps.

3. To change which notifications show on your lock screen (show all, hide notifications from apps you [silenced](#), or hide all), tap **Lock screen**.

To hide sensitive content from specific apps:

1. Set lock screen notifications for all apps to **Show conversations, default, and silent**.
2. Touch & hold the app icon, then tap ⓘ > **Notifications**.
3. Types of notifications the app sends appear here. For each enabled notification that you want to hide:
 - a. Tap the name.
 - b. Tap **Lock screen** > **Show sensitive content only when unlocked**.

Tip: When you [turn on Lockdown](#), notifications won't show on your lock screen.

Control notification sound

Change notification volume

To adjust the volume level of all notifications:

1. Press a Volume button and on the screen tap .
2. Adjust the **Notification volume** slider.

Change notification sound

You can modify the notification sound for all apps, or assign a distinctive sound to notifications from a specific app, replacing the default.

Set default notification sound

1. Go to **Settings** > **Sound & vibration** > **Default notification sound**.
2. Do one of the following:
 - To change it, choose a new sound.
 - To turn notification sounds off, select **None**.

Set notification sound for a specific app

1. Touch & hold the app icon.
2. Tap  > **Notifications**.
3. Tap the category for enabled notifications, then tap **Sound** and select a unique ringtone, or set it to none.

If you can't hear a notification

If an app's notifications are silent but you want to hear them:

1. Touch & hold a notification.
2. Tap **Default**.

To let an app's notifications be heard when **Do Not Disturb** is on:

1. Touch & hold the app icon.
2. Tap  > **Notifications**.
3. Tap the category for enabled notifications and turn **Override Do Not Disturb** on .

Silence an app's notifications

To temporarily silence notifications from **all** apps, use **Do Not Disturb**.

Change to Silent

If you want an app's notifications to be less intrusive, you can categorize them:

- **Default:** You'll hear a sound and feel vibration (if on), get a message on your lock screen, and can see the app's icon in your status bar.
- **Silent:** You won't hear a sound or feel a vibration. The notification icon will still show in the [status bar](#), unless you hide them.

Option 1: On a notification

1. Touch & hold a notification.
2. Tap **Silent**.

Option 2: In Settings

1. Go to [Settings](#) > **Notifications** > **App settings**, and select the app.
2. Tap the type of notification to change.
3. Tap **Silent**.

Hide silent notifications

1. Go to [Settings](#) > **Sound & vibration** > **Do Not Disturb**.
Or, in quick settings, touch & hold .
2. Tap **Display options for hidden notifications**.
3. Select what to allow or block:
 - **No sound from notifications:** You will see notifications in the pull-down list of all notifications but won't hear their sound.
 - **No visuals or sound from notifications:** You won't see or hear notifications.
 - **Custom:** Start with not seeing or hearing notifications, and make small adjustments, like allowing notification dots on app icons.

Hide status bar icons for silent notifications

To hide the icons for silent notifications from **all** apps:

1. Go to [Settings](#) > **Notifications**.
2. Turn **Hide silent notifications in status bar** on .
3. Restart the phone to apply the new settings.

You won't see the icon in the status bar for any silent notifications. When you swipe the status bar down, the icon appears in the pull-down along with the notification.

Tip: To hide status bar icons for a single app, open the app and look in its settings. Only some apps let you do this.

See previously viewed notifications

After you clear or snooze notifications, you can go to your notification history to view them again.

To set it up:

1. Go to **Settings** > **Notifications**.
2. Tap **Notification history**.
3. Turn **Use notification history** on .

To see the history, go to **Settings** > **Notifications** > **Notification history**.

Adjust screen brightness

To set your screen's brightness, open [quick settings](#) and slide .

Your phone automatically adjusts your screen to the light around you, with Adaptive brightness. When the feature is on, you can still fine tune the brightness in quick settings. To turn this feature off:

1. Go to [Settings](#) > **Display**.
2. Turn **Adaptive brightness** off.

Tips:

- If the lowest setting on the  slider is still too bright, you can [make the screen extra dim](#).
- If Adaptive brightness stops working as desired, you can reset it to retrain the system.

Use Dark theme

Give your eyes and battery a break by changing to a dark background.

When Dark theme is on:

- The dark background applies to your settings and apps.
- Colors don't change in media, such as videos.
- Not all apps support Dark theme. To change those apps to a dark background, in order to reduce eye strain while reading, [use color inversion](#).

When it's off, if you run low on battery, [Battery saver](#) switches temporarily to the dark background until the phone has charged.

Turn it on or off

1. [Open quick settings](#).
2. Tap .

Set a schedule

1. [Open quick settings](#), then touch & hold .
2. Tap **Schedule**, then select one:
 - To start and stop at specified times, tap **Turns on at custom time** and enter times.
 - To use from dusk to dawn, tap **Turns on from sunset to sunrise**.

Change font and display size

You can make the text or other items on your screen smaller or larger for your comfort and convenience.

1. Go to **Settings** > **Display**.
2. Do any of the following:
 - To adjust the size of text on the screen, touch **Font size**, then drag the slider to the size you want.
 - To adjust the size of icons and other screen elements, touch **Display size**, then drag the slider to the size you want.

If you need more help seeing the screen

[Turn on accessibility features](#), like magnification to zoom in and out or a screen reader to hear audio descriptions of what you touch on the screen.

Adjust other font and display options

Touch & hold a blank space on your home screen, then tap  **Personalize**.

Adjust refresh rate

The action you see on your screen is a series of frames strung together, like a movie. A higher display refresh rate shows more frames per second, making the action smoother and more responsive. This uses more battery power.

You can adjust the display refresh rate, depending on your needs:

- For the smoothest, most responsive display, use the highest refresh rate.
- To save battery power, use a lower rate.

Note: When [Battery saver](#) is on, the refresh rate is set to 60Hz.

To raise or lower the refresh rate:

1. Go to [Settings](#) > **Display**.
2. Tap **Display refresh rate**.
3. Select the rate.

Adjust colors at night

If you selected a color mode, it will resume outside of night hours.

Automatically change screen to amber

Your phone can automatically filter out blue light and adjust screen colors to warmer tones at night, making it easier to view and read in dim light. You might even fall asleep more easily.

1. Go to [Settings](#) > **Display** > **Night Light**.
2. Touch **Schedule**, then:
 - To start and stop at specified times, touch **Turns on at custom time** and enter times.
 - To filter from dusk to dawn, touch **Turns on from sunset to sunrise**.

To adjust filter intensity, [open quick settings](#), touch & hold , then use the slider to change the intensity of the amber filter.

Turn it off

To temporarily switch back to regular colors from amber, [open quick settings](#) and turn off  Night Light.

To stop automatically changing to amber, select **Settings** > **Display** > **Night Light** > **Schedule** > **None**.

Use a screen saver

Set up screen saver

While your phone is idle on a dock or charger, turn it into a desk clock, a photo frame to show off your pics, or more.

1. Go to **Settings** > **Display**.
2. Tap **Screen saver**.
3. Do any of the following:
 - To change screen savers, tap **Current screen saver**, then select one. To set options for that screen saver, tap .
 - To preview your selection, tap **Use screen saver**. Tap the screen anywhere (unlock if necessary) to return to settings.
 - To adjust when the screen saver starts (while docked, charging, or either), tap **When to start**.

Start screen saver

The screen saver automatically starts when you connect your phone to a dock or charger and the screen turns off.

To exit the screen saver and return to your home or lock screen:

- Press the Power button.
- Or, if you're using [fingerprint security](#), touch the sensor.

Turn off screen saver

To prevent the screen saver from starting automatically:

1. Go to **Settings** > **Display**.
2. Tap **Screen saver** > **When to start** > **Never**.

Add screen savers

Search for “Screen saver” in App Center for apps that give you more.

After you install an app, you can select the new ones in **Settings** > **Display** > **Screen saver**.

Set screen recording options

To adjust settings before recording your screen:

1. Open recording options:
 - In [quick settings](#), touch & hold .
 - Or, go to **Settings > Display > Screen record**.
 - If you're playing a game and Gametime is on, tap , then touch & hold .
2. Use the **Viewfinder size** **Avatar size** option to resize the small frame that shows you when the camera is on during screen recording.
3. To show screen touches, turn **Record touch points** on .
4. Adjust the quality or file size as needed:
 - If you want the best quality recording, use the highest resolution.
 - To minimize the recording file size, select a lower resolution.

See Peek Display notifications

About Peek Display notifications

When your screen is off, battery-friendly notifications fade in and out, lighting only the pixels needed and showing notifications delivered since you last woke your screen. You can select which apps show notifications and limit content to control your privacy.

These notifications aren't displayed:

- When the phone is in your pocket or purse
- When the phone is lying face down
- When you are on a call
- When [Do Not Disturb](#) is on

Respond to Peek Display notifications

Check for notifications

If you haven't seen activity for a while, to wake your phone, bump it.

Peek at contents

Touch & hold an icon to preview the notification.

View more and take action

For more details and notifications, drag an app icon up, or drag it to . Then:

- To respond, drag the app icon to an action, like reply  or archive .
- To dismiss, drag the app icon to **Dismiss**.

Change Peek Display settings

1. Go to [Settings](#) > **Display** > **Peek Display**.

Or, [open](#) the **Moto** app and tap  > **Display** > **Peek Display**.

2. Tap **Settings** and do any of the following:

- To change the style of the clock on the notifications screen, tap **Clock**, select the type, then tap **Customize** for more options.
- To see a black background for these notifications instead of an animated one that fades in and out, turn **Animated background** off .
- To prevent phone from vibrating when you tap a notification or drag it to an action (like Dismiss), turn **Vibrate on touch** off .
- To allow replies without unlocking the phone, turn **Safe reply** off . To require unlocking to reply, keep it on .
- To stop specific apps from showing these notifications, tap **Block apps** >  and tap the app's name.

Stop Peek Display notifications

1. Go to **Settings** > **Display** > **Peek Display**.
Or, **open** the **Moto** app and tap  > **Display**.
2. Turn **Peek Display** off .

To restart the notifications, turn Peek Display on .

Visual assistance

Adjust colors if you’re color blind

Color correction is an experimental feature and might not work correctly everywhere on your phone.

Turn it on

1. Go to **Settings** > **Accessibility** > **Text and display**.
2. Tap **Color correction** and turn **Use color correction** on .
3. To replace all screen colors with gray tones, choose **Grayscale**. Or, correct colors based on your vision:

How you see colors	Option to choose	
It’s difficult to tell violet from blue. Yellow and green appear redder.	Deuteranomaly (red-green)	
Colors aren’t bright. Red, orange, and yellow appear greener.	Red-green (Red weak, protanomaly)	Protanomaly (red-green)
It’s difficult to tell yellow and red from pink. Blue appears greener.	Tritanomaly (blue-yellow)	

If colors don't appear as you expect, [troubleshoot the issue](#).

