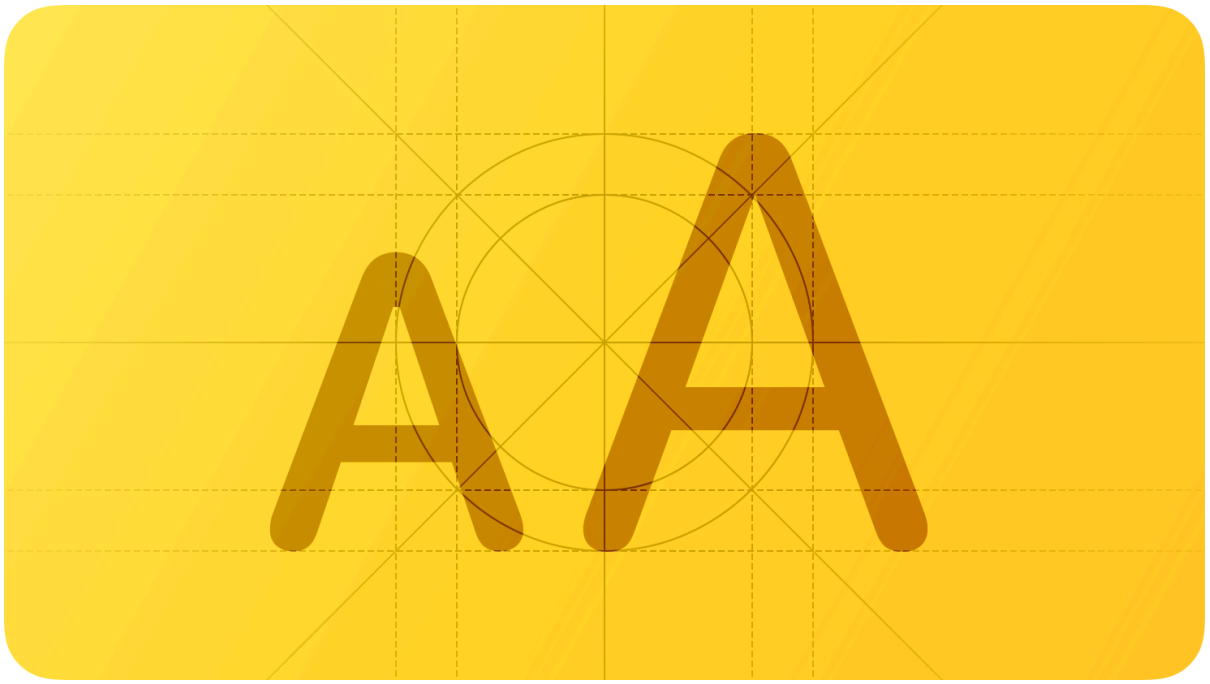
Typography

Your typographic choices can help you display legible text, convey an information hierarchy, communicate important content, and express your brand or style.



