



7

**MASTERING LIGHTING
AND SHADING**



AVELINE STOKART



MASTERING LIGHTING AND SHADING

WITH AVELINE STOKART

HOW TO STUDY LIGHT

This chapter is designed for beginners and those at intermediate levels who want to deepen their knowledge of light and hopefully learn some new techniques along the way. I want to help you understand lighting and shading so you can better translate them graphically.

I will be using Procreate tools but all of these techniques translate well into Photoshop or other digital software. I'll guide you step by step as we study how light affects your art in different scenarios.

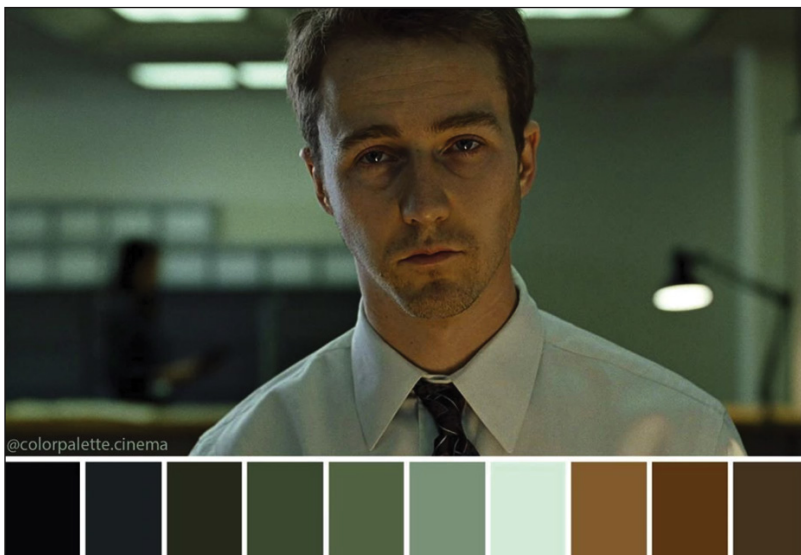
We will also review color and light in order to understand how to use them to create a specific mood in your artwork. I will share

with you my favorite brushes and tools to use for shading. At the end of this chapter, we will create a clean illustration to use for rendering four different lighting scenarios.

OBSERVING LIGHT

To determine the ambient color—what I also call atmospheric color—look at the overall color of an image and choose a single color that best defines the image. This color basically determines the overall mood of your artwork. The following are examples of this process:

FIGHT CLUB COLOR STUDY: In the film clip below we clearly see that the ambient color is green. Even though there are warmer



Fight Club, Actor:
Edward Norton.

tones contrasting on his face, the overall color of this image is green. This is due to the color of the lighting in the scene. The office lights influence every element in the room. It's interesting to analyze this because it helps give you direction in terms of the mood emerging in the film. In this scene, a heavy atmosphere is clearly intended to add to the sense of discomfort and exhaustion.

PRIDE & PREJUDICE COLOR STUDY: The dominant color is yellow-orange. This is due to the color of the sunlight but also to the bounce that the light creates on the objects inside the room. It's a sunny day, so the light is naturally warm. This light enters the room and bounces all over the place—on the red curtains, the floor that may be a wood-colored parquet, on the cream-colored walls—all the elements have relatively warm colors that warm up the general atmosphere of the room. This gives an intimate and cozy feeling. If you imagine the walls were blue, for example, with the intense yellow light of the sun, perhaps it would be a greenish dominant color.

BASIC COLOR

The second observation to pay close attention to are the basic colors or local colors. These are the true colors that make up an object. Colors are not constant; they change depending on the context in which they exist. Colors are influenced by light, shadows, and the surrounding colors. Being aware of all these influences will help you to determine the basic colors of objects in an image. By picturing objects as they would be when not affected by light or shadow you can visualize their true color.

For example, let's review the *Fight Club* film clip again—the shirt is white, his skin is flesh pink, his hair is brown, and his eyes are blue. You want to keep these observations in mind as you create an illustration. It's important to distinguish between the basic color and the color after it has been changed by the lighting. Understanding the basic colors that make up objects allows you to see how colors are influenced by the surroundings in which they exist.



Pride and Prejudice,
Actress: Keira Knightley.

LIGHT SOURCES

Next, we will analyze different sources of light and their color. If there are more than one light source, define the main source and then the secondary sources that have a lower intensity and therefore less influence in the scene. It's important to understand the difference between direct light and diffuse light.

DIRECT LIGHT is light that meets no obstacle from its source to an object. All the light rays go in the same direction and travel in a straight line from their source point to their destination. When direct light hits an object, it casts a shadow that has perfect sharp edges—called a hard shadow. The contrast between the illuminated areas and the shaded areas of an object is very strong—the difference is substantial between light and dark tones.