Add a shortcut

To use an [accessibility shortcut](#) for quickly turning Color correction on/off:

1. Go to **Settings** > **Accessibility** > **Text and display** > **Color correction**.
2. Turn **Color correction shortcut** on .
3. Tap **Color correction shortcut** and choose one or more shortcuts:
 - For a  shortcut on your home screen, select **Tap accessibility button**.
 - To press & hold both Volume buttons simultaneously, select **Hold volume keys**.

Use color inversion

Color inversion flips all colors on your screen, turning light screens dark and dark screens light. This affects everything on screen, including media and images. While it can make reading text easier (light text on a dark background), it can also make it harder to understand images and videos.

If you're [using Dark theme to reduce eye strain](#) when reading, you might encounter specific apps that don’t support it and still have a light background. Turn Color inversion on to use those apps with a dark background. You can use quick settings or a shortcut to easily turn Color inversion on and off.

Turn it on

1. Go to **Settings** > **Accessibility** > **Text and display**.
2. Tap **Color inversion**.
3. Turn **Use color inversion** on .

 is added to your **quick settings** so you can easily turn it off/on.

Add a shortcut

To use an **accessibility shortcut** as an alternate to the  quick setting:

1. Go to **Settings** > **Accessibility** > **Text and display** > **Color inversion**.
2. Turn **Color inversion shortcut** on .
3. Tap **Color inversion shortcut** and choose one or more shortcuts:
 - For a  shortcut on your home screen, select **Tap accessibility button**.
 - To press & hold both Volume buttons simultaneously, select **Hold volume keys**.

Use it

Open quick settings and tap  to turn it on/off.

Or, if you set up accessibility shortcuts, tap  or press & hold both Volume buttons.

Make screen extra dim

If the  **brightness slider in quick settings** doesn't go low enough, you can set the screen to extra dim.

Set it up

1. Go to **Settings** > **Accessibility** > **Extra dim**.
2. Turn **Make screen extra dim** on .

The first time you do this,  Extra dim is added to quick settings.

3. Use the **Intensity** slider to dim the screen.
4. Optional: After you restart the phone, Extra dim will be turned off. To prevent this, turn on **Keep on after device restarts** .

Add a shortcut

To use an **accessibility shortcut** as an alternate to the quick setting:

1. Go to **Settings** > **Accessibility** > **Extra dim**.
2. Tap **Extra dim shortcut** and select the shortcuts to use:
 - For a  shortcut on your home screen, select **Tap accessibility button**.
 - To press & hold both Volume buttons simultaneously, select **Hold volume keys**.

Use it

Open quick settings and tap  to turn it on/off. Touch & hold  to adjust intensity and other settings.

Or, if you set up accessibility shortcuts, tap  or press & hold both Volume buttons.

Bold all text

To change all text on the screen to bold for easier reading:

1. Go to **Settings** > **Accessibility** > **Text and display**.
2. Turn **Bold text** on .

Magnify the screen

You can magnify the screen by triple tapping it or by swiping up from the bottom of the screen with two fingers. If you're using **3-button navigation**, you can add  to magnify.

Turn it on

To set up the way to start (zoom in) and stop (zoom out) magnification:

1. Go to **Settings** > **Accessibility** > **Magnification**.
2. Turn **Magnification shortcut** on .

The  shortcut is added to your screen.

3. You can magnify the entire screen or you can use a magnifier that you can move around to zoom in on parts of the screen.

To switch between methods, leave **Magnification type** set as **Switch between full and partial screen**.

If you want to always magnify the entire screen, tap **Magnification type** and choose **Magnify full screen**.

If you only want the magnifier box, tap **Magnification type** and choose **Magnify part of screen**.

Add a shortcut

To use gestures in addition to the  shortcut:

1. Go to **Settings** > **Accessibility** > **Magnification**.
2. Tap **Magnification shortcut** and:
 - To press & hold both Volume buttons simultaneously, select **Hold volume keys**.
 - To quickly tap the screen three times, select **Triple-tap screen**.

Turning this on might make your phone feel slower. After you turn on magnification, single taps take slightly longer. This short delay lets your phone find out if your tap is part of a triple tap.

Use magnification

1. To start magnification, tap .

You'll see an orange border around the screen.

2. Tap the area of the screen to magnify, then:
 - Drag two or more fingers to scroll.
 - Pinch two or more fingers to adjust zoom.
 - Tap  to magnify a framed area instead of the full screen. Then use two fingers or  to drag the frame around the screen.
 - Tap  to switch to full screen magnification.
 3. To turn magnification off, tap .
- The orange border disappears.

To zoom temporarily:

1. Start magnification: swipe up from bottom of screen with two fingers, or tap .
2. Touch & hold anywhere on the screen, then:
 - Drag to move around the screen.
 - Lift your finger to zoom out.

You can't zoom in on the keyboard or the    buttons.

Fix an issue

If you open or close an app when zoomed in, your phone automatically zooms out. To zoom in again, use .

Use TalkBack to read screens

Hear descriptions of everything you touch.

Set it up

1. Go to **Settings** > **Accessibility**.
2. Tap **TalkBack** and turn **Use TalkBack** on .
3. Tap **Settings** and set the options you want.

Add a shortcut

To add an [accessibility shortcut](#) for quickly turning TalkBack on/off:

1. Go to **Settings** > **Accessibility** > **TalkBack**.
2. Turn **TalkBack shortcut** on .
3. Tap **TalkBack shortcut** and choose one or more shortcuts:
 - For a  shortcut on your home screen, select **Tap accessibility button**.
 - To press & hold both Volume buttons simultaneously, select **Hold volume keys**.

When TalkBack is on

To hear descriptions:

- Tap an item. Your phone speaks the name.
- Start typing. Your phone speaks each number or letter.
- Drag status bar down. Your phone speaks all of the notifications.
- Open a message, file, or book. Your phone reads the text out loud.

To change readout volume:

- Press a Volume button to open volume settings, then use the  slider to adjust the level.
- Or, during voice readout, repeatedly press a Volume button.

Stop readout

If you added the shortcut, tap  or press & hold both Volume buttons.

Or, turn TalkBack off:

1. Go to **Settings** > **Accessibility**.
2. Tap **TalkBack** and turn **Use TalkBack** off .

Hearing assistance

Caption all speech

Your phone can automatically caption videos, podcasts, audio messages, and recordings.

Turn captions on/off

Press a Volume button, then turn it on  or off . (If you don't see this icon, open the **Live caption** app and turn **Live Caption in volume control** on .)

Or, open the **Live caption** app and turn **Live Caption** on  or off .

Battery use: When your battery gets low and [Battery saver](#) is on, Live Caption automatically turns off.

Use the caption box

- To move captions, drag the box.
- To expand or shrink captions, touch the box twice.

Turn on video captions

1. Go to [Settings](#) > **Accessibility**.
2. Tap **Caption preferences** and turn **Show captions** on .
3. Specify options (language, text size, and style) for closed captioning.

Dexterity assistance

Change timing controls

If you need more time to respond to a notification or messages that are visible only temporarily, you can adjust the time before they disappear:

1. Go to **Settings** > **Accessibility**.
2. Tap **Timing controls**.
3. Adjust settings:
 - You can adjust the amount of time before your touch/tap on the screen becomes touch & hold. If you find that you accidentally touch & hold when you intend to tap, choose a longer delay. Use **Touch & hold delay** to select short, medium, or long delay.
 - If messages that ask you to take action are disappearing too quickly, tap **Time to take action** and choose a longer time. Not all apps support this setting.
 - If you're using a connected mouse, you can set the cursor to click automatically when the cursor stops moving for an amount of time. Tap **Autoclick (dwell timing)** and select the amount of time.

Use accessibility shortcuts

About accessibility shortcuts

Shortcut: Essential controls for your phone

The  [accessibility menu](#) gives quick access to essential features on your phone.

Shortcut: Accessibility features

Easily turn accessibility features on/off from any screen. For each feature you're using, you can:

- [Add a button to the screen](#). The button fades when not in use.
If you set up multiple buttons, they display as a group; drag to reposition the group around the sides of the screen.
If you're using gesture navigation, you can set up a gesture instead of buttons.
- [Set your phone so that you press both Volume buttons to turn the feature on/off](#).
If you set this up for multiple accessibility features, you'll see a list of those features when you press both Volume buttons.

Use accessibility menu of essential controls

Open a large menu where you can:

- Call your assistant
- Open accessibility settings
- Lock or turn off the phone
- Adjust volume
- Adjust brightness
- See recent apps to return to one
- Take a screenshot
- Open quick settings

Turn it on

1. Go to [Settings](#) > **Accessibility**.
2. Tap **Accessibility Menu**.
3. Turn **Accessibility Menu shortcut** on .
4. To increase the size of the buttons on this menu, tap **Settings**, then turn **Large buttons** on .

Use it

If you're using [gesture navigation](#):

1. Use two fingers to swipe up from the bottom of the screen.

2. Choose an option from the menu.

If you're using [3-button navigation](#):

1. At the bottom of the screen, tap .
2. Choose an option from the menu.

Manage accessibility buttons

For each accessibility feature you're using, you can add a button to the screen to quickly turn the feature on/off.

Add buttons

When you turn on an accessibility feature in **Settings > Accessibility**, if the feature supports shortcuts, you'll see a switch to turn on the shortcut. Tap the switch's name to see options for adding the button and assigning the feature to the Volume buttons.

Change button size and transparency

This setting applies to the shortcuts for all accessibility features.

1. Go to **Settings > Accessibility > Accessibility shortcuts**.
2. If you're using 3-button navigation, tap **Accessibility button**.
If you're using gesture navigation, tap **Accessibility button & gesture**.
3. Adjust how the buttons look and work:
 - Tap **Size** and choose **Large** or **Small**.
 - To keep the buttons always visible, turn **Fade when not in use** off .
 - To make the buttons more or less transparent, drag the **Transparency when not in use** slider.

Gesture navigation: Choose between buttons and gesture

If you're using [gesture navigation](#), you can choose between using a gesture or a button for accessibility shortcuts. This setting applies to the shortcuts for all accessibility features.

1. Go to **Settings > Accessibility > Accessibility shortcuts**.
2. Tap **Accessibility button & gesture**.
3. Tap **Use button or gesture** and select which to use.

Press Volume buttons for accessibility features

You can press & hold the Volume buttons to turn accessibility features on/off.

Set it up

1. When you turn on an accessibility feature in **Settings > Accessibility**, if the feature supports shortcuts, you'll see a switch to turn on the shortcut. Tap the switch's name to see the option for using the Volume button gesture as the shortcut.
2. If you've assigned two or more accessibility features to the Volume buttons, you can add more shortcuts with the gesture. Press & hold both Volume buttons, then tap **Edit shortcuts** to select from a list of all accessibility features.

Use the shortcut

Press & hold the Volume Up and Down buttons at the same time for three seconds.

If you assigned multiple accessibility features, you'll see a list. Tap a feature to it turn on/off.

Use location services

About location information

You can let your phone use GPS, Wi-Fi networks, mobile networks, and sensors to estimate your location. Apps that have your permission can use this information to deliver location-based services, such as the ability to check in, view traffic, find nearby restaurants, or tag your photos with the location where you took them.

