









Apple Buying Guide 2020

Part 2: December 1, 2020

Tony Crawford
The Villages Apple User Group











iPhone



iPhone

Which iPhone should I Buy?



iPhone 12 Pro Max 6.7" A14



iPhone SE (2nd Gen) 4.7" A13



iPhone 12 Pro 6.1" A14





iPhone 12 6.1" A14



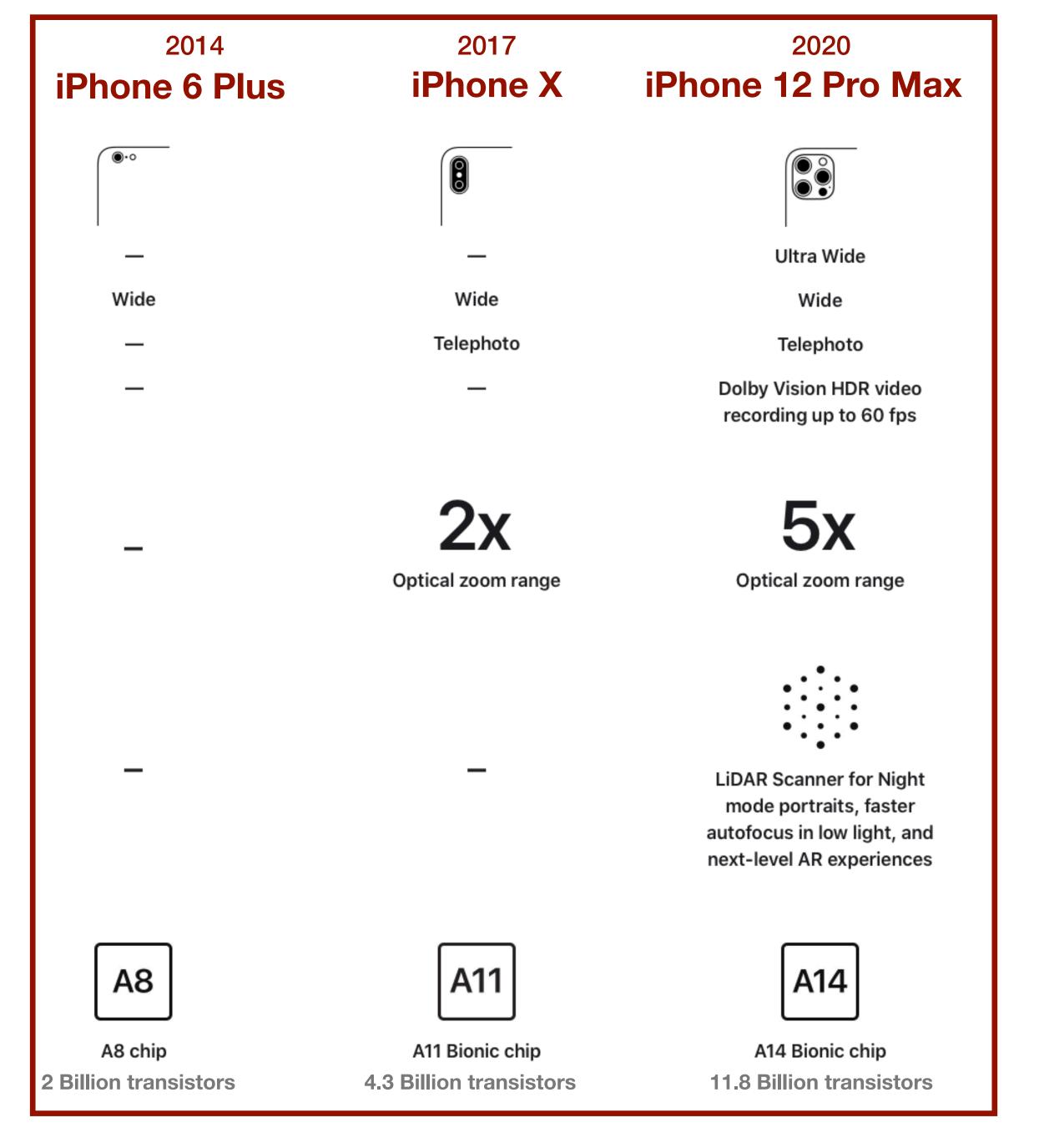


iPhone 12 mini 5.4" A14

Model	Year Released	Price TBD
12 Pro Max	2020	\$1100 128 GB
12 Pro	2020	\$1000 128 GB
12	2020	\$800 64GB
12 mini	2020	\$700 64GB
SE	2020 (Apr)	\$400 64GB
11	2019	\$600 64GB
XR	2018	\$500 64GB

iPhone Lifespan and Evolution

	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
	1	2	3	4	5	6	7	8	9	10	11
Phone	12 Pro 12	11 Pro Max 11 Pro 11 SE (April 2020)	XS Max XS XR	X 8Plus 8	7 Plus 7	6s Plus 6s SE	6 Plus 6	5 s	5 5c	4s	4
	iOS14					6					
		iOS 13				5					
			iOS 12					6			
				iOS 11				5			
					iOS 10				5		
						iOS 9				5	
							iOS 8			4	
								iOS 7			4
Base Storage	64GB Pro 128GB	64GB	64GB	64GB	32GB	16GB	16GB	16 GB	16GB	16GB	16GB
Chip	A14 Bionic	A13 Bionic	A12 Bionic	A11 Bionic	A10 Fusion	A9	A8	A7	A6	A5	A4
Transistors	11.8 Billion	8.5 Billion	6.9 Billion	4.3 Billion	3.3 Billion		2 Billion	1 Billion	742 Million		149 Million



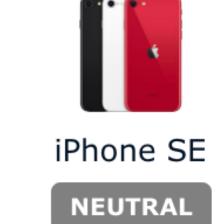
iPhone 6 Plus	iPhone X	iPhone 12 Pro Max
Camera		
Single 8MP Wide camera	Dual 12MP Wide and Telephoto cameras	Pro 12MP camera system (Ultra Wide, Wide, and Telephoto)
Wide: <i>f</i> /2.2 aperture	Wide: $f/1.8$ aperture Telephoto: $f/2.4$ aperture	Ultra Wide: $f/2.4$ aperture Wide: $f/1.6$ aperture Telephoto: $f/2.2$ aperture
_	_	Night mode
_	_	Deep Fusion
_	_	Apple ProRAW**
Optical image stabilization	Dual optical image stabilization	Sensor-shift optical image stabilization
Digital zoom up to 5x	2x optical zoom in Digital zoom up to 10x	2.5x optical zoom in, 2x optical zoom out; 5x optical zoom range Digital zoom up to 12x
True Tone flash	True Tone flash with Slow Sync	Brighter True Tone flash with Slow Sync
_	_	Night mode portraits
_	Portrait mode	Portrait mode with advanced bokeh and Depth Control
_	Portrait Lighting with five effects (Natural, Studio, Contour, Stage, Stage Mono)	Portrait Lighting with six effects (Natural, Studio, Contour, Stage, Stage Mono, High-Key Mono)
HDR for photos	Auto HDR for photos	Smart HDR 3 for photos

iPhone

Which iPhone should I Buy?











