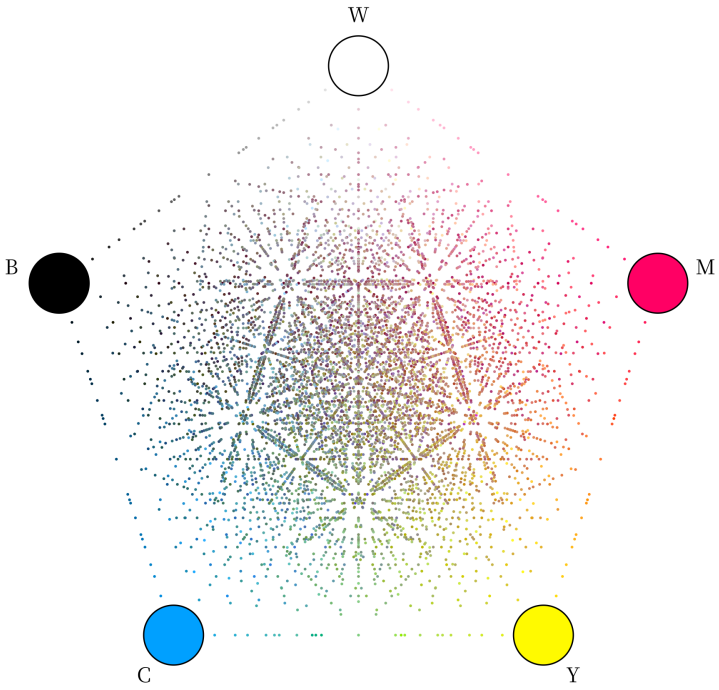
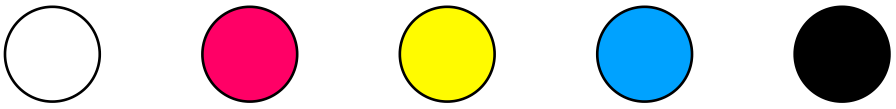


WMYCB

Oleksiy Koval

WMYCB distinguishes ratios. The 7,646 colour chords are not 7,646 swatches but 7,646 relations. Their colours are calibrated anew by eye in every medium, on every device, in every light — and they still change over time, with the viewer and with the distance. What is preserved is the chord, not its colour. Colour stays in motion; the ratio gives it rhythm.

> WMYCB allows a colour chord to be experienced visually in different colour spaces and through different mixing methods: on a digital surface, which produces colour additively from light, as well as on an analogue surface, where colour is produced subtractively, by absorbing light. On both, the eye mixes adjacent colours optically according to their share of the surface; a colour chord becomes experienceable only through the combination of this optical mixing with the production of colour on the surface. The colour chord itself remains the same; only its colour depends on the medium.