Turn location on or off

To control what location information your phone can use:

1. Go to [Settings](#) > **Location**.
2. Turn **Use location** on  or off  to give or remove permission to use your location information.

When it's off, your phone can't find your precise location or share it with any apps. However, turning this off disables many useful features and apps.

Tip: To add a Location tile to quick settings, [open quick settings](#). Tap . Then drag the Location tile where you want it.

Review apps using your location

To see which apps have recently accessed your location:

1. Go to [Settings](#) > **Location** > **App location permissions**.
You'll see apps listed by those allowed all the time, some of the time, and not allowed.
2. To change permissions, tap the app name, then select the location access you want.

Fix an issue

Issue: Location isn't working

After each step, check to see if the issue is fixed.

1. [Turn location off](#) and then on again.
2. Turn airplane mode on, wait 15-20 seconds, then turn it off again.
3. If you're using a case, remove it and check if GPS is working. The case might be obstructing the sensor.
4. [Check if Battery saver is on](#). To save power, when Battery saver is on, your phone disables location services.
5. Turn your phone off and then on again.
6. Check for updates to the Amap app. After updating the app, restart your phone.
7. Clear the cache and data for the Amap app.

8. [Use safe mode](#) to see if apps you installed are causing the issue and uninstall as needed.

If location works correctly in safe mode, a 3rd party app is probably causing the issue. A lot of apps use your phone's location. If these apps end up with corrupted files, it can affect your phone's location too.

Add or remove accounts

Add accounts

You can connect to your accounts for email and social networking.

Email or other app account

Accounts are automatically added when you:

- Set up corporate email
- Set up personal email
- Install apps that require a username/password to log in, such as messaging, shopping, or streaming content

To review these accounts or add another:

1. Go to [Settings](#).
2. Tap **Passwords & accounts** > **Add account**.
3. Tap the type of account to add and follow the onscreen instructions.

If you don't see the type of account you want to add, install the related app from App Center, then sign into your account through the app.

4. Once the account is added, account-related features and apps are updated with information from that account. To review and change what syncs with your phone, tap the account type, then account name.

Remove accounts

If you remove an account, information you synced will be removed from your phone, but it is not deleted from your account.

To remove an account:

1. Go to [Settings](#) > **Passwords & accounts**.
2. Tap the account name.
3. Tap **Remove account**.

About security

Screen lock options

To keep your phone secure, use a screen lock when it goes to sleep:

- [Set up a pattern, PIN, or password](#) to unlock your phone.
- Set up facial recognition if you want to unlock with your face.

When your phone is locked, you can:

- Access notifications and quick settings, start a call, and open the camera from the lock screen.
- Make emergency calls on a locked phone. A locked phone still rings; you don't need to unlock it to answer.

If you forgot your pattern, PIN, or password, follow these steps.

You can customize the lock screen by adding your contact info. You can also [control which notifications appear on your lock screen](#).

Fingerprint sensor

Quickly and easily verify your identity using the [fingerprint sensor](#) on your phone, instead of entering a password, PIN, or pattern to unlock the phone, make online and in-store purchases, and sign into banking and financial apps.

You can [add and remove fingerprints](#).

Fingerprints:

- Are created from features of your fingertip, converted to a mathematical representation, and then encrypted and stored only on the phone. No fingerprint images are ever stored.
- Are never shared with other apps. Your phone only shares the verification, not the fingerprint.

Note: A fingerprint screen lock may be less secure than a strong pattern or PIN lock. It is possible to unlock the phone using a physical copy of a matching fingerprint.

Additional security options

- Protect your phone in case it's lost or stolen. Use Find My Device.
- [Connect to a virtual private network](#) if you need to access files on a secure network.
- See when apps are using your microphone and camera and block them if needed.
- [Add a SIM lock](#) to prevent others from using your cellular plan and accessing account information if your phone is stolen.

Set a screen lock

You can set up a screen lock to secure your phone. Each time you turn on your phone or turn on the screen, you'll be asked to unlock it.

Set or change screen lock

1. Go to [Settings](#) > **Security**.
2. Tap **Screen lock** and select the [type of lock](#) you want.

Some lock options aren't available if you added a [VPN](#) or a work (corporate) email account to your phone.

Tip: After you set up a pattern, PIN, or password, you can [set up fingerprint security](#) to unlock your phone with the fingerprint sensor.

Screen lock types

No lock:

- **None:** This gives no protection, but you can quickly access your home screen.
- **Swipe:** Swipe  up. This prevents accidental dialing but doesn't secure the phone.

Standard lock:

- **Pattern:** Draw a pattern on a grid.
- **PIN:** Enter a four to six digit numeric code. (To create your PIN, tap .) Longer PINs are more secure.
- **Password:** Enter four to sixteen letters, digits, or symbols for the password. A long, strong password is the most secure option.

Remove screen lock

1. Go to [Settings](#) > **Security**.
2. Tap **Screen lock**.
3. Enter your current PIN, password, or pattern to confirm your identity.
4. Select **None** or **Swipe**.

Quickly tighten lock screen security

Unlocking with the [fingerprint sensor](#) and setting up automatic unlocking make it easier to keep your phone secure and minimize when you need to enter your PIN, pattern, or password. But sometimes you need to trade convenience for more security. You can temporarily tighten locks and prevent lock screen notifications.

1. Press & hold the Power button.
2. Touch **Lockdown**.

Your fingerprint sensor and automatic unlock settings are disabled and notifications won't be displayed on your lock screen.

3. To exit Lockdown, unlock your phone with your PIN, pattern, or password.

Set advanced lock options

Use these options to control when your phone locks and whether your code is visible when you unlock.

You can also control what content is included on your lock screen.

Set time before locking

Unless kept unlocked automatically, your phone locks the screen five seconds after the screen turns off.

To increase or decrease the amount of time before automatically locking the screen:

1. Go to [Settings](#) > **Security**.
2. Next to **Screen lock**, tap .
3. Tap **Lock after screen timeout**, then select a duration.

Stop Power button from instantly locking

You can manually lock your phone by pressing the Power button. If you want the Power button to turn off the screen but not lock it:

1. Go to [Settings](#) > **Security**.
2. Next to **Screen lock**, tap .
3. Tap **Power button instantly locks** off .

After the screen turns off, your phone will still lock after the time set for [the automatic lock](#).

Hide your pattern

You can hide your PIN or pattern to prevent others from viewing it when you unlock your screen.

To hide patterns (if you're using a [pattern screen lock](#)):

1. Go to [Settings](#) > **Security**.
2. Next to **Screen lock**, tap .
3. Turn **Make pattern visible** off .

Hide passwords

To control whether characters briefly display when you enter a password to unlock your phone or log into websites and apps:

1. Go to [Settings](#) > **Privacy**.
2. Turn **Show passwords** off .

Use fingerprint security

Set up fingerprint security

Use the [fingerprint sensor](#) to unlock your phone, make fast and secure online and in-store purchases, and sign into bank and finance apps.

1. Go to [Settings](#) > **Security**.
2. Tap **Fingerprint**, then unlock your phone.
3. Follow the onscreen instructions to scan your fingerprint using [the sensor](#) on the back of your phone.

Fingerprints are [stored securely](#) on the phone.

Add more fingerprints

Add a fingerprint for each finger you want to use with the sensor:

1. Go to [Settings](#) > **Security**.
2. Tap **Fingerprint** and enter your pattern, PIN, or password to verify your identity.
3. Tap **Add fingerprint**.
4. Use the fingerprint sensor to scan another fingerprint.
5. Rename each fingerprint. Tap the current name, type a name, and tap **OK**.

Remove a fingerprint

1. Go to [Settings](#) > **Security**.
2. Tap **Fingerprint** and enter your pattern, PIN, or password to verify your identity.
3. Tap  next to the fingerprint.

Use fingerprint to unlock phone

To wake and unlock your screen, or any time you see  on the screen, touch the sensor to verify your identity.

Tip: You can temporarily tighten security by turning off fingerprint unlocking and lock screen notifications with [Lockdown mode](#).

Use fingerprint to sign in to apps

To use the fingerprint sensor with third-party apps:

- Be sure the app supports fingerprint recognition.
- Install the app and open its settings to adjust options, like enabling fingerprint unlock.
- Consult the app's help info for more instructions.

Why am I still asked for PIN/pattern?

For maximum security, you still need to enter your pattern, PIN, or password:

- Every time you power up your phone
- When more than 72 hours have passed since you last unlocked the phone
- When you go to **Settings > Security > Fingerprint**
- When the sensor can't read the fingerprint

Fix an issue

Issue: Sometimes the sensor can't read my fingerprints.

Each finger has a unique print. If you've added only one fingerprint, add more for other fingers you want to use with the sensor.

The sensor may have trouble reading fingerprints if your finger is:

- Wet
- Oily
- Dirty
- Injured

If a registered fingerprint isn't working as expected, [remove](#) and re-add the fingerprint. If your finger is injured, add fingerprints for your other fingers and use them until healed.

Issue: Fingerprint option disappeared from Security menu.

After each troubleshooting step, check to see if your issue is fixed.

1. Turn your phone off and then on again.
2. [Check if a software update is available](#) for your phone.
3. [Use safe mode](#) to see if apps you installed are causing the issue and uninstall as needed.

If the sensor works correctly in safe mode, a 3rd party app is probably causing the issue. These apps can cause issues: lock screen apps, app locks that use the fingerprint sensor, RAM boosters, and RAM cleaners.

4. [Reset the phone.](#)

Pin an app screen

Turn on pinning

Use pinning to keep the current app in view until you unpin it. For example, you can pin a game and your child cannot navigate anywhere else on your phone.

You can set up a pattern, PIN, or password required to unpin.

1. Go to [Settings](#) > **Security** > **App pinning**.
2. Turn pinning on.
3. By default, you must always enter your pattern, PIN, or password when unpinning a screen. If you don't want this security before accessing your other phone screens, turn this option off.

Pin and unpin an app

To pin a screen:

1. Make sure you've [turned on pinning](#) and have recently opened the app you want to pin.
2. Drag up from the bottom of the screen, hold, then release.
3. In the recent app list, touch the app's icon at the top of the preview to see .

Be sure to touch the app's icon instead of the preview, which opens the app.

4. Touch .

To unpin it:

1. Drag up from the bottom of the screen and hold.
2. If you required a pattern, PIN, or password when you [turned on pinning](#), enter it to unlock the phone.

Lock SIM card

Set up SIM lock

This feature is not available in all countries.

Your SIM card came with a default PIN from your carrier. You can use it to set up an optional SIM card lock, which prevents others from using your cellular plan and accessing account information if your phone is stolen.

If you add a SIM lock, you will be prompted to enter the PIN each time you swap SIM cards or restart the phone.

1. Be sure you have the PIN your carrier provided with the SIM card. If you don't have it, contact your carrier.
2. Go to [Settings](#) > **Security**.
3. Tap **SIM card lock**.
4. Turn **Lock SIM card** on .
5. Enter your carrier-provided PIN and follow the onscreen instructions.

