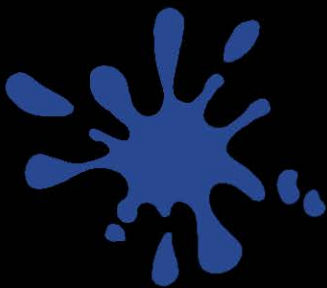


THE
COLOUR
BOOK



KEEPING IT SIMPLE

MICHELLE ROBERTS

The Colour Book - Keeping it Simple

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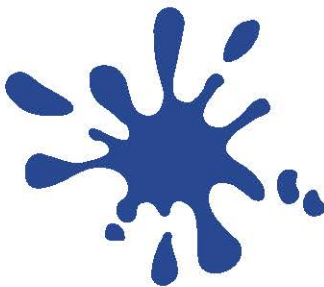
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KEEPING IT SIMPLE

Michelle Roberts

BOOK DESIGN BY REBECCA STANLEY

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Firstly, I would like to thank Derivan Pty Ltd, in particular the Chief Executive Officer, Steven Patterson, for his faith and trust in me to write this book. Also, thank you Steven for lending me your knowledge and experience - you've been an encyclopaedia of information, and a patient teacher.

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As I said before, I had a lot of help. As I was writing this book, many people tested the activities for me from all over the world. So thank you Elaine, Gwen, Heather, Janette, Josephine, Pnina, Sue, Sylvia and Wendy for all your hard work. Also, thanks to Dianne and Trudy for the effort you went to painting up the examples for the book.

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I couldn't have achieved this without the support of friends and my family. Thank you for your understanding and support. For being there when things weren't going so well, and for celebrating the successes with me. Mostly for putting up with me talking about the book constantly.

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Michelle Roberts





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INTRODUCTION



Hello! Welcome to our world of colour – we hope you enjoy your visit.

Some artists can get very caught up in ‘colour theory’, to the point of being fearful of colour. Other artists may never have been taught any colour theory for fear of stifling the artist within. This book isn’t about what’s right or wrong, according to a set of theoretic rules. It’s about helping you to understand colour, colour schemes and most of all to help you discover what it is *you* like about colour. We will be building your knowledge; you need to work on how you’re going to apply it!

Sounds hard? Well, it’s not! You will be led through exercises that will build your knowledge of colour and how to use it in your artwork through a series of practical activities.

Did you know that you learn:

- 10% of what you read;
- 20% of what you hear;
- 30% of what you see and hear;
- 70% of what is discussed with others;
- 80% of what you experience personally; and
- 95% of what you teach someone?

So, by doing the activities in this book, not just reading about them, you will improve your understanding of colour by 70%. That’s why, in addition to this book, we have created *The Colour Workbook*, with black line masters for all the activities included. You will be able to create copies of these to complete each of the exercises. It is recommended that these be copied onto paper that has a weight of around 110gsm to 130gsm to allow it to be painted on without buckling. We have also designed produced a colour wheel palette that can be utilised in conjunction with this book

This book has been written using Derivan Matisse Structure and Flow Formula acrylic paints from Derivan Pty Ltd. We have chosen this brand because of their extremely high quality and brilliant colours. You will however, be able to use other brands – and you’ll find this book useful anywhere you’re thinking about colour.

If you are using Derivan Artist, or Derivan Student - please use the table on page 91 as a reference.