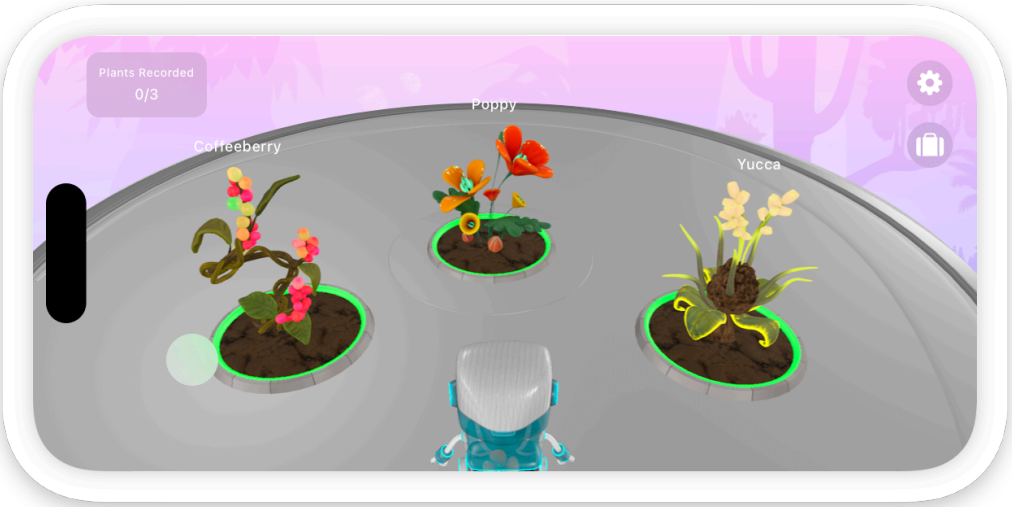
Supported platforms

Ensuring legibility

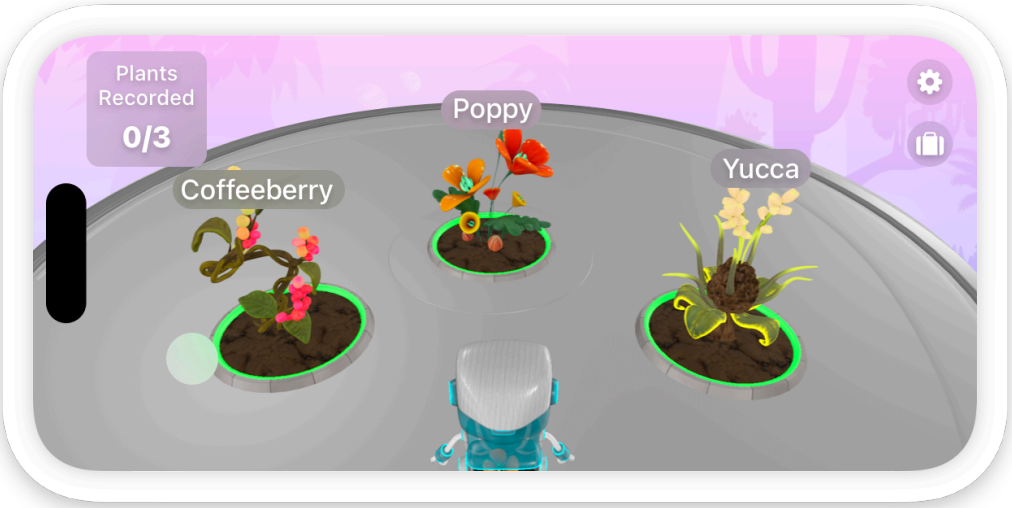
Use font sizes that most people can read easily. For example, aim to use the minimum font size of 11 pt in iOS and iPadOS, 10 pt in macOS, 23 pt in tvOS, and 12 pt in visionOS and watchOS. It's important to recognize that differences in device displays, including pixel density and brightness, in addition to other factors — such as ambient lighting, the reader's proximity to the text, their visual acuity, and whether they're in motion — can all impact legibility.

Support Dynamic Type. When you support Dynamic Type — a system feature that lets people choose the size of visible text on their device — your app or game can respond appropriately when people adjust text to a size that works for them. For available Dynamic Type sizes, see Specifications; for developer guidance, see Text input and output. To support Dynamic Type in your Unity-based game, use Apple's Unity plug-ins (for developer guidance, see Apple Unity Plug-Ins).

Test legibility in different contexts. For example, you need to test game text for legibility on each platform on which your game runs. If testing shows that some of your text is difficult to read, consider using a larger type size, increasing contrast by modifying the text or background colors, or using typefaces designed for optimized legibility, like the system fonts.



Testing a game on a new platform can show where text is hard to read.



Increasing text size and adding visible background shapes can help make text easier to read.

In general, avoid light font weights. For example, if you're using system-provided fonts, prefer Regular, Medium, Semibold, or Bold font weights, and avoid Ultralight, Thin, and Light font weights, which can be difficult to see, especially when text is small.

Conveying hierarchy

Adjust font weight, size, and color as needed to emphasize important information and help people visualize hierarchy. Be sure to maintain the relative hierarchy and visual distinction of text elements when people adjust text sizes.

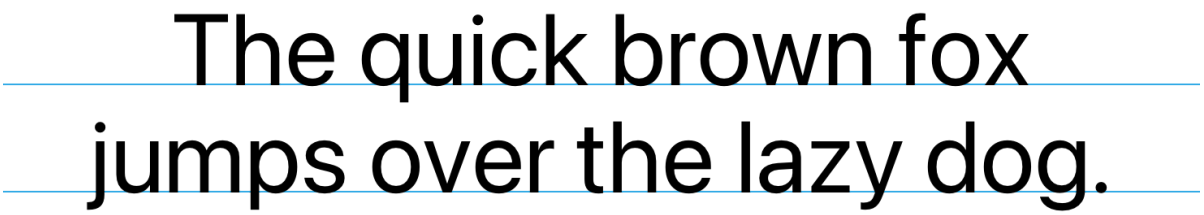
Minimize the number of typefaces you use, even in a highly customized interface. Mixing too many different typefaces can obscure your information hierarchy and hinder readability, in addition to making an interface feel internally inconsistent or poorly designed.