iPhone 12 Pro Max 6.7" A14



iPhone SE (2nd Gen) 4.7" A13



iPhone 12 Pro 6.1" A14



6.1" A13



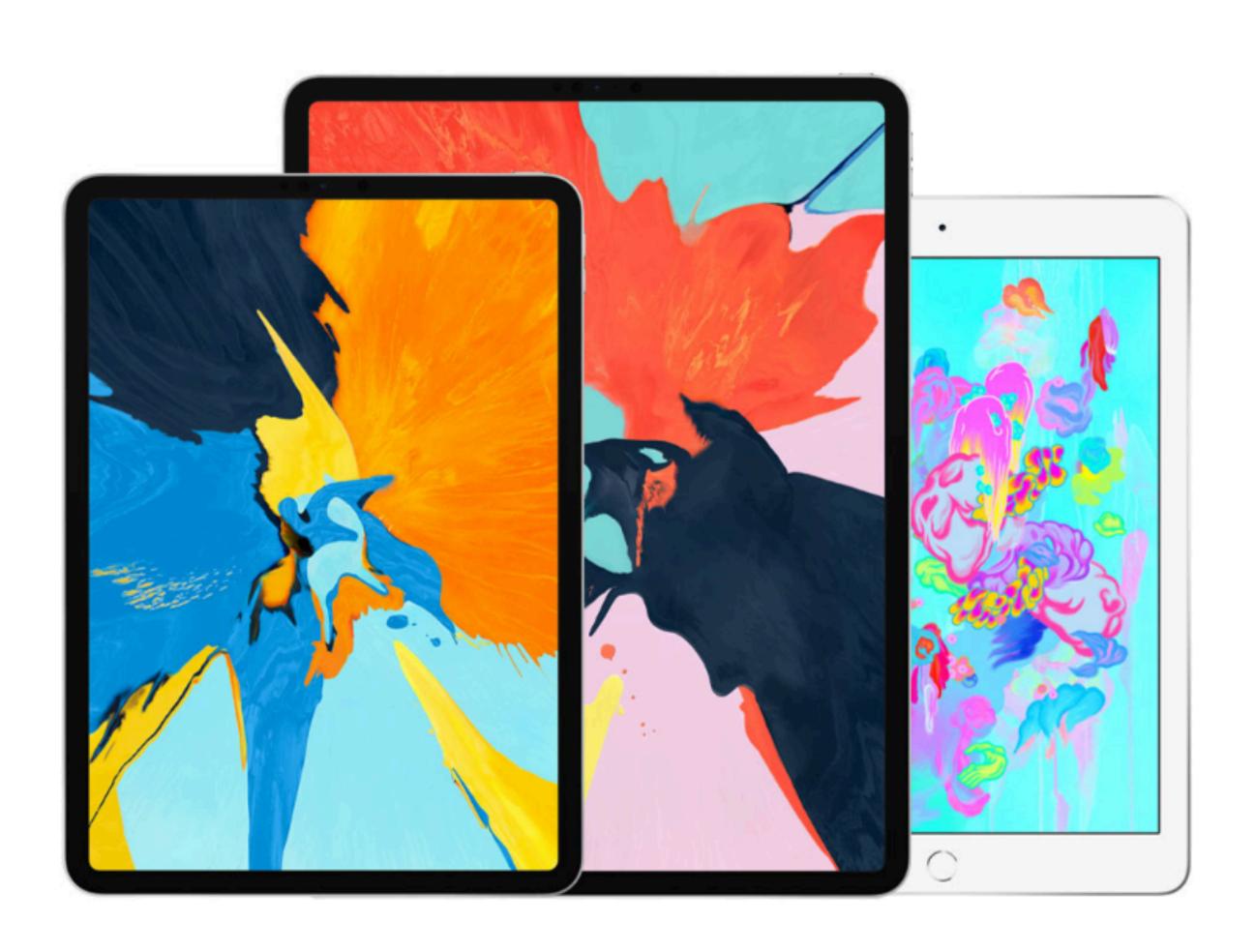




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12 mini	2020	\$700 64GB
SE	2020 (Apr)	\$400 64GB
11	2019	\$600 64GB
XR	2018	\$500 64GB

Pad



iPad

Which iPad should I Buy?



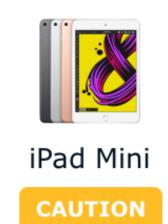
NEUTRAL



NEUTRAL



BUY NOW













Silver



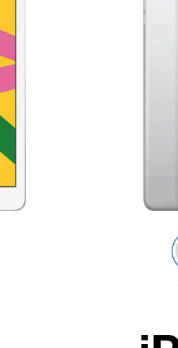
iPad Pro 11"

iPad Air 10.5"



iPad

10.2"





iPad mini 7.9"

Model	Year Released	Price (Wi-Fi)
iPad Pro 12.9" 4th Gen	2019	\$1,000 A12Z 64GB
iPad Pro 11" 2nd Gen	2019	\$800 A12Z 64GB
iPad Air 10.9" 4th Gen	2020	\$600 A14 64GB
iPad 10.2" 8th Gen	2020	\$330 A10 32GB
iPad mini 7.9" 5th Gen	2019	\$400 A12 64GB

Magic Keyboard

\$300 for iPad Air 10.9" (4th Generation) \$300 for iPad Pro 11" (1st & 2nd Generation) \$350 for iPad Pro 12.9" (3rd & 4th Generation)

The Magic Keyboard is an amazing companion for iPad Pro and iPad Air.

It features a great typing experience, a trackpad that opens up new ways to work with iPadOS, a USB-C port for pass-through charging, and front and back protection.

The Magic Keyboard features a floating cantilever design, allowing you to attach it magnetically and smoothly adjust it to the perfect viewing angle for you.

Comfortable typing

Full-size, backlit keys and a scissor mechanism with 1 mm travel for quiet, responsive typing.

Built-in trackpad

Designed for Multi-Touch gestures and the cursor in iPadOS.

Floating cantilever design

Smooth angle adjustability delivers the perfect viewing angle.

Front and back protection

Folds into a case to provide front and back protection for traveling.



HT211091 Setup and use Magic Keyboard for iPad

Mac/Macbook



Mac

Which Mac should I Buy?







MacBook Air

MacBook Pro

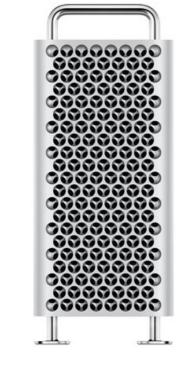
MacBook Pro 16"







iMac Pro 27"



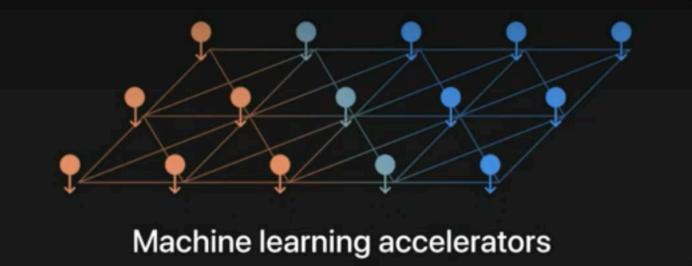
Mac Pro



Mac Mini

Model	Year Released	Price
MacBook Air 13"	2020	\$1,000 M1 chip 8GB 256GB SSD
MacBook Pro 13"	2020	\$1,300 M1 chip 8GB 256GB SSD
MacBook Pro 16"	2019	\$2,400 2.6GHz 16GB 512GB SSD
iMac	2017 21.5" 2020 27"	\$1,100 21.5" 2.3GHz 8GB 256GB SSD
iMac Pro	2017	\$5,000 3.0GHz 32GB 1TB SSD
Mac Pro	2019	\$6,000 3.5GHz 32GB 256GB SSD
Mac mini	2020	\$700 M1 chip 8GB 256GB SSD