CHAPTER ONE

How we see colour

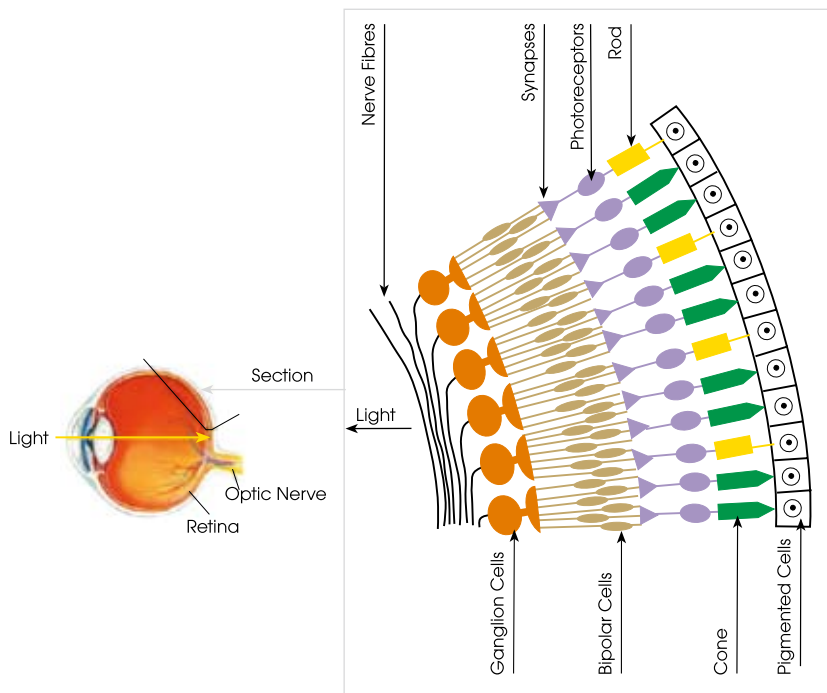


HOW WE SEE COLOUR

Without getting too technical, it is important to understand in some small form, the different ways we see colour. If you are not really interested in the theory behind colour, skip ahead to Chapter Six and start the colour activities.

To see the colour of an object we need light to pass through the lens of our eyes to the retina. The part of the retina that allows us to see colours are the *rods* and *cones*.

Rods are more sensitive than cones, but they can only see images as black or white, and different shades of grey. Cones each have a sensitivity to a particular colour wavelength, being red, green or blue. These cones work together to allow us to see the variety of colours in our world.



COLOUR BLINDNESS

Colour blindness is more common in males than females, with approximately 8% of males being affected, and only 1% of females. But what causes it?

Those people that suffer from some degree of colour blindness have fewer cones in their eyes that detect a particular colour. As we said before each of the cones are sensitive to red, green or blue. With fewer red cones, your eyes would not be able to see this colour as clearly and may become confused. While there may still be some of the red colour sensitive cones there, the colour blind person may only be able to see this colour in strong natural light, and the same colour may appear different in indoor light, or dull light.

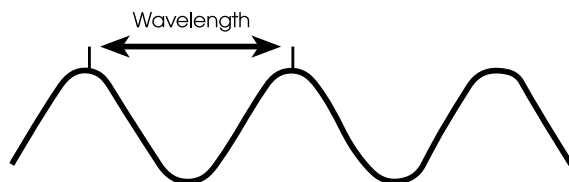
The most common colour blindness is red-green. It is very rare for total colour blindness to occur, and this is normally associated with other severe visual impairments. These sufferers have no cones at all, and only see the world in shades of grey.

LIGHT AND WAVELENGTHS

To understand colour theory, you will first need to know a little bit about what makes 'light'.

Light is energy in the form of electro magnetic radiation. The way we measure light is by its frequency and wavelength.

Light travels in waves, similar to the waves in the ocean. The distance between the peaks of these types of waves is measured in nanometres. A nanometre is one millionth of a millimetre, or one billionth of a metre. Very small indeed!

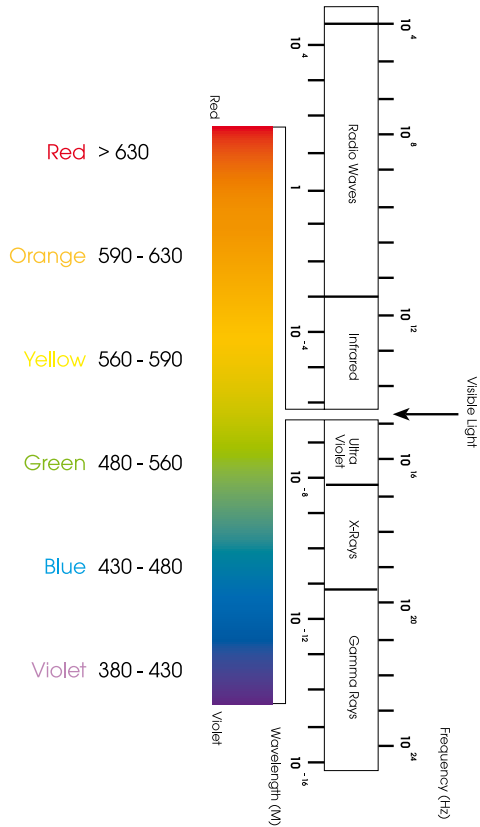


You probably would have heard of X-rays, ultra violet light and microwaves, which are all examples of different wavelengths; however they're not in our *visible spectrum*, which simply means we can't see them.