Prioritize important content when responding to text-size changes. Not all content is equally important. When someone chooses a larger text size, they typically want to make the content they care about easier to read; they don't always want to increase the size of every word on the screen. For example, when people increase text size to read the content in a tabbed window, they don't expect the tab titles to increase in size. Similarly, in a game, people are often more interested in a character's dialog than in transient hit-damage values.

Using system fonts

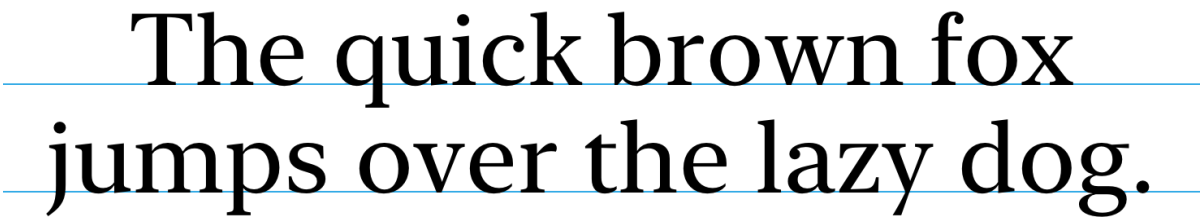
Apple provides two typeface families that support an extensive range of weights, sizes, styles, and languages.

San Francisco (SF) is a sans serif typeface family that includes the SF Pro, SF Compact, SF Arabic, SF Armenian, SF Georgian, SF Hebrew, and SF Mono variants.



The system also offers SF Pro, SF Compact, SF Arabic, SF Armenian, SF Georgian, and SF Hebrew in rounded variants you can use to coordinate text with the appearance of soft or rounded UI elements, or to provide an alternative typographic voice.

New York (NY) is a serif typeface family designed to work well by itself and alongside the SF fonts.

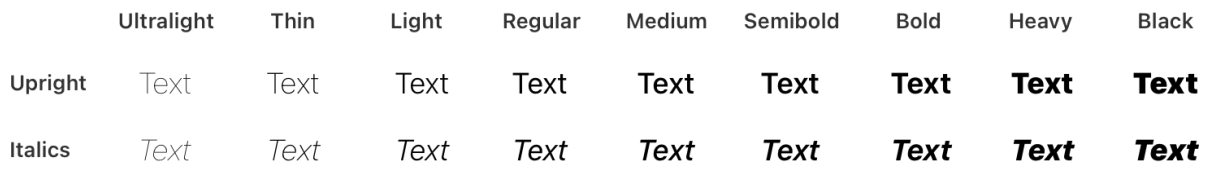


You can download the San Francisco and New York fonts here.

The system provides the SF and NY fonts in the *variable* font format, which combines different font styles together in one file, and supports interpolation between styles to create intermediate ones.

> **Note**
>
> Variable fonts support *optical sizing*, which refers to the adjustment of different typographic designs to fit different sizes. On all platforms, the system fonts support *dynamic optical sizes*, which merge discrete optical sizes (like Text and Display) and weights into a single, continuous design, letting the system interpolate each glyph or letterform to produce a structure that's precisely adapted to the point size. With dynamic optical sizes, you don't need to use discrete optical sizes unless you're working with a design tool that doesn't support all the features of the variable font format.

To help you define visual hierarchies and create clear and legible designs in many different sizes and contexts, the system fonts are available in a variety of weights, ranging from Ultralight to Black, and — in the case of SF — several widths, including Condensed and Expanded. Because SF Symbols use equivalent weights, you can achieve precise weight matching between symbols and adjacent text, regardless of the size or style you choose.



> **Note**
>
> SF Symbols provides a comprehensive library of symbols that integrate seamlessly with the San Francisco system font, automatically aligning with text in all weights and sizes. Consider using symbols when you need to convey a concept or depict an object, especially within text.