5 nanometer process





Thunderbolt / USB 4 controller



Media encode and decode engines

16 billion transistors



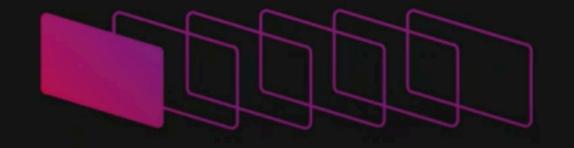
16-core

Neural Engine

11 trillion operations per second



8-core CPU



Advanced image signal processor



Secure Enclave



Unified memory architecture

Industry-leading performance per watt

Apple Event — November 10

Up to

16GB

memory

Thunderbolt / USB 4

Up to

2TB

SSD



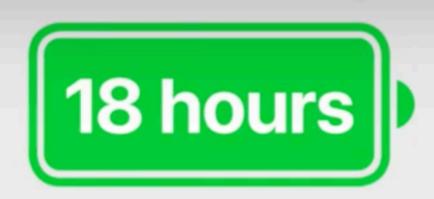
Touch ID Wi-Fi 6



Advanced camera ISP

MacBook Air

\$1,000



Up to

battery life



iPhone and iPad apps

Secure

Enclave

Up to

3.5X

faster CPU

Up to

5X

faster graphics

macOS Big Sur

color

Retina display

Up to

faster machine learning

2x

Up to

faster SSD



Magic Keyboard



Silent design





13.3"

