typeface anatomy

CAP HEIGHT
X-HEIGHT
BASELINE

Fancy

STEM | BOWL | SERIF | DESCENDER

LIGATURE | ASCENDER

flesh

FINIAL

TERMINAL | ASCENDER

fresh

SPINE

UPPERCASE | SMALL CAPITAL

Blood

CROSS BAR | COUNTER | LOWERCASE
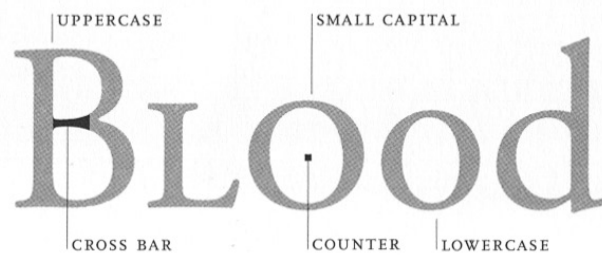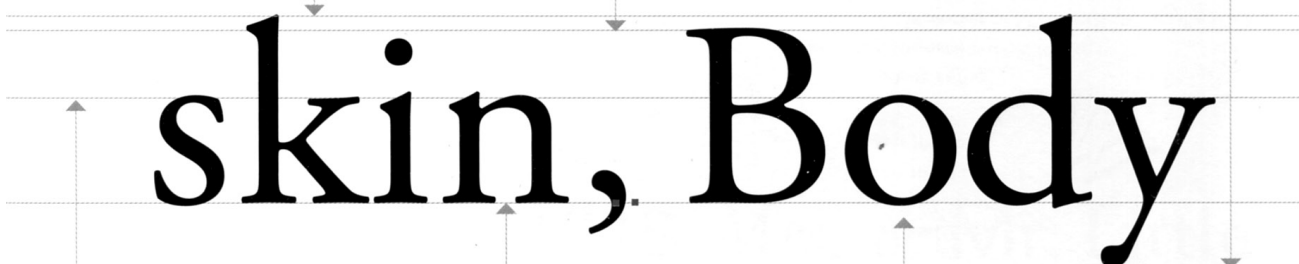
ASCENDER HEIGHT
Some elements may extend slightly above the cap height.

CAP HEIGHT
The distance from the baseline to the top of the capital letter determines the letter's point size.

DESCENDER HEIGHT
The length of a letter's descenders contributes to its overall style and attitude.

skin, Body

X-HEIGHT is the height of the main body of the lowercase letter (or the height of a lowercase x), excluding its ascenders and descenders.

THE BASELINE is where all the letters sit. This is the most stable axis along a line of text, and it is a crucial edge for aligning text with images or with other text.

OVERHANG The curves at the bottom of letters hang slightly below the baseline. Commas and semicolons also cross the baseline. If a typeface were not positioned this way, it would appear to teeter precariously. Without overhang, rounded letters would look smaller than their flat-footed compatriots.

Bone

Although kids learn to write using ruled paper that divides letters exactly in half, most typefaces are not designed that way. The x-height usually occupies more than half of the cap height. The larger the x-height is in relation to the cap height, the bigger the letters appear to be. In a field of text, the greatest density occurs between the baseline and the x-height.

Hey, look! They supersized my x-height.

Two blocks of text are often aligned along a shared baseline. Here, 14/18 Scala Pro (14-pt type with 18 pts of line spacing) is paired with 7/9 Scala Pro.
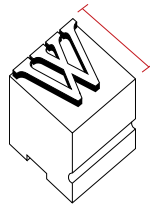
SIZE

*12 points
equal 1 pica*

*6 picas
(72 points)
equal 1 inch*

Big

*60-point scala
A typeface is measured
from the top of the
capital letter to the
bottom of the lowest
descender, plus a small
buffer space.*

*In metal type,
the point size
is the height of
the type slug.*

HEIGHT Attempts to standardize the measurement of type began in the eighteenth century. The *point system* is the standard used today. One *point* equals 1/72 inch or .35 millimeters. Twelve points equal one *pica*, the unit commonly used to measure column widths. Typography can also be measured in inches, millimeters, or pixels. Most software applications let the designer choose a preferred unit of measure; picas and points are standard defaults.

NERD ALERT:
ABBREVIATING PICAS AND POINTS
8 picas = 8p
8 points = p8, 8 pts
8 picas, 4 points = 8p4
8-point Helvetica with 9 points of line spacing =
8/9 Helvetica

WIDE LOAD

INTERSTATE BLACK
*The set width is the body of the letter
plus the space beside it.*

TIGHT WAD

INTERSTATE BLACK COMPRESSED
*The letters in the compressed version of the typeface
have a narrower set width.*

WIDE LOAD
TIGHT WAD

TYPE CRIME
HORIZONTAL & VERTICAL SCALING
*The proportions of the letters have been
digitally distorted in order to create wider
or narrower letters.*

WIDTH A letter also has a horizontal measure, called its *set width*. The set width is the body of the letter plus a sliver of space that protects it from other letters. The width of a letter is intrinsic to the proportions and visual impression of the typeface. Some typefaces have a narrow set width, and some have a wide one.

You can change the set width of a typeface by fiddling with its horizontal or vertical scale. This distorts the line weight of the letters, however, forcing heavy elements to become thin, and thin elements to become thick. Instead of torturing a letterform, choose a typeface that has the proportions you are looking for, such as condensed, compressed, wide, or extended.

BIG BOTTOMS ARE AN EFFICIENT USE OF RESOURCES

32-PT SCALA PRO   32-PT INTERSTATE REGULAR   32-PT BODONI   32-PT MRS EAVES

Do I look fat in this paragraph?

When two typefaces are set in the same point size, one often looks bigger than the other. Differences in x-height, line weight, and set width affect the letters' apparent scale.

Mrs Eaves rejects the twentieth-century appetite for supersized x-heights. This typeface, inspired by the eighteenth-century designs of Baskerville, is named after Sarah Eaves, Baskerville's mistress, housekeeper, and collaborator. The couple lived together for sixteen years before marrying in 1764.

Mr. Big versus Mrs. & Mr. Little

32-PT HELVETICA   32-PT MRS EAVES   32-PT MR EAVES

The x-height of a typeface affects its apparent size, its space efficiency, and its overall visual impact. Like hemlines and hair styles, x-heights go in and out of fashion. Bigger type bodies became popular in the mid-twentieth century, making letterforms look larger by maximizing the area within the overall point size.

12/14 HELVETICA

Because of its huge x-height, Helvetica can remain legible at small sizes. Set in 8 pts for a magazine caption, Helvetica can look quite elegant. The same typeface could look bulky and bland, however, standing 12 pts tall on a business card.

8/10 HELVETICA

The default type size in many software applications is 12 pts. Although this generally creates readable type on screen displays, 12-pt text type usually looks big and horsey in print. Sizes between 9 and 11 pts are common for printed text. This caption is 7.5 pts.

Typefaces with small x-heights, such as Mrs Eaves, use space less efficiently than those with big lower bodies. However, their delicate proportions have lyrical charm.

12/14 MRS EAVES

Like his lovely wife, **MR EAVES** has a low waist and a small body. His loose letterspacing also makes him work well with his mate.

12/14 MR EAVES

The size of a typeface is a matter of context. A line of text that looks tiny on a television screen may appear appropriately scaled in a page of printed text. Smaller proportions affect legibility as well as space consumption. A diminutive x-height is a luxury that requires sacrifice.

8/10 MRS AND MR EAVES

Source: Thinking with Type: A Critical Guide for Designers, Writers, and Editors: Ellen Lupton

SIZE

All the typefaces shown below were inspired by the sixteenth-century printing types of Claude Garamond, yet each one reflects its own era. The lean forms of Garamond 3 appeared during the Great Depression, while the inflated x-height of ITC Garamond became an icon of the flamboyant 1970s.

Grapes of Wrath

30-PT GARAMOND 3   30-PT ITC GARAMOND

GARAMOND IN THE TWENTIETH CENTURY: VARIATIONS ON A THEME

1930s: Franklin D. Roosevelt, SALVADOR DALÍ, Duke

18-PT GARAMOND 3, *designed by Morris Fuller Benton and Thomas Maitland Cleland for ATF, 1936*

Ellington, *Scarface*, chicken and waffles, shoulder pads, radio.