The system defines a set of typographic attributes — called text styles — that work with both typeface families. A *text style* specifies a combination of font weight, point size, and leading values for each text size. For example, the *body* text style uses values that support a comfortable reading experience over multiple lines of text, while the *headline* style assigns a font size and weight that help distinguish a heading from surrounding content. Taken together, the text styles form a typographic hierarchy you can use to express the different levels of importance in your content. Text styles also allow text to scale proportionately when people change the system's text size or make accessibility adjustments, like turning on Larger Text in Accessibility settings.

Consider using the built-in text styles. The system-defined text styles give you a convenient and consistent way to convey your information hierarchy through font size and weight. Using text styles with the system fonts also supports Dynamic Type and the larger accessibility type sizes (where available), which let people choose the text size that works for them.

Modify the built-in text styles if necessary. System APIs define font adjustments — called *symbolic traits* — that let you modify some aspects of a text style. For example, the bold trait adds weight to text, letting you create another level of hierarchy. You can also use symbolic traits to adjust leading if you need to improve readability or conserve space. For example, when you display text in wide columns or long passages, more space between lines (*loose leading*) can make it easier for people to keep their place while moving from one line to the next. Conversely, if you need to display multiple lines of text in an area where height is constrained — for example, in a list row — decreasing the space between lines (*tight leading*) can help the text fit well. If you need to display three or more lines of text, avoid tight leading even in areas where height is limited. For developer guidance, see leading(_:).

> **Developer note**
>
> You can use the constants defined in `Font.Design` to access all system fonts — don't embed system fonts in your app or game. For example, use `Font.Design.default` to get the system font on all platforms; use `Font.Design.serif` to get the New York font.

If necessary, adjust tracking in interface mockups. In a running app, the system font dynamically adjusts tracking at every point size. To produce an accurate interface mockup of an interface that uses the variable system fonts, you don't have to choose a discrete optical size at certain point sizes, but you might need to adjust the tracking. For guidance, see Tracking values.

Using custom fonts

Make sure custom fonts are legible. People need to be able to read your custom font easily at various viewing distances and under a variety of conditions. While using a custom font, be guided by the recommended minimum font sizes for various styles and weights in Specifications.

Implement accessibility features for custom fonts. System fonts automatically support Dynamic Type (where available) and respond when people turn on accessibility features, such as Bold Text. If you use a custom font, make sure it implements the same behaviors. For developer guidance, see Applying custom fonts to text. In a Unity-based game, you can use Apple's Unity plug-ins to support Dynamic Type. If the plug-in isn't appropriate for your game, be sure to let players adjust text size in other ways.

Platform considerations

iOS, iPadOS

SF Pro is the system font in iOS and iPadOS. iOS and iPadOS apps can also use NY.

macOS

SF Pro is the system font in macOS. NY is available for Mac apps built with Mac Catalyst. macOS doesn't support Dynamic Type.

When necessary, use dynamic system font variants to match the text in standard controls. Dynamic system font variants give your text the same look and feel of the text that appears in system-provided controls. Use the variants listed below to achieve a look that's consistent with other apps on the platform.

Dynamic font variant	API
Control content	`controlContentFont(ofSize:)`
Label	`labelFont(ofSize:)`
Menu	`menuFont(ofSize:)`
Menu bar	`menuBarFont(ofSize:)`
Message	`messageFont(ofSize:)`
Palette	`paletteFont(ofSize:)`
Title	`titleBarFont(ofSize:)`
Tool tips	`toolTipsFont(ofSize:)`
Document text (user)	`userFont(ofSize:)`
Monospaced document text (user fixed pitch)	`userFixedPitchFont(ofSize:)`
Bold system font	`boldSystemFont(ofSize:)`

Dynamic font variant	API
System font	`systemFont(ofSize:)`

tvOS

SF Pro is the system font in tvOS, and apps can also use NY.

visionOS

SF Pro is the system font in visionOS. If you use NY, you need to specify the type styles you want.

visionOS uses bolder versions of the Dynamic Type body and title styles and it introduces Extra Large Title 1 and Extra Large Title 2 for wide, editorial-style layouts. For guidance using vibrancy to indicate hierarchy in text and symbols, see Materials > visionOS.

In general, prefer 2D text. The more visual depth text characters have, the more difficult they can be to read. Although a small amount of 3D text can provide a fun visual element that draws people's attention, if you're going to display content that people need to read and understand, prefer using text that has little or no visual depth.

Make sure text looks good and remains legible when people scale it. Use a text style that makes the text look good at full scale, then test it for legibility at different scales.