You can see in the outdoor image below that the sunlight is coming from the left, impacting their bodies on that side and creating very strong shadows on their clothes and the wall. Note that despite the intensity of the direct light, the shadows are not black. It's because this is an outdoor scene which means we have a second light source—the sky. The light from the sky is much less intense than the sun, but it has an impact on the scene as it softens the shadows by slightly tinting them blue.

DIRECT LIGHT



WHEN A LIGHT SOURCE IS DIRECT (INTENSE), LIGHT RAYS GO IN ONLY ONE DIRECTION AND SHADOWS WILL HAVE HARD EDGES.



In the image at right, the main light source is artificial, but it is intense and direct. There is no other light to separate the figure from the background of the stage. Direct lighting creates defined shadows, and unlike the previous image that was outdoors, the shadows are darker and black. This is because the environment itself is dark. The stage is black surrounded by dark curtains that absorb a lot of light, and there are no other light sources or bounces of light that affect the shadows to soften them.



DIFFUSE LIGHT occurs when light rays go in different directions. These light rays have different directions because they encounter obstacles that deflected them to different degrees: a cloud, a white wall, a veil, etc. Diffuse light is observed when the subject's projected shadow has blurred edge—called soft shadow. The contrast is also less pronounced, with more subtle differences between light and dark tones.



DIFFUSE LIGHT



DIFFUSE LIGHT HAPPENS WHEN A LIGHT SOURCE IS SOFTER AND LIGHT RAYS GO IN EVERY DIRECTION; SHADOWS WILL HAVE SOFT EDGES.



OCCLUSION SHADOWS OCCUR WHERE AN OBJECT TOUCHES ANOTHER OBJECT.

There is another type of shadow you need to consider, called *contact* or *occlusion* shadows. They exist in every context. They are the thin dark line that appears when an object touches another object. This gives the feeling that an object is standing on something but isn't floating.

The image below is set on an overcast day so there are no hard shadows, no edges

to the shadows. The light is going in all directions in a relatively homogeneous way because of the diffusion from the cloud cover. The only dark areas are where the sunlight has trouble reaching. Look also at the contact shadows, where objects touch one another or in the folds of clothing, such as under the boy's jacket. The shadows gradually diffuse and fade further away from the contact point.



In this film clip from *Marriage Story*, we see that it's a sunny day (we can assume that because of the warm overall tone). It's an interior scene, so the sunlight meets several obstacles before coming inside the room. Maybe it bounces on the ground outside first, hits the window, and then goes through the curtains, so the light is now completely diffused. There's no hard shadows either. The cast shadow of the character on the wall is subtle, slightly darker and diffused.



Marriage Story, Scarlett Johansson

Note that light is not only diffused or direct. Sometimes we can observe light that is a bit in between. Situations where we have only direct light are not as common. Unless you have an intense light like the sun or a spotlight, you will have diffuse light most of the time. Diffuse light will cast an obvious shadow but the edges remain relatively soft. This can depend on several factors—the obstacles light encounters and their intensity, and the distance from and the size of the light source.

In this film clip from *Atomic Blonde*, Charlize Theron is holding the flame quite a distance from her face. We can see how this distance affects the diffusion of light. The impact of the light is light and soft, which creates relatively soft shadows.



Atomic Blonde, Charlize Theron

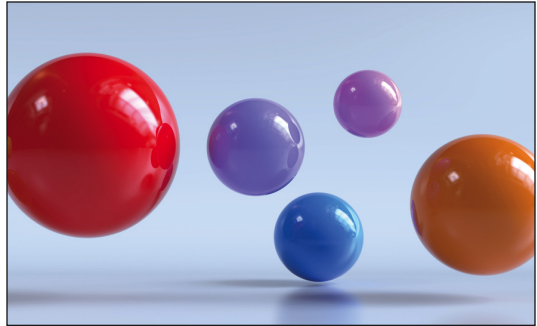
This next clip is from *True Grit* and shows Matt Damon holding a flame much closer to his face. You can see how big the impact is on his face. The shadows under his collar or near his nose are much sharper and fade further from the light source. Like on his cheeks, it becomes soft. Note also that the top of his hat allows a reflection of the light which projects downward.



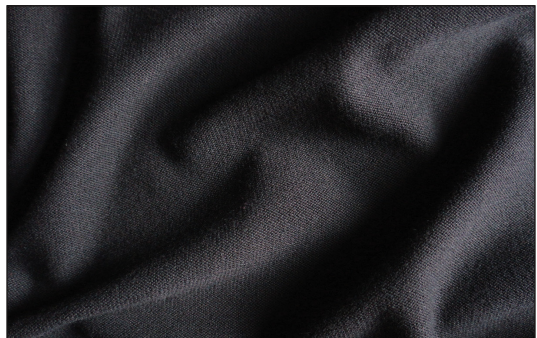
True Grit, Matt Damon

REFLECTION

Reflection is how light looks when it bounces off the surface of an object. Reflection differs depending on the material the light hits. If an object is made of sleek material like plastic or glass, it will be very reflective, and light and color will be more intense. If an object has a softer surface like fabric, light is absorbed and therefore less affected by light and color.



