

The Painter's Palette: Part 1 - Full Overview

A guide on how to choose and arrange your palette for your studio practice.

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SLIDE 1 - Title: The Painter's Palette

- What is the **purpose** of this presentation and what is included?
 - Full **overview** on how to **manage** the artist's palette and **workspace**.
 - **Efficient workflow**: having a default palette helps the artist know the exact layout of their palette like second nature, which cuts down on decision making effort during colour mixing.
 - **Less resistance** to start the painting session when the setup ritual is already established, which helps the artist **spend more time painting**.
 - The artist can learn more about how they like to work and create a specific palette **tailored** not just to the painting outcome, but to the painting process and techniques to differentiate themselves from other artists
 - This presentation will provide a complete **structure** to research further into different paints, mediums and other parts of the painting process.

SLIDE 2 - Why I chose this topic

- Pigments is such an interesting topic, and when I transitioned into oil painting from graphite and charcoal drawing (black & white) and using watercolour, I had a lot of questions when it came to choosing what colours to use on my palette:
 - Which paint should I use over the other?
 - Why use Cobalt blue instead of Ultramarine?
 - Do I need all of these blues in a palette or do I just need one or two?

SLIDE 3 - Creating a painting

- The creation of a physical painting needs 3 main components:
 1. **Palette** - Paint / Surface (+ Medium / Vehicle)
 - What is a palette?
 - Physical item - A palette refers to the surface where paint is held for mixing.
 - Concept - Not only the mixing surface, but also the range of colours used for the painting.
 - History:
 - 1460 first reference to a mixing palette described by Duke of Burgundy - "Trenchers of wood for painters to put oil colours on and to hold them in the hand."
 - 1650 palette knives - premixing common practice in 1600s
 2. Surface to paint on - Fabric: canvas or linen / wood / paper / metal: copper or aluminium / plastic
 3. Tools - paint brushes / palette knives / rollers / fingers
- Presentation's focus —> Palette & Paint

SLIDE 4 - Anatomy of a Palette

1. **Paint** - Medium choice / Colour choice
2. **Surface** - Palette's shape / size / material / colour
3. Palette setup / Colour arrangement

SLIDE 5 - What is Paint?

- What makes paint: main composition of **pigment and binder**, and some additives.
- The binder determines the type of paint.
- **Additives** - resins, dryers, preservatives etc.
 - These do not need to be part of the paint's mixture.
 - Fillers such as calcium carbonate (chalk) to create lower grade paints so less pigment is added.
- Paint types:
 - **Watercolour** = Pigment + Gum Arabic
 - Water soluble, can be left to dry on the palette and activated with water for use
 - additives can include honey, glycerin, ox gall etc.
 - **Gouache** is same mixture as watercolour (pigment + gum arabic) but has:
 - Higher pigment load
 - Chalk filler / opacifier
 - Opaque pigments
 - Coarse pigments
 - Varnishing gouache with a gloss finish can make it look more like oil, but the way the paint affects brushstrokes may help maintain the gouache look.
 - **Oil** = Pigment + Drying oils
 - linseed / walnut / safflower etc.
 - drying oil will cure, harden, and form a solid film from oxidation, non-drying oils stay oily and will not harden like olive oil and coconut oil
 - **Acrylic** = Pigment + Acrylic polymer emulsion
- **Ink** is different from paint: **Alcohol markers** use dyes, which are water soluble, not physical grains of pigments and can fade within a few years due to not being suspended in binder and protected from light and oxygen. The colour is held by the fibres of the paper or fabric it's applied on, but will not stick to non-porous surfaces like paints with insoluble binders do.
- Paint can be made just by mixing powdered pigment with a binder.
 - Landscape painter can use the sand or rocks from the landscape they're painting from. Many earth pigments are made from clay, sand, iron oxides, and earth materials.
 - Mixing graphite or charcoal powder with gum arabic to make watercolour or linseed oil to make oil paint.
 - The paint and binder mixture would need to be milled if a finer paint is desired, but coarser paint can also work depending on what the artist has in mind for their outcome.