Maximize the contrast between text and the background of its container. By default, the system displays text in white, because this color tends to provide a strong contrast with the default system background material, making text easier to read. If you want to use a different text color, be sure to test it in a variety of contexts.

If you need to display text that's not on a background, consider making it bold to improve legibility. In this situation, you generally want to avoid adding shadows to increase text contrast. The current space might not include a visual surface on which to cast an accurate shadow, and you can't predict the size and density of shadow that would work well with a person's current Environment.

Keep text facing people as much as possible. If you display text that's associated with a point in space, such as a label for a 3D object, you generally want to use *billboarding* — that is, you want the text to face the wearer regardless of how they or the object move. If you don't rotate text to remain facing the wearer, the text can become impossible to read because people may view it from the side or a highly oblique angle. For example, imagine a virtual lamp that appears to be on a physical desk with a label anchored directly above it. For the text to remain readable, the label needs to rotate around the y-axis as people move around the desk; in other words, the baseline of the text needs to remain perpendicular to the person's line of sight.

watchOS

SF Compact is the system font in watchOS, and apps can also use NY. In complications, watchOS uses SF Compact Rounded.

Specifications

iOS, iPadOS Dynamic Type sizes

xSmall | Small | Medium | Large (default) | xLarge | xxLarge | xxxLarge

xSmall

Style	Weight	Size (points)	Leading (points)
Large Title	Regular	31	38
Title 1	Regular	25	31
Title 2	Regular	19	24
Title 3	Regular	17	22
Headline	Semibold	14	19
Body	Regular	14	19
Callout	Regular	13	18
Subhead	Regular	12	16
Footnote	Regular	12	16
Caption 1	Regular	11	13
Caption 2	Regular	11	13

Point size based on image resolution of 144 ppi for @2x and 216 ppi for @3x designs.

iOS, iPadOS larger accessibility type sizes

AX1 | AX2 | AX3 | AX4 | AX5

AX1

Style	Weight	Size (points)	Leading (points)
Large Title	Regular	44	52
Title 1	Regular	38	46
Title 2	Regular	34	41
Title 3	Regular	31	38
Headline	Semibold	28	34
Body	Regular	28	34

Style	Weight	Size (points)	Leading (points)
Callout	Regular	26	32
Subhead	Regular	25	31
Footnote	Regular	23	29
Caption 1	Regular	22	28
Caption 2	Regular	20	25

Point size based on image resolution of 144 ppi for @2x and 216 ppi for @3x designs.

macOS built-in text styles

Text style	Weight	Size (points)	Line height (points)	Emphasized weight
Large Title	Regular	26	32	Bold
Title 1	Regular	22	26	Bold
Title 2	Regular	17	22	Bold
Title 3	Regular	15	20	Semibold
Headline	Bold	13	16	Heavy
Body	Regular	13	16	Semibold
Callout	Regular	12	15	Semibold
Subheadline	Regular	11	14	Semibold
Footnote	Regular	10	13	Semibold
Caption 1	Regular	10	13	Medium
Caption 2	Medium	10	13	Semibold

Point size based on image resolution of 144 ppi for @2x designs.

tvOS built-in text styles

Text style	Weight	Size (points)	Leading (points)	Emphasized weight
Title 1	Medium	76	96	Bold
Title 2	Medium	57	66	Bold
Title 3	Medium	48	56	Bold
Headline	Medium	38	46	Bold

Text style	Weight	Size (points)	Leading (points)	Emphasized weight
Subtitle 1	Regular	38	46	Medium
Callout	Medium	31	38	Bold
Body	Medium	29	36	Bold
Caption 1	Medium	25	32	Bold
Caption 2	Medium	23	30	Bold

Point size based on image resolution of 72 ppi for @1x and 144 ppi for @2x designs.

watchOS Dynamic Type sizes

xSmall Small Large xLarge xxLarge xxxLarge

xSmall

Style	Weight	Size (points)	Leading (points)
Large Title	Regular	30	32.5
Title 1	Regular	28	30.5
Title 2	Regular	24	26.5
Title 3	Regular	17	19.5
Headline	Semibold	14	16.5
Body	Regular	14	16.5
Caption 1	Regular	13	15.5
Caption 2	Regular	12	14.5
Footnote 1	Regular	11	13.5
Footnote 2	Regular	10	12.5

watchOS larger accessibility type sizes

AX1 AX2 AX3

AX1

Style	Weight	Size (points)	Leading (points)
Large Title	Regular	44	46.5

Style	Weight	Size (points)	Leading (points)
Title 1	Regular	42	44.5
Title 2	Regular	34	41
Title 3	Regular	24	26.5
Headline	Semibold	21	23.5
Body	Regular	21	23.5
Caption 1	Regular	18	20.5
Caption 2	Regular	17	19.5
Footnote 1	Regular	16	18.5
Footnote 2	Regular	15	17.5

