

Paint Colours and Colour Mixing

Colour Chart A

The colour wheel here is created with six colours. These colours are what I recommend as a basic selection of colours to start with, and they can mix quite a large range of bright colours.

1. Cadmium Lemon Yellow (PY 37)
2. Cadmium Yellow Light (PY 35) or Cadmium Yellow (PY 35)
3. Cadmium Red Light (PR 108) or Cadmium Red (PR 108)
4. Permanent Rose (PV 19)
5. Ultramarine Blue (PB 29)
6. Phthalo Blue (PB 15).

One also needs a white such as Titanium White (PW 6) and a Black (PBk 9, or 6, 7, or 11)
The blue at 11. is a mixture of Ultramarine Blue and Phthalo Blue, making a middle blue.
The oranges 7., 8. and 9. were mixed with Cadmium Yellow Light and Cadmium Red Light.
The purple 10. was mixed with Ultramarine Blue and Permanent Rose.
The greens 12. and 13. were mixed with Phthalo Blue and Cadmium Lemon Yellow.

Later, one could consider adding further colours to this basic starter set:

If you want to mix the most bright and vivid greens, one needs 15. Phthalo Green (PY 7).

16. is a mixture of Phthalo Green and Cadmium Lemon Yellow.

To mix the brightest oranges one needs 14. Cadmium Orange (PO 20) and Cadmium Yellow Deep (PY 35) or (PO 20) 17. Magenta (PR 122) helps one mix very vivid purples, mauves and pinks.

With these ten colours mentioned (and black and white) one can mix the complete full range of bright colours, possible with reliable artist's colours, including all the browns, and also everything else.

These other colours are worth knowing about, and are used by many artists. Equivalent colours, can actually be mixed with the ten colours mentioned above.

Cobalt Blue (PB 28) is a very useful middle blue, similar in colour to 11.

18. Cerulean Blue (PB 35 or PB 36) is the traditional greenish blue.

19. Cadmium Red Deep (PR 108) is a useful middle red.

20. Cobalt Violet (PV 49).

21. Cobalt Violet Deep (PV 14).

22. Manganese Violet (PV 19).

23. Ultramarine Violet (PV 15).

24. Chromium Oxide Green (PG 17).

25. Cobalt Turquoise (PB 36).

26. Viridian (PG 18). Is similar to Phthalo Green, but not quite as intense.

These particular colours, with these particular pigment numbers (usually printed on the tube) are what I recommend, as they are considered the most reliable and lightfast colours, that fade the least.

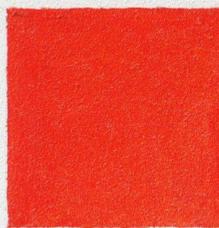
If you are not so concerned as to whether a particular colour may fade, then when you are buying colours at the shop, just ask for a similar colour, if the one that I recommend is too expensive for your budget.

Colours with pigment numbers other than the above, may eventually fade on your painting, over time.

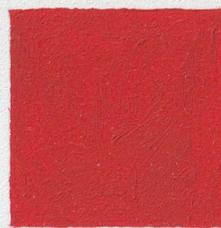
Some of the above mentioned colours, are more lightfast than others. For example Ultramarine Blue, Cobalt Blue, and Cerulean Blue, are both more lightfast than Phthalo Blue. The violet's mentioned above, are more lightfast than violets made using Permanent Rose, or Magenta. Permanent Rose is sometimes given different names, like "Quinacrinone Rose" so look for the number PV 19 on the tube. There is a version of PV 19 called "Quinacrinone Violet", but in oils it may darken in strong light.