Apple Event — November 10

Up to

16GB

memory



Thunderbolt / USB 4

Up to

2TB

SSD



Touch ID



macOS Big Sur

P3 wide color

13.3" Retina display

Up to

111

faster machine learning

Active cooling system

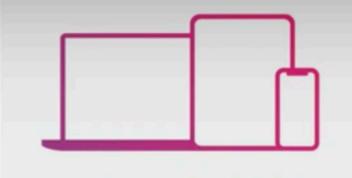


Advanced camera ISP



Up to

battery life



iPhone and iPad apps

2.8X

Up to

faster CPU

MacBook Pro

\$1,300



Secure **Enclave** Up to

5X

faster graphics





Magic Keyboard + Touch Bar





Apple Event — November 10

Up to

16GB

memory

Up to

2TB

SSD



Supports 6K external display

macOS Big Sur

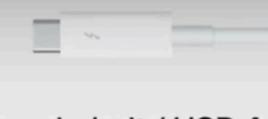
Cool and quiet operation



Up to

faster machine learning



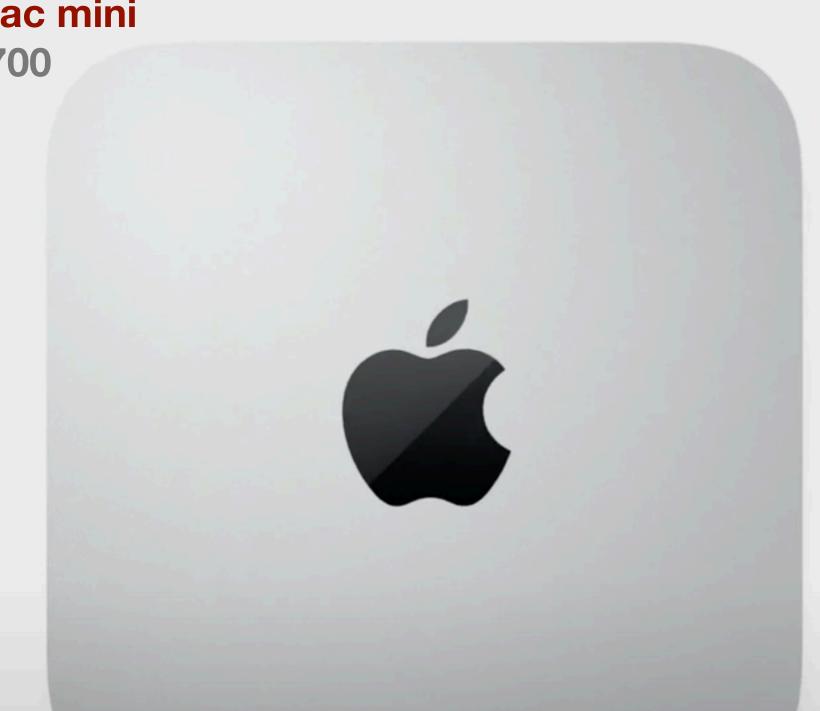


Thunderbolt / USB 4

Up to 60% more energy efficient



\$700





HDMI

Wi-Fi 6



Gigabit Ethernet



iPhone and iPad apps



Up to

faster CPU

Up to



Secure **Enclave**



faster graphics











Unified memory architecture

Up to

3.5X

faster CPU

Wi-Fi 6

Up to

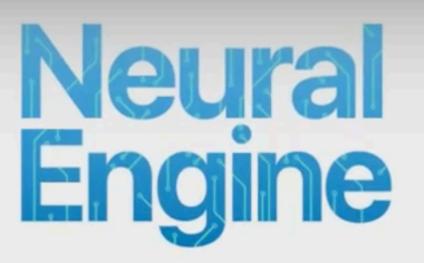
6X

faster GPU

Up to

15X

faster machine learning



macOS Big Sur



Advanced camera ISP

Industry-leading performance per watt





Up to

battery life





iPhone and iPad apps

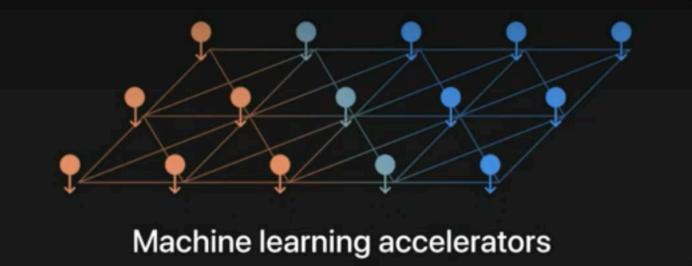


Secure Enclave



Universal apps

5 nanometer process





Thunderbolt / USB 4 controller



Media encode and decode engines

16 billion transistors



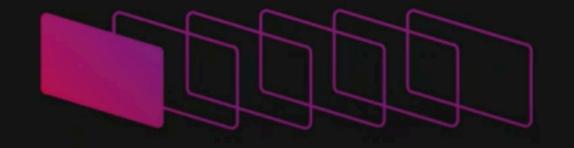
16-core

Neural Engine

11 trillion operations per second



8-core CPU



Advanced image signal processor



Secure Enclave



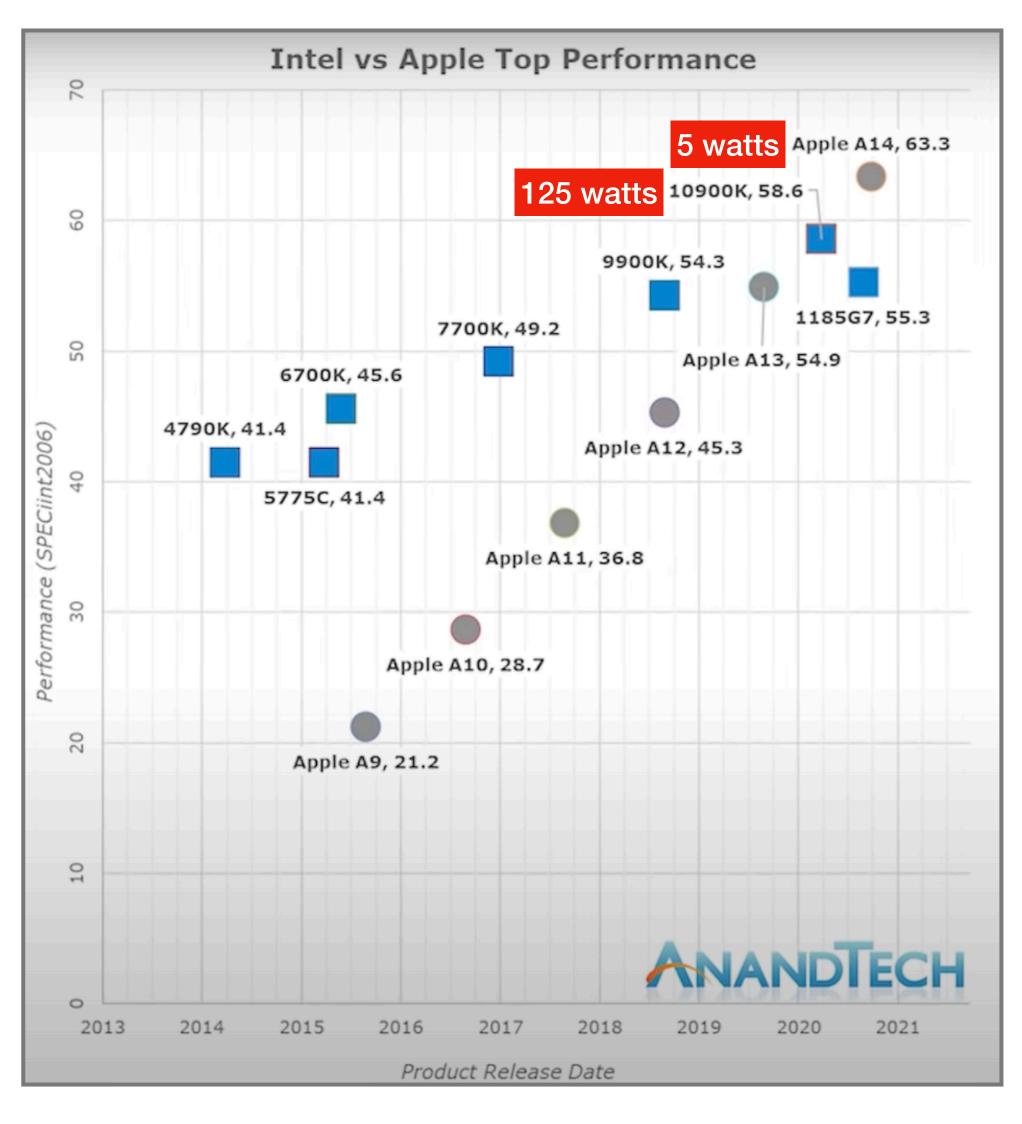
Unified memory architecture

Industry-leading performance per watt

iPhone Lifespan and Evolution

	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
	1	2	3	4	5	6	7	8	9	10	11
Phone	12 Pro Max 12 Pro 12 12 mini	11 Pro Max 11 Pro 11 SE (April 2020)	XS Max XS XR	X 8Plus 8	7 Plus 7	6s Plus 6s SE	6 Plus 6	5 s	5 5c	4s	4
	iOS14					6					
		iOS 13				5					
			iOS 12					6			
				iOS 11				5			
					iOS 10				5		
						iOS 9				5	
							iOS 8			4	
								iOS 7			4
Base Storage	64GB Pro 128GB	64GB	64GB	64GB	32GB	16GB	16GB	16GB	16GB	16GB	16GB
Chip	A14 Bionic	A13 Bionic	A12 Bionic	A11 Bionic	A10 Fusion	A9	A8	A7	A6	A5	A4
Transistors	11.8 Billion	8.5 Billion	6.9 Billion	4.3 Billion	3.3 Billion		2 Billion	1 Billion	742 Million		149 Million

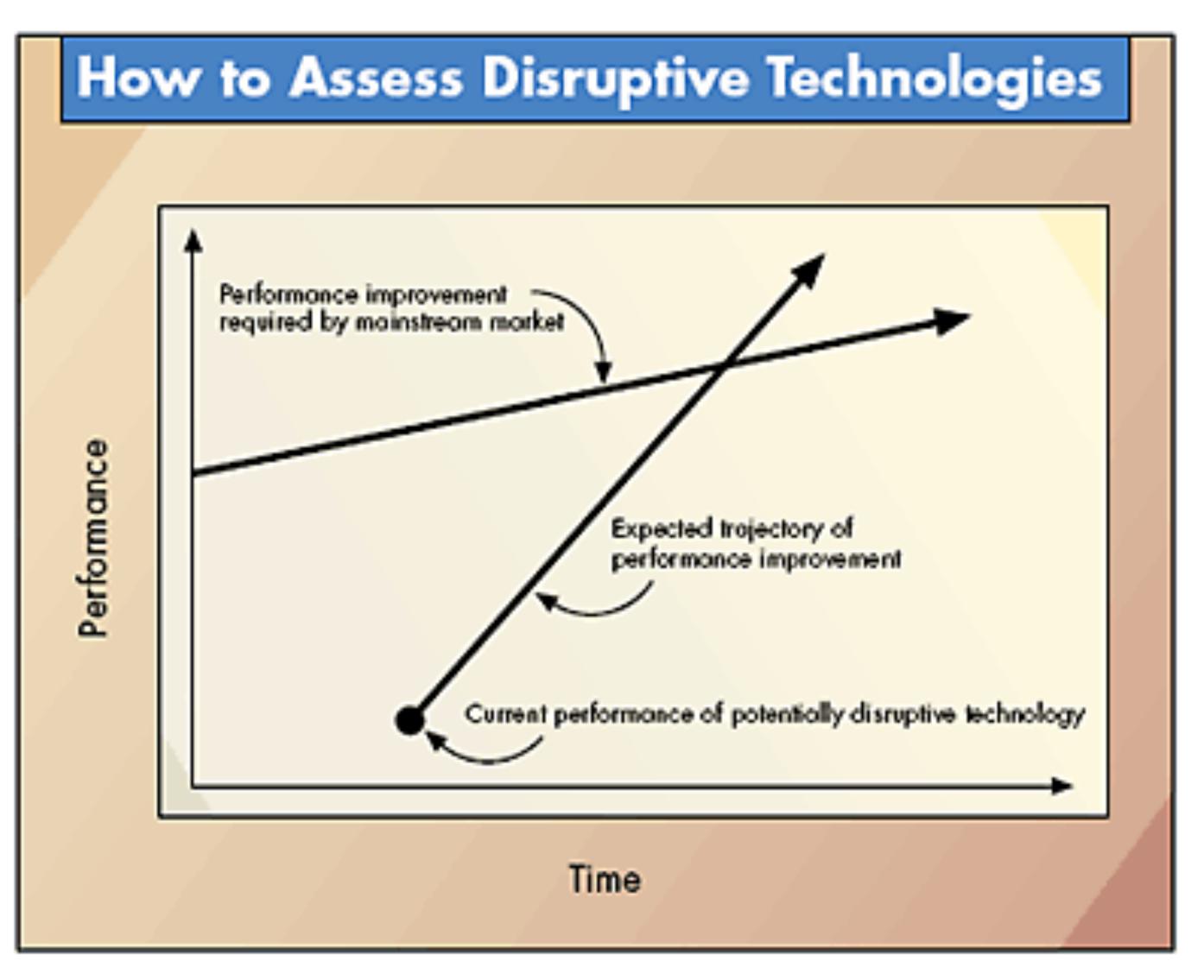




How Apple Just Changed the Entire Industry

Morning Brew

YouTube Nov 23, 2020



<u>Disruptive Technologies: Catching the Wave</u> <u>Joseph Bower & Clayton Christensen</u> <u>Harvard Business Review January/February 1995</u>

Mac





















MacBook Air 13"

MacBook Pro 13"

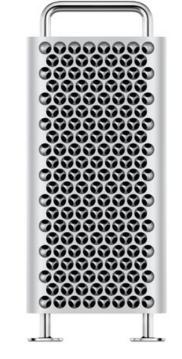
MacBook Pro 16"



iMac 21.5"



iMac Pro 27"



Mac Pro



Mac Mini

Model	Year Released	Price
MacBook Air 13"	2020	\$1,000 M1 chip 8GB 256GB SSD
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iMac	2017 21.5" 2020 27"	\$1,100 21.5" 2.3GHz 8GB 256GB SSD
iMac Pro	2017	\$5,000 3.0GHz 32GB 1TB SSD
Mac Pro	2019	\$6,000 3.5GHz 32GB 256GB SSD
Mac mini	2020	\$700 M1 chip 8GB 256GB SSD

Apple TV



Apple TV







Model	Year Released	Price
Apple TV 4K	2017	\$179 A10X 6 cores 32GB
Apple TV 4th generation	2015	\$149 A8 2 cores 32GB