Tracking values

iOS, iPadOS, visionOS tracking values

SF Pro | SF Pro Rounded | New York

SF Pro

Size (points)	Tracking (1/1000 em)	Tracking (points)
6	+41	+0.24
7	+34	+0.23
8	+26	+0.21
9	+19	+0.17
10	+12	+0.12
11	+6	+0.06
12	0	0.0
13	-6	-0.08
14	-11	-0.15
15	-16	-0.23
16	-20	-0.31
17	-26	-0.43
18	-25	-0.44
19	-24	-0.45

Size (points)	Tracking (1/1000 em)	Tracking (points)
20	-23	-0.45
21	-18	-0.36
22	-12	-0.26
23	-4	-0.10
24	+3	+0.07
25	+6	+0.15
26	+8	+0.22
27	+11	+0.29
28	+14	+0.38
29	+14	+0.40
30	+14	+0.40
31	+13	+0.39
32	+13	+0.41
33	+12	+0.40
34	+12	+0.40
35	+11	+0.38
36	+10	+0.37
37	+10	+0.36
38	+10	+0.37
39	+10	+0.38
40	+10	+0.37
41	+9	+0.36
42	+9	+0.37
43	+9	+0.38
44	+8	+0.37
45	+8	+0.35
46	+8	+0.36
47	+8	+0.37
48	+8	+0.35
49	+7	+0.33

Size (points)	Tracking (1/1000 em)	Tracking (points)
50	+7	+0.34
51	+7	+0.35
52	+6	+0.33
53	+6	+0.31
54	+6	+0.32
56	+6	+0.30
58	+5	+0.28
60	+4	+0.26
62	+4	+0.24
64	+4	+0.22
66	+3	+0.19
68	+2	+0.17
70	+2	+0.14
72	+2	+0.14
76	+1	+0.07
80	0	0
84	0	0
88	0	0
92	0	0
96	0	0

Not all apps express tracking values as 1/1000 em. Point size based on image resolution of 144 ppi for @2x and 216 ppi for @3x designs.

macOS tracking values

Size (points)	Tracking (1/1000 em)	Tracking (points)
6	+41	+0.24
7	+34	+0.23
8	+26	+0.21
9	+19	+0.17
10	+12	+0.12

Size (points)	Tracking (1/1000 em)	Tracking (points)
11	+6	+0.06
12	0	0.0
13	-6	-0.08
14	-11	-0.15
15	-16	-0.23
16	-20	-0.31
17	-26	-0.43
18	-25	-0.44
19	-24	-0.45
20	-23	-0.45
21	-18	-0.36
22	-12	-0.26
23	-4	-0.10
24	+3	+0.07
25	+6	+0.15
26	+8	+0.22
27	+11	+0.29
28	+14	+0.38
29	+14	+0.40
30	+14	+0.40
31	+13	+0.39
32	+13	+0.41
33	+12	+0.40
34	+12	+0.40
35	+11	+0.38
36	+10	+0.37
37	+10	+0.36
38	+10	+0.37
39	+10	+0.38
40	+10	+0.37

Size (points)	Tracking (1/1000 em)	Tracking (points)
41	+9	+0.36
42	+9	+0.37
43	+9	+0.38
44	+8	+0.37
45	+8	+0.35
46	+8	+0.36
47	+8	+0.37
48	+8	+0.35
49	+7	+0.33
50	+7	+0.34
51	+7	+0.35
52	+6	+0.31
53	+6	+0.33
54	+6	+0.32
56	+6	+0.30
58	+5	+0.28
60	+4	+0.26
62	+4	+0.24
64	+4	+0.22
66	+3	+0.19
68	+2	+0.17
70	+2	+0.14
72	+2	+0.14
76	+1	+0.07
80	0	0
84	0	0
88	0	0
92	0	0
96	0	0

Not all apps express tracking values as 1/1000 em. Point size based on image resolution of 144 ppi for @2x and 216 ppi for @3x designs.