SLIDE 6 - How to read the paint tube's labels: Marketing Name

- **Marketing name can be misleading.** Many modern paints have stopped using the pigments used back in the day, but still use the same name. The name itself is not always the guarantee that the pigment inside is what was used originally as many paint colours retain the name while the original pigment has been replaced. The reasons for the change can be many such as toxicity, availability, price, ethical considerations, or better alternatives available. Here are some examples:
 - Ultramarine originally uses ground Lapis Lazuli. Modern day UM is synthetic due to the high price of Lapis Lazuli and synthetic alternative is more vibrant and consistent. Genuine Lapis Lazuli is also available with this exact paint name, but it is a duller colour and is used more as a novelty.
 - Indian yellow was made from cattle urine, and is now banned due to ethical considerations. The name is still used as Indian Yellow, but the pigment is usually modern synthetic yellow pigments such as PY150.
 - Naples Yellow was originally Lead Antimonate, which is toxic. Modern mixtures use a mix of Titanium white and other yellows.

- Gamboge were made from tree resins, which are now uncommon. Many brands use a different pigment that imitate the original and many brands change the name to New Gamboge.
- Ivory Black was made from burned ivory. Modern day ivory blacks are made from other animal bones instead.
- Look at pigment number usually in the back or some brands like Michael Harding has the pigment numbers in the front.

SLIDE 7 - How to read the paint tube's labels: Hue & Lake

- **Hue** at the end of the name is the '**dupe**' version of that colour and uses a different pigment from the original
 - Reasons for brands to use 'hue' colours are for price, student grade paints, toxicity, and availability.
 Examples:
 - Viridian Hue (PG18) is usually a Phthalocyanine green (PG7), which costs less and has higher tinting strength, but is hard to control in mixes. Too large a dab of PG7, and your mixture could be ruined.
 - Cobalt Blue Hue (PB28) is usually a mixture of Ultramarine Blue and Phthalo blue. This is due to the price of cobalt being higher. Cobalt has a lower tinting strength, which can be desirable in certain palettes.
 - Cadmium Yellow Hue (PY35) is usually modern azo yellows (PY74, PY65, PY3, etc.), also for the pricing and toxicity of genuine cadmiums.
 - Cadmium Red Hue (PR108) is usually Pyrrole, naphthol, quinacridone mixes, also due to the same reasons as the cadmium yellows.
 - Hues don't generally look and behave the same as their genuine counterparts, but are useful in describing what the colours should be expected look like out of the tube. These colours can be different in their tinting strengths, opacity, texture, and hue.
- **Lake** at the end of the name is pigment made with dye, but modern day brands also use this word to signify transparency without the pigments being laked.
 - The **dye** version:
 - The dye is attached onto inert particles to behave like paint pigment.
 - A dye on its own is water-soluble, has poor permanence, bleeds and migrates.
 - Laked pigments can be suspended in medium (ie. oil) and stays where placed. It physically becomes part of the paint, gives it body, and creates a certain level of opacity compared to just dye itself.
 - Usually transparent, high tinting strength, small particle size.
 - Traditional laked pigments come from biological sources such as roots, berries, resins, insects, and snails. Many modern laked paints are synthetic.
 - Examples: Madder Lake, Indigo Lake, Carmine, Alizarin Crimson.
 - Historically, many glazing colours were **lake** pigments. This may be why modern day brands add this word to the end of their paint names as a description of the paint's transparency and its glazing ability. Many modern pigments have been synthesised to be more vibrant than what was historically available, in these cases, 'lake' seems more of a naming convention, than a technical description. Examples:
 - Old Holland's Blue Lake (PB15) is a Phthalocyanine pigment, not a laked pigment.
 - Old Holland's Royal Purple Lake (PV42) - Quinacridone pigment
 - Old Holland's Transparent Oxide Yellow Lake (PY42) - This is the synthetic version of the classic Yellow Ochre pigment (PY43), which is more chromatic and with finer particles, m
 - Old Holland's Transparent Oxide Red Lake (PR101) - Transparent oxide iron, a synthetic earth pigment
- Other keywords to look for in paint names include: "Permanent," "Genuine," "New," "Light/Pale," "Deep," "Cadmium-free," "Imitation," "Natural," etc.