1970s: Richard Nixon, Claes Oldenburg, Van Halen,

18-PT ITC GARAMOND, *designed by Tony Stan, 1976*

The Godfather, bell bottoms, guacamole, sitcoms.

1980s: Margaret Thatcher, BARBARA KRUGER, Madonna,

18-PT ADOBE GARAMOND, *designed by Robert Slimbach, 1989*

Blue Velvet, shoulder pads, pasta salad, desktop publishing.

2000s: Osama Bin Laden, MATTHEW BARNEY, the White

18-PT ADOBE GARAMOND PREMIERE PRO MEDIUM SUBHEAD, *designed by Robert Slimbach, 2005*

Stripes, *The Sopranos*, mom jeans, heirloom tomatoes, Twitter.

40 | THINKING WITH TYPE

Source: Thinking with Type: A Critical Guide for Designers, Writers, and Editors: Ellen Lupton

A type family with *optical sizes* has different styles for different sizes of output. The graphic designer selects a style based on context. Optical sizes designed for headlines or display tend to have delicate, lyrical forms, while styles created for text and captions are built with heavier strokes.

No Job *Too Small*

48-PT BODONI   8-PT BODONI

TYPE CRIME

Some typefaces that work well at large sizes look too fragile when reduced.

OPTICAL SIZES

HEADLINES are slim, *high-strung* prima donnas.

27-PT ADOBE GARAMOND PREMIERE PRO DISPLAY

SUBHEADS are *frisky* supporting characters.

27-PT ADOBE GARAMOND PREMIERE PRO SUBHEAD

TEXT is the *everyman* of the printed stage.

27-PT ADOBE GARAMOND PREMIERE PRO REGULAR

CAPTIONS get *heavy* to play small roles.

27-PT ADOBE GARAMOND PREMIERE PRO CAPTION

10 PT

In the era of METAL TYPE, type designers created a different *punch* for each size of type, adjusting its weight, spacing, and other features. Each size required a unique typeface design.

ADOBE GARAMOND PREMIERE PRO DISPLAY

When the type design process became automated in the NINETEENTH CENTURY, many typefounders economized by simply *enlarging or reducing* a base design to generate different sizes.

ADOBE GARAMOND PREMIERE PRO REGULAR

This MECHANIZED APPROACH to type sizes became the norm for photo and digital type production. When a text-sized letterform is enlarged to poster-sized proportions, its thin features become too heavy (and vice versa).

ADOBE GARAMOND PREMIERE PRO CAPTION

8 PT

A DISPLAY or *headline* style looks spindly and weak when set at small sizes. Display styles are intended for use at 24 pts. and larger.

Basic TEXT styles are designed for sizes ranging from 9 to 14 pts. Their features are strong and *meaty* but not too assertive.

CAPTION styles are built with the heaviest stroke weight. They are *designed* for sizes ranging from 6 to 8 pts.

80 PT

A

A

A

Source: Thinking with Type: A Critical Guide for Designers, Writers, and Editors: Ellen Lupton

SCALE

Scale is the size of design elements in comparison to other elements in a layout as well as to the physical context of the work. Scale is relative. 12-pt type displayed on a 32-inch monitor can look very small, while 12-pt type printed on a book page can look flabby and overweight. Designers create hierarchy and contrast by playing with the scale of letterforms. Changes in scale help create visual contrast, movement, and depth as well as express hierarchies of importance. Scale is physical. People intuitively judge the size of objects in relation to their own bodies and environments.
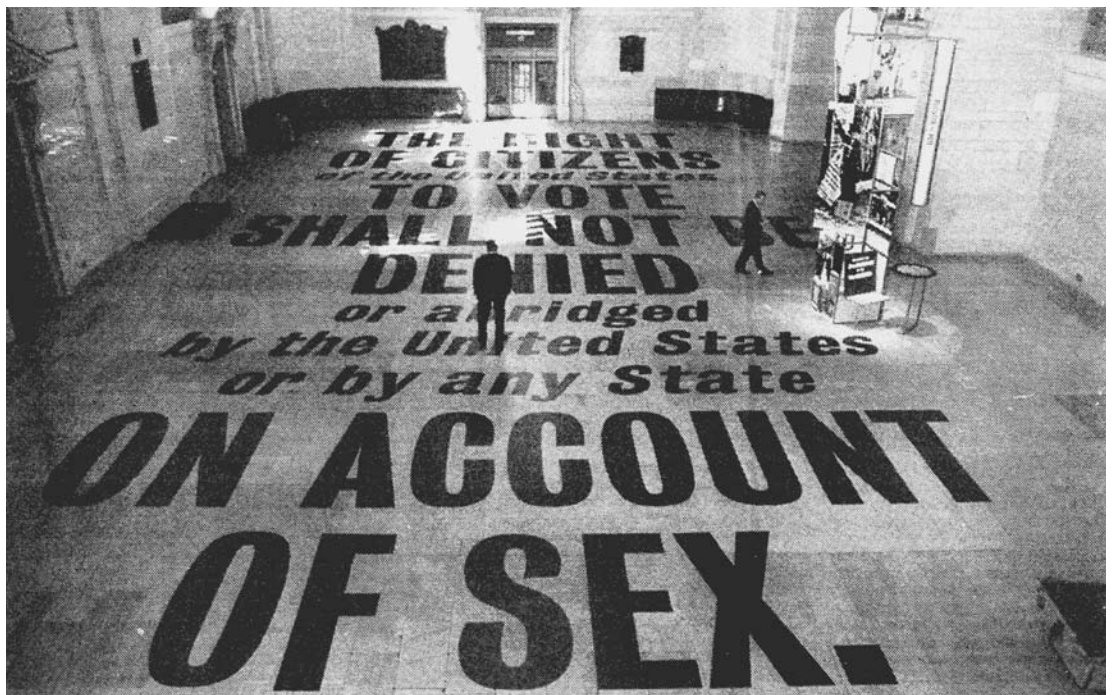
THE WORLD IS FLAT

TYPE CRIME
Minimal differences in type size make this design look tentative and arbitrary.
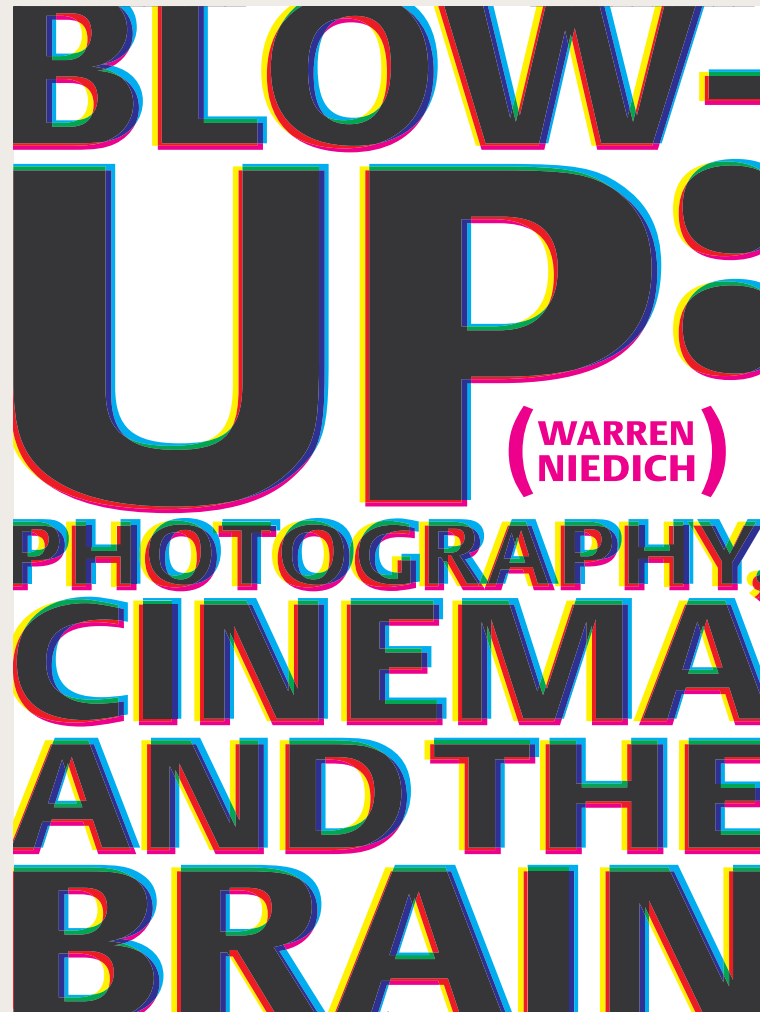
THE WORLD
IS FLAT

SCALE CONTRAST
The strong contrast between type sizes gives this design dynamism, decisiveness, and depth.