W White

M Magenta

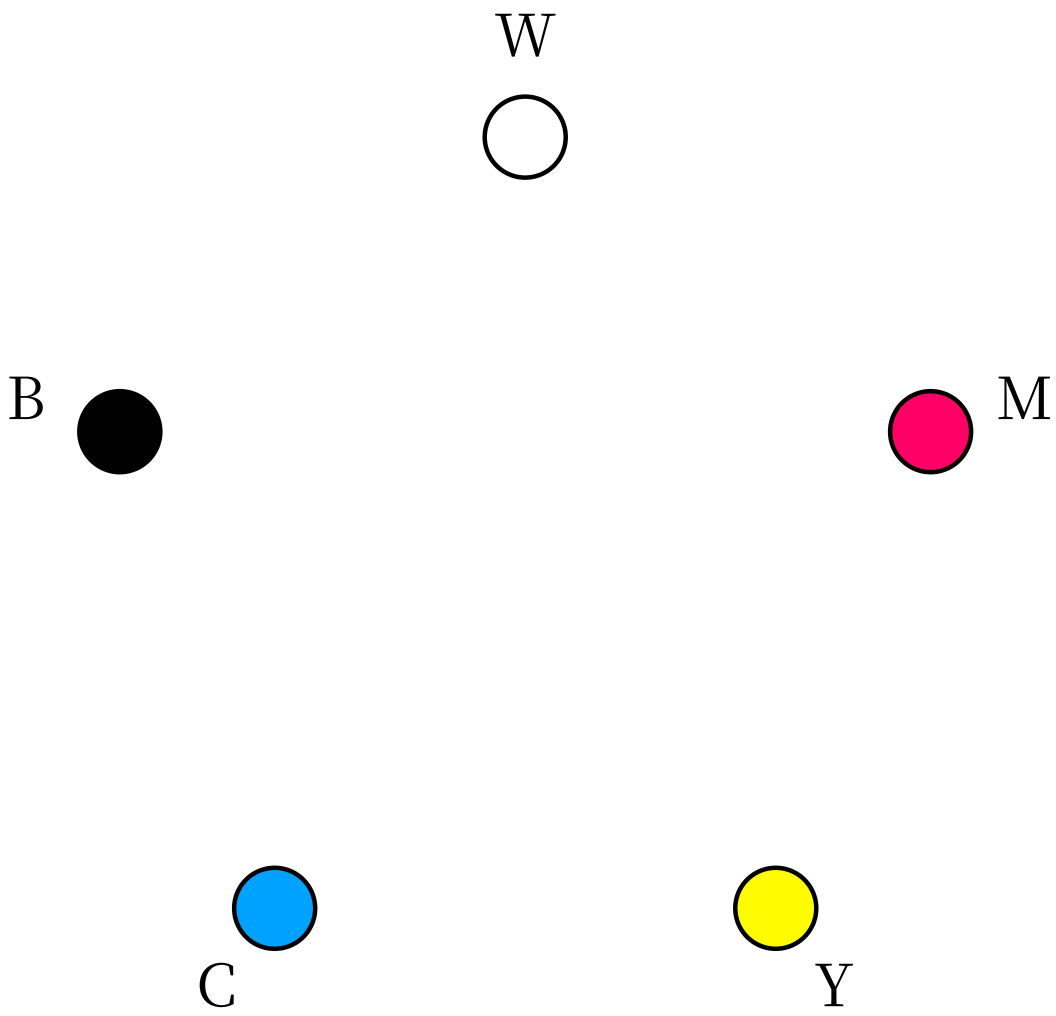
Y Yellow

C Cyan

B Black

Primary colours

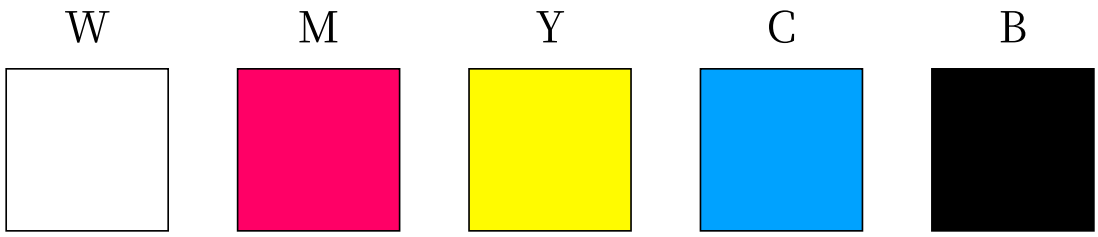
> White, magenta, yellow, cyan and black are the five primary colours of WMYCB. In every medium, their concrete values – as pigment, printing ink or hex value – are calibrated by eye: each colour on its own, until it appears free of any other colour, and all colours attuned to one another.



The five primary colours in the system order W–M–Y–C–B at the corners of a pentagon (colour values from the digital calibration profile).

Calibration profile

> A calibration profile is the determination, established by eye, of the concrete values of the five primary colours in a medium for a particular device or material and particular lighting conditions.