SLIDE 8 - How to read the paint tube's labels: **Pigment 1**

- Pigment code can be found in the back, sometimes front, depending on the brand.
- Pigment - Make sure it starts with P - otherwise can be the brand's reference number.
 - The first letter, P stands for pigment, the second letter is the colour code:
 - PW = White
 - PY = Yellow
 - PO = Orange
 - PR = Red
 - PV = Violet
 - PB = Blue
 - PG = Green
 - PBr = Brown
 - PBk = Black
 - Can be made from anything that can be ground into powder
- Some pigments like Yellow Ochre have a **natural (PY43)** and **synthetic (PY42)** version, but the marketing name for these two pigments can stay the same. Synthetic should have a more uniform particle size, stronger tinting, batch consistency
- The same pigment can also look and behave differently depending on the brand and the manufacturer's sourcing. This is more the case with earth pigments as they are natural, not chemically pure, contain impurities depending on where the earth was dug up, and manufacturing processes such as milling and heat treatments. The same pigment, such as PBr7 can be used for Raw Sienna, Burnt Sienna, Raw Umber, and Burnt Umber, all of which vary in hues, tinting strength, particle size, absorbency, and transparencies.

SLIDE 9 - How to read the paint tube's labels: **Pigment 2**

- Comparing two paints with similar marketing names: Cadmium Red Hue vs. Cadmium Red.
- The Hue version (left) is **Student grade** (Winton). The non-Hue (right) version is **Artist grade** (W&N).
 - Student grade paints use fillers to allow the manufacturer to add more volume to the paint, while using less pigments, which are the expensive components. A common filler is calcium carbonate (chalk / marble dust), or they can add more oil to the paint, making it more soft and transparent than the higher grade versions.
 - Old Holland paint, a premium artist's paint, is often more stiff, due to the high pigment to oil ratio.
 - Many professional artists use artist-grade paints as a starting point, then add mediums or other materials to modify the paint's handling properties to suit their preferences. Therefore, paints with higher pigment concentrations and fewer added extenders may provide a more flexible starting point, as artists can adjust the formulation further without needing to compensate for existing additives.
- Both student and artist grade paints come in different series. The pricing goes up by series number within that paint's range ie. Series 4 is a lot more expensive than 1. Genuine Cadmium Red is series 4 (\$21.39), while the Hue version is a series 1(\$4.49) due to different pigments being used. It is rare for a Cadmium pigment to be used in student grade paint due to cost and toxicity.

SLIDE 10 - How to read the paint tube's labels: **Opacity / Transparency**

- Important for glazing
- Sometimes 'Lake' in the name also implies transparency

SLIDE 11 - How to read the paint tube's labels: **Lightfastness**

- Lightfastness in numbers or stars depending on brand
 - I = Excellent (100+ years)

- II = Very good (100 years)
- III = Fair (50-70 years)
- IV = Fugitive (15-20 years) Operas, Alizarin Crimson, and neons
- NR = Not rated
- Also depends on the medium - Alizarin crimson oil paint has better lightfastness than watercolour as it's within the oil film and is less exposed
- Some popular paints used historically, such as Alizarin Crimson, has the word "Permanent" in front of the name to imply it's the same colour, but the pigment

SLIDE 12 - How to read the paint tube's labels: **Toxicity**

- Toxicity
 - AP = safe
 - CL = toxic
 - wear protective (nitrile) gloves, and keep workspace clean. Do not sand the painting.

SLIDE 13 - Other Properties in paint: **Watercolour**

- Focusing on **oil** specifically for this presentation, but different paints need different considerations if you want to focus on other types of media, it's not going to be a direct transfer.
- Below is to show how oil and watercolour can be different, and some properties can be ignored or are more important in one medium depending on what the planned final outcome is.
- Left image: **Granulation**
 - This paint uses a mixture of Ultramarine blue and Quinacridone Coral.
 - The UM Blue has larger particles, which sits on the paper and clump together, while the Quin.Coral has smaller particles that sink down and spread out to cling onto every fibres of the paper more evenly.
- Right image: **Staining**
 - Watercolour is more of an additive process where colour is built in layers. After paint is applied, lightening the values or wiping away paint is more difficult or limited.
 - Less staining watercolours can be wiped away with water, then dabbing tissue over it, making it a little more versatile to use and possible to blend after it has dried.
 - More staining pigments are generally synthetic and smaller in particle size. The paint will cling onto the paper and makes it hard to reactivate it with water, which behaves like waterproof ink. This can be useful in creating an underpainting that will not dissolve with many layers of glazing.
 - Image: Underpainting using PB60 Indanthrone Blue, a very staining colour.
- **Difference:** Properties to look for
 - **Watercolour:**
 - Watercolour can somewhat be '**erased**' with very good cotton **paper** and if the colour is light and non-staining enough. With watercolour, the paper is the most important component in the painting.
 - **Staining** - can be used to create an **underpainting** or for glazing so that the underneath layers don't dissolve. Good staining pigments include Quins. and Phthalos.
 - **Particle size** - larger stays on top and granulates, which is the most unique property in watercolour.
 - Watercolour is generally used quite thinly, so opacity doesn't matter too much as even more opaque paints can appear more transparent. Some artists use white and opaque paints to depict smoky or foggy landscapes, but this is less common.
 - **Oil paint:**
 - **Opacity** - transparent for glazing, opaque for covering up.
 - **Dry time** - some paint labels will have this information