THE XIX AMENDMENT Typographic installation at Grand Central Station, New York City, 1995. Designer: Stephen Doyle. Sponsors: The New York State Division of Women, the Metropolitan Transportation Authority, Revlon, and Merrill Lynch. *Large-scale text creates impact in this public installation.*

42 | THINKING WITH TYPE

BLOW-UP: (WARREN NIEDICH) **PHOTOGRAPHY, CINEMA AND THE BRAIN**

BLOW-UP: PHOTOGRAPHY, CINEMA, AND THE BRAIN
Book cover, 2003. Designers: Paul Carlos and Urshula
Barbour/Pure + Applied. Author: Warren Niedich. *Cropping the
letters increases their sense of scale. The overlapping colors suggest
an extreme detail of a printed or photographic process.*

KERNING

Kerning is an adjustment of the space between two letters. The characters of the Latin alphabet emerged over time; they were never designed with mechanical or automated spacing in mind. Gaps occur, for example, around letters whose forms angle outward or frame an open space (W, Y, V, T). In metal type, a kerned letter extends past the lead slug that supports it, allowing two letters to fit more closely together. In digital fonts, the space between letter pairs is controlled by a kerning table created by the type designer, which specifies spaces between problematic letter combinations. Working in a page layout program, a designer can choose to use metric kerning or optical kerning as well as adjusting the space between letters manually where desired. A well-designed typeface requires little or no additional kerning, especially at text sizes.
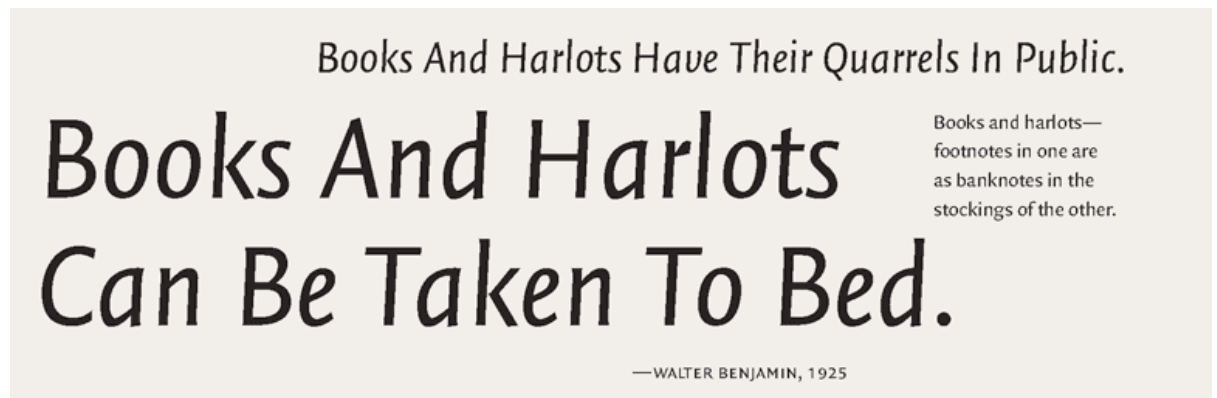
METRIC KERNING

kerning tables that are built into the typeface. When you select metric kerning in your page layout program, you are using the spacing that was intended by the type designer. Metric kerning usually looks good, especially at small sizes. Cheap novelty fonts often have little or no built-in kerning and will need to be optically kerned.

OPTICAL KERNING

executed automatically by the page layout program. Rather than using the pairs addressed in the font's kerning table, optical kerning assesses the shapes of all characters and adjusts the spacing wherever needed. Some graphic designers apply optical kerning to headlines and metric kerning to text.

Books And Harlots Have Their Quarrels In Public.

Books And Harlots Can Be Taken To Bed.

Books and harlots—
footnotes in one are
as banknotes in the
stockings of the other.

—WALTER BENJAMIN, 1925

QUADRAAT SANS, WITH METRIC KERNING

Books And Harlots Have Their Quarrels In Public.

Books And Harlots Can Be Taken To Bed.

Books and harlots—
footnotes in one are
as banknotes in the
stockings of the other.

—WALTER BENJAMIN, 1925

QUADRAAT SANS, WITH OPTICAL KERNING

NERD ALERT: *In addition to using optical kerning, the text above has word spacing reduced to 80 percent. With large type, normal word spacing often looks too wide. Adjust word spacing in the Paragraph>Justification menu in InDesign.*

Source: Thinking with Type: A Critical Guide for Designers, Writers, and Editors: Ellen Lupton

Takes Two

SCALA PRO, WITH KERNING SUPPRESSED
Spacing appears uneven, with gaps around T/a, T/w, and w/o

Takes Two

SCALA PRO, WITH METRIC KERNING
Spacing appears more even between T/a and T/w.

Takes Two

SCALA PRO, WITH OPTICAL KERNING
Spacing seems more even between T/a, T/w, and w/o.

Warm Type

SCALA PRO ITALIC, WITH KERNING SUPPRESSED
Spacing appears uneven between W/a and T/y.

Warm Type

SCALA PRO ITALIC, WITH METRIC KERNING
Spacing appears more even between W/a and T/y.

Warm Type

SCALA PRO ITALIC, WITH OPTICAL KERNING
Spacing is comparable to metric kerning.

LOVE LETTERS

SCALA PRO ALL CAPITALS, WITH KERNING SUPPRESSED
Spacing is tight between T/T.

LOVE LETTERS

SCALA PRO ALL CAPITALS, WITH METRIC KERNING
Improved spacing between T/T.

LOVE LETTERS

SCALA PRO ALL CAPITALS, WITH OPTICAL KERNING
Improved spacing between T/ T and O/V.

TRACKING

Adjusting the overall spacing of a group of letters is called tracking or letterspacing. By expanding the tracking across a word, line, or entire block of text, the designer can create a more airy, open field. In blocks of text, tracking is usually applied in small increments, creating a subtle effect not noticeable to the casual reader. Occasionally, a single word or phrase is tracked for emphasis, especially when CAPS or small caps are used within a line. Negative tracking, rarely desirable in text sizes, can be used sparingly to help bring up a short line of text. White type on a black background is considered more legible when it is tracked.

LOVE LETTERS
CAPITALS: NORMAL TRACKING

LOVE LETTERS
CAPITALS: LOOSE TRACKING (+75)

LOVE LETTERS, LOVE LETTERS
SMALL CAPS: NORMAL VS. LOOSE TRACKING (+75)

love letters, *love letters*
LOWER CASE: NORMAL TRACKING

love letters, *love letters*
LOWER CASE: LOOSE TRACKING (+75)

TYPE CRIME: TRACKING LOWERCASE LETTERS
Loosely spaced lowercase letters—especially italics—look awkward because these characters are designed to sit closely together on a line.

NORMAL TRACKING
Letters do love one another. However, due to their anatomical differences, some letters have a hard time achieving intimacy. Consider the letter V, for example, whose seductive valley makes her limbs stretch out above her base. In contrast, L solidly holds his ground yet harbors a certain emptiness above the waist. Capital letters, being square and conservative, prefer to keep a little distance from their neighbors.

POSITIVE TRACKING (+20)
Letters do love one another. However, due to their anatomical differences, some letters have a hard time achieving intimacy. Consider the letter V, for example, whose seductive valley makes her limbs stretch out above her base. In contrast, L solidly holds his ground yet harbors a certain emptiness above the waist. Capital letters, being square and conservative, prefer to keep a little distance from their neighbors.