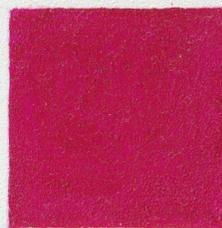
1



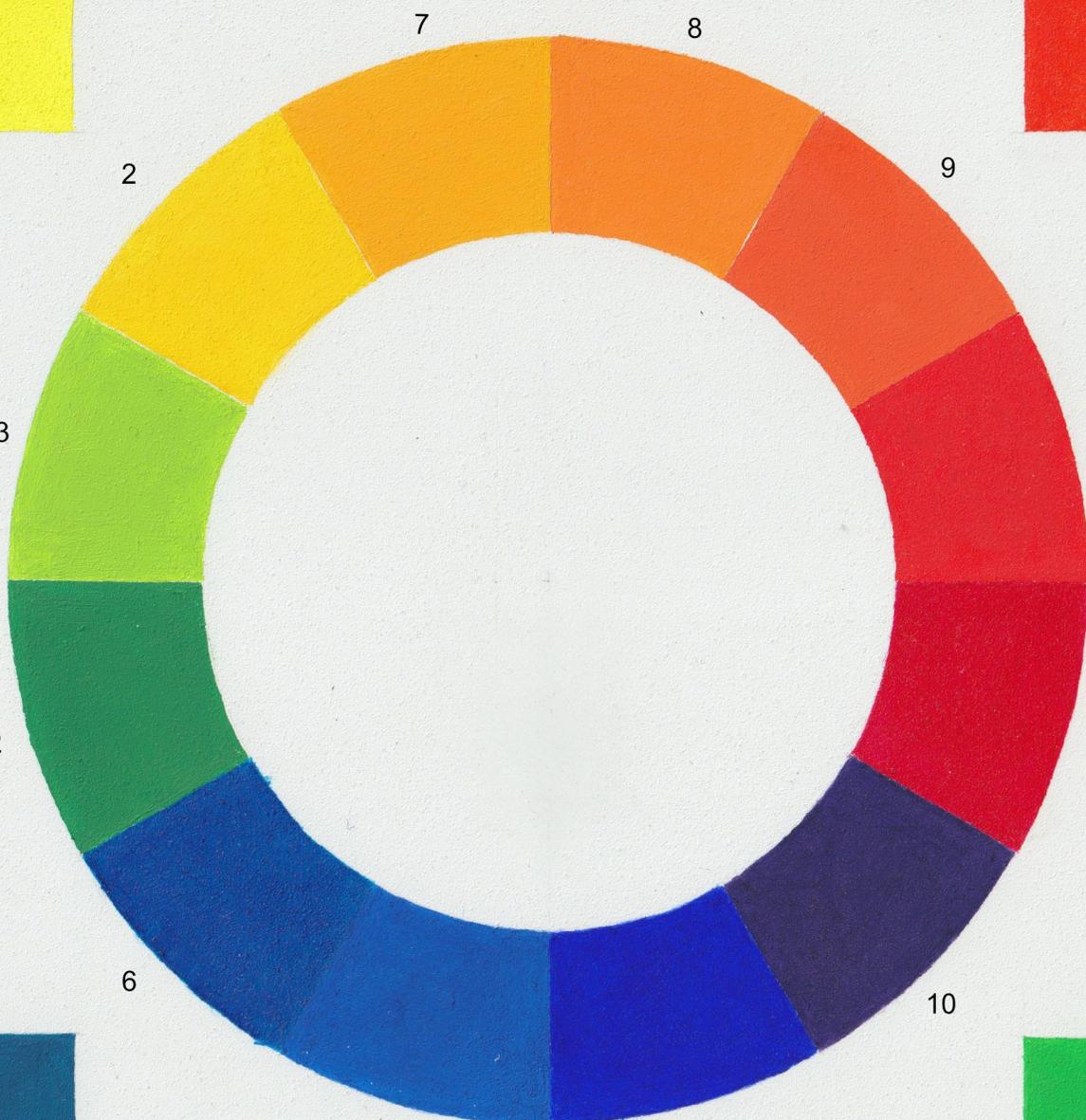
14



19



17



2

7

8

9

3

13

20

21

12

22

23

6

4

24

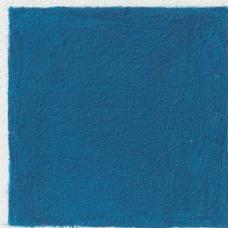
25

11

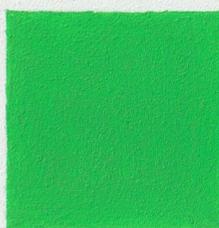
10

5

PG 17



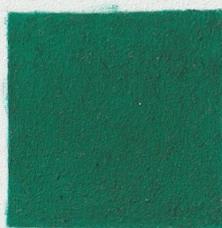
18



16



15



26

Color Chart A

Colour Chart B

1. and 2. are two further colour of interest, being Cobalt Teal (PB 28) and Cobalt Teal (PB 36). They can also be made with PG 50. Similar colours can be also mixed with Phthalo Blue, Phthalo Green and White.