In the film clip below from *A Rainy Day in New York*, the main light source comes from the right. It hits Elle Fanning's face on the right and also hits her hair. One of the most obvious ways to see a reflection is in the eyes. It is this luminous white point of reflected light that gives life to the eyes. It's very visible and well defined because of the cornea of the eye, which is a smooth and shiny surface. It's also due to the moisture of the eyes, so the surface is very reflective, like a mirror. This is called the specular reflection. Another more subtle reflection is the one on the skin—at her nose, chin, and slightly on her forehead. The skin is not a sleek material like glass, but it's shiny enough to reflect light in a diffused way. Finally, an even more subtle reflection is the one on the cheek. It's slightly illuminated because the light reflects and bounces off the hair, toward the cheek, gently warming and unblocking this area of her face.



A Rainy Day in New York,
Elle Fanning

TOOLS AND TECHNIQUES

MY MAIN BRUSHES:

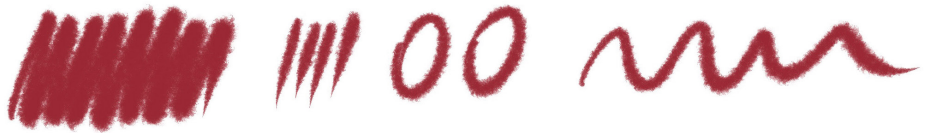
Ink bleed is found in the ink menu and is a default brush in Procreate. I use it for sketching, line work, and sometimes for smudging. I also use a customized version of this brush to add harder edges. I named it: **Hard ink bleed**.

Big air brush is a default brush in Procreate under the airbrushing menu. I use it for larger areas of light that need to be diffused. I also use it to create halo effects.

Star noise is a Procreate brush that I bought on the creativemarket.com site from Eliza Moreno. I like using it to add some texture in light gradients or colors. I also occasionally use it for smudging.

MaxU Gouache clean is another Procreate brush by Max Ulichney from the Gouache MaxPack (gumroad.com/maxulichney). I like to use this one to sketch quickly and rough in color.

