



MAKEUP

How Different Light Colors Affect The Way Your Skin And Makeup Look

I conducted an experiment in which I photographed the same makeup under four colored filters to represent blue, white, yellow, and orange light. (Also, my parents are spectroscopists, so I have the inside scoop.)

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Once, as I sat before a makeup artist's lighted mirror, he switched the light setting to "winter." I gasped in horror as my under-eye circles and blemishes turned a dark, bruised purple and my skin dulled and flattened. With a flick of a switch, he turned on "sunset" light. I was bathed in the soothing glow of sweet orange light, which lit and plumped my skin into a healthful radiance.

From an aesthetic perspective, different qualities of light can make our faces look very different. The hour of the day, the season of the year, or the distance from the equator can affect the colors we see in light.

Some light colors are more forgiving than others, but all will emphasize certain perceived flaws while detracting from others. Makeup can be a useful tool for correcting these flaws. Makeup can also work together *with* the light to draw out interesting colors and features.

But it is one thing to follow a makeup artist's tips for dos and don'ts for particular light, and it is another to understand *why*.

What is it about that winter light that makes my yellow-gold bronzer look like dirt on my face? Why does my pink lipstick suddenly turn coral when I walk into a candlelit room?

Let's delve beyond the aesthetics into a more scientific explanation: Spectral Radiance 101, a special introductory course with guest spectroscopists, my mom and dad.



Dr. & Dr. S like to torture molecules with light and listen to them scream.

I interviewed my parents for an introduction on the colors of light. Then, I conducted an experiment in which I photographed the same makeup under four colored filters to represent blue, white, yellow, and orange light. I asked my resident spectroscopists specific questions about the visual effects the colored lighting has on the makeup look.

As a reference point, in every photo I am wearing this bright neutral pink lipstick:



Chanel Rouge Allure Velvet in L'Exubérante

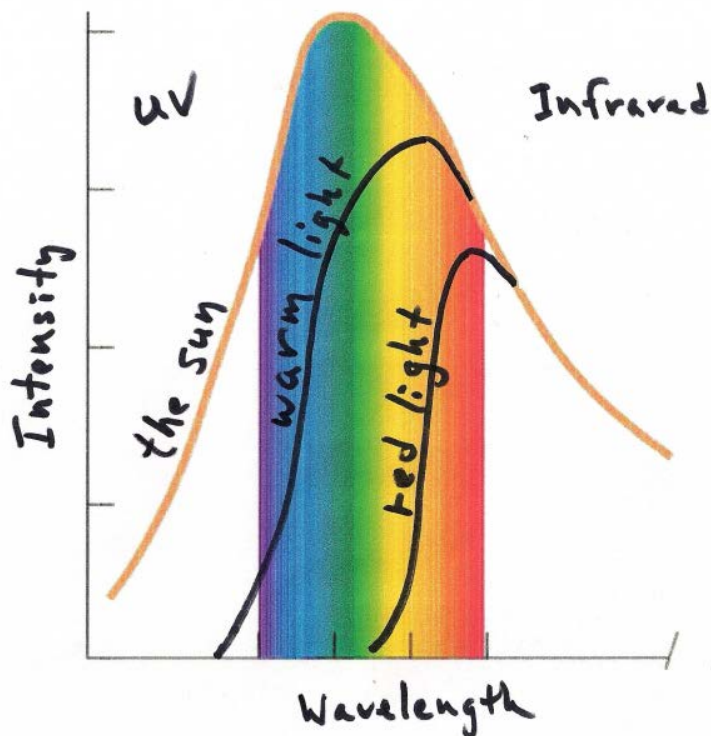
THE COLORS OF LIGHT

Fundamentally, everything gives off electromagnetic waves. Heat up an electric stove, and it will start to look red. As it got hotter, it would look more yellow. If it could get hot enough without melting, it would look white. If it got *really* hot, it would become bluish as the higher-energy lightwaves predominated. Different colors are associated with temperatures.

The sun is hot enough to give off light that looks white. As sunlight travels through the atmosphere, it hits gas molecules and small particles and reflects in all directions. The higher energies of light scatter better. Blue light scatters best. If you have the sun in the sky someplace, and you look at the sky someplace else, you will see that scattered blue light. That's why the sky is blue!

