This setting can extend your phone's battery life better than you think.

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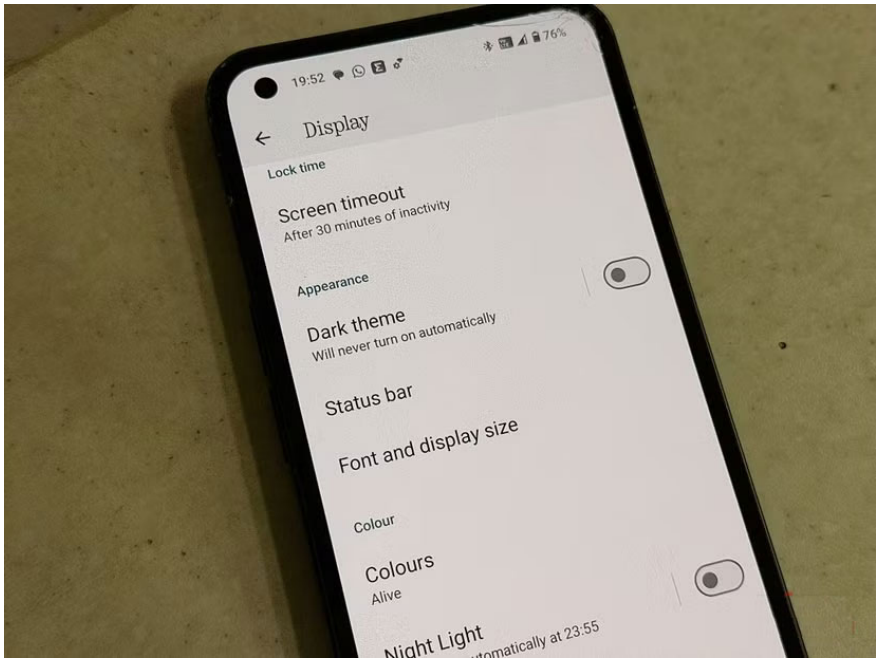
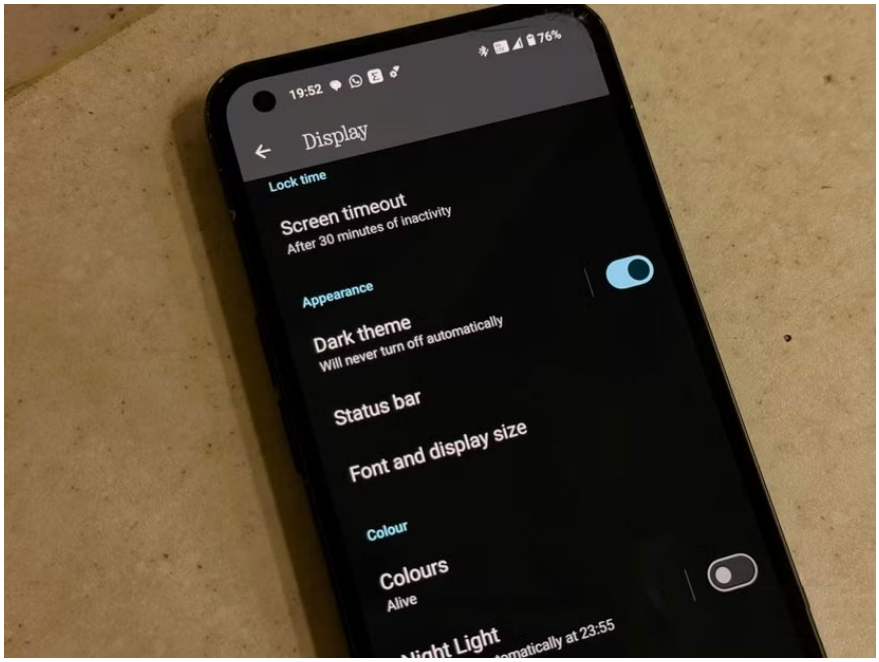
This article is about Dark Mode . And you probably already use it. A few years ago, Dark Mode was just an experiment hidden in the developer settings. Now it's the default. Android, iOS, Windows, macOS, Linux—everyone has it.

Encouraged by Reddit, Apple integrated it into iOS in 2019, and now even banking apps have it. There are a number of reasons for the boom: Dark Mode is easier on the eyes (especially in the dark). Less blue light means fewer headaches. And, if you've ever seen a pure black OLED panel, it just looks better.





Most phones today use AMOLED displays. Unlike LCD displays, where black pixels just 'look' dark, on AMOLED displays, those black pixels are actually off. This means deeper blacks, which is great, but it also means better battery life.

This isn't just a theory. There's a study on the subject. Spoiler: It's not just a small difference. The numbers are enough to make you think twice about keeping your phone on bright.

Does Dark Mode Really Save Battery?

Researchers at Purdue University have published a comprehensive study of Dark Mode and power consumption. They built a frame-by-frame OLED power analyzer and tested it on four Android phones. The study was conducted in 2021, so the phones used (Pixel 4, Pixel 5, Moto Z) are a bit outdated. However, this means that modern results should be even better with newer hardware.

The results are clear: Using Dark Mode can reduce OLED display power consumption by up to 47% at full brightness compared to an all-white display. Even at half brightness, the ideal level most people use, you'll see an average OLED display power consumption drop by 27%. Put simply: The darker the display, the lower the power consumption.