- **Texture** - generally natural pigments can be grainy, synthetics more smooth, and some artists prefer stiffer or more liquid formulas depending on preference or outcome desired.
- Equally **important for both**: Tinting strength, hue, formula, grade (pigment load), pigment type, lightfastness, toxicity.
- Many of these properties are not labelled on the paint tube, so further research into pigments and real life testings need to be done. Here is a link to pigment properties in watercolour, but can also be useful for oil painters: <https://www.handprint.com/HP/WCL/waterfs.html>

SLIDE 14 - The Palette Surface

- **Shapes** -
 - Handheld style:
 - Sacrifice one arm that can hold a mahl stick, unless the easel has a mechanism for that
 - Allows the artist to take the palette with them when moving around and compare the colours easily by holding the palette closer to the source
 - Size is limited to what the artist can carry
 - Rectangular:
 - Can be placed on an easel or desk
 - Allows for hands-free freedom
 - Can use heavier materials like glass
 - Larger sized if desired
- **Sizes** - larger allows for more mixing space / smaller is better for travel
- **Materials**
 - glass - clear glass can have colour backing, easiest to clean up, has glare
 - wood - develops a skin that some people like
 - acrylic - easy for travel but can stain
 - paper - comes in different colours, easy for travel (disposable)
- **Colour** - helps with eyes adjustments to the tone of the painting surface
 - White, brown, grey, clear glass (can choose backing)

SLIDE 15 - The Palette Setup

- **Set up** - hand held (usually wood), table or easel - flat or propped up
 - Size - choose the biggest easel you can comfortably work with in that specific situation to allow for maximum mixing space.
- **Keeping overnight** - personal preference
 - Option to keep the whole palette in a 12"x16" airtight box
 - Palette knife to scrape the colours into a tiny box & refrigerate
 - Some artists may also prefer to start fresh every time and old paints can have the film mixed in.

SLIDE 16 - Choosing Colours

- A palette can include as few as 2 to as many as 20 or 30 colours.
 - A **full range palette** contains more than 4 colours, which can include '**convenient colours**' that cut down on mixing time, and allows for more diversity in hues.
 - A **limited Palette** contains 1 to 4 colours (not including white), so a fuller range of colours cannot be mixed, but keeps the overall colour schemes unified. (Examples in next few slides.)
 - Technically, every palette is limited in a sense, because no matter how many colours you have on your palette, you can never replicate every colour in nature.

- This particular palette shown seems to use Quinacridone Magenta instead of Alizarin Crimson, which I haven't seen much of it used in oil. Oil painters tend to prefer Alizarin Crimson because the mass-tone allows for a darker, deeper red.

SLIDE 17 - Zorn Palette

- Swedish artist Andres Zorn was speculated to have used only 4 colours to paint some of his portraits.
- A **limited palette** can keep your colour schemes strong, and results in a more **unified** and **harmonious** effect. It helps to convey **mood**.
- The range of colours that can be mixed from a specific palette, no matter how big or small, is referred to as that palette's **colour gamut**
- Zorn still keeps the idea of the primary triad:
 - White - Core component
 - Yellow - Yellow Ochre or other earth yellows
 - Red - Vermillion or other warm reds
 - Blue - Ivory Black or other cool blacks, used as a non-chromatic blue
- Zorn is good for **portraits**, but not so much for the vibrant green Texas landscapes
 - Generally good practice to keep your portraits warm to give your whole painting a filter of coziness, warmth, and life. Cool portraits for a more sombre mood.