But if light has to travel through a lot of atmosphere, all of the blue light scatters away. All that is left are the longer wavelengths like yellow and red light. You can see this during a sunset when the light is coming into the atmosphere at the horizon and travels much further to reach our eyes.

Sunlight is pretty bright. Other sources of light are much cooler. Cooler light sources have a shorter color spectrum, which does not include blue light. Candlelight is an example of a cooler light source that appears orange because it simply lacks blue light to begin with.



As blue light is scattered from the white sunlight, the light gets more reddish. Warm light, like candlelight, lacks blue wavelengths.

BLUE LIGHT

The “winter” light that wreaked such havoc upon my complexion was blue light. The atmospheric cloud cover associated with wintertime blocks the earth from the sun, So the light bouncing onto your face is mostly scattered light, rather than that directly from the sun.

Most colors on your face can reflect blue light, except for red tones. So any reddish spot--like acne or under-eye circles--will absorb blue light, darkening and accentuating the area. Orange will also absorb the blue light and darken significantly, which is why orange-toned makeup like blush and bronzer will appear brown.



The blue light draws out the shadows on my face and deepens my neutral pink lipstick.

Blue light makeup conclusions:

- Light-reflective foundations and highlighters help camouflage dullness and disguise red areas and under-eye circles.
- Cool to neutral-toned colors stay truer to color than warmer colors.
- Red and pink lipsticks look deeper and darker.
- Blue eye makeup stands out dramatically.
- Orange tones reflect as brown.

WHITE LIGHT

The light given off by the sun is white light all year long and for most of the day. It comes from a part of the sun that is about 5500° Kelvin. It is composed of all color wavelengths, so it can reflect all different colors.

White light is by far the most versatile color of light because of it can be reflected by any color. This means colored makeup looks truest under this light.



The white light shows the colors in my makeup in their truest form.

White light makeup conclusions:

- Wear whatever you would like! The colors will look true. This is the favorite light of makeup artists.

YELLOW LIGHT

There are two causes for yellow light: It can be the hot sunlight with most of the blue filtered out of it by the atmosphere, such as in the morning and evening when the sunlight crosses the atmosphere at the horizon, or it can be a cooler light like incandescent light (2870° Kelvin at 100 watts) that never had many blue wavelengths to begin with.

Yellow light is a flattering one for the skin. It still looks bright, because it has a lot of white in it, but it looks warm because of the lack of blue wavelengths.



The yellow light softens and evens my skin tone while erasing the blue tones from my lipstick.

Yellow light makeup conclusions:

- Gold tones, such as a golden highlighter or gold eye makeup, are significantly accentuated.
- Blue tones in lipstick or eye makeup are diminished.
- The skin looks warmer and more even, camouflaging blemishes and reducing the need for foundation and concealer.

ORANGE LIGHT

Orange light can also be sunlight thoroughly filtered of its high energy wavelengths by the atmosphere during a sunrise or sunset. It can also be a cool light with mostly red wavelengths like candlelight (1850° Kelvin).

This is a dramatic light that can have a remarkable effect on makeup. Reds and oranges in the skin tone are reflected back strongly. This can have a flattering, warm effect on the skin that disguises small blemishes and uneven skin tone. On the other hand, it can highlight redness in the skin, such as rosacea.

My pink lipstick looks coral as it reflects back mostly orange light with very few of the bluish tones.



The orange light gives my skin warmth and evenness but distorts my lipstick color.

Orange light makeup conclusions

- The reddish light reflects red tones strongly, which can highlight acne and rosacea.
- Small blemishes and under-eye circles disappear in the orange glow.
- Red makeup stands out strongly. Blush can quickly overwhelm a face. Red lipstick looks strong and bright.
- Bluish and green tones do not show up at all.
- Bronze, brown, and orange makeup are showcased.

In our daily lives, the light on our faces can change significantly, and it has a big impact on color choice for makeup. This is one of the reasons that red-carpet makeup is so tricky to do; one makeup look needs to work in daylight, sunset, incandescent light, and stage light.

For the common makeup enthusiast, simply planning ahead for the time of day or season of the year can yield beautiful results. A smoky blue eye in the depths of winter or a golden highlighter for a late afternoon drink on the terrace uses the sunlight's colors to their best advantage.

Yet should you find yourself in that most fleeting of colors--the smooth orange of a sunset--get thee to thy vanity! Put some bronzer on your cheekbones and a coral lipstick on your lips before you slip into that most illuminating glow.