The Villages Apple User Group

Apple TV Presentation 3/22/17

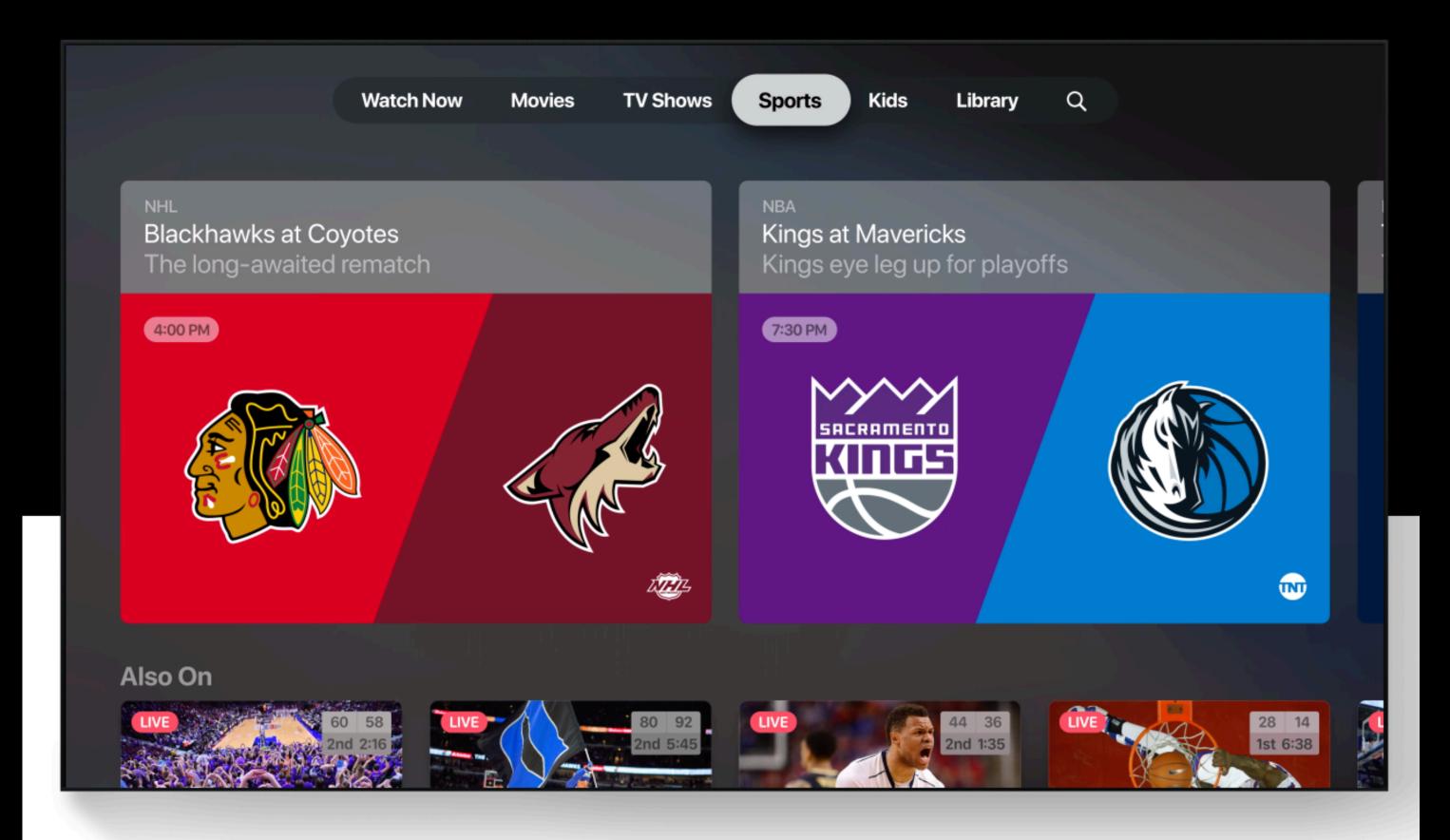
https://www.tvaug.org/presentations/presentations-2017/



The new Apple TV app

All your TV. All in one app.

apple.com/tv-app



Replay C

Just the premium channels you want. Thousands of movies to buy or rent. Popular streaming services. The biggest cable TV providers. And original shows and movies from Apple TV+. It's personalized and expertly curated, so you'll discover the best of what's on. And it's all in one place. On all your screens. It's simple — the new Apple TV app is the ultimate way to watch TV.





Take control of your channels.

Now you can quickly and easily subscribe to just the channels you watch — like Showtime, Starz, CBS All Access, and Noggin. There are no new apps, accounts, or passwords needed for up to six family members, and you can even watch offline.

WIME STARZ

еріх

©CBSALLACCESS

noggin



Streaming services, streamlined. Easily discover all your favorite shows from streaming services including Disney+, HBO Max, Amazon Prime Video, Hulu, and more — all inside the app.

Raised by Wolves is available on the Apple TV app with an HBO Max subscription* 7



HBOMAX

hulu

peacock

prime video

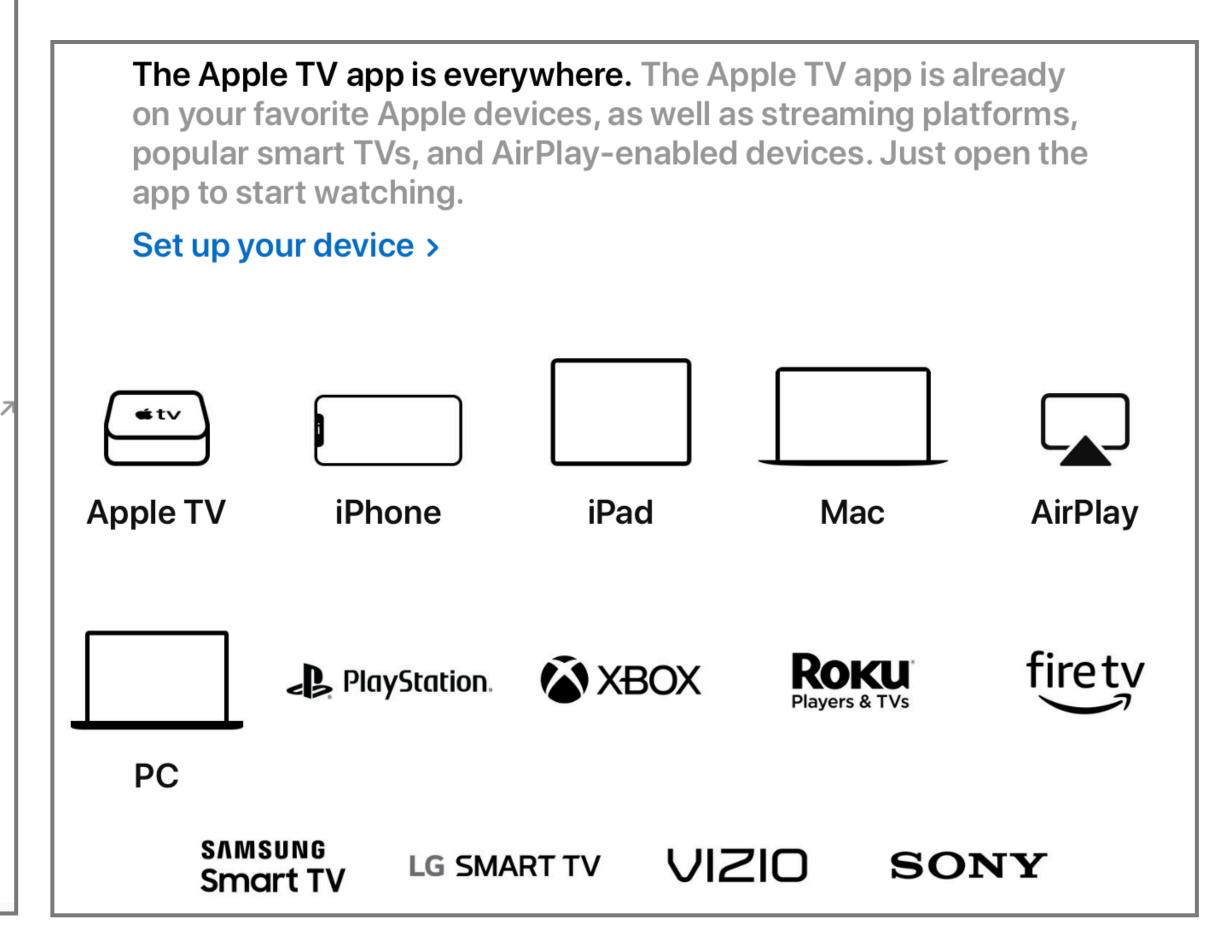
pluto



Apple TV+ streams critically acclaimed Apple Original shows and movies, only on the Apple TV app.