As well as being a certain length, these waves also have different speeds, or frequencies. You would be more familiar with the term frequency for tuning your radio. Frequency measures how fast the wavelengths travel. This is how many times the peak of the waves pass a given point in one second. This frequency is measured in Hertz.

There is only a small band of wavelengths that we can see. These are known as the 'visible light spectrum', and are found in wavelengths that measure between 400 to 700nm.

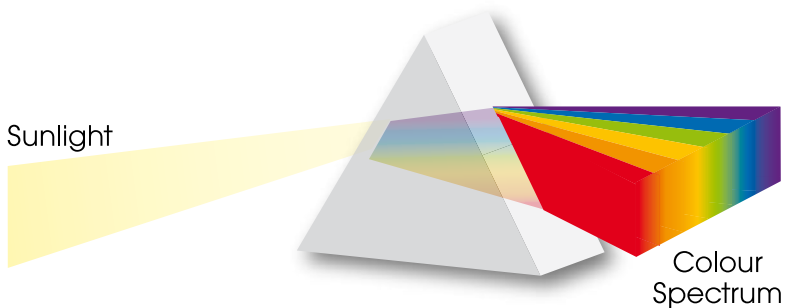
Each of these individual wavelengths makes up the colours of the colour spectrum.



Have you ever noticed that when sunlight hits a crystal, you can see different colours sparkling from the crystal? These are the colours of the colour spectrum.

White light – such as sunlight – is made from the combination of most of the colours in the colour spectrum.

As we discussed before, light travels in waves, and each different wavelength of light is a different colour. When the light hits the crystal, each of these different wavelengths is refracted (changes direction).



Because each different colour has a different size wavelength, it hits the crystal at a slightly different angle. This makes it refract, or bend, at a different angle and this is how the white light is split up like a fan, so that all the colours can be seen.



CHAPTER TWO

Sources of Colour



SOURCES OF COLOUR

There are two basic ways we see colour in our world - either by light reflecting off an object, or by light emitting from an object.

EMITTED LIGHT

Where colour is emitted (or produced) from an object, you would be able to see the object in a dark room. For example, a streetlight or a computer monitor emits colour. A burning poker also emits colour (and some heat too).

REFLECTED LIGHT

The second source of colour is reflected light. This is what you see when light strikes an object. The object itself cannot show you any colour without the help of some form of light.

For example, if you were to put a plant in a dark room, you wouldn't be able to see the green of the leaves. You might know that it's green, but without turning the light on, you can't see that it's green.

When light hits an object, it changes. Depending on the colour of an object, some of the different wavelengths that make up the white light are absorbed and some of them are reflected back to us.



For this example, all the wavelengths or colours (the white light) are hitting an orange object.

A lot of the different wavelengths (colours) are being absorbed into the object, but you will notice that most of the red and orange wavelengths are reflecting back.

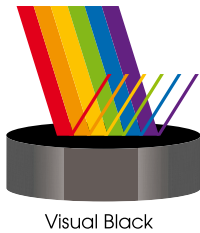
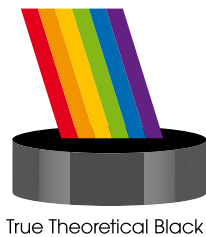
When you see this, your mind will register that you are seeing a 'reddy orange' colour. This sounds confusing – but let's have a look at this apple with the light hitting it from one side.



Because an apple doesn't emit any light, it uses the white light to reflect its colours back to you. Where the light is the strongest, the most colours are reflected back to us.

Did you notice how the brightest colours are where the light hits the apple, but towards the back, and in any little dips and hollows in the apple, there is a shadow?





As we mentioned before white light contains all the colours of the spectrum and when we see something as white it is the full colour spectrum being reflected off a surface to us.