tvOS tracking values

Size (points)	Tracking (1/1000 em)	Tracking (points)
6	+41	+0.24
7	+34	+0.23
8	+26	+0.21
9	+19	+0.17
10	+12	+0.12
11	+6	+0.06
12	0	0.0
13	-6	-0.08
14	-11	-0.15
15	-16	-0.23
16	-20	-0.31
17	-26	-0.43
18	-25	-0.44
19	-24	-0.45
20	-23	-0.45
21	-18	-0.36
22	-12	-0.26
23	-4	-0.10
24	+3	+0.07
25	+6	+0.15
26	+8	+0.22
27	+11	+0.29
28	+14	+0.38
29	+14	+0.40
30	+14	+0.40
31	+13	+0.39
32	+13	+0.41

Size (points)	Tracking (1/1000 em)	Tracking (points)
33	+12	+0.40
34	+12	+0.40
35	+11	+0.38
36	+10	+0.37
37	+10	+0.36
38	+10	+0.37
39	+10	+0.38
40	+10	+0.37
41	+9	+0.36
42	+9	+0.37
43	+9	+0.38
44	+8	+0.37
45	+8	+0.35
46	+8	+0.36
47	+8	+0.37
48	+8	+0.35
49	+7	+0.33
50	+7	+0.34
51	+7	+0.35
52	+6	+0.31
53	+6	+0.33
54	+6	+0.32
56	+6	+0.30
58	+5	+0.28
60	+4	+0.26
62	+4	+0.24
64	+4	+0.22
66	+3	+0.19
68	+2	+0.17
70	+2	+0.14

Size (points)	Tracking (1/1000 em)	Tracking (points)
72	+2	+0.14
76	+1	+0.07
80	0	0
84	0	0
88	0	0
92	0	0
96	0	0

Not all apps express tracking values as 1/1000 em. Point size based on image resolution of 144 ppi for @2x and 216 ppi for @3x designs.

watchOS tracking values

SF Compact SF Compact Rounded

SF Compact

Size (points)	Tracking (1/1000 em)	Tracking (points)
6	+50	+0.29
7	+30	+0.21
8	+30	+0.23
9	+30	+0.26
10	+30	+0.29
11	+24	+0.26
12	+20	+0.23
13	+16	+0.20
14	+14	+0.19
15	+4	+0.06
16	0	0.00
17	-4	-0.07
18	-8	-0.14
19	-12	-0.22
20	0	0.00

Size (points)	Tracking (1/1000 em)	Tracking (points)
21	-2	-0.04
22	-4	-0.09
23	-6	-0.13
24	-8	-0.19
25	-10	-0.24
26	-11	-0.28
27	-12	-0.30
28	-12	-0.34
29	-14	-0.38
30	-14	-0.42
31	-15	-0.45
32	-16	-0.50
33	-17	-0.55
34	-18	-0.60
35	-18	-0.63
36	-20	-0.69
37	-20	-0.72
38	-20	-0.74
39	-20	-0.76
40	-20	-0.78
41	-20	-0.80
42	-20	-0.82
43	-20	-0.84
44	-20	-0.86
45	-20	-0.88
46	-20	-0.92
47	-20	-0.94
48	-20	-0.96
49	-21	-1.00
50	-21	-1.03

Size (points)	Tracking (1/1000 em)	Tracking (points)
51	-21	-1.05
52	-21	-1.07
53	-22	-1.11
54	-22	-1.13
56	-22	-1.20
58	-22	-1.25
60	-22	-1.32
62	-22	-1.36
64	-23	-1.44
66	-24	-1.51
68	-24	-1.56
70	-24	-1.64
72	-24	-1.69
76	-25	-1.86
80	-26	-1.99
84	-26	-2.13
88	-26	-2.28
92	-28	-2.47
96	-28	-2.62

Not all apps express tracking values as 1/1000 em. Point size based on image resolution of 144 ppi for @2x designs.

Resources

Related

Fonts

SF Symbols

Developer documentation

`Font` — SwiftUI

`UIFont` — UIKit

`NSFont` — AppKit

Videos

Meet the expanded San Francisco font family

Meet TextKit 2

The details of UI typography

Change log

Date	Changes
June 10, 2024	Added guidance for using Apple's Unity plug-ins to support Dynamic Type in a Unity-based game and enhanced guidance on billboarding in a visionOS app or game.
September 12, 2023	Added artwork illustrating system font weights, and clarified tvOS specification table descriptions.
June 21, 2023	Updated to include guidance for visionOS.