THE DRAWING PATH

Local Color vs Light Color

A Complete Lesson Plan

BEGINNER	HOBBYIST	PROFESSIONAL

Lesson 6 · Color Fundamentals

Teach Yourself to See

thedrawingpath.com

Contents

SKILL LEVEL 1

BEGINNER

What the object "is" vs what the light makes it look.

1

Local Color vs Light Color — Beginner

What Is Local Color?

Local color is the "true" color of an object under neutral white light — the color we would describe if naming the object's color: "the apple is red," "the sky is blue," "the wall is white." It is the color the object has by virtue of how it reflects or absorbs specific wavelengths of light. Light color (or apparent color) is the color the object actually appears to be under specific lighting conditions — which may be dramatically different from the local color depending on the light source color, its intensity, and the shadows and reflections in the scene.

The key challenge: the human visual system tries to discount the effect of lighting and see objects as their local color (color constancy). Artists must train themselves to override this perceptual correction and see and paint the actual apparent color, not the intellectually known local color.

[VISUAL EXAMPLE]

A white mug shown three times: (1) under neutral light (appears white — local color matches apparent color), (2) under warm sunset light (appears orange — apparent color differs strongly from local white), (3) under blue skylight in shadow (appears blue-grey). Labels show local color = white in all three, but apparent color changes dramatically.

How Light Changes Local Color

The color you see on any surface is the product of the surface's local color MULTIPLIED by the light color. A white surface under orange light appears orange. A red surface under blue light appears dark (the blue light cannot reflect off the red surface, which absorbs blue). A yellow surface under green light appears yellow-green. Understanding this multiplication relationship allows you to predict what color any surface will appear under any light condition — without relying on observation alone.

Common Mistakes

Painting local color instead of apparent color

Painting a red apple as pure red regardless of the lighting — rather than as orange-red in warm sunlight or dark cool-red in shadow.

Color constancy making all apparent colors neutral

The eye corrects apparent color toward local color, making it hard to see the true color of a surface under colored light. Train yourself to see the actual color, not the conceptual color.

Shadow as darker version of local color only

Shadow is not just darker local color — it is influenced by the ambient light, sky color, and nearby reflected surfaces. Shadow colors diverge from local color.

Beginner Exercises

White Object Under Colored Light

20 min

TRAINS: Seeing apparent color override local color

STEPS

1. Place a white or neutral grey object under a strongly colored light (a colored lamp, or outside at sunset/golden hour).
2. First: describe the object's color intellectually ("it's white").
3. Then: look carefully at what color you actually see. Isolate it by making a small patch of color paint to match what you observe (not what you know).
4. Compare the painted patch to a patch of the object's local color.
5. How different are they?

SELF-EVALUATE:

How different is the observed apparent color from the intellectual local color? Were you initially correcting for the light source rather than seeing the true apparent color?

Local Color Chart

20 min

TRAINS: Identifying local colors from photographs

STEPS

1. Find 5 photographs of objects whose local colors are well-known: a lemon (yellow), grass (green), sky (blue), wood (brown), skin (peach-tan).
2. For each photograph: identify the local color AND the apparent color as photographed.
3. Are they the same or different? How has the lighting shifted the apparent color from the local color?
4. Write the hue, saturation, and value of both for each object.

SELF-EVALUATE:

How consistently do photographers capture local vs apparent color? Which photograph showed the largest divergence between local and apparent color?

Observational Still Life — Apparent Color

35 min

TRAINS: Painting what you see, not what you know

STEPS

1. Set up a still life under a colored light source (colored bulb or strong directional sun).
2. Paint the still life painting ONLY the apparent colors you observe — not the local colors you know.
3. If the white tablecloth appears orange, paint it orange.
4. If the shadow of the red apple appears dark violet, paint it dark violet.
5. Override color constancy throughout.

SELF-EVALUATE:

How difficult was it to override color constancy and paint apparent rather than local color? Where did you find yourself reverting to local color?

Light Color Prediction Exercise

25 min

TRAINS: Predicting apparent color from local + light

STEPS

1. List 5 objects with known local colors (white, red, yellow, blue, green).
2. Specify a light color (warm golden, cool blue, or neutral white).
3. For each object: predict the apparent color under that light by mentally multiplying the local color by the light color.
4. Then photograph the actual objects under the specified light and compare your predictions.
5. How accurate were your predictions?

SELF-EVALUATE:

Were your apparent color predictions accurate? Which local color / light color combination was hardest to predict?

Beginner Resources

James Gurney — Color and Light

gurneyjourney.com

The most complete treatment of local vs apparent color for illustrators. Chapter on color constancy is essential.

Ctrl+Paint — Local Color vs Light Color

ctrlpaint.com

Free library. Clear segment on the local/apparent color distinction.

Proko — Color in Light and Shadow

youtube.com/user/ProkoTV

Applied local/apparent color in figure and portrait. Free.

SKILL LEVEL 2

HOBBYIST

Constancy, complex light, and surface color.