NEGATIVE TRACKING (-20)
Letters do love one another. However, due to their anatomical differences, some letters have a hard time achieving intimacy. Consider the letter V, for example, whose seductive valley makes her limbs stretch out above her base. In contrast, L solidly holds his ground yet harbors a certain emptiness above the waist. Capital letters, being square and conservative, prefer to keep a little distance from their neighbors.

TYPE CRIME
TIGHTLY TRACKED TEXT
Letters are tracked too close for comfort.

Books and harlots—both have their type of man, who both lives off and harasses them. In the case of books, critics. WALTER BENJAMIN, 1925
REVERSED TYPE, NO TRACKING

Books and harlots—both have their type of man, who both lives off and harasses them. In the case of books, critics. WALTER BENJAMIN, 1925
REVERSED TYPE, TRACKED +25

Source: Thinking with Type: A Critical Guide for Designers, Writers, and Editors: Ellen Lupton

LEADING

The distance from the baseline of one line of type to another is called line spacing. It is also called leading, in reference to the strips of lead used to separate lines of metal type. The default setting in most layout and imaging software is 120 percent of the type size. Thus 10-pt type is set with 12 pts of line spac-ing. Designers play with line spacing in order to create distinctive typographic arrange-ments. Reducing the standard distance creates a denser typographic color, while risking collisions between ascenders and descenders. Expanding the line spacing creates a lighter, more open text block. As leading increases, lines of type become independent graphic

different

folks

different

strokes

TYPE CRIME
*Here, auto spacing yields
an uneven effect.*

different

folks

different

strokes

---

*Adjusting line spacing with
the baseline shift tool helps create
an even appearance.*

A a ↑ **NERD ALERT:** A *baseline shift* is a manual adjustment of the horizontal position of one or more characters. Baseline shifts are often used when mixing different sizes or styles of type. The baseline shift tool can be found in the Type tool bar of standard software applications.

The distance from the baseline of one line of type to another is called *line spacing*. It is also called *leading*, in reference to the strips of lead used to separate lines of metal type. The default setting in most layout and imaging software is 120 percent of the type size. Thus 10-pt type is set with 12 pts of line spacing. Designers play with line spacing in order to create distinctive layouts. Reducing the stan-dard distance creates a denser typo-graphic color—while risking collisions between ascenders and descenders.

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6/6 SCALA PRO
(6 pt type with 6 pts line spacing, or "set solid")

6/7.2 SCALA PRO
(Auto spacing; 6 pt type with 7.2 pts line spacing)

6/8 SCALA PRO
(6 pt type with 8 pts line spacing)

6/12 SCALA PRO
(6 pt type with 12 pts line spacing)

Source: Thinking with Type: A Critical Guide for Designers, Writers, and Editors: Ellen Lupton

38a.

The Modern Literature
Society presents a lecture
by Raoul Ramirez,
Professor of Literature
Santaneo State University
Modern Hispanic Poetry
7:30 pm March 23
The Humanities Center Auditorium
Admission is free

39a.

The Modern Literature
Society presents a lecture
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Professor of Literature
Santaneo State University

Modern Hispanic Poetry

7:30 pm March 23
The Humanities Center Auditorium
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40a.

The Modern Literature
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7:30 pm March 23
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41a.

The Modern Literature
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by Raoul Ramirez,
Professor of Literature
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**Modern
Hispanic Poetry**

7:30 pm March 23
The Humanities Center Auditorium
Admission is free

42a.

The Modern Literature
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by Raoul Ramirez,
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Santaneo State University

**Modern
Hispanic Poetry**

7:30 pm March 23
The Humanities Center Auditorium
Admission is free

43a.

The Modern Literature
Society presents a lecture

Santaneo State University
Professor of Literature

Raoul Ramirez
**Modern Hispanic
Poetry**

7:30 pm March 23
The Humanities Center Auditorium
Admission is free

44a.

The Modern
Literature
Society presents
a lecture

*Modern
Hispanic Poetry*

by Raoul Ramirez,
Professor of Literature
Santaneo State
University

7:30 pm March 23
The Humanities Center
Auditorium
Admission is free

45a.

Santaneo State
University
Professor of Literature

Raoul
Ramirez
**Modern
Hispanic
Poetry**

The Modern
Literature
Society
presents
a lecture

7:30 pm
March 23
The
Humanities
Center
Auditorium
Admission
is free

46a.

The Modern Literature
Society presents a lecture

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Santaneo State University

**Modern
Hispanic Poetry**

7:30 pm March 23
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HIERARCHY

Typographical hierarchy is the order of importance in a body of text (such as the sections and subsections of a book). Hierarchy arranges lettering so that important words clearly stand out to readers who are scanning for information.

TERMINOLOGY:

As a general rule, your typography have at least three levels of hierarchy.
Primary – The most noticeable text on the page, usually bigger and a brighter color than the other layers of text. Because it's so powerful, this level should be sparse – reserve it only for headlines and decks (known as 'furniture').
Secondary – Less noticeable than the primary level, but more noticeable than the main content, the secondary level handles everything in between.
This level features some minimal but distinct elements in size
and color, and typically includes subheads, captions, pull quotes, infographics, or supportive blocks of text separate from the main content.
Tertiary – This is the main content, the most common, and the least noticeable. It should be simple and not flashy – the goal of the other layers is to attract attention; the goal of this layer is to encourage the reader to become immersed in the text, hence less distraction.
Other – Smaller levels of hierarchy can be created by sparingly applying italics, color, bolding, underlining, and other effects to tertiary type.
These levels might include underlined links, a few bolded words for emphasis within paragraphs, etc. Text that shows up in banners, logos, or other background graphics also fall in this category.
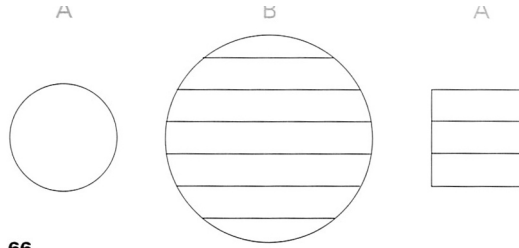
66.
Shape relates the first and middle forms; texture relates the middle and right forms; and size relates the left and right forms.

a	Bass	
b	Thomas Coleman	
b	Anthony Beadle	
a	Flute	
b	Elinor Preble	A
a	Oboe	
b	Peggy Pearson	
b	Raymond Toubman	
a	Clarinet	

S Y M P H O N Y

H A L L

B

a	Bassoon	
b	Francis Nizzari	
b	Ronald Haroutunian	A
a	French Horn	
b	Oaneka Oaujub	

Source: Typographic Design: Form and Communication: Rob Carter, Meggs, Day, Maxa, Sanders

I Division of angels	Division of angels	DIVISION OF ANGELS	
A. Angel	Angel	*Angel*	*angel*
B. Archangel	Archangel	*Archangel*	DIVISION *archangel*
C. Cherubim	Cherubim	*Cherubim*	OF ANGELS *cherubim*
D. Seraphim	Seraphim	*Seraphim*	*seraphim*
II Ruling body of clergy	Ruling body of clergy	RULING BODY OF CLERGY	
A. Pope	Pope	*Pope*	*pope*
B. Cardinal	Cardinal	*Cardinal*	RULING BODY *cardinal*
C. Archbishop	Archbishop	*Archbishop*	OF CLERGY *archbishop*
D. Bishop	Bishop	*Bishop*	*bishop*
III Parts of a text	Parts of a text	PARTS OF A TEXT	
A. Work	Work	*Work*	*work*
B. Chapter	Chapter	*Chapter*	PARTS OF *chapter*
C. Section	Section	*Section*	A TEXT *section*
D. Subsection	Subsection	*Subsection*	*subsection*

SYMBOLS, INDENTS, AND LINE BREAKS

INDENTS AND LINE BREAKS ONLY

FONT CHANGE, INDENTS, AND LINE BREAKS

ALIGNMENT, FONT CHANGE, AND LINE BREAKS

COMMON TYPOGRAPHIC DISEASES

Various forms of dysfunction appear among populations exposed to typography for long periods of time. Listed here are a number of frequently observed afflictions.

TYPOPHILIA An excessive attachment to and fascination with the shape of letters, often to the exclusion of other interests and object choices. Typophiliacs usually die penniless and alone.