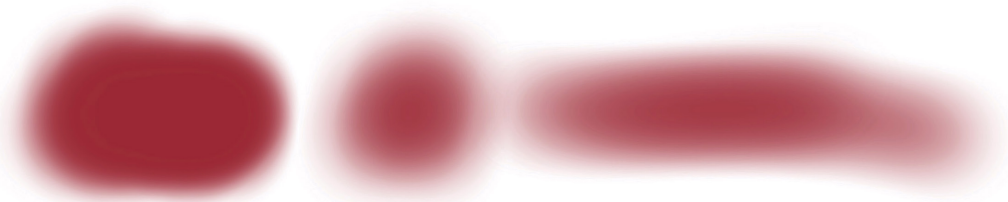
INK
BLEED



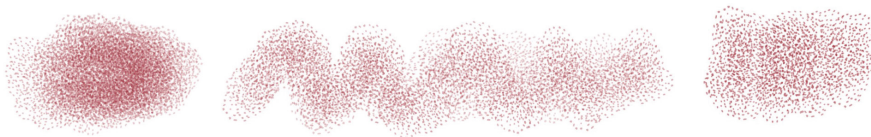
HARD
INK
BLEED



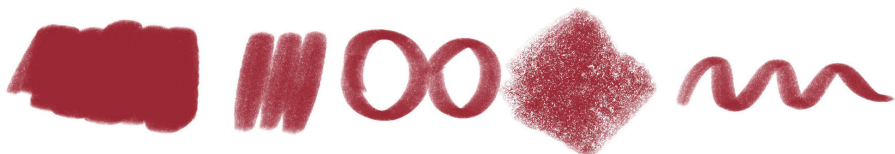
BIG
AIR
BRUSH



STAR
NOISE



MAXU
GOUACHE
CLEAN



SHADING TECHNIQUES

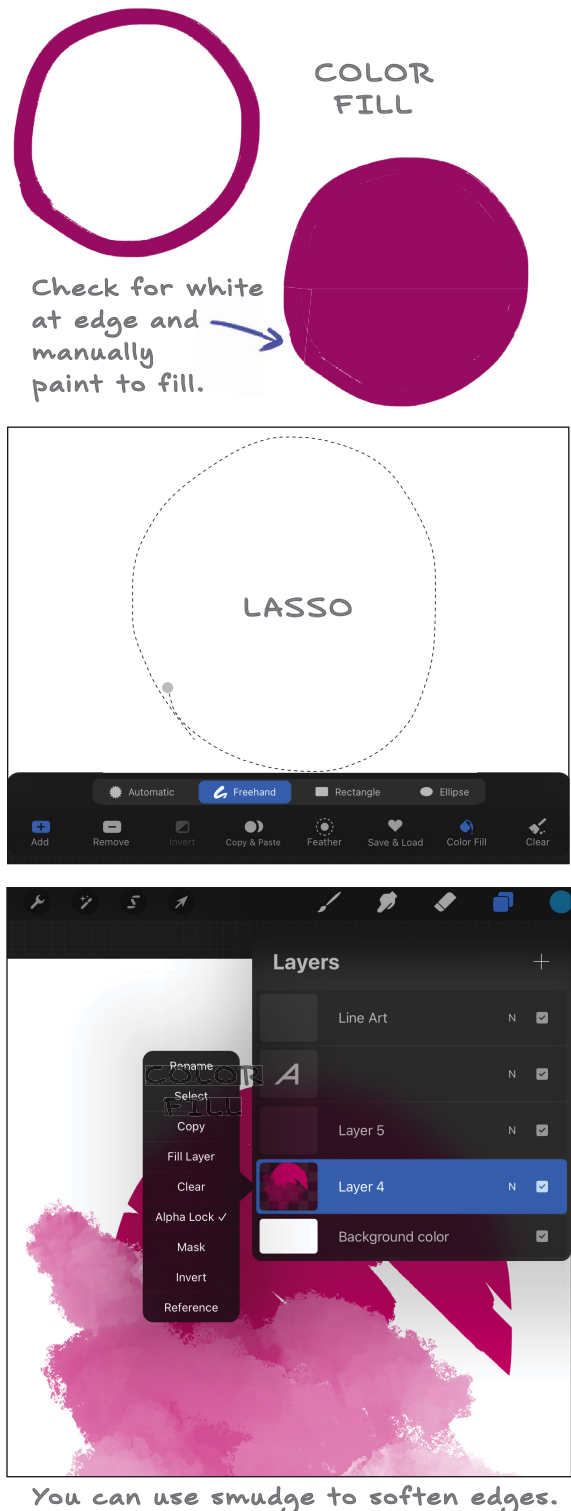
COLOR FILL: Start by drawing the outline of a shape with a sharp brush. Make sure to close your shape well—no holes must appear in the line or the color will spill out and fill the entire canvas. Once the shape is properly closed, fill it by dragging and dropping the color. While keeping the stylus on the image, play with the threshold so that the color fills up the shape as much as possible. If you use a textured brush with a lot of pixel variation in the stroke, when you fill your shape, a small white line near the contour line can appear. Unfortunately you have to go over it manually.

LASSO: Use it to create and define areas of light and shadow. Create a freehand selection, then paint inside your selection. This allows you to have a sharp edge to clearly see the area where the color needs to be applied and then fade the rest progressively. It is a good tool for sculpting volumes and adding color in defined areas.

MASK: It is a useful tool to work in a non-destructive mode. The mask is linked to a layer to hide some areas by using the eraser on it. They are hidden, which means no pixels are deleted. You can remove or recover color as you wish, without altering the original layer. To recover color, use the brush with a white color. It's often used when we want to erase shadows in certain areas to give an impression of light.

CLIPPING MASK: This tool allows you to paint only the layer directly underneath and you don't need to worry about drawing outside the shape. This keeps the layer underneath the new layer safe from any brush strokes.

SMUDGE: Use it to blur an edge that you find too sharp. It allows you to smooth some transitions. It is also a tool to sculpt shapes and volumes.



You can use smudge to soften edges.

ALPHA LOCK: Activate it by swiping two fingers to the right on a layer. When there's a little checkerboard, it means that it's active. It's a convenient tool when you need to paint inside a shape on the same layer without worrying about exceeding the shape too.

BLENDING MODES

MULTIPLY

What it does: The resulting image is darkened depending on the blend color. It's like a transparent tinted sheet that you put on top of your design. If you put a blue color on top of a yellow color, you will get green.

What it is used for: This is the key blend mode for darkening elements and for creating shadows, whether diffuse or cast shadows. It also allows you to influence the overall mood of a scene by tinting it with a specific color.

OVERLAY

What it does: It superimposes or multiplies the colors according to the base color.

What it is used for: Mainly used to bring light and influence the shade of light.

HARD LIGHT

What it does: It multiplies or overlays colors, depending on the blend color.

What it is used for: This effect is useful for adding highlights, as long as you use colors with more than 50% gray (below 50% it has a darkening effect). Sometimes used to lighten some areas in the shadows, while bringing more intense color. Also used for a reflection effect.

ADDITION

What it does: It brightens the base color depending on the blend color and increases the brightness.

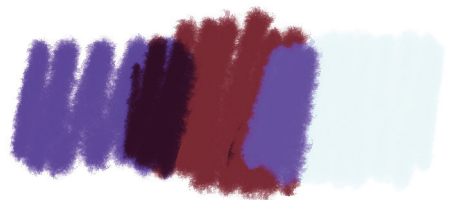
What it is used for: Mainly used to create a halo light effect.