Buy. Rent. Watch. All inside the app.

Welcome to the new home of thousands of movies, including all the latest blockbusters.



Buying Considerations

Should I get this device



Apple or non-Apple

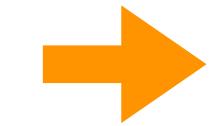


• Which model do I get (new, older, refurbished)?



- Where to buy?

 (Apple retail store, Apple online store, Apple Store app, Best Buy, Sams, Mobile Carrier etc)
- Can I trade in my old device?

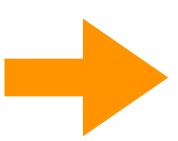


• Is now a good time to buy?



https://buyersguide.macrumors.com

• Should I get a warranty, and if so, from where?





Must Have















Should Have

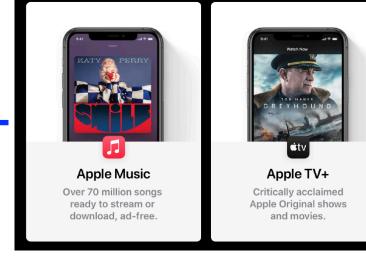


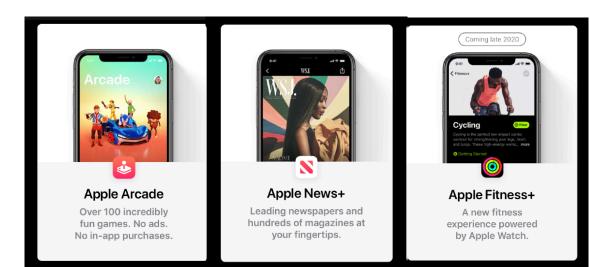












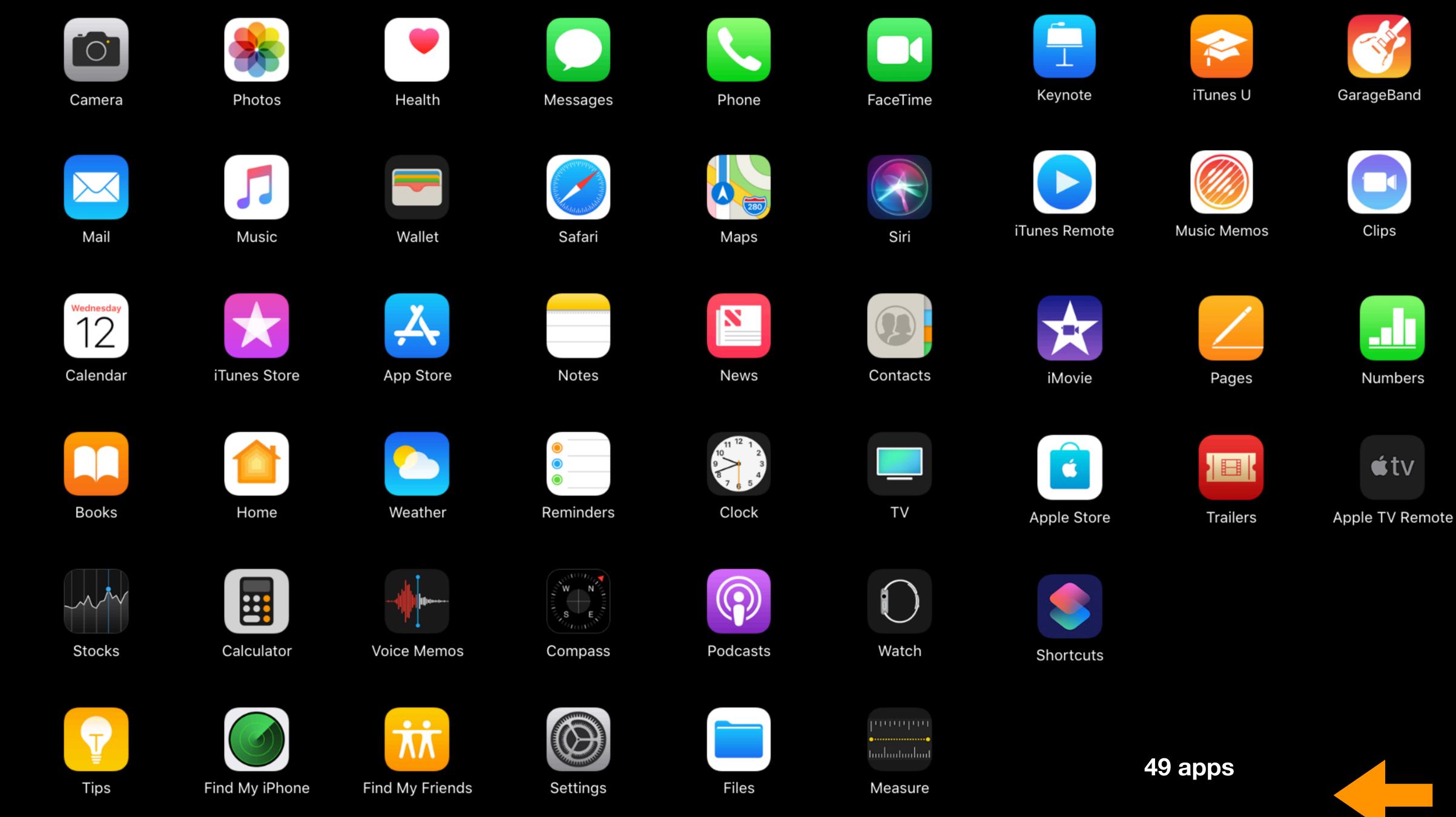




The Apple Ecosystem

Business Partners Apple Stores Accenture, Cisco, Deloitte, macOS GE, IBM, Salesforce, Apps SAP, Mobility Partners iMac MacBook Apple.com Mac Mini Mac Pro Connectivity TV iTunes Silicon iOS Ethernet Pages Numbers Keynote iCloud WiFi iPod iPhone Photos iMovie Garage Band Bluetooth iPad iPad Pro NFC Siri iBeacon Music Books Podcasts Security watchOS AirDrop Apple CarPlay AirPlay AirPrint Apple Watch Privacy HealthKit ResearchKit CareKit Home Sharing Accessibility Family Sharing tvOS Home HomeKit Mail Messages Apple TV Face Time **ARKit** Apple Care Accessories Apple Pencil HomePod Apple Support Apple Pay/Wallet Home Automation User Guides Health & Fitness

(iPhone) Apps Apple



iPhone Lifespan and Evolution

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Transistors	11.8 Billion	8.5 Billion	6.9 Billion	4.3 Billion	3.3 Billion		2 Billion	1 Billion			