Unlock SIM card

When prompted, enter the PIN used to set up the SIM lock.

Caution: If you enter an incorrect PIN multiple times, the SIM will be disabled.

If you accidentally disabled SIM

If you enter an incorrect PIN multiple times, the SIM will be disabled.

Contact your carrier for a PIN unlock key (PUK) to re-enable the SIM.

Change SIM PIN

To change the PIN code for your SIM card:

1. Be sure you have the previous PIN. If you don't, contact your carrier for a PIN unlock key (PUK).
2. Go to [Settings](#) > **Security**.
3. Tap **SIM card lock**.
4. If **Lock SIM card** is off, turn it on .
5. Tap **Change SIM PIN**.
6. Enter the previous PIN and touch **OK**.
7. Enter a new PIN and tap **OK**.
8. Re-enter the new PIN and tap **OK**.

Set ringtones

Change default call ringtone

1. Go to [Settings](#) > **Sound & vibration**.
2. Do one of the following:
 - If your phone has one SIM card, tap **Phone ringtone**.
 - If your phone has dual SIMs, tap the ringtone for the SIM you want to change.
3. Do one of the following:
 - Select a ringtone from the list.
 - To use a song as the ringtone, tap **Add ringtone** at the bottom of the list. Then locate and select the song [stored on your phone](#).
 - For silence, tap **None** at the top of the list.

Vibrate phone for calls

To extend battery life, turn vibrate off.

You can set the phone to vibrate when the phone rings, or set it to vibrate first, then ring gradually.

1. Go to [Settings](#) > **Sound & vibration**.
2. Touch **Vibrate for calls** and select an option.

Set call ringtone for a contact

You can choose a unique ringtone for calls from specific people so you'll know instantly who's calling.

1. [Open](#) the  **Contacts** app.
2. Tap the contact's name.
3. Swipe to move down and tap **Contact ringtone**.
4. Do one of the following:
 - Select a ringtone from the list.
 - To use a song as the ringtone, tap **Add ringtone** at the bottom of the list. Then tap  to browse and select the song [stored on your phone](#). Tap  to show internal storage.
 - For silence, tap **None** at the top of the list.

Set ringtone for app notifications

You can set a default sound for notifications from apps including messaging and email. You can also set a unique ringtone for notifications from specific apps. [Learn how](#).

Tip: To change your alarm sound, open the Clock app and tap . Then touch the alarm time.

Get more ringtones

Although your phone comes with lots of ringtones, you can get more:

- Search for “ringtones” in App Center and install an app that provide ringtones.
- Search for “ringtone maker” in App Center and install an app that lets you create custom ringtones. Open the app and use it to select entire songs or portions of songs.
- If you have songs that are .mp3 files stored on your computer, connect your phone and computer with a USB cable, then copy the song to your phone.

Fix an issue

If you're not hearing your ringtones:

- Look for  in your [status bar](#), which means you're in [Do Not Disturb](#) mode. [Open quick settings](#) and turn  Do Not Disturb off.
- Check that your ringtone volume is set to .

Silence calls & notifications

When you're busy, use Do Not Disturb to mute ringtones for incoming calls, stop vibration, and block notifications.

Quickly turn Do Not Disturb on or off

Turn it on

1. [Open quick settings](#) and tap .

You'll see  in the status bar when Do Not Disturb is on.

2. To change how long it stays on, in quick settings, touch & hold , tap **Duration for Quick Settings**, and then choose one:
 - To keep it on indefinitely, tap **Until you turn off**.
 - To select a duration, tap **For 1 hour**, then tap + or - to adjust the time.
 - To choose each time you turn Do Not Disturb on, tap **Ask every time**.

Turn it off

[Open quick settings](#) and tap .

Set down to start

You can turn on Do Not Disturb by placing your phone face down on a surface. To enable this gesture:

1. Go to [Settings](#) > **Sound & vibration**.
2. Tap **Flip for DND** and turn it on .

Silence automatically

Your phone can automatically switch into and out of Do Not Disturb mode, either based on your calendar events or on a schedule you create.

Silence during calendar events

1. [Open quick settings](#), then touch & hold .
2. Tap **Schedules**.
3. Check **Event** to turn it on.
4. To select the calendar to use and choose events based on your reply status, tap .

Silence using a schedule

1. [Open quick settings](#), then touch & hold .
2. Tap **Schedules**.

3. Adjust settings:

- To use an existing schedule, tap its name, like **Sleeping**. To adjust times or settings, tap .
- To create a new one, tap **Add more**. Tap **Time**, then enter a name and tap **Add**. Specify its days, start and end times, and level of silence.

Stop automatic silencing

If you don't want your phone to switch automatically into and out of Do Not Disturb:

1. [Open quick settings](#), then touch & hold .
2. Tap **Schedules**.
3. To stop silencing based on your calendar, uncheck **Event** to turn it off.
4. To stop silencing based on a schedule:
 - To use the schedule later, uncheck it to turn it off.
 - To delete a schedule, tap  > .
 - To delete multiple schedules, tap  > **Delete schedules**.

Choose what can interrupt

You can choose which interruptions to allow when Do Not Disturb is on.

Choose interruptions by People

1. Go to [Settings](#) > **Sound & vibration** > **Do Not Disturb**.
Or, in quick settings, touch & hold .
2. Tap **People**.
3. Choose what and who to allow.
 - **Conversations**: Allow all or priority conversations, or allow none. Tap to make selections.
 - **Calls**: Allow calls from starred contacts, other contacts, all callers, or none. You can also allow calls if the same person calls twice in 15 minutes; turn **Allow repeat callers** on .
 - **Messages**: Allow messages from starred contacts, other contacts, anyone, or none.

Choose interruptions by Apps

1. Go to [Settings](#) > **Sound & vibration** > **Do Not Disturb**.
Or, in quick settings, touch & hold .
2. Tap **Apps**.
3. Tap .
4. Tap the app to allow, and set notifications to allow .

You'll see selected apps under APPS THAT CAN INTERRUPT. To change which notifications can interrupt, tap the app in the list.

Allow alarms and other interruptions

Alarms and media sounds are allowed by default, but you can turn them off. You can also allow touch sounds, reminders, and calendar events to send notifications.

1. Go to **Settings** > **Sound & vibration** > **Do Not Disturb**.

Or, in quick settings, touch & hold .

2. Tap **Alarms & other interruptions**.
3. Turn interruptions on  or off .

About storage options

Phone internal storage

You can store photos, videos, music, and applications on your phone. Files you downloaded from the internet and attachments you save from email or text messages are stored there, too.

You can [free up space](#) when needed.

SD card storage

You can store media files on an SD card. Just [insert](#) the card and move your files from phone storage to the SD card.

Benefits include:

- Immediate access to your files
- No cellular data or internet connection required to access files
- More control over privacy

Cloud storage

Clouds are great for storing files, like photos, videos, and music, you want to share and access from other devices.

Benefits include:

- Access your files from any device with an internet connection
- File synchronization - no need to keep track of multiple versions in multiple storage locations
- Backups of photos and videos available if phone is lost or damaged

Cloud storage providers typically offer free storage that can be expanded with a paid subscription once you reach the free-storage limit. Or you can manage your free storage by removing files you no longer need to make space for new ones.

Manage phone storage

Schedule automatic removal of photos and videos

If you automatically back up your photos and videos, you can automatically remove copies from your phone's internal storage after 30, 60, or 90 days.

1. Go to **Settings** > **Storage**.
2. If you installed an SD card, tap **Internal shared storage**.
3. Tap **Storage manager** and turn it on .
4. Tap **Remove photos & videos** and select a duration.

If you store photos or videos on your SD card, this does not delete them.

Manage SD card

Eject SD card

Drag the SD card notification down, and tap **Eject**.

If you don't see the notification:

1. Go to **Settings** > **Storage**.
2. Tap ▼ and select your SD card.
3. Tap ⋮ > **Eject**.

It's now safe to [remove the card](#) from the phone.

To insert the card into another device (computer, projector, etc.) that uses different card dimensions, you may need the adapter that came with your card. See device manufacturer's instructions for the type of adapter required and insertion instructions.

Erase SD card

1. Go to **Settings** > **Storage**.
2. Tap ▼ and select your SD card.
3. Tap ⋮ > **Format**.
4. Follow onscreen instructions to format the card.

Use multiple languages

Change display language

You selected the language for your phone during set up. To change it:

1. Go to **Settings** > **System** > **Languages & input** > **Languages**.
2. Touch & hold the language you want and drag it to the first position in the list.
3. If you don't see the language you want, tap  to add it, then drag it to the first position.

To switch languages when using the keyboard, touch .

To remove a language, go to **Settings** > **System** > **Languages & input** > **Languages**, then tap  > **Remove**, select the language, and tap .

Open camera with Power button

You can customize the Power button so that pressing it twice opens your camera.

You can customize the Power button so that pressing it twice opens your camera.

You can customize the Power button so that tapping it twice opens your camera or another chosen app.

1. Go to [Settings](#) > **Gesture shortcuts**.
2. Touch **Quickly open camera** and turn it on .
2. Touch **Quickly open camera** and turn it on .

Change System navigation

You can choose how to move between apps and screens:

1. Go to [Settings](#) > **Gesture shortcuts**.
2. Tap **System navigation**.
3. Choose an option:
 - **Gesture navigation:** Use drag and swipe gestures to return to your home screen, to switch apps, or to go back to the previous screen. [Learn more about gestures](#). To adjust sensitivity of the back gesture, touch  and move the slider.
 - **3-button navigation:** Use the back , home , and recent  buttons. [Learn more](#).

Use one-handed mode

Want to use one thumb to navigate your phone? Turn on One-handed mode.

This mode is only available if you're [using Gesture navigation](#).

Set it up

1. Go to [Settings](#) > **Gesture shortcuts**.
2. Tap **One-handed mode** and turn it on .
3. Choose what should happen when you swipe down:
 - To move the top of the screen into reach of your thumb, select **Pull screen into reach**.
 - To see your notifications and quick settings, touch **Show notifications**.
4. To add , which you can touch instead of swiping down, turn **One-handed mode shortcut** on .

Use it

Move top of screen down where your thumb can reach

Swipe down near the bottom edge of the screen. Or tap  if you turned on the shortcut.



To exit this view:

- Swipe up from the bottom of the screen
- Tap anywhere above the app
- Tap 

See your notifications and quick settings

To see notifications and quick settings, swipe down from the bottom edge of the phone *once* or tap  *once*.

To see all quick settings, swipe down from the bottom edge of the phone *twice* or tap  *twice*.

Turn it off or remove

If you want to remove  but still be able to swipe down near the bottom edge of the screen, go to **Settings** > **Gesture shortcuts** > **One-handed mode** and turn **One-handed mode shortcut** off .

To turn off the gesture and remove :

1. Go to **Settings** > **Gesture shortcuts**.
2. Tap **One-handed mode** and turn it off .

Swipe fingerprint for notifications

You can set the fingerprint sensor to open your notifications and [quick settings](#) when you swipe it.