All the browns can actually be mixed with red, yellow and blue (and white). When buying browns, I recommend starting with Yellow Ochre, Raw Umber, Burnt Umber and Burnt Sienna. Then you could then add other browns, depending on if they may be useful for your next painting project.

3. Yellow Ochre (PY 43 or 42)
- 4 Raw Sienna (PBr 7)
5. Raw Umber (PBr 7 or 6)
6. Red Umber (PBr 7 or 6)
7. Burnt Umber (PBr 7 or 6)
8. Mars Orange (Py 42)
9. Burn Sienna (PBr 7)
10. Venetian Red ((PR 101)
11. Light Red (PR 101)
12. Indian Red (PR 101)
12. Mars Violet/ Caput Mortuum (PR 101).

14. This row of colours shows white added to Cadmium Red Light, to create the tint of that colour.

15. This row of colours shows white added to Cadmium Red Light, to create the tint of that colour, except in this case I have also added some Cadmium Yellow.

Titanium White was used, and Titanium White is actually a white that is slightly blue. So when white is used in 14. the resulting tint becomes more pink, and less orange-red, so it doesn't look like the original Cadmium Red Light, but more towards a middle-red pink. Adding a small amount of Cadmium Yellow in 15. pushes the resulting tint back towards yellow (and away from blue), resulting in a tint that is more salmon coloured, which is the correct tint colour of Cadmium Red Light.

Artists need to be aware that every time that you add Titanium White to a colour, you are actually adding a little blue, and the tint colour may be incorrect. For example, adding white to a green may result in a green that is more blue-green than the original colour, so one must add yellow, in addition to the white.

17. These are browns created by mixing red, yellow, and blue (and white) to give skin tones.

16. Here I have mixed a black with Cobalt Blue, Cadmium Red and Cadmium Lemon Yellow.

By adding white to the black, I was able to produce two neutral greys. Not every mixture of a red, yellow and blue paint will give a perfect black, in practice, but they can produce something close to black.

The fact that red, yellow and blue can mix a black, is very useful to know in terms of colour mixing.

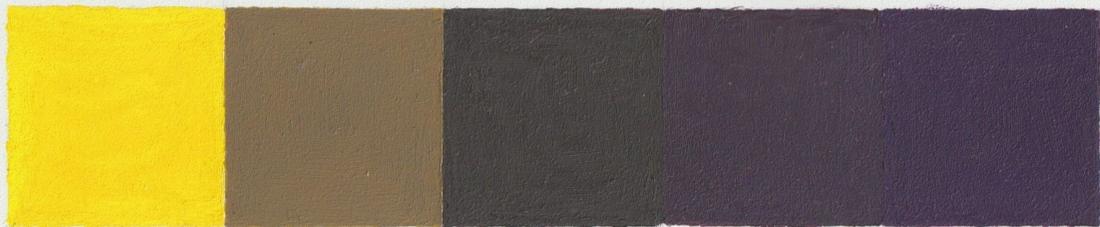
Because red and blue make purple, then mixing purple and yellow can result in a black.

Because yellow and blue make green, then mixing green and red can result in a black.

Because yellow and red make orange, then mixing orange and blue can result in a black.

In 18. I have mixed yellow with red and blue, going from left to right gradually adding more red and blue to the yellow, until I reach pure purple (being just red and blue). Note that in the middle I get something close to black, being yellow plus red and blue, which is black as in 16.

The same logic follows when mixing red with yellow and blue at 19., (yellow and blue is green) and blue with orange at 20. , (yellow and red is orange). But when you haven't reached black, you get a dull version of the colour, which I call the shadow colour, being what that colour would look like in shadow. So adding a little purple (red and blue) to yellow gives a dull yellow. And adding a little yellow to purple, gives a dull purple. Adding a little green (yellow and blue) to red gives a dull red, and adding a little red to green gives a dull green. Adding a little blue to orange (yellow and red) gives a dull orange, and adding a little orange (yellow and red) to blue gives a dull blue.