2

Local Color vs Light Color — Hobbyist

Color Constancy and Observation Training

Color constancy is the strongest perceptual challenge for painters: the visual system automatically corrects what it sees toward the known local color, making it extremely difficult to observe and paint the true apparent color. Professional painters develop specific observation techniques to overcome this: (1) squinting (reduces detail and emphasises color mass), (2) isolating a color with a viewing card (removes context that triggers constancy), (3) comparing rather than naming ("this shadow is bluer than the lit area" — relative observation, not naming), (4) photographing the scene and using a color picker to verify observations.

Light Effects on Different Surface Types

Different surface types respond differently to light color. **Matte surfaces:** show the full effect of the light color — the apparent color closely follows the light × local color calculation. **Specular/metallic surfaces:** the highlight reflects the pure light color (not the local color); the body color shows the local color under the light influence. **Transparent/translucent surfaces:** light passing through takes on the material's color; reflected light shows the light color. Understanding how surface type modulates the local/apparent relationship is essential for convincing material rendering.

Common Mistakes

Uniform treatment of local color across all surface types

Applying the same local-to-apparent color shift to both matte and specular surfaces. Metal highlights reflect the light source color, not the local color shifted.

Comparison-based observation abandoned mid-painting

Starting a painting with careful color comparison but abandoning it midway through, reverting to local color painting.

Ignoring local color entirely in favor of light effects

Overcompensating by painting only the light effects without grounding them in the local color structure. Local color remains the foundation that light modifies.

Hobbyist Exercises

Color Constancy Override Training

60 min

TRAINS: Observation techniques

STEPS

1. Set up a still life under a clearly colored light.
2. Paint the same scene 3 times using 3 observation techniques: (1) paint from general visual impression (likely to have constancy correction), (2) squint to reduce detail before each color note, (3) isolate each color with a card hole (cut a small hole in a grey card and hold it over the color you're observing, isolating it from context).
3. Compare the three: which technique produced the most accurate apparent colors?

SELF-EVALUATE:

Which observation technique most effectively bypassed color constancy? How large was the difference between the uncorrected and technique-assisted color notes?

Multi-Material Color Study

55 min

TRAINS: Local vs apparent across 4 surface types

STEPS

1. Set up 4 objects of the same local color (e.g., all blue) but different surface types: matte, semi-gloss, high gloss/metal, translucent.
2. Under the same light: observe and paint how the apparent color differs across the 4 materials.
3. The matte blue should shift most toward the light color. The metal highlight should be nearly the pure light color. The translucent object's edge should show warm translucency.
4. Label the local color and the apparent color for each material type.

SELF-EVALUATE:

Do the 4 materials show clearly different apparent colors despite sharing the same local color? Which material showed the most dramatic departure from local color?

Interior vs Outdoor Color Study

2 × 30 min

TRAINS: Light color differences in two environments

STEPS

1. Paint the same object twice: once under warm indoor artificial light, once under outdoor daylight (or cool overcast).
2. The same object should appear dramatically different in color in each environment.
3. Compare: how has the local color of the object been modified in each environment?
4. Which environment produced a more saturated apparent color?

SELF-EVALUATE:

How dramatically does the same object's apparent color differ between indoor and outdoor light? Which environment is more challenging to observe accurately?

Golden Hour Color Study

45 min

TRAINS: Painting apparent color under strong warm light

STEPS

1. Photograph or observe a scene during the golden hour (first or last hour of sunlight).
2. Paint the scene painting ONLY the apparent colors: warm lit surfaces, cool shadow, warm sky bounce on horizontal shadow surfaces, cool sky fill on vertical shadow surfaces.
3. This is one of the most dramatic local vs apparent color scenarios: everything warm in direct light, everything cool in shadow.

SELF-EVALUATE:

How effectively does your painting capture the golden hour color quality? Where did color constancy most interfere with your observation?

Hobbyist Resources

James Gurney — Color and Light

gurneyjourney.com

Color constancy and local vs apparent color. The comprehensive professional treatment.

Ctrl+Paint — Seeing Color

ctrlpaint.com

Free library. Observation training for accurate color perception.

Richard Schmid — Alla Prima

amazon.com/search?q=richard+schmid+alla+prima

Schmid's color observation approach is exceptional. His treatment of painting what you see rather than what you know is definitive.

SKILL LEVEL 3

PROFESSIONAL

Designing color over local color in production.

3

Local Color vs Light Color — Professional

Designing Color Over Local Color

In professional concept art and illustration, color is often designed rather than observed. The artist specifies the local color of each element in the scene, then designs the lighting color system that will be applied to all local colors. This separation — local color as a base layer, light color as a design layer applied over the top — allows the lighting color to be adjusted independently of the object colors. It is the professional equivalent of the painter's observation process, applied in reverse: design the light first, then derive the apparent colors from the light-local interaction.

Production Color Override

In film and game production, the visual development artist may specify local colors (character sheets, prop sheets — "this character's jacket is warm grey") while the lighting department designs the lighting color that will be applied in-engine or in comp. The two systems must be designed to work together: a lighting scheme that washes out all local color differences, or a set of local colors that fight the intended lighting temperature, will fail in production. Professional color design anticipates the light-local interaction before any element is fully resolved.