Set it up

1. Go to [Settings](#) > **Gesture shortcuts**.
2. Touch **Swipe fingerprint for notifications** and turn it on .

Use it

Swipe down on the [fingerprint sensor](#):

- Swipe once to view notifications.
- Swipe again to view quick settings.

Turn flashlight on and off

Tip: To add  to quick settings, [open quick settings](#), touch , then drag the tile where you want it.

To turn your flashlight on or off:

- [Open quick settings](#) and tap .
- Or, make a chopping motion.

If the camera opens instead of turning on the flashlight, be sure to use a chop gesture, not a [twist gesture](#).

To control the chop gesture:

1. Go to [Settings](#) > **Gesture shortcuts**.
Or, [open](#) the **Moto** app and tap  > **Gestures**.
2. Tap **Fast flashlight** and turn it on or off.

Twist phone to open camera

Open your camera instantly from any screen, even your lock screen, with Quick capture.

Twist your phone twice like this:



The   Camera opens, and you're ready to shoot.

Twist twice again to switch to the front (selfie) camera.

If you don't want others to access your camera, you can turn Quick capture off. But if you use a screen lock, don't worry--only your Camera app is accessible. To view existing photos or access any other features or apps, you must unlock your phone.

To turn Quick capture on or off:

1. Go to [Settings](#) > **Gesture shortcuts**.
2. Turn **Quick capture** on  or off .

Adjust screenshot settings

You can adjust settings for capturing screenshots at any time.

1. Go to **Settings** > **System** > **Gesture shortcuts**.
2. Do any of the following:
 - Turn **Use Three finger screenshot** on  or off .
 - To prevent the three finger gesture from working in certain apps, tap **Settings** > **Exceptions** >  and select the apps.

Set date and time

Change time format

1. Go to **Settings** > **System** > **Date & time**.
2. To change how times are displayed:
 - To use military time such as 13:00, turn **Use locale default** off  and turn **Use 24-hour format** on .
 - To use the time format of your current location, turn **Use locale default** on .
 - To use 12-hour format, turn both **Use locale default** and **Use 24-hour format** off .

Set date and time automatically

1. Go to **Settings** > **System** > **Date & time**.
2. Turn **Set time automatically** and **Use location to set time zone** on .

Your phone automatically syncs with the local time (using the mobile network). The local time is used for alarms and is displayed on the lock screen and other displays.

Set date and time manually

1. Go to **Settings** > **System** > **Date & time**.
2. Turn **Set time automatically** off .
3. To make corrections, tap **Date** and **Time**.

Switch time zones

1. Go to **Settings** > **System** > **Date & time**.
2. Turn **Set time zone automatically** off .
3. Tap **Time zone**.
4. Choose a regional time zone (which is applied to the current time).

Show multiple time zones

You can view multiple time zones in the Clock app, so you can coordinate plans with friends and co-workers in other cities, or stay in touch with family back home when you're traveling.

1. **Open** the **Clock** app and tap .
2. To add time zones, tap , then select cities in the time zone you want to view.

Open apps faster

With artificial intelligence (AI), your phone learns which apps you use most, then manages memory more efficiently so they open faster.

To turn this feature on or off:

1. Go to **Settings** > **System** > **Performance**.
2. Adjust settings:
 - To allow AI to learn your usage patterns to help open apps faster, turn **Quick launch** on .
 - To use phone storage to extend RAM and improve performance, turn **RAM boost** on . Restart your phone to apply the new setting.

Share your phone

Ways to share your phone

- **Add users.** If you share your phone with family, friends, or within a business, you can set up separate user spaces for each of them.
- **Lend to people as guest.** This is a more temporary space that you or the guest can delete when finished.
- **Pin the screen.** This lets you keep one specific app or screen in view. For example, you can pin a game and your child cannot navigate anywhere else on your phone.

About owners, users, and guests

The owner can:

- Determine whether users and guests can make phone calls and send text messages, which also allows them to see the phone's call history and text history.
- Reset, update, and uninstall any apps.
- Delete user and guests, removing any associated accounts and data from the phone.

Users and guests can:

- Set up accounts
- Set up a [screen lock](#).
- Customize the home screen and settings for their spaces.
- Add and delete apps for their spaces, and update any apps they use, regardless of who installed them.

Important: To prevent others from switching to your owner profile and accessing your information, set a [screen lock](#) before you share your phone with users or guests.

When sharing your phone with users and guests, some apps are only available to the owner, not to other users and guests.

Switch users

Only the owner can switch to the guest profile for loaning the phone and can switch between user profiles.

To switch user profiles or see which is currently active, [open quick settings](#). At the top of the screen, you'll see one of these icons after you've [set up a user](#) or [added a guest](#).

Icon	Meaning
	Owner (If you set up your profile in Contacts and included a picture, you'll see it and your name instead.)



Guest



Added user

Add, modify, remove users

Add a user

You must be the device owner to add users.

1. To prevent others from switching to your owner profile and accessing your information, set a [screen lock](#) before you share your phone.
2. Go to [Settings](#) > **System** > **Multiple users**. If needed, turn it on .

Tip: To add users from quick settings on your lock screen without unlocking the phone, go to [Settings](#) > **System** > **Multiple users** and turn **Add users from lock screen** on .

3. Tap **Add user** > **OK**.
4. Add the user's name.
5. To allow the user to make calls and send messages, switch on **Turn on phone calls & SMS**.
6. Switch to that user and tap **Set up now**.
7. Give the phone to the new user to set up the profile.

Restrict calls and messages

From your [owner](#) profile, you control whether users can call and send texts with your phone:

1. Go to [Settings](#) > **System** > **Multiple users**.
Or from quick settings, tap  > **More settings**.
2. Tap the user's name.
3. To prevent the user from making calls or sending messages, switch off **Turn on phone calls & SMS**.

Remove a user

You can remove yourself as a user. You must be the device owner to remove other users.

If you're a user who borrowed a phone:

1. Go to [Settings](#) > **System** > **Multiple users**.
Or from quick settings, tap  > **More settings**.
2. Tap  and delete your user account from the phone.

If you're the owner:

1. Go to [Settings](#) > **System** > **Multiple users**.
Or from quick settings, tap  > **More settings**.
2. Tap the user's name.

3. Tap .

Add or delete guest

Create a temporary guest profile for [sharing your phone](#) with someone.

If you need a space for someone to use on a regular basis, where apps and data can be saved, [add a user](#) instead of a guest session.

Lend to guest

1. Go to [Settings](#) > **System** > **Multiple users**. If needed, turn it on .
2. Tap **Add guest**.
3. To allow the guest to make calls, switch on **Turn on phone calls**.
4. Tap the option to switch to guest mode.
5. If you've lent your phone to a guest previously, tap **Start over** to clear the last guest settings, or tap **Yes, continue** to keep last guest settings.

End guest session

1. Go to [Settings](#) > **System** > **Multiple users**. Or from quick settings, tap .
2. Tap **Remove guest** > **Remove**.

All data from and apps installed during this session are deleted.

Record your IMEI number

An IMEI (International Mobile Equipment Identity) number is a unique code that identifies your phone. Phones with two SIM have two IMEI numbers, one for each SIM. This allows the phone to be identified separately on each network that the SIMs connect to.

You'll need your IMEI number if you contact support regarding a warranty, and it's important to have if your phone is stolen. Service providers can use the IMEI to block a stolen phone from cellular networks, and many police departments keep a record of stolen phones using this number.

You might never need your IMEI number, but it's a good idea to record it, just in case.

To find the IMEI number:

1. Go to **Settings** > **About phone**.
2. See **IMEI** for your SIM.
3. Record and save the number where you can easily access it.

You can also find your IMEI number by dialing ***#06#** in the Phone app. On some phones, the MEID HEX number is your IMEI number.

If your phone doesn't turn on, check the box it came in or the receipt for the IMEI number.

Find legal and product information

To view the electronic regulatory label for your phone, go to [Settings](#) > **About phone** > **Regulatory labels**.

For safety, environmental, warranty, and other legal information, go to [Settings](#) > **About phone** > **Legal information**.

Printed legal information may also be provided with your phone.

To find your phone's model or serial number, go to [Settings](#) > **About phone** > **Model** > **Model Number (SKU)**.

Phone is slow or unstable

If **a certain app is slow**, try these [app-specific troubleshooting steps](#).

If your phone is slow **when viewing online content**, it could be an issue with your connection. If you're on Wi-Fi, use a different Wi-Fi network, switch to mobile data, or contact your Internet Service Provider. If you're using a mobile connection, switch to Wi-Fi.

If **all apps are slow**, it's probably an issue with your phone, not an app on your phone. Try these troubleshooting steps. After each step, check to see if the issue is fixed:

1. Turn your phone off and then on again.
 - If your phone is frozen, reboot it by pressing and holding the Power button for 7-10 seconds.
2. Check for system updates.

Go to [Settings](#) > **System updates**.
3. Check for app updates.
4. [Check available storage](#) and clear space if needed.

Phone feels warm or hot

Overview

It's normal for your phone to feel warm, or even hot, depending on how you're using it.

If your phone gets hot, it will slow charging, reduce brightness, and limit other functions until it cools down, or automatically shut off if it gets too hot.

If your phone is too hot to touch, use a different phone, tablet, or computer to contact [Motorola support](#).

Reasons your phone may get warm

- Playing graphics-intensive games in high performance mode for an extended period
- Using GPS navigation
- Tethering or using your phone as a Wi-Fi hotspot
- Using phone while it's [charging](#)
- Fast charging with a high-wattage or wireless charger
- Downloading or uploading large amounts of data, such as during initial setup when copying data from your old phone, backing up or restoring data, or downloading and updating multiple apps
- Taking multiple photos or recording high-resolution videos for an extended time
- Using your phone in areas with weak signals for an extended period

Ways to keep your phone from heating up

- Pause resource-intensive features or apps until your phone cools down
- Use the charger that came with your phone, or a charger that is compatible with your phone
- Keep your phone away from direct heat sources like electric blankets, heaters, hot air vents, or excessive sunlight
- Don't charge or use your phone in enclosed or poorly ventilated places, such as on a pillow or blanket, where heat can quickly accumulate
- [Lower your phone's display brightness](#)

If you're not using or charging it

Sometimes a process can get stuck in the background. If your phone is hot but you're not using or charging it, turn your phone off and on again. This will stop the previously stuck process and resolve the issue.

Phone won't turn on

If your phone isn't starting, has a black or blank screen, or turns on but immediately turns off, try these steps to fix the issue.

1. Press & hold the Power button for 5-7 seconds, or up to 30 seconds.

This restarts (reboots) your phone.

2. [Charge the phone.](#)

If your phone has a sign-of-life indicator look for a white light near the top front of the phone. This indicates that the phone is charging but battery is too low to power the screen.

If you're having problems charging, [try these troubleshooting steps](#).