TYPOPHOBIA The irrational dislike of letterforms, often marked by a preference for icons, dingbats, and—in fatal cases—bullets and daggers. The fears of the typophobe can often be quieted (but not cured) by steady doses of Helvetica and Times Roman.

TYPOCHONDRIA A persistent anxiety that one has selected the wrong typeface. This condition is often paired with OKD (optical kerning disorder), the need to constantly adjust and readjust the spaces between letters.

TYPOTHERMIA The promiscuous refusal to make a lifelong commitment to a single typeface—or even to five or six, as some doctors recommend. The *typothermiac* is constantly tempted to test drive "hot" new fonts, often without a proper license.

Type Anatomy

Ascender
The lowercase character stroke which extends above the x-height.

Ascender Line
The invisible line from where the ascender rises. It marks the height of the ascender.

Aperture
Opening at the end of an open counter.

Apex
The portion of letters A, M, and N where two strokes meet to form a peak. The point created by joining two diagonal stems (apex above, vertex below).

Arm
The diagonal or horizontal stroke that is not connected at one or both ends. Examples would be top of the capital T, the horizontal strokes of the F and the diagonal strokes in K.

Axis
An imaginary line drawn from top to bottom of a glyph bisecting the upper and lower strokes is the axis. Also known as stress, angle of stress, design axis.

Baseline
The imaginary horizontal line to which the body, or main component, of characters rest.

Beak Terminal or Beak
A decorative stroke at the end of the arm of a letter. Found is Serif typefaces particularly on the f, and also often on a, c, j, r and y bottom of cap E

Body Size
The height of the face of the type, which in letterpress terms is the depth of the body of the type. Originally, this was the height of the face of the metal block .

Bowl
The fully closed curved or circular part of a character like B, e, g, o.

Bracket
A curved line connecting the serif to the stroke. The joining of the stem of a letter to the serif. This is also referred to as a fillet.

Cap Height
Height of the capital letter from the baseline.

Cap Line
A line marking the height of uppercase letters within a font.

Characters
The basic typographic element is called a character, which is any individual letter, numeral, or punctuation mark. The capital letters are called caps, or uppercase (u.c.) characters. Small letters are called lowercase (l.c.) characters. Numbers are called numerals or figures.

Character components
Typographic characters have basic component parts. The easiest way to differentiate characteristics of type is by comparing the structure of these components.

Chin
The angled terminal of a "G".

Contrast
The amount of variation in between thick and thin strokes.

Crossbar
The horizontal stroke in a letter like A', 'H', 'T', 'e', 'f', 't'. Also called bar

Cross Stroke
The horizontal stroke that intersects the stem in t and f.

Crotch
Acute angle made on the inside where 2 strokes meet.

Counter
The completely or partially enclosed area within a letter. Letters A, B, D, O, P, Q, R, a, b, d, e, g, o, p, and q. Letters containing open counters include c, f, h, i, s etc.

Descender
The lowercase character stroke which extends below the baseline.

Descender Line
The invisible line that marks the end of the descender. It marks the maximum height of the descender.

Diacriticals
The accent marks used on some characters ~`'

Ear
Ear is a decorative stroke projecting out from the upper bowl of lowercase g.

Eye
In side counter space of a lowercase e.

Finial
The tapered curved end of the letter as in c and e.

Font
A selection of characters of one size and design of type.

Glyph
All the written characters representing one specific letter lower case, cap, italic etc.

Italic
A sloped or cursive variation of roman. Not a just slanted version of the roman face, a true italic font is drawn from scratch and has unique features not found in the roman face. Also called oblique, tilted, slanted.

Jot
A small round mark on top of i, j, also called tittle, dot

Hairline
The thin strokes of a serif typeface.

Hook
A curved, protruding stroke in a terminal. Usually found on a lowercase f.

Leg
Short, descending portion of a letter.
The lower, down sloping stroke of K, k, is called a leg.

Ligature
Two or more letters tied into a single character.

Link
A stroke connected the loop and the bowl of a g.

Lobe
Rounded projecting stoke attached to the main structure of a letter,, p, b.

Loop
The counter below the baseline. It is connected to the bowl with a link. The bottom part of the lowercase roman 'g'.

Lowercase
The little letters or non-capital letters of the alphabet are lowercase glyphs. Also called small letters, or more formally minuscule.

Meanline
Half the distance from the baseline to the cap height. This may or may not be the x-height, depending on the design of the lower case letters.

Old-Style Figures
Numbers with varying heights, some aligning to the baseline and some below.

Overshoot
Ascenders extending into the space of a following character like cap F, T.

Quaint
An antiquated sort or glyph, used to recreate the typographic flavor of a bygone age.

Sans Serif
From the French, meaning "without serif". A typeface which has no serifs. Sans serif typefaces are typically uniform in stroke width.

Serif
Tapered corners on the ends of the main stroke. Serifs originated with the chiseled guides made by ancient stonecutters as they lettered monuments. Some serif designs may also be traced back to characteristics of hand calligraphy. Note that serif type is typically thick and thin in stroke weight. Usually added at the beginning and end of the stroke.

San Serif
From the Latin sans serif without serifs. Typeface with no serifs.

Shoulder
This is the transitional section a curved stroke coming from the stem.

Slope
The angle of inclination of the stems and extenders of letters. Not to be confused with axis.

Special characters
Math signs Punctuation marks Accented characters Reference marks.

Spine
The main stem stroke that is curved or angled, diagonal of the letter s.

Spur
A small projection from a rounded stroke. Bottom right corner of capital G , end of a C. Smaller that a serif

Stem
A main stroke which is vertical or diagonal from which all strokes branch out from.

Stress
The direction in which a curved stroke changes weight. Look at a serif of to see where thin strokes align. Types of stress:
Oblique, or angled, stress
Semi-oblique stress
Vertical stress

Stroke
Typeface component which defines the typeface structure. The straight (vertical, horizontal, diagonal) and rounded strokes.

Swash
A flourish addition replacing a terminal or serif.
 Typographical flourish on a glyph, like an exaggerated serif.

Tail
The decorative stroke that descends downwards in Q .

Terminal
The end of a stroke which does not terminate in a serif. tear-drop terminal, bulbous terminal.

Tittle
A small round mark on top of i, j, also called jot, dot.

Uppercase
Capital letters of the alphabet are uppercase glyphs. Also called capital letters, capitals, caps, large letters, or more formally majuscule.

Vertex
The outside point at the bottom or top of a character where two strokes meet.

X-height
The height of the body, minus ascenders and descenders, which is equal to the height of the lowercase 'x'. Varies among typefaces in the same point size and strongly effect readability and gray value of text blocks.

Blackletter 1450s

Characters Built of Many Strokes

No Slant

Mock Quill Pen

Extreme Contrast

No Letter Connections

Old Style 1475~

Full Brackets

Angled Stress

Modest Serifs

Limited Contrast

Human Writing Styles

Script 1550~

Free-flowing Strokes

Stong Slant to Right

Mock Quill Pen

Limited Contrast

Grouped in One Category

Transitional 1750~

Thin Brackets

Inclined / Vertical Stress

Modest Serifs < Old Style

Moderate Contrast > Old Style

Obliqne Head Serif

Modern 1775~

No Brackets

Vertical Stress

Modest Serifs < Transitional

Extreme Contrast >Transitional

Ball Shapes Stroke Terminals

Egyptian 1825~

No Brackets

No Angled of Stress

Rectangular Slab Serif

No / little Contrast

Like The Sans Serif

Monoweight 1930~

No Brackets

No Angled of Stress

Sans Serif

No / little Contrast

Geometric Shapes

The Anatomy of Type

Hv5fêñtogk

Label	Label	Label
Stem / Stroke	Arm	
Flag	Diacritic	
Terminal	Eye	
	Spur	Ear
	Counter	Link
	Arc of Stem	Arc
	Final	
		Leg
		Ascender

Tn

Ascent Line
Cap Line
Mean Line / x-line
Baseline
Descent line

Cap height
x-Height

Arm	Vortex	
Beak	Serif	
Axis	Aperture	
Drop	Loop	

Typography

Apex	Bracket	Arm
Counter	Descender	Beak
	Stress	Axis
		Drop
Shoulder	Spur	
Arc	Bowl	
Tie		