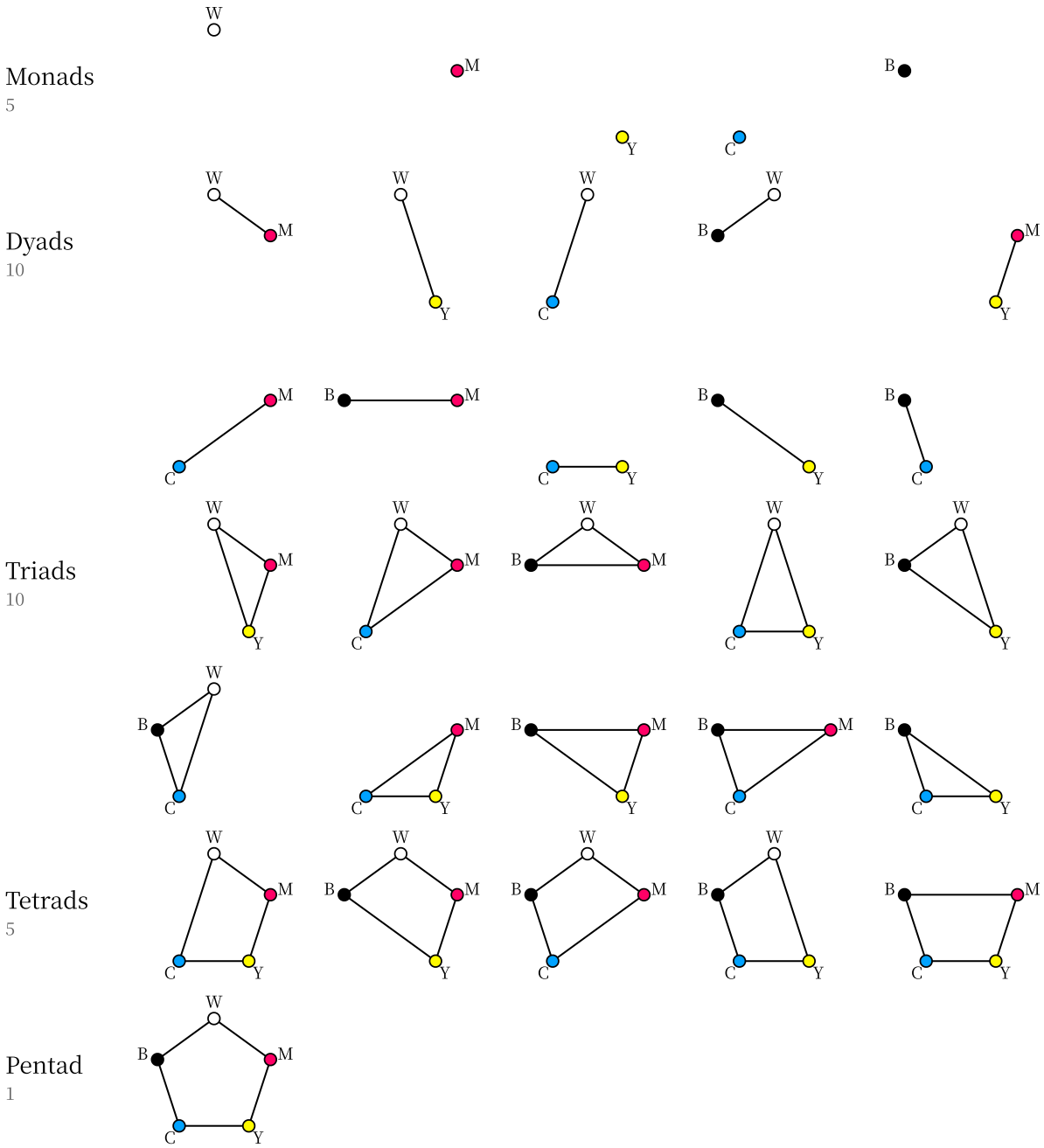


#FFFFFF	#FF0066	#FFFB00	#00A2FF	#000000
White	Magenta	Yellow	Cyan	Black

The digital calibration profile v26.