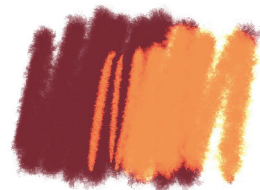
MULTIPLY



OVERLAY



HARD LIGHT



ADDITION

USING BLENDING MODES

There are four modes, which means you will use a number of layers. I like to distinguish the effects and keep my layers separated, so I can go back to my layers and change the color as I see fit independently, without affecting the rest of the layers. It's convenient, too, because it gives the opportunity to explore different possibilities as I work.

If you need to merge layers at any point, you can do so, but be careful to merge only the layers with the same blending mode. Or you could affect and alter the mode of other layers that you don't intend to change.

Also note that the most suitable blending mode to use can change depending on the specifics of your drawing. Depending on the context, one effect may work better than another. I suggest you play with different modes to see the potential effects so you can better choose what will suit your painting the best.

ARTISTIC STYLE

It's important to understand how your unique artistic style can influence the way you graphically translate light in your artwork.

For example, these images by different artists express light and shadow in distinct ways. At top right the artist kept light and shadow as simple and efficient as possible. All of the shadows and



light are clearly delineated, even if the light source is diffused, and yet it doesn't disturb a viewer from understanding the atmosphere and emotion in the painting.

Compare that image with the other examples that have more complex lighting. There are more strokes and levels of light and shadow—contact shadows, diffused shadows—and the light bounces. All these elements give a more realistic impression to the volumes in the space.

There really isn't a good or bad way to stylize lighting design—it's literally all about experimenting and then making your own choices and developing your artistic style.



USING COLOR AND LIGHT TO TELL A STORY

Light and color are inseparable—they're a big part of the identity of a project and have a large influence on how the viewer will respond to an image. Both can enhance a story and the message of your artwork. The color choices you make for your character will depend on the character's personality, but it will also be affected by the color you add to the light to create a specific mood. Color and light can contain many shades and messages.

THE BASICS:

These are the main colors you will find on the color wheel: the primary colors (blue, red, yellow), the secondary colors (purple, green, orange), and the complementary colors.

EACH COLOR HAS THREE ATTRIBUTES:

- **Hue:** the color you choose
- **Saturation:** intensity of your color
- **Value:** how light or dark a color is

COLOR CHOICES

I tend to work intuitively while making color choices, because I think color is mostly about feeling. Color theory has many harmony possibilities, but I don't use a formula to create great combinations. I prefer to choose colors that convey meaning to me.



HUE



SATURATION



VALUE (BRIGHTNESS)



Colors can communicate a great deal about a character. While painting, try to keep in mind the story narrative and a sense of your character.

Bright and vivid colors will express an optimistic, dynamic, joyous, and fun feeling, while desaturated colors appear calmer, serious, and evoke a dull and sad feeling.



Unique by Aveline Stokart

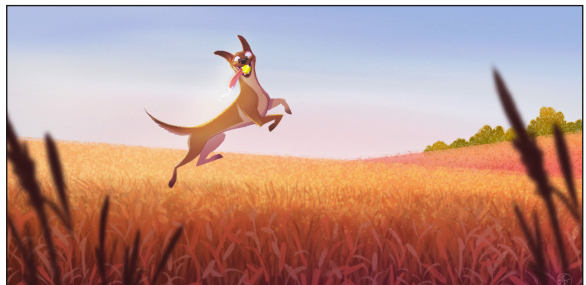
In the above image, the character with the flower wears vivid and bright colors, while the others wear dark, desaturated tones, and have pale skin. The character wearing the vivid and bright colors is showing his outgoing and vibrant personality. The other men wearing the desaturated tones seem to have a bored and gloomy temperament. Since they are seated next to one another, the contrast in their personalities is highlighted.

The temperature of colors also conveys different feelings. The warm colors in the images at right give an energetic and vigorous feeling and are linked to the idea of optimism, motivation, spontaneity, power, rage, anger, passion.

Cool colors tend to be soothing and more calculating and are linked to the idea of balance, spirituality, wisdom, serenity, mystery, melancholy, sadness.