3. If you don't see a battery icon after you, plug your phone in to charge, the issue could be with your screen. Check if your phone rings by calling it from another phone. If it rings, the issue is with your screen and you can [try these troubleshooting steps](#).
4. Perform an external reset of your phone. [Learn how](#).
5. If you have a Windows PC, [download Software Fix](#) to your PC and try reinstalling the phone's system software.

Phone restarts or crashes

If your phone randomly reboots, restarts, or shuts down without restarting, try the following.

1. Restart your phone:
 - a. Hold down the Power button for about 30 seconds.
 - b. If this doesn't work, connect your phone to charge for at least 5 minutes. Then, while connected to the charger, restart again by holding down the Power button for 30 seconds.
2. Troubleshoot your phone:
 - a. [Check if a software update is available](#) for your phone.
 - b. [Check available storage](#) and [clear space](#) if needed.

You may see issues if your phone's internal storage is almost full. To free up space, remove unnecessary files and clear cached data.
3. Troubleshoot your apps:
 - a. Check for app updates.
 - b. [Use safe mode](#) to see if apps you installed are causing the issue and uninstall as needed.

If your problem doesn't go away in safe mode, restart your phone and continue to the next section.
4. Reset to factory settings:

To remove any processes on your phone that may be causing the issue, you can [reset your phone](#) to factory settings.

A factory data reset will remove all data from your phone.
5. If you have a Windows PC, [download Software Fix](#) to your PC and try reinstalling the phone's system software.

Screen is frozen or won't respond

Tip: If your screen goes black when the phone rings so you can't answer the call, [clear data](#) for the Phone app.

If your screen lags or blurs motion between actions, [raise your refresh rate](#).

If your phone freezes, stops responding, or is stuck on a blank or white screen, try the following:

1. Restart your phone. Hold down the Power button for about 30 seconds.
2. If this doesn't work, charge your phone for at least 5 minutes. Then, while connected to the charger, restart again by holding down the Power button for 30 seconds.

If your phone freezes again, check for a larger issue:

1. Restart your phone to unfreeze it.
2. [Check if a software update is available](#) for your phone.
3. [Check available storage](#) and [clear space](#) if needed.

You may see issues if your phone's internal storage is almost full. To free up space, remove unnecessary files and clear cached data.

4. Check for app updates.

If you can't unfreeze the phone, [reset your phone](#) to factory settings, to remove any processes that may be causing the issue.

A factory data reset will remove all data from your phone.

Screen displays wrong colors

Everything is negative, reversed colors

Go to [Settings](#) > **Accessibility** > **Text and display** > **Color inversion** and turn it off .

[Learn more.](#)

Tones, hues are different or missing

- If the screen shows warmer tones than usual, check [quick settings](#). If  **Night Light** is on, turn it off.
- If certain colors appear diminished or their hues are different, go to [Settings](#) > **Accessibility** > **Text and display** > **Color correction** and turn **Use color correction** off .

Background turned dark/light

Go to [Settings](#) > **Display** and turn **Dark theme** off .

SD card issues

Phone doesn't recognize new SD card

If your phone isn't recognizing a new card that you [inserted](#), try these steps. After each step, check to see if the issue is fixed.

1. Turn your phone off and then on again.
2. Inspect card for damage or alignment issue:
 - a. Turn your phone off and [remove the card](#). Inspect for damage. If not damaged, reinsert the card.
 - b. Be sure the card sits completely in its slot and that the tray slides easily into the phone.
 - c. Turn the phone on.
3. Check that the card is mounted:
 - a. Go to [Settings](#) > **Storage**.
 - b. Touch ▼ and select your SD card.
 - c. Touch ⋮ > **Mount**.
 - d. Turn your phone off and then on again.
4. Check that the card's type and capacity is [compatible with your phone](#). If not, use a different SD card that meets the requirements.
5. Insert a different SD card to confirm that the issue is with the original card and not with your phone.

Phone can't format SD card

Try the following:

- Check that the card's type and capacity is [compatible with your phone](#). If not, use a different SD card that meets the requirements.
- Try formatting the card using an SD card reader and an SD card formatter app on a Windows computer.

Phone stopped reading SD card

After each step, check to see if the issue is fixed:

1. Turn your phone off and then on again.
2. Inspect card for damage or alignment issue:
 - a. Turn your phone off and [remove the card](#). Inspect for damage. If not damaged, reinsert the card.
 - b. Be sure the card sits completely in its slot and that the tray slides easily into the phone.
 - c. Turn the phone on.

3. Check that the card is mounted:
 - a. Go to [Settings](#) > **Storage**.
 - b. Touch ▼ and select your SD card.
 - c. Touch ⓘ > **Mount**.
 - d. Turn your phone off and then on again.
4. Use another device to check if the card is readable:
 - a. Insert card into another device.
 - b. If that device can read the card and files are present, back up files to your computer.
5. Check for errors with a USB SD card reader connected to a Windows computer:
 - a. Insert the card into a USB card reader.
 - b. Open My Computer, right-click on the SD card, and select **Properties** > **Service** > **Check disk for errors**. Depending on the size of your card and usage, this process could take up to an hour.
6. Reformat card using an SD card reader and an SD card formatter app on a Windows computer. Formatting the card erases all data on the card. Before you reformat, if you can access your SD card files from your PC, copy them to your computer. Then, use the SD card formatter app to format your card to FAT32.
7. Try a new SD card.

Apps can't view files on SD card

If none of your apps can view files on the card:

1. Install a different file manager app from App Center. Use that app to check if files are visible on the card.
2. Check if files are visible using a Windows computer:
 - a. Turn your phone off and [remove the card](#).
 - b. Put the card in the computer's SD card slot or a connected USB SD card reader.

If a specific app can't view files the card:

1. Open the app from which files are missing.
2. In the app's settings, set the storage location to be the SD card, not internal or phone memory.

Computer can't view files on SD card

After each troubleshooting step, check to see if your issue is fixed:

1. Use a USB cable that's capable of data transfer and isn't for charging only.
2. Be sure you have set the USB connection type to allow file transfer.

Troubleshoot issues with calls

Select the statement that best describes your issue:

- [Can't make calls](#)
- [Can't answer calls](#)
- [Phone doesn't ring](#)
- [People can't hear me](#)
- [Can't hear calls](#)
- [Don't get calls/texts](#)
- [Screen goes black](#)
- [Calls drop](#)

Can't make calls

After each troubleshooting step, check to see if your issue is fixed.

SIM card not recognized

If you see  or  in the [status bar](#) or a message that the SIM is not recognized:

1. Turn your phone off and then on again.

Press & hold the Power button, then touch **Power off**. Then turn it on to establish a new connection with the network.

2. Do one of the following:

- If your phone allows one SIM card, turn your phone off, then [remove](#) and reinsert the SIM.
- If your phone allows dual SIMs, disable the SIM, then enable it again. Go to [Settings](#) > **Network & internet** > **SIM cards**. Turn the SIM off . Then turn it on .

If one of the two SIMs is working, [remove the SIM](#) that is not recognized and try it in the other SIM slot. If it doesn't work in the other SIM slot, then the issue is with the SIM card and you need a replacement from your carrier.

3. Contact your carrier to make sure your account is set up properly.
4. Ask your carrier to replace the SIM card.
5. Perform an external phone [reset](#).

No signal

1. If you usually have a signal  but the [status bar](#) shows  in your current location, move to another area where you can receive a signal, like outdoors. If you're uncertain whether your carrier provides service in that location, check the coverage map on your carrier's website.
2. If airplane mode is on, turn it off.
3. Turn your phone off and then on again.
4. Check for app updates.
5. [Check if a software update is available](#) for your phone.
6. [Remove your SIM card](#) and reinsert.
7. [Use safe mode](#) to see if apps you installed are causing the issue and uninstall as needed.
8. [Reset the phone](#).

Have signal, but can't make calls

1. Turn your phone off and then on again.

Press & hold the Power button, then touch **Power off**. Then turn it on to establish a new connection with the network.

2. Clear the cache for the Phone app.
3. [Use safe mode](#) to see if apps you installed are causing the issue and uninstall as needed.

4. [Check if a software update is available](#) for your phone.
5. [Reset the phone](#).

Consistent busy signal

Outbound calls

1. If you hear a fast busy signal when you call a number, all cellular circuits may be in use, preventing the call from going through. Try calling again later.
2. If you hear a fast busy signal every time you call the same number, your number may be blocked by an app. Try calling from a different number.

Incoming calls

If you have a signal and can make calls, but callers tell you they consistently get a busy signal when calling you, check that you haven't blocked their numbers.

Can't answer or phone doesn't ring

After each troubleshooting step, check to see if your issue is fixed.

Phone doesn't ring or ring loud enough

1. Check your volume setting.
2. Look for  in your [status bar](#). If you see it:
 - [Open quick settings](#) and touch  to turn Do Not Disturb off. Your phone will ring for incoming calls.
 - Make sure your phone is set to [screen calls](#) at the appropriate times.
3. Check that your [ringtone](#) is not set to **None**.
4. Is your phone connected with a [Bluetooth device](#)? If so, all audio is routed to the Bluetooth device.
5. If you're using a ringtone that you installed, try using a ringtone that came with the phone.
6. [Use safe mode](#) to see if apps you installed are causing the issue and uninstall as needed. Begin with application types like launchers, task killers, or anti-virus apps.

Can't answer ringing phone

1. Clear the data for the Phone app.
Touch & hold , then touch  > **Storage & cache** > **Clear storage**.

Consistent busy signal

Outbound calls

1. If you hear a fast busy signal when you call a number, all cellular circuits may be in use, preventing the call from going through. Try calling again later.
2. If you hear a fast busy signal every time you call the same number, your number may be blocked by an app. Try calling from a different number.

Incoming calls

If you have a signal and can make calls, but callers tell you they consistently get a busy signal when calling you, check that you haven't blocked their numbers.

Don't get calls/texts

1. If airplane mode is on, turn it off.
2. Turn your phone off and then on again.
3. Check for updates to your phone and messaging app.
4. [Check if a software update is available](#) for your phone.

Calls go to voicemail

Check your **Do Not Disturb** settings:

1. Look for  in your [status bar](#). If you see it, then your phone is sending calls to voicemail so you're not interrupted. To have your phone ring for incoming calls, open quick settings and touch  to [turn off Do Not Disturb](#).
2. [Check your schedules for Do Not Disturb and delete any you don't want.](#)
3. You can start Do Not Disturb by placing your phone face down on a surface. If you don't want to send calls to voicemail when your phone is face down, go to **Settings > Sound & vibration > Flip for DND** and turn it off .

Issues during calls

After each troubleshooting step, check to see if your issue is fixed.

Screen goes black

1. If you are using a case, cover or screen protector, remove it and see if it was causing the issue.
2. Check your [proximity sensor](#).

Dial a call and set the phone on a table (don't use speaker mode), then hold your hand over the proximity sensor to see if you can turn the screen off and on.

3. [Use safe mode](#) to see if apps you installed are causing the issue and uninstall as needed.