	Brightness Level											
	Pixel 2			Moto Z3			Pixel 4			Pixel 5		
App	30%	50%	100%	30%	50%	100%	30%	50%	100%	30%	50%	100%
Calculator	21%/ 7%	36%/ 12%	81%/ 54%	24%/ 10%	38%/ 12%	82%/ 58%	13%/ 6%	23%/ 10%	70%/ 51%	16%/ 2%	30%/ 11%	77%/ 58%
Google Phone	18%/ 4%	34%/ 9%	81%/ 50%	-	-	-	12%/ 5%	25%/ 11%	76%/ 56%	16%/ 8%	32%/ 14%	83%/ 63%
Google Calendar	21%/ 6%	34%/ 16%	79%/ 57%	21%/ 0%	37%/ 15%	80%/ 58%	13%/ 9%	25%/ 11%	73%/ 59%	19%/ 10%	32%/ 18%	80%/ 69%
Google Maps	8%/ -1%	15%/ 4%	40%/ 19%	8%/ 4%	14%/ 5%	34%/ 19%	6%/ 10%	11%/ 2%	36%/ 21%	7%/ 0%	14%/ 0%	40%/ 20%
Google News	11%/ -1%	22%/ 5%	64%/ 29%	15%/ 9%	27%/ 6%	63%/ 34%	8%/ 4%	15%/ 6%	56%/ 36%	9%/ 4%	20%/ 5%	63%/ 40%
YouTube	12%/ -1%	21%/ 6%	56%/ 28%	13%/ 6%	24%/ 8%	62%/ 28%	8%/ 1%	15%/ 3%	49%/ 27%	10%/ 2%	18%/ 6%	52%/ 31%
Average	15%/ 3%	27%/ 9%	67%/ 40%	16%/ 6%	28%/ 9%	64%/ 39%	10%/ 6%	19%/ 7%	60%/ 42%	13%/ 4%	24%/ 9%	66%/ 47%

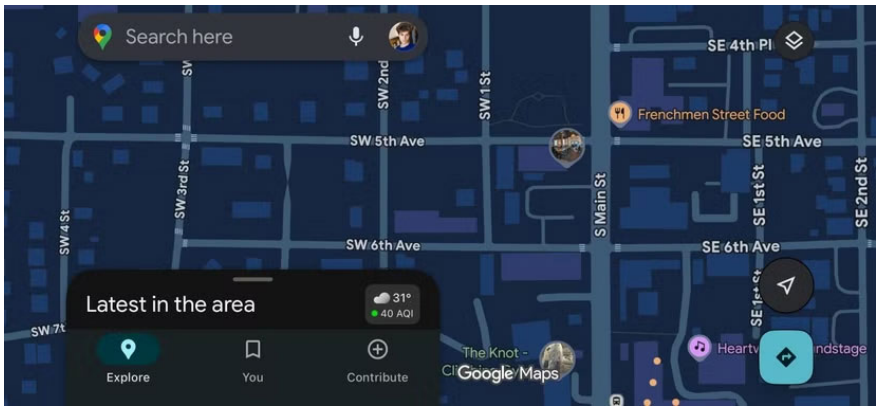
The table above is taken from the study. For example, on the Pixel 5, switching Google Calendar from light mode to dark mode at maximum brightness significantly reduced the screen's power consumption by 80%. Even if you minimized the entire device, power usage was still reduced by 69%.

Dark Mode saves a lot of battery

When you're outside in the sun, your phone will crank up its brightness whether you like it or not. On super sunny days, every white pixel on a high-resolution screen uses battery. But if you're using Dark Mode, you can crank up the brightness to the max and still save a lot of battery.

A 47% reduction in power consumption is remarkable. In fact, while a phone in bright mode needs to be charged, a phone in Dark Mode can keep the device running longer with half the battery left.

This is important for people who rely on their phones for navigation on long road trips. They'll set Google Maps to landscape mode, stick it on the dashboard, and sometimes drive for 10 hours straight. Sure, most people hate Google Maps in Dark Mode, but it does help extend battery life. On long daytime trips, you have to keep the screen at 100% brightness, regardless of mode.



With Dark Mode, you don't have to worry about your phone running out of battery and having to plug it in. You can get to your destination safely instead of worrying about the battery percentage dropping. Long battery life is always better, and no one wants to clutter their device with cables, especially when the charging port is so close to the gear lever.

Smarter with Dark Mode

You don't have to use your screen at 100% brightness to get the benefits. Dark Mode is still better than Bright Mode, even at lower settings. However, higher brightness always means more battery drain, even with Dark Mode. Turn on auto-brightness so your screen only gets brighter when you really need it.

On Android, you can take Dark Mode's effectiveness even further by looking for "pure black" themes, which use absolute black (#000000) instead of dark gray. Since OLED pixels don't emit light when displaying pure black, you're essentially turning off the entire area of ??the screen and saving every milliamp you can.

Many popular apps that only offer a dark gray background can be turned into pure black with a little tweaking. For example, for Reddit, you can install the open source Infinity client for Reddit to change the theme and set the background to pure black.

Dark Mode is probably the biggest lever you can pull to extend your phone's battery life, especially if you spend a lot of time outdoors with the brightness turned up. If you care about battery life, nothing beats it.