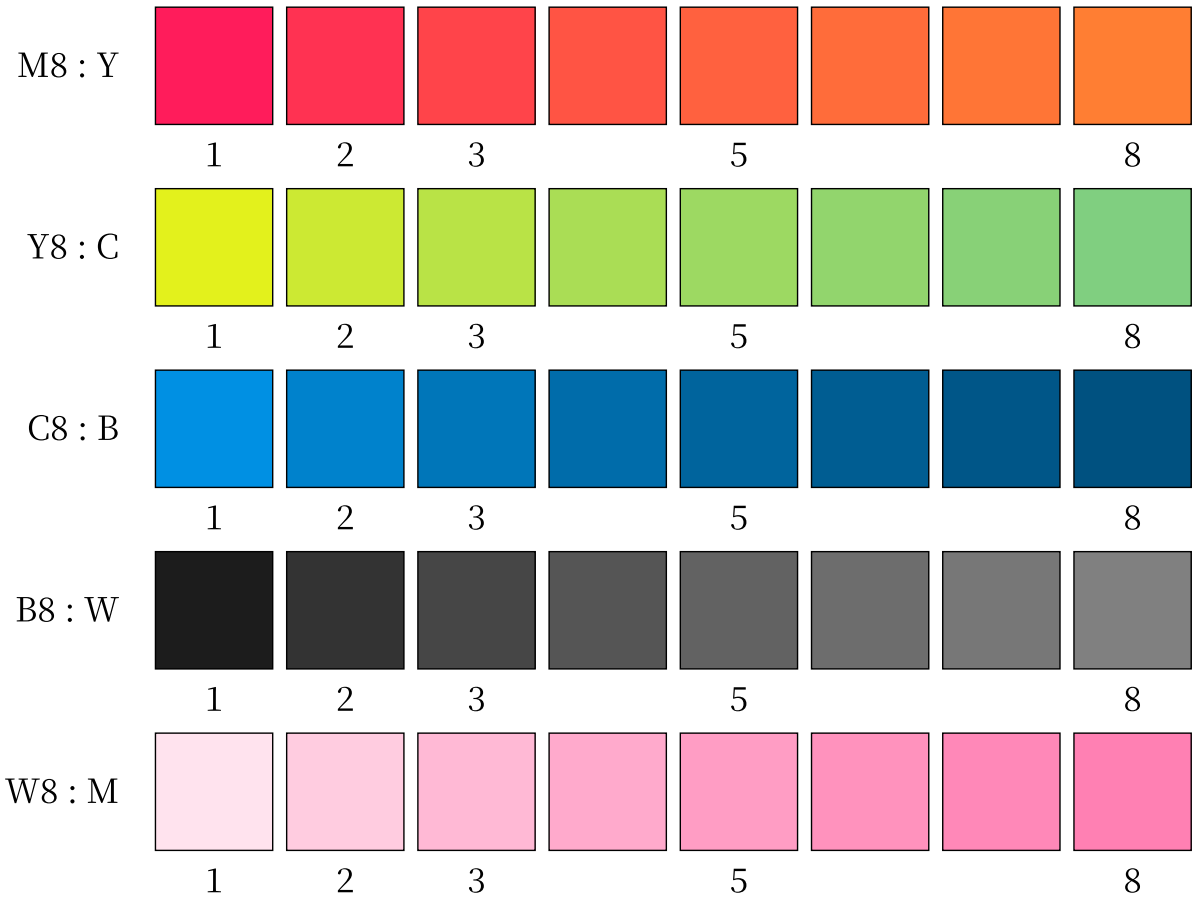
Primary colour combinations

> Primary colour combinations are the groupings of the five primary colours, named after the number of primary colours involved: monad (one), dyad (two), triad (three), tetrad (four) and pentad (five). There are 31 primary colour combinations: 5 monads, 10 dyads, 10 triads, 5 tetrads and 1 pentad.