AxffGiRQșt

Crossbar / Hairline	Bracket / Fillet	Crossbar / Hairline
		Ligature
	Chin	Juncture / Joint
	Tittle	Tail
		Spine
		Discretionary Ligature

Counter

Ascender

Type Size

{Typography}

X Height

Descender

head serif

ascender

terminal

eye

Standard

apex

hairline

shoulder

arm

beak

bowl

Typeface

descender

foot serif

Anatomy

crossbar

spur

counter

tail
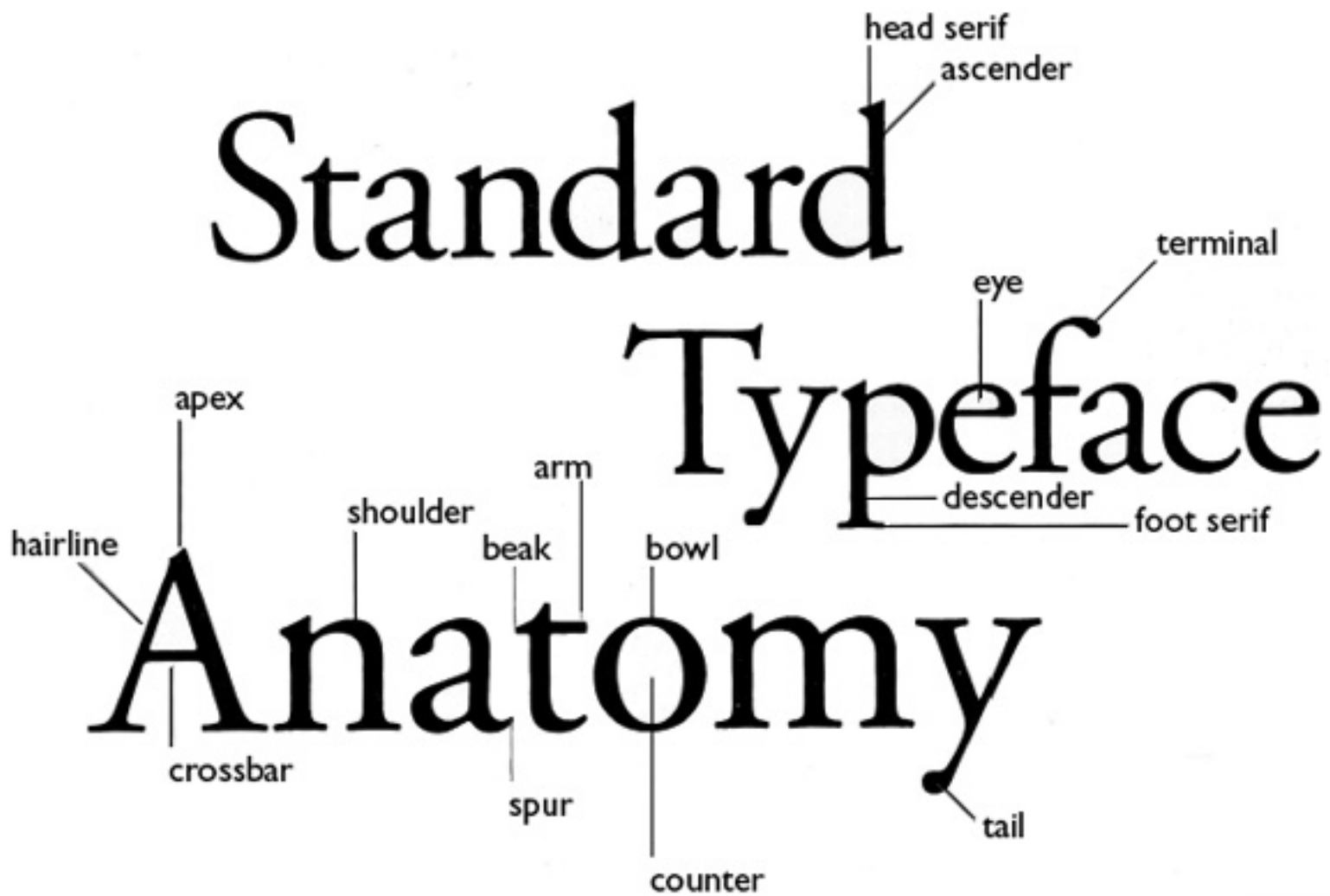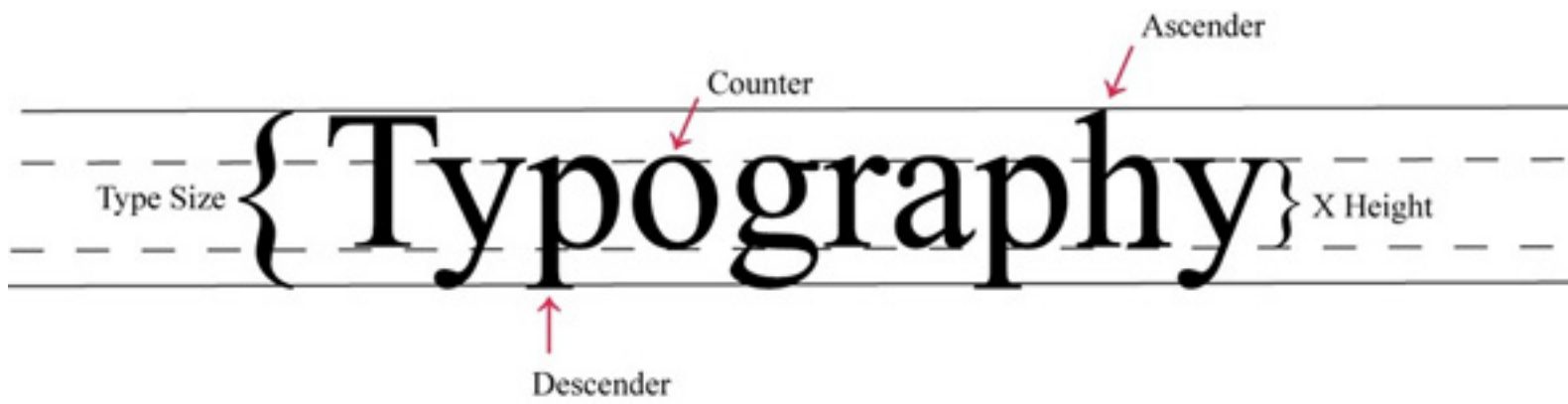
Typography basics: Anatomy of letterforms

Understanding the fundamental principles and concepts of typography is the first step to being a successful typographer. The most basic component of typography is the letter, and each letter of the alphabet is distinguished by its unique shape, or letterform. This technical guide includes definitions for and illustrations of the individual parts that compose letterforms, as well as the boundaries by which letterforms are delineated.

Boundaries

baseline
The imaginary horizontal line upon which the majority of the characters in a typeface sit.

capline
The imaginary horizontal line resting upon the tops of the uppercase letters.

meanline
The imaginary horizontal line that designates the height of lowercase letters.

x-height
Traditionally, the height of the lowercase letter x. As a general rule, x-height is the height of the body of lowercase letters of a typeface, excluding the ascenders and descenders. Some lowercase letters may extend a little bit above or below the x-height as part of their design, even without ascenders and descenders. X-height can vary considerably among typefaces with the same point size, which is based on the width of certain uppercase letters.
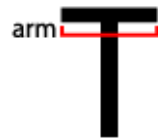

Letterform parts

apex
The peak of an uppercase A.

arm
A horizontal portion of a letterform, one or both ends of which are unattached to the vertical portion(s).

ascender
The portion of a lowercase letterform (e.g., k, b, or d) that ascends above the x-height of the typeface. Contrast descender.

cross stroke
The horizontal part of a letterform that intersects the vertical part.

descender
The portion of a lowercase letterform (e.g., y, p, or q) that descends below the baseline in a typeface. In some typefaces, the uppercase J and Q also descend below the baseline. Contrast ascender.

ear
The small decorative projection from the upper right side a lowercase g.

eye
The enclosed portion of a lowercase e. Similar to a counter.

hairline
The thinnest line of a typeface made of varying line weights.

spur
The projection that extends from the end point of the curved portion of a letterform (e.g., from the top or bottom of an uppercase or lowercase S or C). A spur is smaller than a serif.