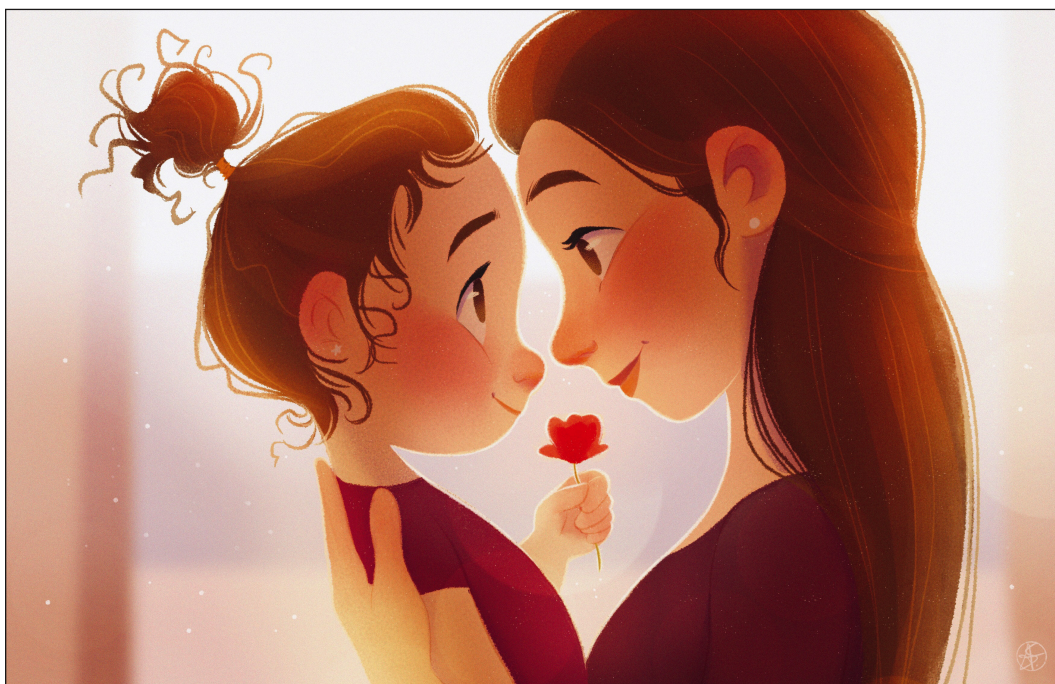
Monkey by Aveline Stokart



Flash by Aveline Stokart



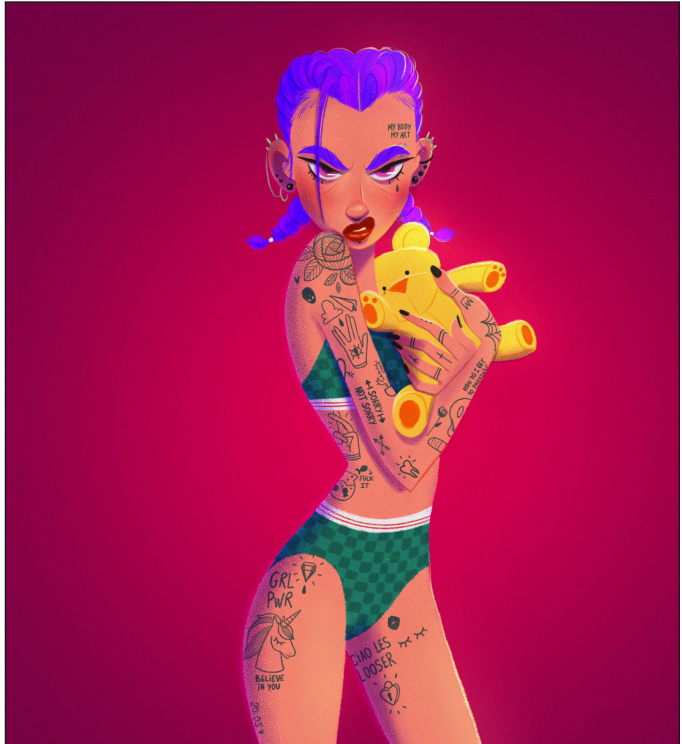
Rain by Aveline Stokart



Red Poppy by Aveline Stokart

The images above are great examples of using color temperature, value, and saturation to create mood and story in the illustrations.

This girl is like “don’t even dare to touch my teddy bear!” She’s kind of tough looking but also clearly has a childish personality. The color choices help to highlight this part of her personality. The bright and ultra vivid colors give her the childish mood but also convey an audacious and bold personality. The use of atypical hair color also adds to her edgy vibe.



Edgy Girl by Aveline Stokart

In this image the colors are clearly desaturated. This character mourns, so I want to convey his deep sadness and loneliness. You can see that nothing about this character is joyful and the lack of color in this case helps to tell his story.