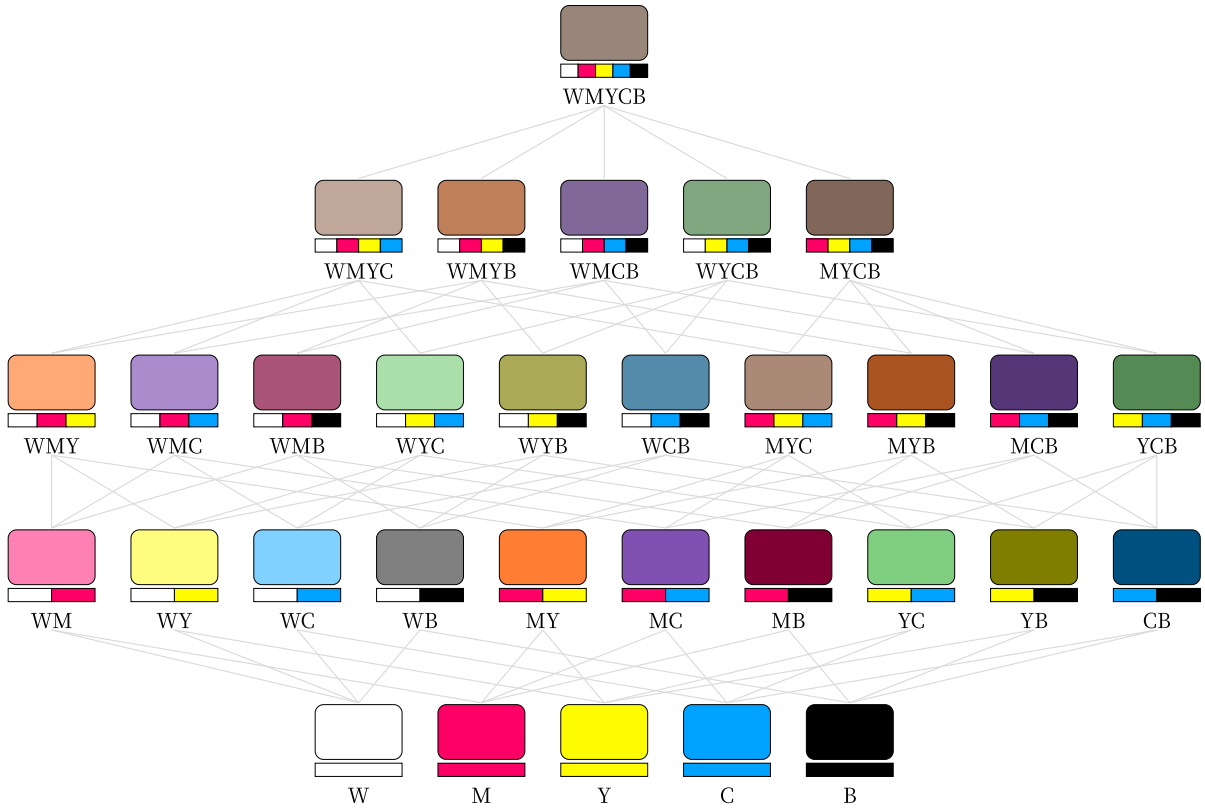
Chord values

> The chord values of WMYCB are 1, 2, 3, 5 and 8. The values 4, 6 and 7 are left out because colour chords containing them can hardly be distinguished visually from those with the neighbouring values. The sequence of chord values ends at 8 because colour chords with larger values can hardly be traced back visually to their primary colours and their ratio to one another. What matters is not the mathematical regularity of the values but their visual distinguishability.

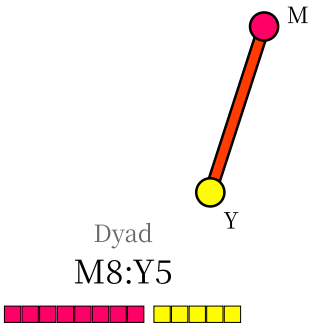


Colour chord

> A colour chord is a grouping of two to five primary colours in proportions of 1, 2, 3, 5 or 8 relative to one another. What matters is the ratio, not the quantity: M2:Y2 is the same colour chord as M1:Y1. A single primary colour is not a colour chord. There are 7,646 colour chords.