SLIDE 18 - Other Triads 1

- Paintings by Andrew Cadima to compare different primary triads on portraits.
 1. Zorn - Andres Zorn's portrait palette
 2. RYB - Basic primary (what we learned in school)
 3. CMY - Cyan, Magenta, Yellow
 - Andrew Cadima did not use the Black (K) from the classic CMYK palette to keep the palette a triad.
 - CMYK palette works better with watercolour and the printer as the yellow is transparent, while in oil, there is some opacity in cadmium yellow that can come across as more white. I have tried using transparent yellow in oil, but the tinting strength and opacity were so low that it was very difficult to mix.

SLIDE 19 - Other Triads 2

- Another example by Andrew Cadima.

SLIDE 20 - Split Primary Palette

- Used more in watercolour for cleaner mixes:
 - preserve maximum chroma and transparency
 - muddy washes are harder to fix
 - layering transparent glazes
- Depending on oil or watercolour - popular pigments used by artists can be different
 - Cool Yellow - Lemon Yellow / Cadmium Lemon
 - Warm Yellow - Cadmium Yellow Deep / Hansa Yellow Deep
 - Warm Red - Cadmium Red Light or Pyrrol Scarlet
 - Cool Red - Quinacridone Magenta or Alizarin Crimson (Permanent)
 - Warm Blue - Phthalo blue or Cobalt blue
 - Cool Blue - Ultramarine blue
- Choose this to mix the largest range of colour gamut with the smallest selection of paint

SLIDE 21 - Other Limited Palettes

- 2 pigments (plus white): Phthalo Green, Cadmium Red - Andrew Cadima
 - more graphic design / comics style
 - less realism, more contemporary
 - moody and atmospheric
- All-purpose Palette - 3 Primary + Brown
 - Popular on the internet where artists claim it mixes almost every colour available
 - Recommended by Daria Callie and Mark Carder (DrawMixPaint)

SLIDE 22 - Categorisation: Primary

- Categorising colours in the palette for their roles in order to figure out which ones should be included for the best range of colour gamut for a specific project or as an artist's go to default palette.
- Role: **Foundation** - as seen in primary triads including Zorn, RYB, CMY
- **Primary colours** - Red, Yellow, Blue
- Can be split into temperature
- **White** - Foundation / core component
 - Titanium white (PW6) - very stiff, very opaque, cool, non-toxic.
 - Zinc white (PW4) - softer, brittle alone, semi-transparent, good when mixed with Titanium, non-toxic.
 - Lead white (PW1) - excellent paint film, will last the longest, warm, very toxic, semi-transparent, also known as Cremnitz white and Flake white.
 - Lithopone (PW5) - Softer than Titanium, semi-opaque, lower tinting strength than Titanium white.
 - Mixed white (PW6+PW4) - softer than Titanium white alone, better paint film than Zinc white.
 - Warm white (PW6+PY43) - warm white, non-toxic,

SLIDE 23 - Categorisation: Secondary

- Role: **Convenient mixes**
- **Secondary colours** - Orange, Green, Violet
- Uses in realism:
 - Orange for skin
 - Green for nature
 - Violet for florals and still-lives
- Use in a limited palette for mood

SLIDE 24 - Categorisation: Earth

- Role: **Neutralisers**
- **Earth colours** - Browns and blacks
- These can be the muted or earthy versions of primary or secondary colours
 - Blacks are cool - Blue or green hues:
 - Zorn uses black to fulfill the role of blue
 - Perylene black (PBk31) is a dark blue-ish green, sometimes called Perylene Green
 - Payne's Grey is a dark indigo (mixes of black and blue), sometimes used instead of black in a watercolour palette for a softer look
 - Browns are warm - Red or yellow hues:
 - PR101 (Transparent Red Oxide) is a reddish brown

- PY43 (Yellow Ochre) is an earthy yellow
- The pigment codes are not always PBr, and can include PR and PY too.

SLIDE 25 - Categorisation: Tints

- Can be used to **key a painting** instead of using the full chromatic colour
- Can be used instead of white in a limited palette
- Examples:
 - Naples Yellow and Naples Orange for convenient skin colours
 - Radiant Violet - Matt Ryder uses it for his florals and landscapes
 - Cobalt Teal (not mixed with white, but has pastel appearance) used as cool blue-green, convenient mixture of Viridian + White or Phthalo Green or Turquoise + White)
 - Radiant line by Gamblin

SLIDE 26 - Examples of Low Key & High Key paintings

- High key - Palette dominated by light values - Soft and dreamy
- Low key - Palette dominated by dark values - Subdued and mysterious