Black is the opposite and is the absorption of all light – in theory anyway - because if a black object really did not reflect any light then we would not be able to see it.

True ‘theoretical’ black would be found in a big bottomless hole or a dark room with absolutely no light being able to penetrate in any fashion.

The blacks we are used to seeing are “colours” where nearly all light is absorbed but still a very low level of the full spectrum is reflected back to us. But, in our eyes, we still see this as black.

Similarly, when we look at an object from a distance that has a shadow cast over it, it appears to be black or very dark. However, when we get close to the object and stand in the shadow ourselves, our rods and cones from our eyes adjust to the lower amount of light and we find that the object may not be really black. It could even be a very bright colour.



CHAPTER THREE

Additive & subtractive colour mixing



ADDITIVE AND SUBTRACTIVE COLOUR MIXING

To create colours that occur naturally in everything we see there are two common methods, known as Additive and Subtractive colour mixing.

ACTIVITY

1. Over each face of three different torches, carefully stretch clear plastic cling film, being sure to tightly secure it with a rubber band.
2. Paint two thin coats of the following colours on the face of each torch so that you end up with a torch for each colour.
 - Matisse Red Light
 - Matisse Emerald Green
 - Ultramarine Blue
3. Shine one torch onto the wall of a dark room. You should be able to see a circle of colour the same as the face of the torch.
4. Shine a second torch on the wall, allowing the circles of colour to overlap.
5. Finally, shine the third torch on the wall, and allow all three lights to overlap.



Congratulations, you have just created your first colour mixes for this book by using additive colour mixing. Try different ways of overlapping the light to create different colours.

When you mixed these coloured lights together, what other colours did you make?

Did you notice that when you added these colours together, the new colour you created was lighter than the original colours? If you are able to get the correct red, blue and green light, mixing all three lights would have given you a white light. Were you able to create a white light by mixing all three lights?

Additive colour mixing is simply creating colour by adding different light sources together and is the process used in stage lighting, movie projections or creating the picture in your television set.

SUBTRACTIVE COLOUR MIXING (colour mixing using reflected light)

When you mix inks, dyes or pigments, as you would when creating paint mixtures, dying fabric, or printing on paper, it is called subtractive colour mixing.

So what happens when you put some paint down on this white paper? It's easy to think you're adding colour to it, but that's not true. You're adding paint. Paint is simply an object that will show its colour by absorbing and reflecting light.

When we see painted colours, we can think of them as being the colour that is left from the white light after the other wavelengths have been absorbed - or more simply, the colours that are reflected back to us.



When we mix paint we are doing the complete opposite of additive colour mixing. Instead of using emitted light sources, we are mixing two or more paints that show us colour through reflecting and absorbing light waves.

ACTIVITY

1. On a piece of white paper, paint a wash of Magenta (a wash is done by using watered down paint).
2. Overlap this with a wash of Yellow Light Hansa.
3. Overlap this with a wash of Phthalo Blue.



Did the colour become darker, or lighter as you added more paint?

When we mix two different coloured paints, we are making a colour that would absorb more of the wavelengths than each of the individual colours would have by themselves.

This process of colour mixing is called subtractive – with each colour added to the mixture, more wavelengths are subtracted from the white light. Fewer wavelengths are reflected back out, making a darker or blacker colour.

Later on in the activities, you will probably happily mix paints together without a thought about what is being absorbed or reflected, but it's interesting to see where it all comes from.

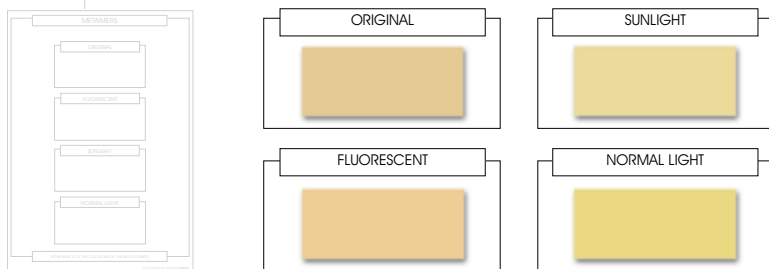


METAMERS

Metamers are, simply speaking, two colours that look the same under one set of conditions but different under another. One of the main causes of metamers is the type of light you use when mixing your paints.