C—spur

stem
The main vertical or near vertical portion of a letterform.

stem—R

stroke
The main diagonal portion of a letterform, though this term is often used to refer to any of the main portions–vertical, near vertical, or diagonal–of a letterform.

N stroke

tail
The stroke or loop at the end of a letterform, such as the tail of an uppercase Q or the stroke on an uppercase R.

Q tail

terminal
The end, or termination, of a stem or stroke with no serif.

terminal h

beak
Akin to a spur, but slightly larger, the projection that extends from the end points of an uppercase L, T, or E.

bowl
A curved portion of the letterform that encloses a counter. The exception in the lower curved part of a lowercase g (see loop).

bracket
The curve that connects the serif to the stem or stroke. May also be referred to as a fillet.

counter
The negative space of a letterform. A counter may be either fully or partially enclosed.

crossbar
The horizontal part of a letterform that connects, for example, a stem to a hairline.

leg
The lower, angled stroke of a k.

link
The part of a lowercase g that connects the loop to the bowl.

loop
The curved part of a lowercase g that encloses the lower counter. Similar to a bowl.

serif
Small decorative lines added to the end of a letterforms's stem and stroke. Serifs improve readability by leading the eye along a line of type.

spine
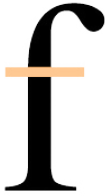The main portion of the letter S—both lowercase and uppercase—that curves from left to right.

Anatomy of a font
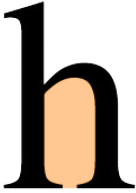
aperture   arm   bar   bowl   counter

h K H B e

cross stroke   descender   ear   leg
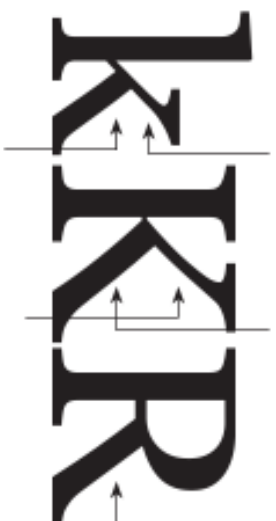
f y g R

serif   spur   stem   tail

I l G I Q
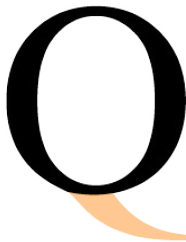
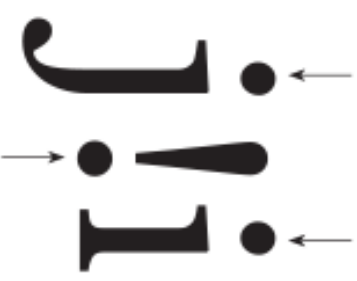bracketed/unbracketed

CROSSBAR : the straight horizontal stroke of a letter .
All of these arrows point to **crossbars**.

e f F H

ARMS & LEGS : when in doubt, use a body part!
Arms move diagonally up and **legs** move diagonally
down. These arrows point to both **arms and legs**.

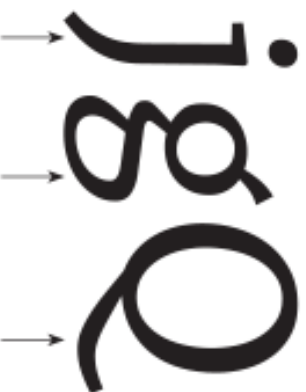**TITTLE** : the dot that is part of a letter
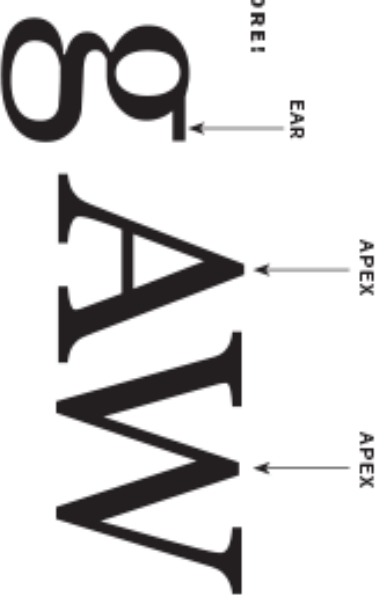All of these arrows point to **tittles**.

TAIL : the part that hangs down or moves
away from the letterform.
All of these arrows point to **tails**.

j g Q

SPINE : a stem that is curved or angled.
All of these arrows point to **spines**.

s g z

k K R j i

CROTCH : an interior join of a letter.
All of these arrows point to **crotches**.

k y x

SHOULDER : the top 'hump' of a letter.
All of these arrows point to **shoulders**.

h n m

EVEN MORE!

EAR

g

APEX

APEX

A W

COUNTER : the interior space of a letter, sometimes closed, sometimes open. All of these arrows point to **counters.**
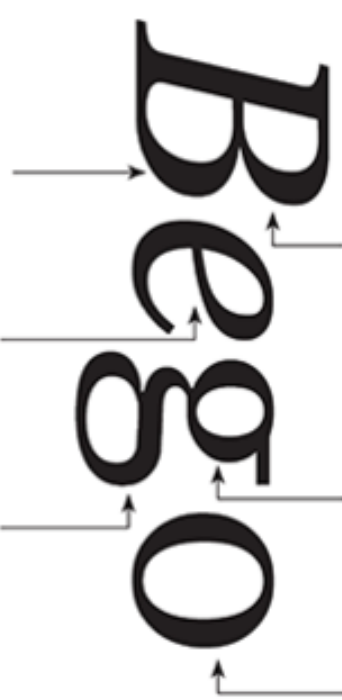
AaBbCc