18



3



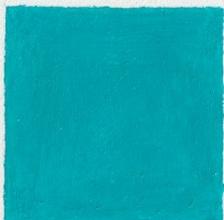
4



5



19



1



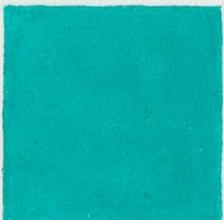
6



7



20



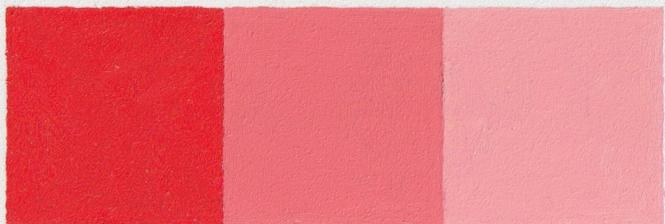
2



8



9



14



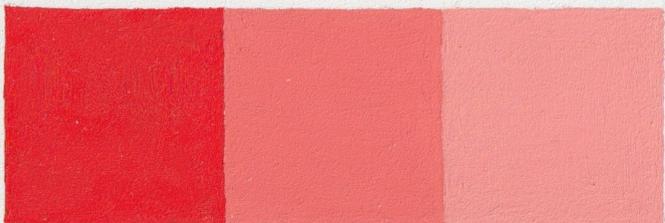
17



10



11



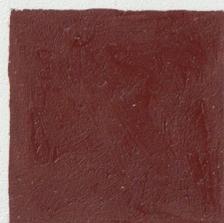
15



16



12



13

Color Chart B

Colour Chart C

In this chart I am exploring how to make a dull version of a bright pure colour, what I call the shadow colour. The three options are: Adding black (first row), adding a brown (second row) and using the system that is based on the fact that red, yellow and blue can mix to black, as in Colour Chart B (third row).

Yellow: 1. I mixed Ivory Black with Cadmium Yellow. In this case the result was not a satisfactory shadow colour, as it looks too green. The reason the result looks a bit olive green, is that the Ivory Black is a bit blue-black, and blue and yellow make green. Blacks can be manufactured to be blue-black, or brown-black, but nowadays most seem to be blue-black. This shows that simply adding black to a colour, doesn't guarantee that one will get the appropriate shadow colour. To counteract this effect, in this case, one would add a small amount of red, to cancel out the greenness, to get the required correct colour.

2. I added Yellow Ochre and Raw Umber. I added more of these browns to go darker in the last box.

3. I added some red and blue, as in Colour Chart B 18. That is, I added a bit of purple.

If you want a dull version of yellow, that is light, all you need to do is mix the shadow colour, and add white, as in 4. A dull light yellow, is a kind of beige.

Blue: 5. I mixed Ivory Black with Cobalt Blue.

6. I added Burnt Sienna to the blue. Raw Umber will also work.

7. I added Cadmium Orange and Cadmium Yellow Deep. That is, I added a yellow orange.

Note that all the dull dark blues are similar in colour.

Red: 8. I added Ivory Black with Cadmium Red

9. I added Burnt Umber. Other reddish browns will also work.

10. I added Phthalo Green and a small amount of yellow. That is, a middle green, as in Colour Chart B 19.

Note that all the dull dark reds look similar.

Green: 11. The green I created with Viridian and Cadmium Lemon Yellow. I then added Ivory Black.

12: I added Raw Umber (which is greenish brown) and a little bit of Cobalt Blue. I needed to add a bit of blue, as the greenish-brown made the colour go a bit to yellow-green, compared to the original green.

A colour like Chromium Oxide Green, would also work to dull a very bright green.

Yellow Ochre, together with Raw Umber, also can work to dull a yellowish-green.

13. I added Ultramarine Violet. One could also add a mixture of blue and red.

14. is a light, but dull green, created by adding white to the dull green at 11.

Adding black to the colours means that one is also adding a bluish tinge, as most blacks are blue-black. For the red at 8. mixed with black, I actually also added a bit of Cadmium Red Light, which is a more orange-red compared to the starting Cadmium Red. Adding this other red, counteracted the blueness of the black. For the dark green at 11. made by mixing the green with black, I also added a bit of yellow to stop the black making the shadow colour go too blue-green.