ACTIVITY

1. Collect a few swatches of paint samples from paint/hardware stores.
2. Cut these into a square piece of colour and glue into your workbook in the box labelled “Original”.
3. Using your paints, create matching colour mixtures for this swatch in a room with strong fluorescent lighting.
4. Create this mixture again, but this time in a room with normal globe lighting (you may even want to use a desk lamp for this activity)
5. Lastly, create the mixture in the sunlight.
6. Repeat for remaining swatches of colour.



FROM PAGE 2 OF THE WORKBOOK

HINT: If you are having trouble finding different light sources, try your local hardware or lighting store, they might have a range of lights on display that you can try comparing the colours with.

Did the colours your originally choose match each other in the different lighting? Did they match the original swatch of colour? The reason why some of these colours look different under the different lights is that a fluorescent light has a bluish light to it, while the sunlight is more yellow.



ACTIVITY

1. Using the coloured torches again, shine each one on this coloured picture to see how they affect the colours you can see.
2. To simulate a yellow light source, shine both the green and the red light together on the picture.



What changed when you shone the blue light on the picture? What about the green and the red?

These are extreme examples, but they can show you how different lighting could make your paintings look considerably different. When you mix colours, you need to consider not only what paints to use, but where the finished piece is going to be viewed, to make sure you don't have colours that will change in the different lighting.

Have a look at the difference lighting could play on this painting:



So, now that we know how we see colour, and all about additive and subtractive mixing, let's find out a little more about paint.



CHAPTER FOUR

History of Paint

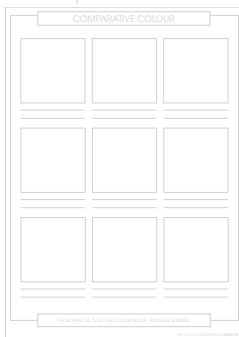


THE HISTORY OF PAINT

In prehistoric times artists would mix different coloured earths (now known as pigments) into a glue (or binder) which was usually made from egg or resin from trees and they would probably have added a little water (now known now as a vehicle) to make it runny enough to paint with. Let's try and make our own paint.

ACTIVITY

1. In a plastic cup place a teaspoon of cocoa. The cocoa will be our 'pigment' for this exercise.
2. Mix in enough water to make your 'cocoa paint' runny. Water is the 'vehicle' for this paint.
3. Paint a sample of this paint onto a piece of paper and write "cocoa" as your pigment and "water" as your vehicle.
4. In another cup, add some beaten egg to the cocoa, about a teaspoon full, or a little more. We are using egg as a 'binder' and you should be able to notice the difference between the two mixtures.
5. Paint out a sample of this underneath the first sample. This time write "egg" as your binder and "cocoa" as your pigment
6. Combine the two paints into one cup. You now have a paint that contains pigment (cocoa), a vehicle (water) and binder (egg).
7. Paint out a sample of this onto your paper as well and fill out the information for pigment, vehicle and binder.



Pigment Cocoa
Vehicle Water
Binder Egg

FROM PAGE 3 OF THE WORKBOOK



How did the different paint you made work? Which one seemed to perform the best? Try this activity again, but change the ingredients. Perhaps jelly crystals as the pigment, or if you're very keen, find some coloured earth and grind it to very small particles. Try substituting oil for water (this will act as a binder as well). What difference did these make to the mixture?

Colour makers have tried many different materials as binders and an even larger number of pigments. The most popular were egg temperas and gouaches but such items as wax were also used. Egg temperas and gouaches were superseded by oils because egg tempera would yellow and become brittle over time, and gouaches were not water-fast.

The old masters used pigments ground in various oils. This paint served artists well for several centuries. However, in time it was realised that the way that the oils dried also eventually caused the oils to crack and peel. This process may take several centuries but is inevitable. Even today the only way to stop this is to apply a coat of solvent based acrylic varnish to the work.



CHAPTER FIVE

Acrylic Paints



ADVANTAGES OF USING ACRYLIC PAINTS

Acrylics are comparatively very new on the art scene, and only became commercially available in the late 1950's. In 1964, Derivan was at the forefront of the acrylic revolution, becoming the first acrylic paint manufacturer in Australia. In acrylics the vehicle is a mixture of water and acrylic polymer and the binder is the acrylic polymer once the water has evaporated.