STEM : the straight part of a letter, the part from which things 'grow' out of. All of these arrows point to **stems.**
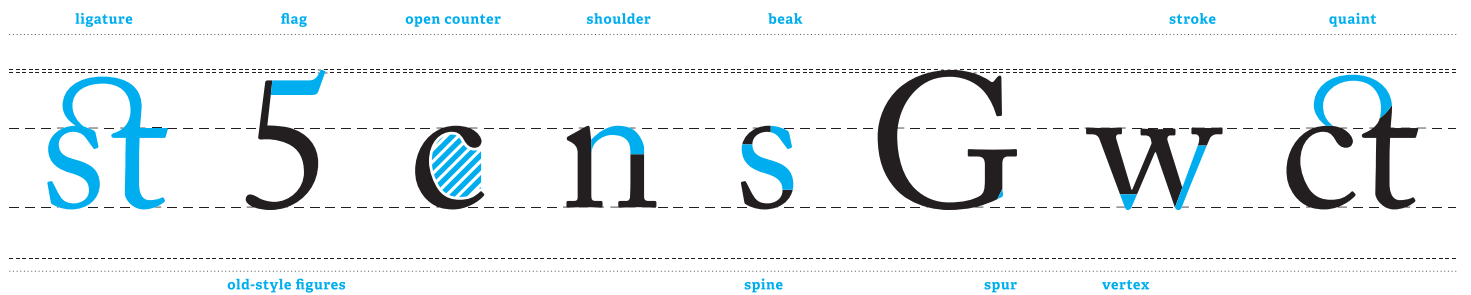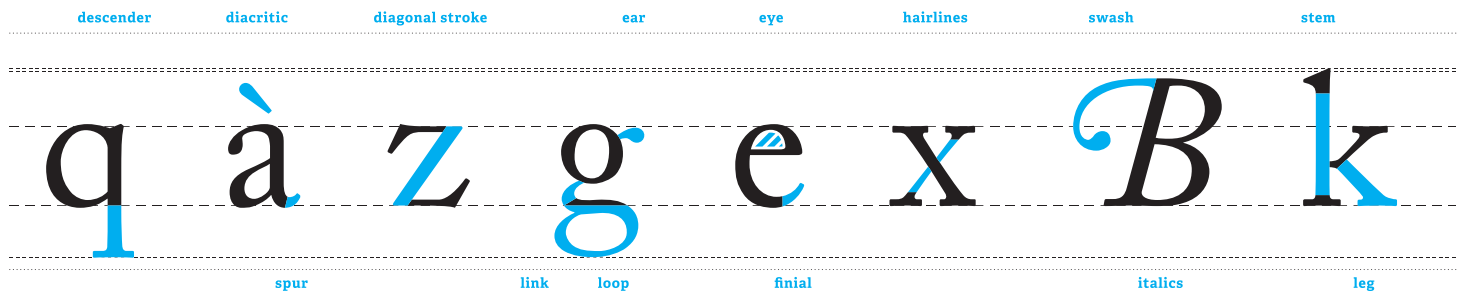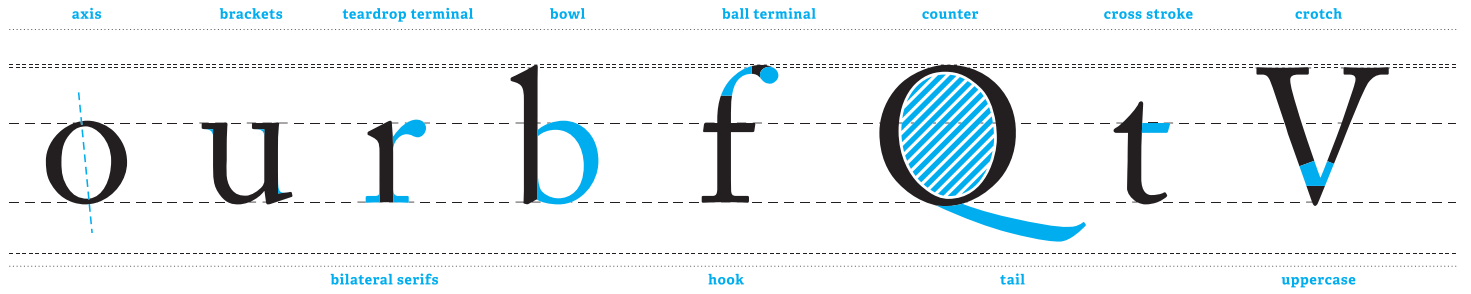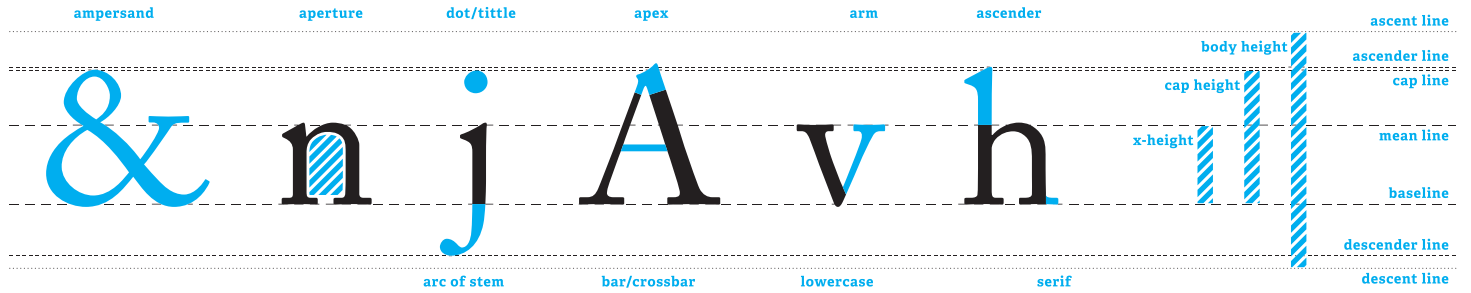
dqPyf

APERTURE : the opening of a letter, usually leading to a counter. All of these arrows point to **apertures.**

AecgF

BOWL : the round part of a letter, can be open or closed. All of these arrows point to **bowls.**

Bego

TYPOGRAPHY *DE*CONSTRUCTED

A comprehensive guide to the anatomy of type.

ampersand aperture dot/tittle apex arm ascender

body height

cap height

x-height

ascent line

ascender line

cap line

mean line

baseline

descender line

descent line

& n j A v h

arc of stem bar/crossbar lowercase serif

axis brackets teardrop terminal bowl ball terminal counter cross stroke crotch

o u r b f Q t V

bilateral serifs hook tail uppercase

descender diacritic diagonal stroke ear eye hairlines swash stem

q à z g e x *B* k

spur link loop finial italics leg

ligature flag open counter shoulder beak stroke quaint

st 5 c n s G w ct

old-style figures spine spur vertex

ampersand
A stylized character of the Latin et used to represent the word and.

aperture
The partially enclosed, somewhat rounded, negative space in some characters.

apex
A point at the top of a character where two strokes meet.

arc of stem
A curved stroke that is continuous with a straight stem.

arm
A horizontal, or upward, sloping stroke that does not connect to a stroke or stem on one or both ends.

ascender
The part of a letter that extends above the x-height.

ascender line
The invisible line marking the height of ascenders within a font.

ascent line
The invisible line marking the farthest distance between the baseline and the top of the glyph.

axis
An imaginary line drawn from top to bottom of a glyph, bisecting the upper and lower strokes.

ball terminal
A circular form at the end of the arm in letters.

bar/crossbar
The horizontal stroke in letters.

baseline
The invisible line where all characters sit.

beak
A sharp spur, found particularly at the top of letters in some 20th century Romans.

bilateral serifs
A serif extending to both sides of a main stroke.

body height
The complete area covered by all of the characters in a font.

bowl
The fully closed, rounded part of a letter.

bracket
A curved or wedge-like connection between the stem and serif of some fonts. Not all serifs are bracketed serifs.

cap height
The height of a capital letter measured from the baseline.

cap line
A line marking the height of uppercase letters within a font.

counter
The open space in a fully or partially closed area within a letter.

cross stroke
A horizontal stroke that intersects the stem of a lowercase 't' or 'f'.

crotch
An acute, inside angle where two strokes meet.

descender
The part of a letter that extends below the baseline.

descender line
The invisible line marking the lowest point of the descenders within a font.

descent line
The invisible line marking the farthest distance between the baseline and the bottom of the glyph.

diacritic
A ancillary mark or sign added to a letter.

diagonal stroke
An angled stroke.

dot/tittle
A small distinguishing mark, such as an diacritic on a lowercase 'i' or 'j'.

ear
A small stroke extending from the upper-right side of the bowl of lowercase 'g'; also appears in the angled or curved lowercase 'r'.

eye
Much like a counter, the eye refers specifically to the enclosed space in a lowercase 'e'.

finial
A tapered or curved end.

flag
The horizontal stroke present on the numeral 5.

hairline
A thin stroke usually common to serif typefaces.

hook
A curved, protruding stroke in a terminal. Usually found on a lowercase 'f'.

italics
A cursive alphabet which is matched with a roman font and used chiefly for emphasis.

mean line
An imaginary line running along the top of non-ascending, lowercase letters.

leg
The short, descending portion of a letter.

ligature
Two or more letters are joined together to form one glyph or character.

link
A stroke that connects the top and bottom bowls of a lowercase double-story 'g'.

lobe
A rounded projecting stroke attached to the main structure of a letter.

loop
The enclosed or partially enclosed counter below the baseline of a double-story 'g'.

lowercase
The smaller form of letters in a typeface.

old-style figures
Numbers with varying heights, some aligning to the baseline and some below.

open counter
The partially open space within a character that is open on one end.

overshoot
Ascenders extending into the space of a following character.

quaint
An antiquated sort or glyph, used to recreate the typographic flavor of a bygone age.

serif
A stroke added as a stop to the beginning and end of the main strokes of a character.

shoulder
The curved stroke aiming downward from a stem.

spine
The main curved stroke of a lowercase or capital 'S'.

spur
A small projection off a main stroke.

stem
A vertical, full-length stroke in upright characters.

stroke
A straight or curved diagonal line.

swash
A flourish addition replacing a terminal or serif.

tail
A descending stroke, often decorative.

teardrop terminal
The teardropped ends of strokes in letters of some typefaces.

terminal
The end of a stroke that does not include a serif.

uppercase
A letter or group of letters of the size and form generally used to begin sentences and proper nouns. Also known as "capital letters".

vertex
The outside point at the top or bottom of a character where two strokes meet.

x-height
The height of lowercase letters based on the height of lowercase 'x'; does not include ascenders or descenders.