Common Mistakes

Local color and lighting color designed independently without checking their interaction

An elaborate lighting design that conflicts with the local color specifications, producing unintended apparent colors.

Local colors too similar for the lighting to differentiate them

Multiple objects with very similar local colors that merge under the intended lighting. Local colors need sufficient difference to remain distinct under the planned lighting.

Light design that eliminates local color identity

A lighting temperature so strong that all local colors convert to near-monochrome apparent colors, eliminating local color differentiation.

Professional Exercises

Local-Light Color Design System

90 min

TRAINS: Specifying local and light independently then combining

STEPS

1. Design a scene with 5 objects of specified local colors.
2. Write a lighting color specification: light color, shadow color, ambient color.
3. For each object: predict the apparent color by mentally applying the light specification to the local color.
4. Create the illustration from these predictions.
5. Compare your predictions to the actual painted result.

SELF-EVALUATE:

How accurately did your apparent color predictions match the painted result? Which local-light interaction produced the most unexpected outcome?

Character Sheet Color Production

120 min

TRAINS: Local color specification for production use

STEPS

1. Design a character for production. Create a character color sheet specifying: local color swatches for all costume elements, skin, hair, and props.
2. Draw the character in 3 lighting conditions: neutral, warm sun, cool overcast.
3. Each version should show how the local colors are modified by each lighting condition.
4. The character should be identifiable as the same character in all 3 lighting conditions.

SELF-EVALUATE:

Is the character recognisably consistent across all 3 lighting conditions? Which local color was most transformed by the different lighting conditions?

Color Override Design

90 min

TRAINS: Making a monochromatic light work with varied local colors

STEPS

1. Design a scene intended to be lit with a strong single-temperature light (e.g., deep orange-red fire light).
2. The local colors of all scene elements must be chosen so that they remain distinguishable under the orange-red lighting.
3. Elements that would merge under orange-red light (two warm-colored objects) must have different values or local hues that survive the color override.
4. Test: paint the scene and verify all elements remain readable.

SELF-EVALUATE:

Do all scene elements remain distinguishable under the strong monochromatic lighting? Which local color choices most successfully maintained differentiation?

Lighting Revision Study

60 min

TRAINS: Changing light color without repainting

STEPS

1. Create an illustration. Digitally apply a color layer over the entire illustration in 3 different light colors (warm, cool, deep amber).
2. Evaluate: which local colors in the illustration survive all 3 lighting changes? Which are most compromised?
3. If working traditionally: photograph the illustration and apply the changes in a photo editing app.
4. Document which local colors are most robust across lighting variations.

SELF-EVALUATE:

Which local colors are most robust across all 3 lighting variations? Does this inform how you would choose local colors for a production illustration?

Professional Resources

James Gurney — Color and Light

gurneyjourney.com

The professional standard on local vs light color in illustration and concept art.

Richard Schmid — Alla Prima

amazon.com/search?q=richard+schmid+alla+prima

The master practitioner's treatment of observed color — what to paint when local and apparent diverge.

Nathan Fowkes — The Art of Color

gnomononline.com/nathan-fowkes

Color design at the production level, including local-light color specification for concept art.

Master Exercise Index

All exercises consolidated for quick reference.

Beginner

#	Exercise Name	What It Trains	Duration
B1	White Object Colored Light	Apparent vs local	20 min
B2	Local Color Chart	Photo analysis	20 min
B3	Apparent Color Still Life	Paint what you see	35 min
B4	Light Color Prediction	Predicting apparent color	25 min

Hobbyist

#	Exercise Name	What It Trains	Duration
H1	Color Constancy Override	3 observation techniques	60 min
H2	Multi-Material Color Study	4 surface types	55 min
H3	Interior vs Outdoor	Two light environments	2×30 min
H4	Golden Hour Study	Strong warm apparent color	45 min

Professional

#	Exercise Name	What It Trains	Duration
P1	Local-Light Design System	Predicting apparent colors	90 min

P2	Character Sheet Production	3 lighting conditions	120 min
P3	Color Override Design	Monochromatic lighting	90 min
P4	Lighting Revision Study	Changing light digitally	60 min

Resource Directory

All recommended resources, consolidated.

Beginner

Resource	URL	Notes
James Gurney Color Light	gurneyjourney.com	Complete local/apparent treatment
Ctrl+Paint Local vs Light	ctrlpaint.com	Free clear segment
Proko Color Light Shadow	youtube.com/user/ProkoTV	Free figure application

Hobbyist

Resource	URL	Notes
James Gurney Color Light	gurneyjourney.com	Color constancy professional
Ctrl+Paint Seeing Color	ctrlpaint.com	Free observation training
Richard Schmid Alla Prima	amazon.com	Observation approach mastery

Professional

Resource	URL	Notes
James Gurney Color Light	gurneyjourney.com	Professional standard
Richard Schmid Alla Prima	amazon.com	Master practitioner treatment
Nathan Fowkes Art of Color	gnomononline.com	Production color specification