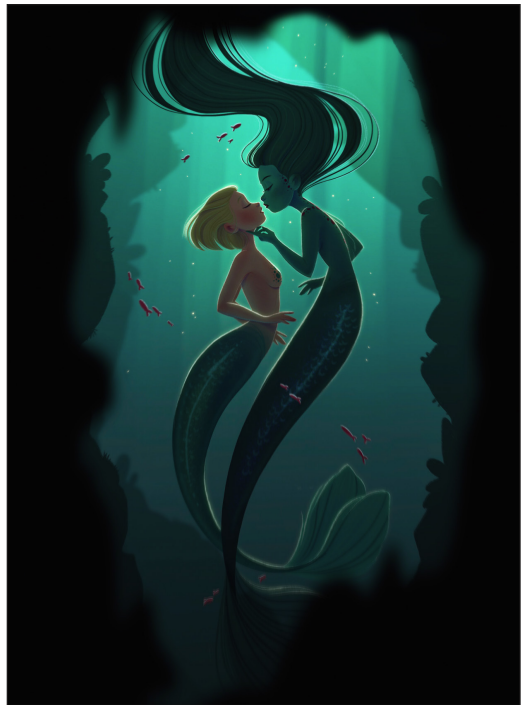


King Goran by Aveline Stokart

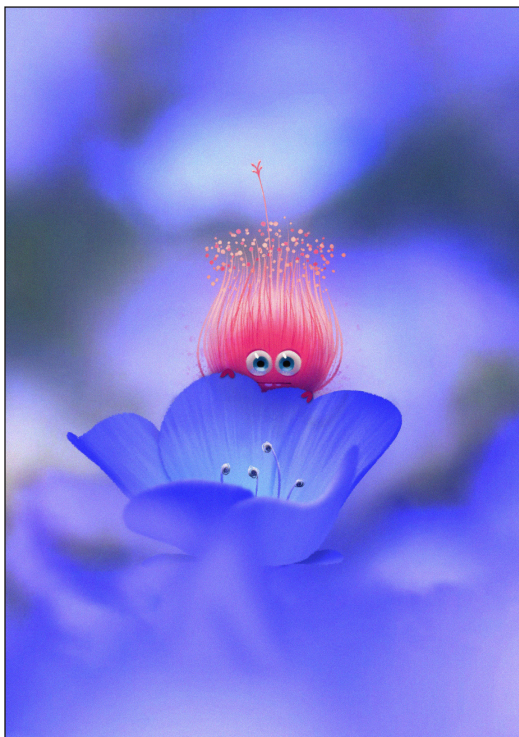
In the image on the right, there is a contrast between the light and darkness of these two characters. You can see which one is poisonous and which one is innocent. This is due to the value and the temperature of the colors. One is warm, clear, and she feels pure, while the other is cold and dark and feels powerful and intriguing.

Positive or negative connotations for color can vary from one culture to another, and depend on the context. For example, a red color can be as much positive as negative. It can evoke love and passion as well as anger or danger.

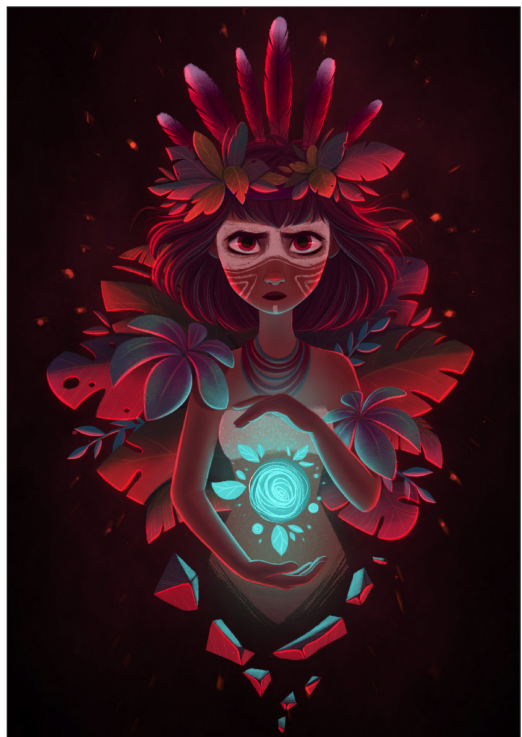
Try not to stress too much about your color choices. Keep in mind what you want to express in your drawing and try different color combinations to see what works best for your idea.



Forbidden Kiss by Aveline Stokart



Shy Fluffy by Aveline Stokart



Earth by Aveline Stokart

ASSIGNMENT 1: OBSERVATION

- 1 Gather a bunch of images so you can observe and study the lighting using the process you learned in this chapter. On the right is one of the clips from ColorPalette.Cinema on Instagram.
- 2 Identify the main ambient light color.
- 3 Note the different local colors in the image.
- 4 Identify the different light sources and try to figure out if the light is diffuse or direct. Define the intensity, size, and color of the light.
- 5 Look at how the light impacts and interacts with objects, how strong are the impacts, how does the light bounce or reflect off objects? Take notes on your observations.



AMBIENT COLOR



LOCAL COLOR



LIGHT COLOR

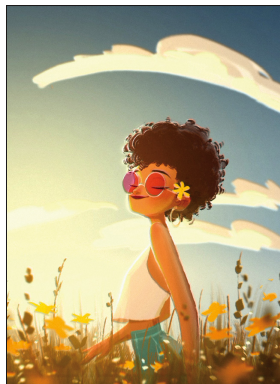


SHADOW COLOR



ASSIGNMENT 2: SCENE LIGHTING

- 1 Find some images that have lighting that inspire you to create your own scene based on the lighting in the images.