Average Lifespans



~ 5 years



~ 5 years



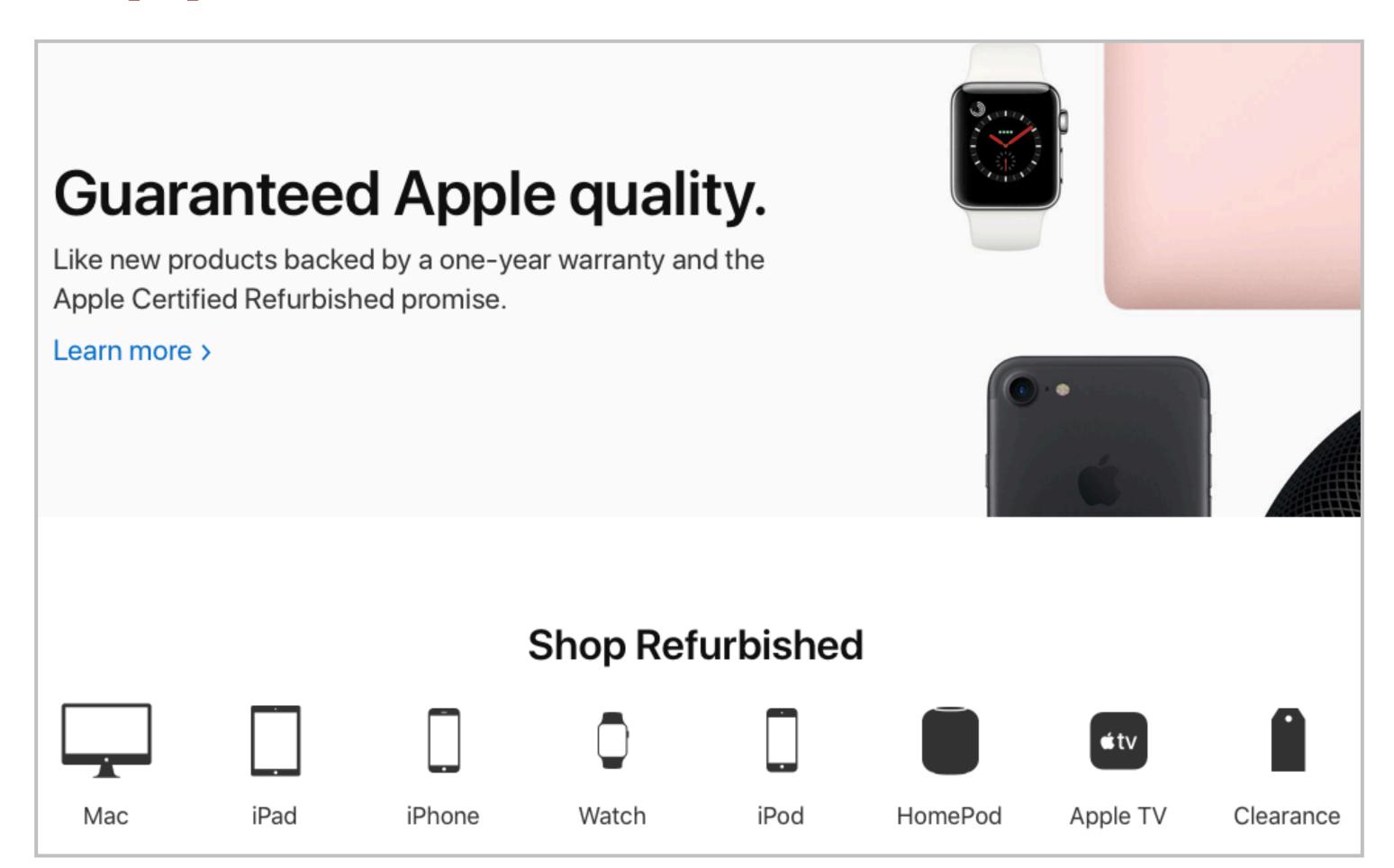
~ 5 years



~ 5 to 7 years

Lifespan = ~ years that a new device can accept the latest OS release

Apple Refurbished



https://www.apple.com/shop/refurbished

As of 11/30/20





\$899.00 Save \$350.00



Refurbished iPhone XS 256GB - Space Gray (Unlocked)

\$759.00 \$1,049.00 Save \$290.00



Refurbished iPhone XS Max 256GB - Silver (Unlocked)

\$849.00 \$1,149.00 Save \$300.00



Refurbished iPad Air Wi-Fi 64GB - Silver

\$419.00 \$499.00 Save \$80.00



Refurbished iPad Wi-Fi 32GB Gold (7th Generation) \$249.00

\$299.00 Save \$50.00



Refurbished iPad mini 5 Wi-Fi 64GB - Space Gray

\$339.00 \$399.00 Save \$60.00



Refurbished 15.4-inch MacBook Pro 2.4GHz 8-core Intel Core i9 with Retina display and Radeon Pro Vega 20 - Space Gray \$3,189.00

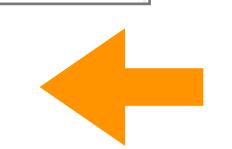
Refurbished 13.3-inch MacBook Pro 2.3GHz quadcore Intel Core i5 with Retina display - Space Gray

\$1,749.00 Save \$480.00

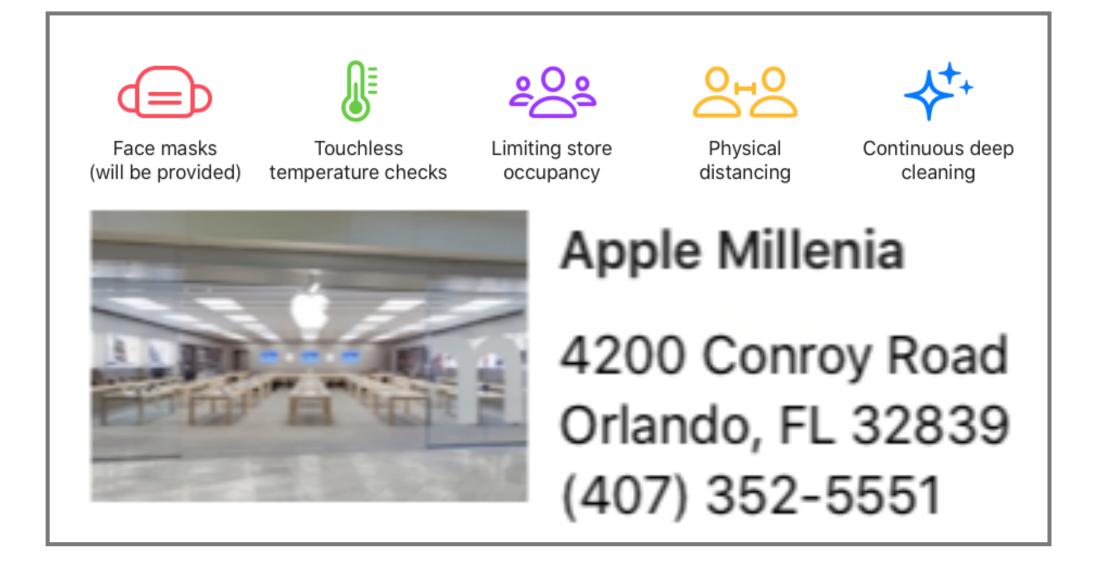


Refurbished 13.3-inch MacBook Pro 1.4GHz quad-core Intel Core i5 with Retina display-Space Gray