Over time, artists usually develop a sense of what works, to dull and darken a particular colours.

When mixing colours, in a general sense, one may say that adding a colour (kind of) opposite on the colour wheel, often works to dull a colour. The colour that neutralises and dulls a colour, is called its' complementary colour. The mixing complementary colours for actual paint tube colours are:

Green - Red Violet

Violet Blue - Yellow Orange

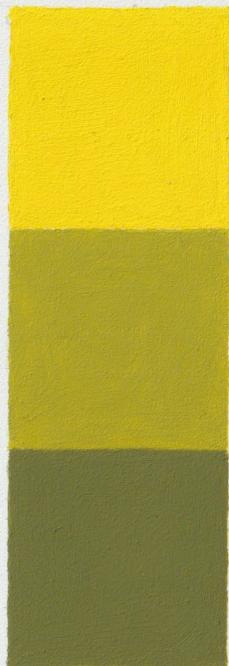
Blue - Orange

Blue Green - Middle Red

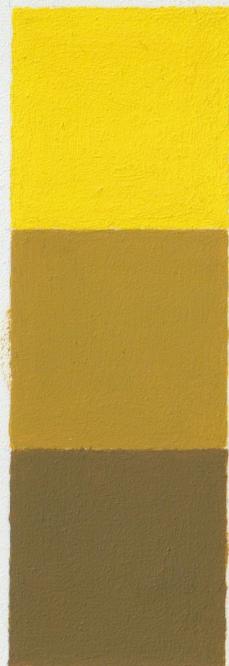
Green Blue - Orange Red

Violet - Yellow Green

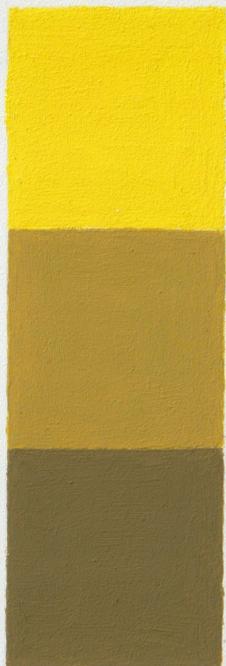
Sometimes a specific pure colour, straight out of the tube, will dull another bright colour. For example adding Phthalo Green to Cadmium Red Deep makes a dull red. More often than not, however, one has to add two colours, to achieve the colour that you need, as illustrated in the above examples.