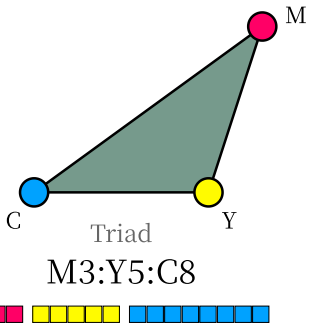


Each primary colour combination in equal proportions.



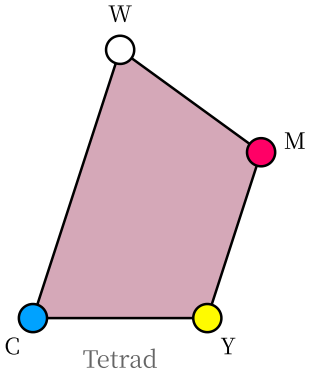
Dyad

M8:Y5



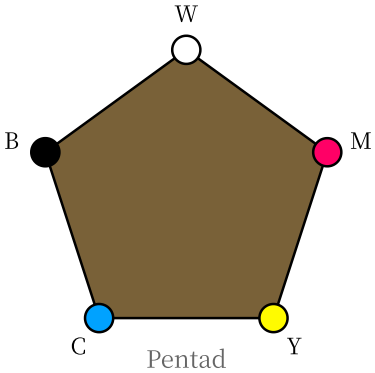
Triad

M3:Y5:C8



Tetrad

W8:M5:Y2:C3



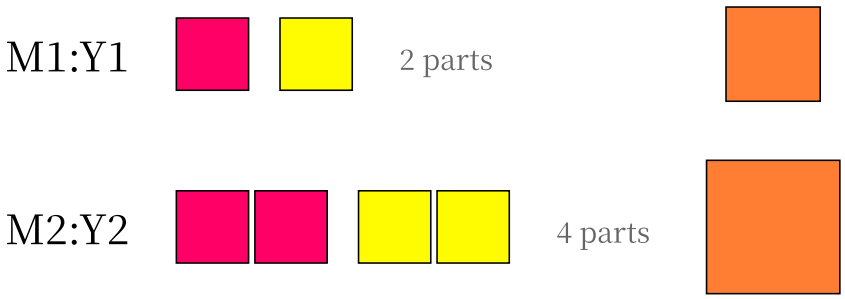
Pentad

W1:M3:Y5:C2:B8

Examples of colour chords from a dyad, triad, tetrad and pentad. Beside each colour chord are its proportions.

Colour quantity chord

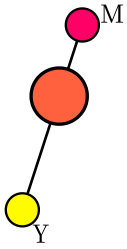
> A colour quantity chord is a grouping of two to five primary colours in quantities of 1, 2, 3, 5 or 8 parts. What matters is the quantity, not only the ratio: M2:Y2 and M1:Y1 are the same colour chord but different colour quantity chords. There are 7,750 colour quantity chords.



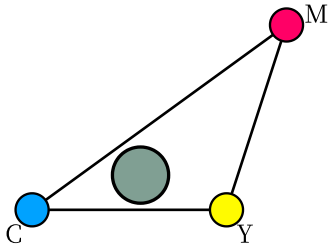
Per combination of primary colours there are 21 colour chords for a dyad, 121 for a triad, 621 for a tetrad and 3,121 for the pentad, because equal ratios count once. With 10, 10, 5 and 1 combinations this gives 210 + 1,210 + 3,105 + 3,121 = 7,646 colour chords. For colour quantity chords every combination of values counts separately, that is 5^2, 5^3, 5^4 and 5^5 per combination: 250 + 1,250 + 3,125 + 3,125 = 7,750.

Mixture value

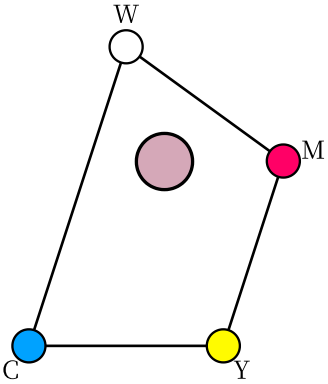
> The mixture value of a colour chord is the mean of the values of its primary colours, weighted by their proportions.