\$1,249.00 Save \$230.00

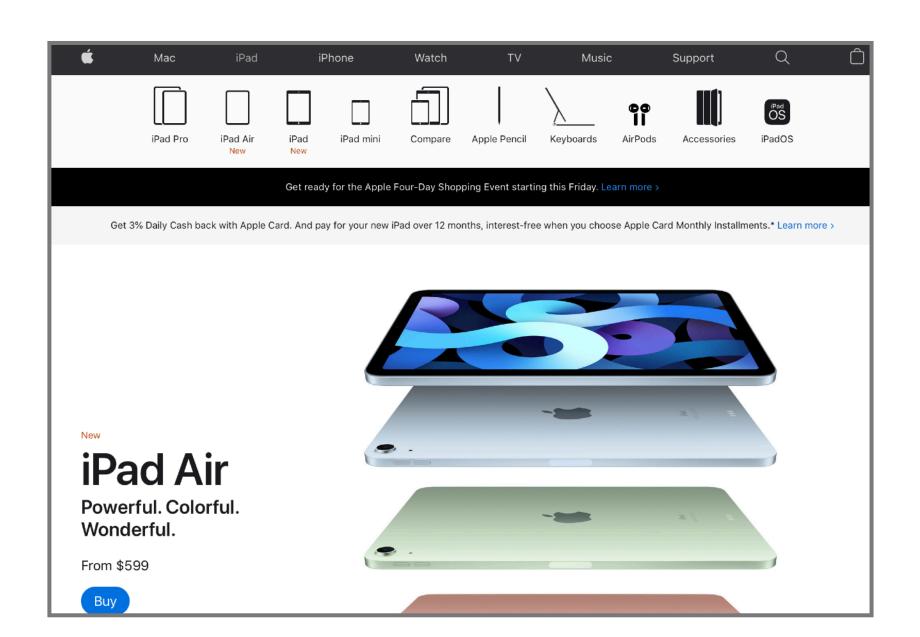


Where to buy?





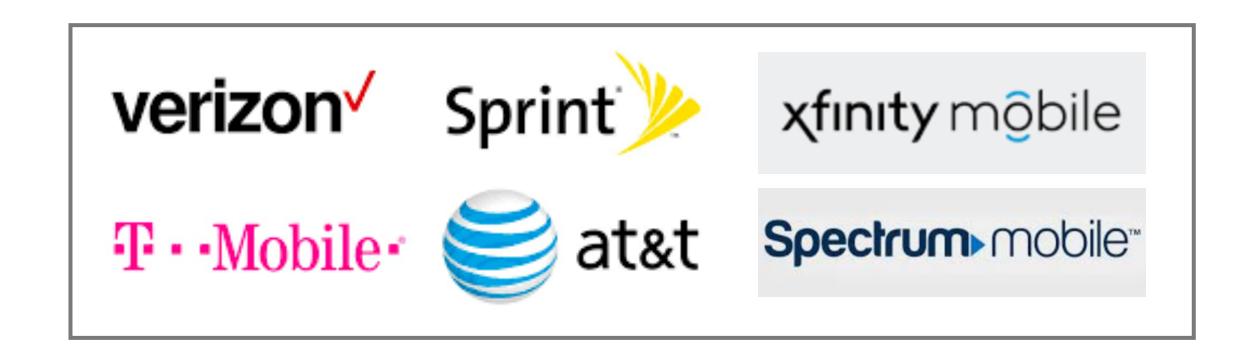
iPhone/iPad app

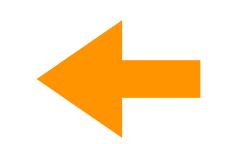


apple.com









Trade In

apple.com/shop/trade-in

Apple GiveBack

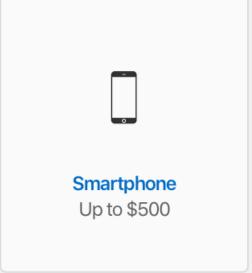
Turn the device you have into the one you want.

Trade in your eligible device for an Apple Store Gift Card or a refund on your purchase. If your device isn't eligible for credit, we'll recycle it for free. No matter the model or condition, we can turn it into something good for you and good for the planet.

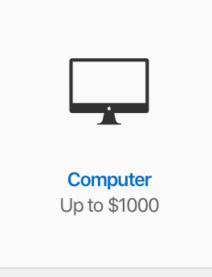


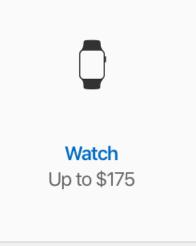
Get credit on a gift card

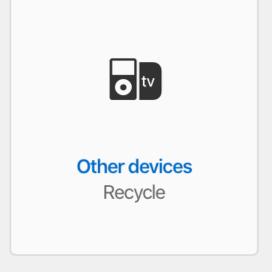
Select your device to get a trade-in estimate for an Apple Store Gift Card.¹











You'll see what it's worth instantly.

Can trade in a few non-Apple devices for credit (e.g Google, Samsung, HP, Lenovo) and others for free recycling only.

Your device As of	11/17/20 Estimated trade-in value*
iPhone 11 Pro Max	Up to \$500
iPhone 11 Pro	Up to \$450
iPhone 11	Up to \$350
iPhone XS Max	Up to \$370
iPhone XS	Up to \$300
iPhone XR	Up to \$250
iPhone X	Up to \$250
iPhone 8 Plus	Up to \$210
iPhone 8	Up to \$140
iPhone 7 Plus	Up to \$140
iPhone 7	Up to \$100
iPhone 6s Plus	Up to \$80
iPhone 6s	Up to \$60
iPhone 6 Plus	Up to \$50
iPhone 6	Up to \$30
iPhone SE (2nd generation	n) Up to \$210

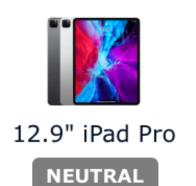
Estimated



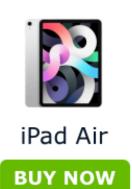
















Is now a good time to buy?



iPhone 12

Buy Now Just Updated

The iPhone 12 and iPhone 12 mini are Apple's mainstream flagship iPhones for 2020. The phones come in 6.1-inch and 5.4-inch sizes with identical features, including support for faster 5G cellular networks, OLED displays, improved cameras, and Apple's latest A14 chip, all in a completely refreshed design. The iPhone 12 went up for pre-order on October 16 ahead of an October 23 launch, while the iPhone 12 mini became available for pre-order on November 6 ahead of a November 13 launch.

<u>iPhone 12 Roundup</u>

Days since last release	Oct 2020	40
Average		371
Recent releases	Sep 2019	399
<u>com</u>	Oct 2018	329

Recent Rumors

Nov 20 2020

Leather Sleeve for iPhone 12 Models Now Available From Apple

Nov 18 2020

Apple Investigating Display Issues With iPhone 12 Models, Including Flickering and Green/Gray Glow

Nov 16 2020

iFixit's iPhone 12 Mini Teardown Reveals Apple's Miniaturized Components

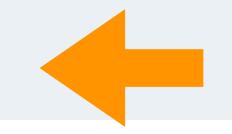
Nov 14 2020

Apple Says Hearing Aid Sound Issues With iPhone 12 Models Will Be Fixed in Future Software Update

Nov 14 2020

iPhone 12 Mini Users Report Lock Screen Touch Sensitivity Issues

iPhone 12 Rumors



AppleCare



Service and support from the people who know your Apple products best.

Most Apple hardware comes with a one-year limited warranty and up to 90 days of complimentary telephone technical support. To extend your coverage further, purchase the AppleCare Protection Plan or AppleCare+.

Because Apple makes the hardware, the operating system, and many applications, Apple products are truly integrated systems. And only AppleCare products give you one-stop service and support from Apple experts, so most issues can be resolved in a single call.



✓ Apple hardware coverage

✓ Software support included

For Mac

Get up to three years of hardware coverage and software support for your Mac.

Learn more >

For iPad

Get up to two years of technical support and hardware repair coverage for your iPad. Learn more >



For iPhone

Get up to two years of technical support and hardware repair coverage for your iPhone. Learn more >



For Apple Watch

For non-Apple devices

Depending on the model, get up to one or two years of hardware repair coverage and telephone support. Learn more >



For Apple TV, HomePod or iPod

an Allstate®

company

Get up to two years of hardware coverage and technical support for your Apple TV, HomePod or iPod. Learn more about Apple TV Learn more about HomePod Learn more about iPod ▶



https://www.apple.com/support/products/