1



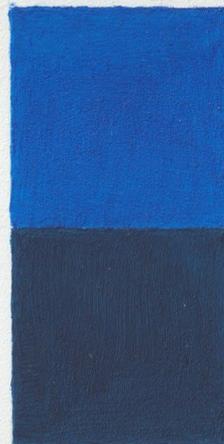
2



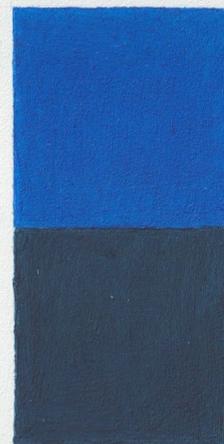
3



4



5



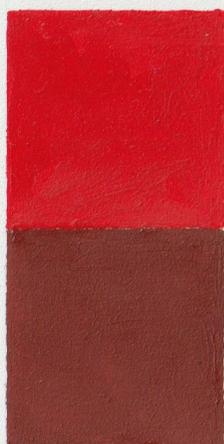
6



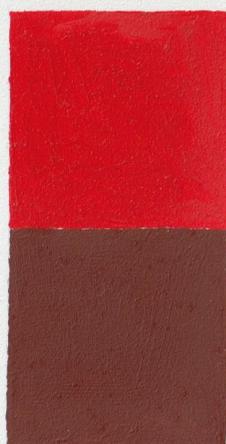
7



8



9



10



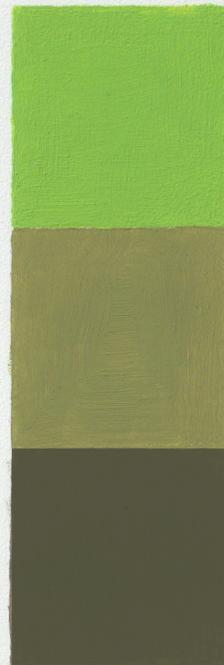
14



11

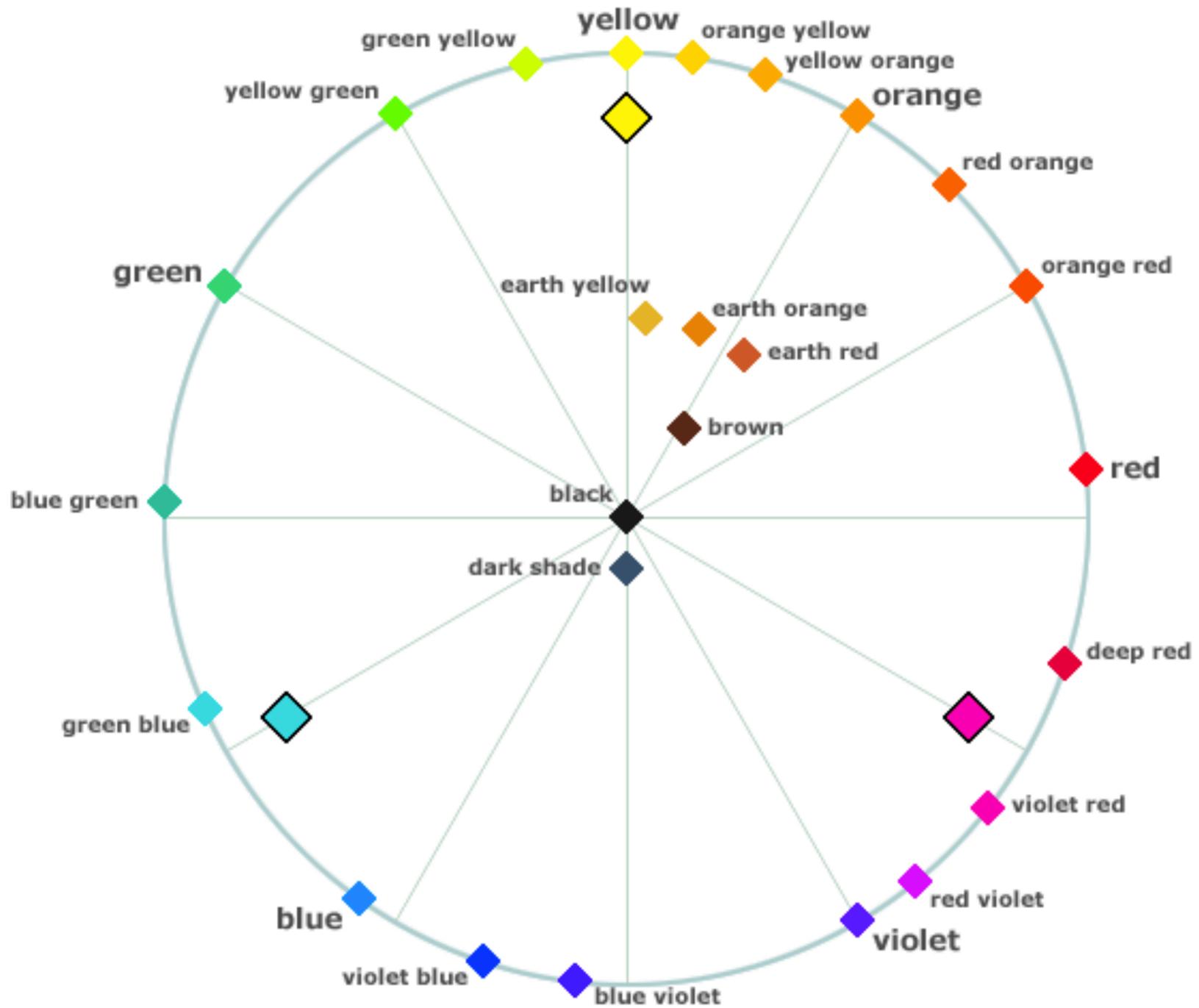


12



13

Color Chart C



a mixing complement color wheel