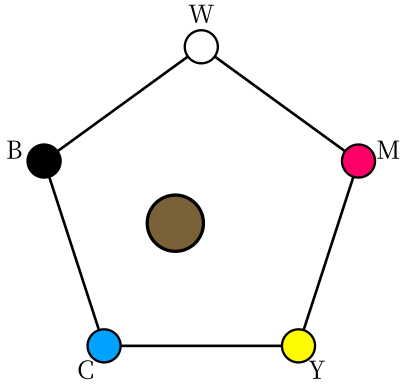
M8:Y5



M3:Y5:C8



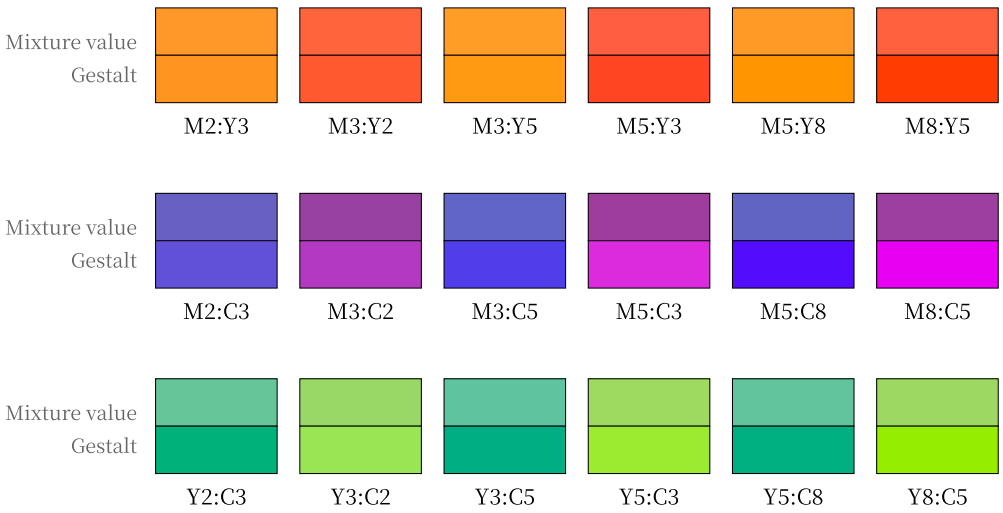
W8:M5:Y2:C3



W1:M3:Y5:C2:B8

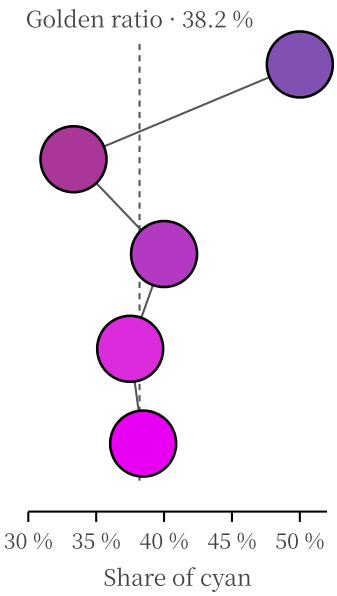
Gestalt

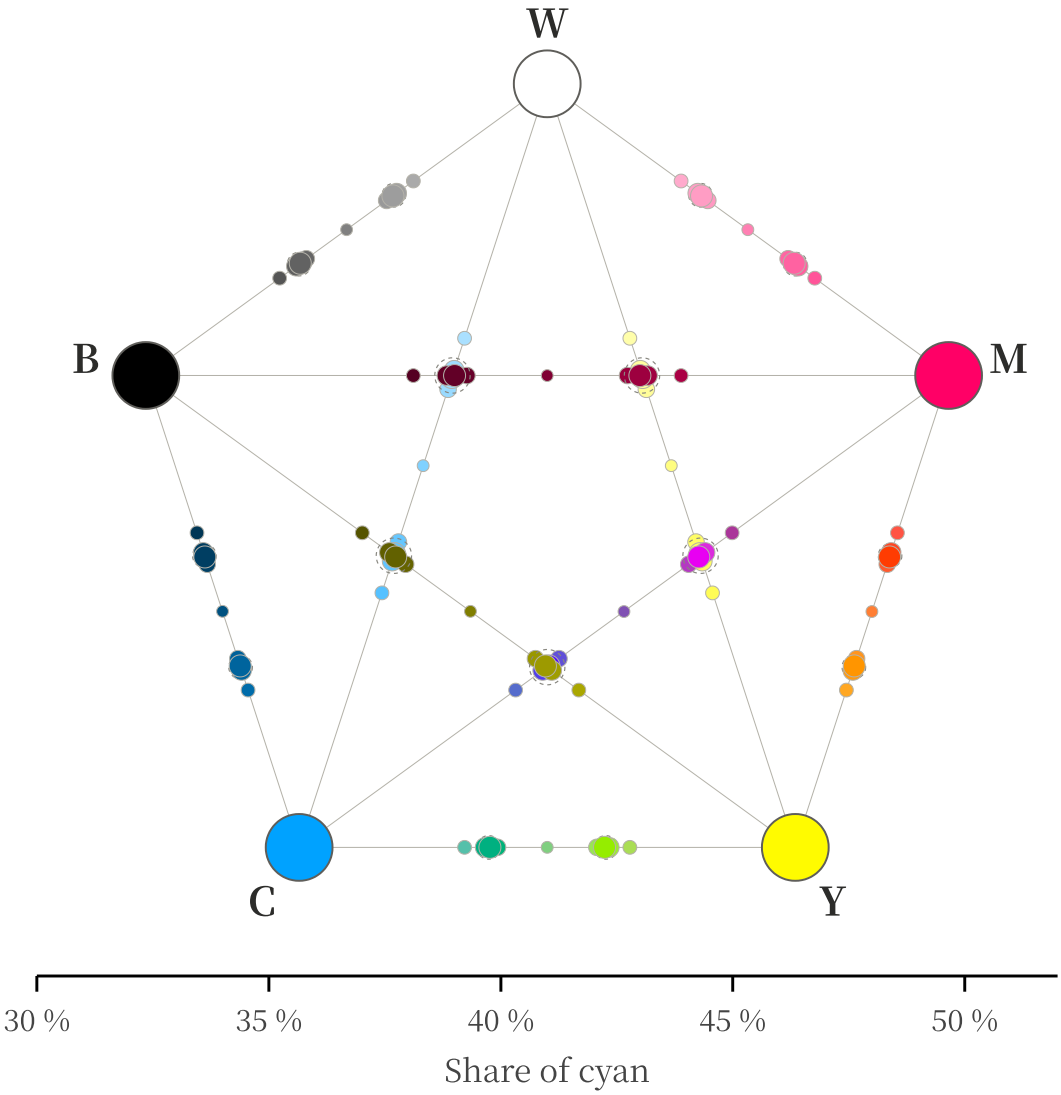
> The gestalt is the appearance of a colour chord where its colour is set rather than mixed, for example digitally in sRGB or in print as a dedicated Pantone colour for each colour chord. Because the mixture values, as weighted means, run through the paler centre of the colour space, the gestalt of the colour chords of the dyads magenta·yellow, magenta·cyan and yellow·cyan in the ratios 2:3, 3:5 and 5:8 is shifted from the mixture value, at constant hue, towards the most chromatic point of that hue. For all other colour chords, the gestalt coincides with the mixture value.



Chord	Share of C	Difference
M1:C1	50.0 %	+11.80
M2:C1	33.3 %	−4.86
M3:C2	40.0 %	+1.80
M5:C3	37.5 %	−0.70
M8:C5	38.5 %	+0.26

Difference in percentage points





The colour chords 1:1 to 5:8 on the ten dyad lines of the pentagon, in their gestalt colours. Dashed circles mark the golden points and the crossings of the diagonals.