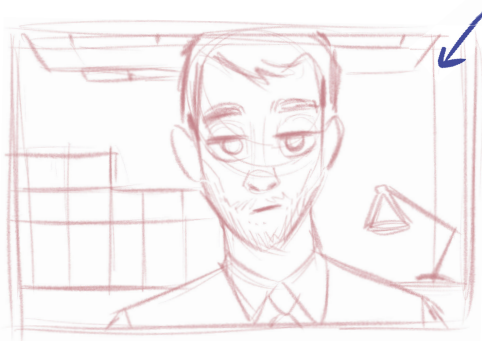
ASSIGNMENT 2: SCENE LIGHTING

- 2 If working with backgrounds is intimidating for you, try finding an image of a background that you like in terms of lighting, then draw a character into it. Use the light from the scene so it looks like the character belongs in the scene. This practice will train your brain to understand how the lighting influences your characters.



ASSIGNMENT 3: ROUGH STUDY

- 1 Find a source image with lighting that inspires you and take time to observe the lighting and color. Then sketch the drawing quickly and set the sketch layer to multiply.
- 2 Under your sketch layer, add layers to paint in the basic colors (top of next page). Try using the different shading techniques you've learned in this chapter: color fill, lasso, clipping masks, etc.
- 3 Identify the ambient color in the original image, then add a layer of this tone set to multiply (see next page). You can adjust using hue, saturation, and brightness.

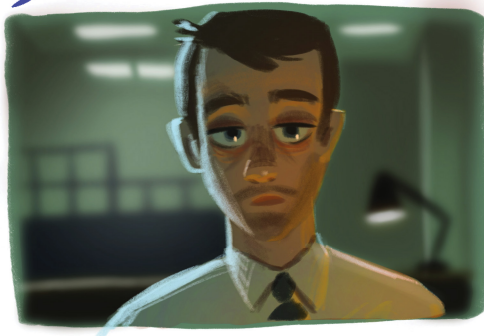
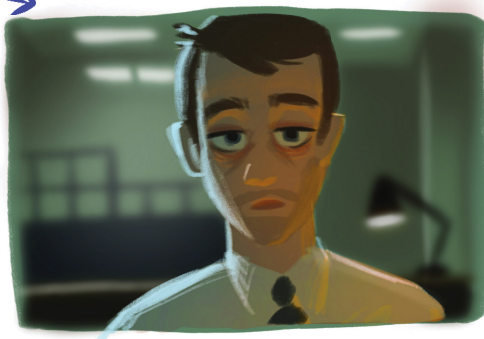


4 Identify the different light sources and play with the different blending modes (overlay, addition, hard light) to create the impacts.

5 Adjust the shadows if needed, use a separate layer set to multiply. (Never use black for the shadow to avoid adding a muddy effect to the image.)

OPTIONAL: Save a copy of your image and flatten the layers, then play with the curves tool to adjust the mood of the image.

OPTIONAL: Play with adding Gaussian blur to the background or foreground to create depth of field and bring the focus in on your character.

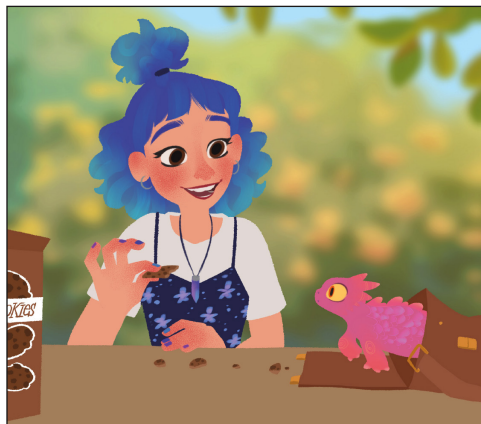


ASSIGNMENT 4: LIGHT SCENARIOS

- 1 Sketch a new drawing that will provide options for different lighting scenarios.
- 2 Under your sketch layer, add layers and paint in basic colors. Try using the different shading techniques learned in this chapter: color fill, lasso, clipping masks, etc.
- 3 Apply an ambient color layer above the character and foreground, and set it to multiply.
- 4 Add light with the help of layer masks. Intensify light by adding bounce light and reflections using different blending modes (overlay, addition, hard light).
- 5 Add occlusion shadows for more definition on a new layer set to multiply.

OPTIONAL: Save a copy of your image and flatten the layers, then play with the curves tool to adjust the mood of the image.

OPTIONAL: Play with adding Gaussian blur to the background or foreground to create depth of field and bring the focus in on your character.



BASIC COLOR



OUTSIDE SUNNY DAY



INSIDE SUNSET



INSIDE OVERCAST DAY

CONCLUSION

I hope you've learned some new techniques from this chapter and it has helped you feel more confident when illustrating light in your artwork. I've shared my personal way to design lighting but there are many different ways to successfully illustrate light. I encourage you to explore the possibilities and find what fits your style and artwork best. ***Now grab your tablet, pencil, and start painting!***



The illustration shows a young girl with vibrant blue curly hair tied in a bun, wearing a white t-shirt and a purple floral apron. She is sitting at a wooden table, smiling and holding a small brown cookie. On the table are several other cookies and a bag of 'COOKIES'. To her right, a small, pink, scaly dragon-like creature with large yellow eyes is sitting on a red bag. The scene is set at night, with a dark background and soft lighting from the creature and the cookies.

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