Calls are dropping

1. Check your signal strength:
 - Weak signal from your cellular provider is a common cause of dropped calls. In the [status bar](#), see how many bars your network connection has. If you see only one or two bars, change locations to improve your signal strength, particularly if you are indoors.
2. Turn your phone off and then on again.

Press & hold the Power button, then touch **Power off**. Then turn it on to establish a new connection with the network.
3. During a call, check that the [proximity sensor](#) works by covering it to confirm that it turns off your screen, preventing accidental touches during calls. You can also download an app to automatically lock your screen during calls; search for “call screen lock” on App Center.
4. [Use safe mode](#) to see if apps you installed are causing the issue and uninstall as needed.
5. [Check if a software update is available](#) for your phone.
6. [Reset the phone](#).

People can't hear me

People can't hear me on calls

1. Check that nothing is covering the [microphone](#):
 - If you are using a case, cover or screen protector, remove it and see if it was causing the issue.
 - Check that the protective film that ships with the phone has been removed.
2. Check to see if your phone is using Voice privacy. (This feature is not available on all models.) Turn it off to see if sound quality improves:
 - a. Tap .
 - b. Tap  > **Settings** > **Calling options**.
3. If the issue occurs while using the speakerphone or a Bluetooth headset, check your signal strength.

In the [status bar](#), see how many bars your network connection has. If you see only one or two bars, change locations to improve your signal strength, particularly if you are indoors.

4. Turn your phone off and then on again.

Press & hold the Power button, then tap **Power off**. Then turn it on to establish a new connection with the network.

5. [Check if a software update is available](#) for your phone.
6. [Use safe mode](#) to see if apps you installed are causing the issue and uninstall as needed.
7. [Reset the phone](#).

People can't hear me on apps like WhatsApp

1. Force stop the app. This completely shuts down the app, including any background services that may be causing your issue.
2. Check for updates to the app.
3. Turn your phone off and then on again.
4. Clear the app's cache.

Poor sound quality on calls

Start by checking your volume setting. You can only adjust the call volume with the Volume buttons while you're on a call.

How are you listening to the call?

Wired headset

1. Make sure the headset is inserted completely into the [headset jack](#).
2. If you are using a case or cover, remove it and re-insert the headset to see if it was interfering.
3. Try a different headset to determine if the issue is with the original headset.

Earpiece

1. Check that nothing is covering the [microphone](#):
 - If you are using a case, cover or screen protector, remove it and see if it was causing the issue.
 - If the phone was shipped with a protective plastic film, remove the film.
2. While in a call, try using the speakerphone or a wired headset to see if the sound quality improves. If it doesn't, the issue is probably network signal strength instead of hardware.
3. Turn your phone off and then on again.

Press & hold the Power button, then tap **Power off**. Then turn it on to establish a new connection with the network.
4. [Use safe mode](#) to see if apps you installed are causing the issue and uninstall as needed.
5. [Check if a software update is available](#) for your phone.
6. [Reset the phone](#).

Connected Bluetooth device

Check the battery level of Bluetooth device and phone, and charge if necessary. [Paired Bluetooth devices](#) may disconnect or create noise when the phone or Bluetooth battery are low.

Charging issues

Try these troubleshooting steps. After each step, check to see if your issue is fixed.

1. Make sure the [USB plug](#) fits securely into the phone.
2. If the battery is completely depleted, connect the charger and wait about 10 minutes until it has enough voltage to charge, then press the Power button.
3. If you're charging by connecting to a wall outlet:
 - If the outlet is controlled with a switch, check that it is turned on.
 - Use the charger that came with the phone, or a charger that is compatible with your phone.
 - Remove any case, to see if it's impeding the charger/port connection.
 - Inspect the charger for damage to the wire or plug. If you see damage, try charging by connecting to your computer with a USB cable.
 - Check the outlet for damage or loose parts. If you see damage, try another outlet.
4. If you're charging by connecting to your computer, check the USB connection:
 - a. Swipe the [status bar](#) down.
 - b. On the USB notification, tap , then tap the notification.
 - c. Tap **No data transfer**.
5. Reboot the phone by holding the Power button for 7-10 seconds.
6. [Reset the phone](#).

Phone gets hot while charging

The TurboPower charger, which provides efficient, rapid charging can cause the battery to heat up, which is normal. If the battery reaches 111 degrees (F), the charging rate slows down. Once the battery cools down, the charger begins rapid charging again.

TurboPower charging not working

When the battery is below 78%, the TurboPower charger charges rapidly. When the battery is at 78% or higher, it charges at regular speed.

If your battery is below 78% and isn't charging rapidly, disconnect your phone from the charger and plug it back in again.

Charging stops at 80%

[Overcharge protection](#) keeps your battery healthy by limiting its charge to 80% if it's been plugged in for three days.

If you see  in the status bar, to fully charge your phone from 80% just disconnect it from the charger and plug it in again.

Battery drains too fast

Battery life varies

The way you use your phone can really affect how long you can go before recharging your battery. Navigating, playing games, browsing the web, making calls and texting all require energy. So, your battery life may vary day to day, depending on what you're doing.

If your battery is draining faster than expected

If your battery life seems shorter than usual, a quick and easy step is to reboot your phone, especially if you haven't turned it off in longer than a week.

1. Press & hold the Power button.
2. Touch **Restart**.
3. Plug your phone in and charge it normally.

Tips:

- Adjust settings to [extend your battery life](#)
- Check your phone's battery health to determine if it's time to replace the battery

Bluetooth issues

Bluetooth turning on automatically

After each step, check to see if your issue is fixed:

1. When Bluetooth is off, your phone can still scan and automatically connect to a previously paired device. To prevent this, [turn off Bluetooth scanning](#).
2. Some third-party apps that control Bluetooth devices (smart watches, fitness and vehicle monitors, etc.) automatically turn Bluetooth on. If they do, this can prevent you from turning Bluetooth off.

To check if a third-party app you installed is automatically turning Bluetooth on, use [safe mode](#) to identify the problematic app, then uninstall it.

Can't pair

After each step, check to see if your issue is fixed:

1. First, [check the basics](#).
2. Make sure the phone and Bluetooth device are in discovery mode.
3. Refresh the available devices list:
 - a. Go to [Settings](#) > **Connected devices**.
 - b. Touch **Pair new device**.
4. Check if a [software update](#) is available for your phone.
5. If you're having trouble pairing with your car, see the car manufacturer's instructions for your model.
6. [Reset](#) the phone's connections, then power cycle the phone.

Can't reconnect previously paired device

Unpair the Bluetooth device, then pair it again:

1. Go to [Settings](#) > **Connected devices**.
2. Next to the paired device, tap  > **FORGET**.
3. [Pair the device](#) again.

Can't hear music

After each step, check to see if your issue is fixed:

1. First, [check the basics](#).
2. Check that the volume is up on your phone and car or Bluetooth device.
3. Check that other devices paired with your phone aren't playing the music.

4. Check that **Media audio** is on:
 - a. Go to **Settings** > **Connected devices**.
 - b. Next to the paired device, touch .
 - c. Make sure **Media audio** is checked.
5. If the problem is with a car, check the car's instructions.

Can't make or hear on calls

After each step, check to see if your issue is fixed:

1. Check that other devices paired with your phone aren't getting your calls.
2. Check that **Phone audio** is on:
 - a. Go to **Settings** > **Connected devices**.
 - b. Next to the paired device, touch .
 - c. Make sure **Phone audio** is checked.
3. If the problem is with a car, check the car's instructions.

Connection drops

After each step, check to see if your issue is fixed:

1. Check battery level on your phone and on the Bluetooth device and charge if needed. Bluetooth devices may disconnect or create noise when the phone or Bluetooth battery is low.
2. Adjust positioning:
 - Make sure you are wearing or positioning the device appropriately.
 - Keep metal objects, such as keys or coins, away from the phone and device to avoid interference.
3. Clear data for this system app:
 - a. Go to **Settings** > **Apps**, then touch **See all # apps**.
 - b. Touch  > **Show system apps**.
 - c. Touch **Bluetooth** > **Storage & cache** > **Clear storage**.

Paired device can't see contacts

Check that contact sharing is on:

1. Go to **Settings** > **Connected devices**.
2. Next to the paired device, touch .
3. Make sure **Contact sharing** is on.
4. Check and adjust sharing settings on the paired device or in the device's app.

Fix it: Check the basics

After each step, see if your issue is fixed:

1. Check battery level on your phone and Bluetooth device, and charge if either is low.
2. Keep the phone and Bluetooth device within 30 feet of each other, closer for better performance.
3. On your phone, turn Bluetooth off and then on again.
4. Turn off the Bluetooth device to disconnect it. Then turn it back on to automatically [reconnect](#) with the phone.
5. Power cycle both your phone and the Bluetooth device.

If that doesn't fix it, follow the steps for specific problems in the sections above.

Wi-Fi issues

After each troubleshooting step, check to see if the issue is fixed.

Can't connect to a network

1. When you [enter the password](#) to connect:
 - Get the password from the Wi-Fi router and make sure you enter it correctly on your phone.
 - If the **Connect** button is greyed out, the password you entered isn't long enough. Confirm the router's password and re-enter it on your phone.
2. Check if a [software update](#) is available for your phone.
3. Check that the Wi-Fi router firmware is up to date.
4. [Reset the phone's network connections](#).
5. [Reset the phone](#).

Connection drops

After each troubleshooting step, check to see if the issue is fixed.

1. Turn off [Wi-Fi scanning](#).
2. [Remove the network connection](#). Then set up the Wi-Fi connection again.
3. Check if a [software update](#) is available for your phone.
4. Restart your wireless router by unplugging it from the power outlet for about 30 seconds and then plugging it back in. Once the wireless router is running again, try to reconnect.
5. On a computer, log into your router and try adjusting one or more of these router settings:
 - If the router has multiple bands, disable the lower band.
 - Change the encryption/security setting of the SSID from WPA-password to WPA-PSK.
 - Don't use automatic channel selection. Instead, assign a fixed channel, such as Channel 6.
6. [Reset the phone's connections](#).

Hotspot problems

If you can't turn your hotspot on, check that:

- [Cellular data is on](#).
- [Data Saver is turned off](#).

If you can't connect a computer or tablet to your phone's Wi-Fi [hotspot](#):

1. The cellular network for your phone may not be in range. Check the signal icon in your status bar to ensure you have strong connection. If not, [try these troubleshooting steps](#).
2. Re-enter the password on the device to match the [hotspot password](#) set up on your phone. Make sure that the encryption type and security settings match on the device and your phone.

3. Disconnect and then reconnect:

- a. Turn off the connection from your device.
- b. Turn off the phone's hotspot.
- c. Restart your device.
- d. Wait for 1 minute, then turn on and [enable](#) the hotspot on your phone.
- e. Reconnect the device.

If you've connected a computer or tablet but can't access certain web sites:

1. Power cycle your computer or tablet.
2. Make sure the browser version is up to date.

Can't transfer files or connect USB to computer

If you're having problems using a USB connection to connect your phone to your computer, try these troubleshooting steps.

Check your USB connection

- On your phone, check that your USB connection is set to File transfer mode.
- Try a different USB cable. Not all USB cables can transfer files.
- If your phone detected moisture in the USB port, which can occur in high humidity environments or if the phone came in contact with water, unplug the phone, wipe it dry, and gently shake it about 10 times with the USB port facing downward to remove moisture. Place it on a cloth to air dry, or use a fan to help dry it faster.
- To test the USB port on your phone, connect your phone to a different computer.
- To test the USB port on your computer, connect a different device to your computer.
- To connect your phone to a car, projector, or other device, refer to the user manual that came with the device.

Check your computer

Windows PC

1. On your PC, check that **Settings > Advanced system settings > Hardware tab > Device installation settings** is set to automatically detect and install drivers for new devices.
2. Restart your PC.

Mac computer

1. Check that your computer is running Mac OS X 10.5 or later.
2. Check that your computer has [Android File Transfer](#) installed and open.
3. Restart your computer.

Check your phone

1. Check if a [software update](#) is available for your phone.
2. Turn your phone off and then on again.
Press & hold the Power button, then tap **Power off**.

Account sync issues

If your account is having problems syncing, you may see a message or an  icon.

In most cases, these issues are temporary and your account will sync again after a few minutes. If you keep having sync issues, try the solutions below.

Sync account manually

1. Go to [Settings](#) > **Passwords & accounts**.
2. Touch the account to sync.
3. Touch **Account sync**.

If your phone syncs, your issue is fixed. If not, try the troubleshooting solutions below.

Basic troubleshooting

After each troubleshooting step, try manually syncing to test if sync works.

1. Check that auto-sync is on.
 - a. Go to [Settings](#) > **Passwords & accounts**.
 - b. Touch the account.

 by the account name means that some or all of the account's information is configured to auto-sync.

 by the account name means that the account will not auto-sync.
2. Make sure your Internet connection works.

For sync to work, you need an Internet connection. To test if your connection is working, open a browser and load a website. If the website doesn't load, get help connecting to [Wi-Fi](#) or to [cellular data](#).
3. Check if you have account issues.
 - If you can sign in, the issue is with your phone. You can move on to the next solution.
 - If you can't sign in, your account may have an issue.
4. Check if a [software update](#) is available for your phone.

Advanced troubleshooting

After each troubleshooting step, try manually syncing to test if sync works.

1. [Remove and re-add](#) your account.

2. Clear cache and data for the Contacts app.
 - a. If you've saved any contacts since you last synced, back them up. Open the **Contacts** app and touch  > **Settings** > **Export**. Then export to a VCF file and email the file to yourself.
 - b. Clear the cache and data for the Contacts app.
 - c. Download the VCF file that you emailed to yourself, then import those contacts (**Contacts** app >  > **Import**).

App or widget issues

Can't change apps and widgets

If you can't reposition, add, or delete apps or widgets, unlock the home screen layout:

1. Touch & hold a blank space on your home screen.
2. Tap  **Home settings**.
3. Turn **Lock the home screen layout** off .

App or widget missing from home screen

If a widget disappeared from your [home screen](#), then add the widget by touching & holding an empty spot on your home screen.

If an app disappeared from your home screen:

- If you keep all your apps on the home screen and don't use an app tray (**Home screen style > Open**), then reinstall the app.
- If you keep all your apps in an app tray (**Home screen style > App tray**), just add its shortcut to the homescreen. If the app disappeared from both your home screen and app tray, you need to reinstall it.

App crashes, won't open, or isn't working

After each step, check to see if the issue is fixed:

1. Turn your phone off and then on again.
Press & hold the Power button, then tap **Power off**.
2. Check that you have not disabled permissions for the app. If any permissions are turned off, turn them on and try using the app again.
3. Update the app.
4. Force stop the app. This completely shuts down the app, including any background services that may be causing your issue.
5. Clear the app's cache. This frees up space by removing temporary files.
6. Clear the app's data. This erases all data saved in this app.
7. Contact the app's developer.
 - a. [Open](#) the App Center app.
 - b. Touch the app and swipe down to see contact information.
8. If all else fails, [delete the app](#).

Tip: To figure out which third-party app is causing performance problems, [use safe mode](#).

App is slow to open

If you experience a lag when opening an app, [turn on performance settings](#).

App disabled in safe mode

If apps are disabled because you're in [safe mode](#), you can't use them until you exit safe mode.

To exit safe mode, turn your phone off and then on again.

Problems with app you installed

After each step, check to see if the issue is fixed:

1. Check for updates to the app.
2. If you can open the app, touch  or  > **Help** and look for troubleshooting information.
3. Clear the app's cache.
4. Go to the developer's website for support.
 - a. [Open](#) the App Center app.
 - b. Touch the app and swipe down to see a link to the website.

Camera issues

Photo looks blurry

Wipe the lens clean with a soft, dry cloth and retake the photo.

If new photos still look blurry:

- Increase resolution (photo size) in the Camera app. A smaller photo size results in lower image quality.
- Avoid zooming when taking a photo. Pixelation always occurs when you zoom a digital photo. If you use zoom during the shot itself, pixelation will be more evident.
- If you're indoors and taking a panoramic photo, switch to regular mode. Panorama works best for outdoor shots; the algorithm that stitches the images together isn't optimized for indoor, up-close shots.

Accidentally deleted photos

You can try to recover recently deleted photos.

If recovered, be sure to back up your photos to the cloud.

Can't delete photo

If a photo or video you deleted comes back, check if it's on your SD card. To delete it, use the File Manager app. (If you don't have this app, download a file manager app and use it to delete the photo from your card.)

Or, [remove](#) your card from the phone and use a computer to delete photos from the card.

WhatsApp camera issues

If you installed WhatsApp and have problems taking photos or videos with it:

1. Check for updates to the app.
2. Clear the app's cache.
3. If the problem continues, open WhatsApp, touch  > **Settings** > **Help**, and search for information about your issue.

Error: Please restart Camera to continue

After each troubleshooting step, check to see if the issue is fixed:

1. Turn your phone off and then on again.
2. Clear the cache for the Camera app.
3. Check for updates to your Camera app.
4. Use [safe mode](#) to see if apps you installed are causing the issue and uninstall as needed.

If the camera works correctly in safe mode, a third-party app is probably causing the issue.

5. If you're storing photos/videos on your SD card, [remove](#) the card and see if you can take photos without getting the error. If so, replace the SD card with a new card. Make sure the new card is certified A1 and has a fast write speed.

Error: Camera Busy

This error can occur if you use the camera in one app and then switch to another app that requires permission to access the camera.

After each troubleshooting step, check to see if the issue is fixed:

1. Turn your phone off and then on again.
2. Check which apps have permission to access the camera.

[Settings](#) > **Apps** > **Camera**

Review the list of the apps on your phone that request camera access and remove access for apps that look suspicious or that you don't use.

3. Clear the cache and data for the Camera app.

Update Android software

For best performance, keep your phone updated with the latest available Android software.

Check Android version number

To check what version of Android your phone is running:

1. Go to **Settings** > **About phone** > **Android version**.
2. The number displayed is your phone's Android version.

Install Android software updates

Your phone notifies you if an Android software update is available.

To manually check for updates, go to **Settings** > **System updates** > **Check for updates**.

If an upgrade is available, follow the onscreen instructions to install it.

Tips:

- To save data charges, use a **Wi-Fi connection** to download software updates.
- For safety reasons, your phone may download security updates (not OS upgrades) automatically over your mobile network if Wi-Fi is not available within a few days after you receive a notification that a security update is available. In this case, data charges may apply depending on the carrier.

You can't downgrade to a previous software version after installing an update.

Reset Wi-Fi, cellular data, and Bluetooth

Use this reset if:

- Wi-Fi doesn't work. Wi-Fi network name doesn't show on your phone.
- Cellular/mobile data: No signal and  in the status bar. You can't make/receive calls, or calls frequently drop.
- Bluetooth doesn't work or disconnects automatically.
- VPN doesn't work as expected.

What gets deleted/removed when you reset

- All Wi-Fi devices and passwords set up on your phone
- All cellular/mobile settings, like preferred cellular network
- All paired Bluetooth devices set to connect with your phone, like ear buds, car audio, speakers
- All VPN configurations set up on your phone

You cannot choose individual connections to reset; they will all reset.

Reset

If you're having problems with connections, review this information first:

- [Wi-Fi](#)
- [Bluetooth](#)
- [Cellular data](#)
- [Hotspot](#) (internet sharing)

Then, if you're still experiencing problems, try resetting all network settings:

1. Go to [Settings](#) > **System** > **Reset options**.
2. Tap **Reset Wi-Fi, mobile & Bluetooth** > **Reset settings**.
3. If you're using dual SIMs, select the SIM to reset for mobile data settings.
4. Tap **Reset settings**.
5. Try to reconnect to Wi-Fi, cellular data, and Bluetooth, or try to share your internet connection again.

Reset phone

What a reset does

Resetting your phone erases all data and brings it back to out-of-the-box condition. This data will be erased from the phone:

- Accounts
- Media (music, photos, videos)
- System settings and data
- App settings and data (including text messages)
- Downloaded apps

Before you reset

1. Back up your data.

If your phone works and you can unlock it:

- If you aren't automatically saving your photos and videos to your cloud, back them up now or copy them to a computer.
- Make sure that any changes you made to contacts or calendar are synced to an account.

2. Make sure you have your security information:

- The username for a Lenovo ID account on your phone. (**Settings > Passwords & accounts**)
- The password for that account.
- If you set a screen lock, make sure you know the PIN, pattern, or password.

To restore your data after resetting, you'll need to enter security information. This shows that you or someone you trust did the reset and helps prevent others from using your phone without permission.

Reset phone from Settings

To erase all data and reset your phone:

1. Go to **Settings > System**.
2. Tap **Reset options > Erase all data (factory reset)**.

Reset phone if you can't open Settings

If you can't open Settings, do an external reset.

1. Charge your battery 30% or more.
2. Turn off the phone.
3. Press & hold the Volume Down button and the Power button at the same time until the phone turns on.
4. Press the Volume Down button until you see Recovery mode.

5. Press the Power button to restart in Recovery mode.
6. If you see an Android robot with an exclamation mark, press & hold the Power button and, while holding it down, press & release the Volume up button.
7. Use the Volume buttons to scroll to **Wipe data/factory reset**, then press the Power button to select it.
8. Use Volume buttons to scroll to **Factory data reset**, then press the Power button to select it.
Allow several seconds for the reset to complete.
9. Use Volume buttons to scroll to **Reboot system now**, then press the Power button to select it.
Allow several minutes for the reboot to complete. If the phone doesn't finish rebooting, press & hold the Power button until the screen turns dark, then release it to power up normally.
10. If you reset your phone because you suspect a third-party app is causing problems, when you set up the phone again, be sure you don't copy all apps. Restore one app at a time and use the phone for a while. If the phone has no issues, install the next app and retest.

Get more help

Issue	Where to get help
Billing or cellular network issues	Contact your carrier.
Learn to use an app	Open the app and touch  or  > Help .