Acrylics have proven to be extremely versatile. These paints have many advantages over their predecessors with very few drawbacks. Acrylic paints are non-yellowing, flexible, durable and resist the effects of ageing such as brittleness, wrinkling or cracking. The colours are permanent, and once dry cannot be rewet, so artists can quickly build layers of paint without fear of removing the previous layer.

These paints are generally non-toxic (please check your manufacturer's advice) and dry quickly. Unlike oil paints, all acrylic paints dry at the same rate and can be freely intermixed. When acrylic paints are dry, they become water insoluble and permanent.

One of the big advantages is that acrylic paints are water soluble when wet, and that means that you can use water for cleaning the brushes while painting. This is very good for those artists who for health reasons cannot use oil paints because of the fumes. These paints are also non flammable.

Acrylic paints can be used on a wide variety of art surfaces, including paper, board, canvas, wood and metal, and are excellent for outdoor mural work. They can also be used on models, fired ceramics, terracotta, leather and a multitude of other surfaces. When choosing a surface for painting you will need to remember that acrylic paints will not adhere to any surface that contains oil or wax. You can, however, apply both oil paints and wax finishes over the top of acrylics.

In addition to the advantages that acrylic paints offer by themselves, there are now a large range of mediums that can be added to the paint to make it behave differently. A medium is a substance that changes the way the paint acts; it can be in liquid form, or a honey-like substance, or something more solid. There are mediums that make acrylics act like oils or watercolours. There are mediums that produce special effects, such as cracking the paint, or adding an ageing patina to make your work look older than it is.



HOW ACRYLIC PAINT WORKS

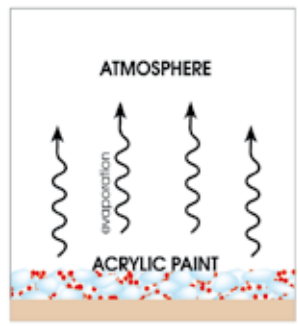
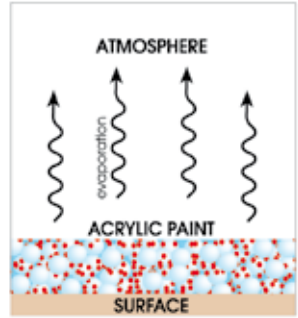
This is an exaggerated cross section of acrylic paint when it is first applied to a surface.

As you can see, there are larger beads of acrylic (or plastic) in the paint. The smaller dots are the pigment which make the colour. There are, of course, other ingredients in there such as dispersants, flow agents, anti-foam agents, anti-settling agents, bactericides and fungicides. These have all been added to help the paint perform better for you. They stop the paint from drying too quickly, or the colours in the paint from clumping together, which results in uneven colour. They also help the paint move when you're using it on a brush. Imagine if you had to paint with honey, how sticky it would be. But for now, think of it as mostly water which flows between the acrylic and pigments.

As the water dries the acrylic starts to fuse together. This creates the dry 'skin' on the paint.

You may have noticed this skin forming on the surface of paints which have been left out on your palette for an extended time. This skin still allows evaporation of the water underneath the skin to occur.

When you are painting, this means that although an acrylic paint may seem dry to touch on the surface, there still may be some areas underneath that need more time to dry.



When the paint is fully dry, all the acrylic beads come together and trap the pigment in them and, like plastic, are water resistant.

HINT: Even though paint can feel dry to the touch, there may still be some water trapped under the skin of the paint that needs to evaporate. This is useful to know when you are painting – and will help you keep out of too much trouble if you remember to let the paint dry fully before repainting. Thin paint will dry thoroughly in 10-20 minutes, while thick paint may take an hour or even up to several days to finish drying.



CHAPTER SIX

Getting to know your paints



WHAT'S ON THE LABELS?

The labelling on tubes or bottles of paint can vary from manufacturer to manufacturer, and the requirements for labelling information will depend on the legislation (laws) of the country where the paint is made or sold.

Generally, paints will have the brand of paint clearly shown, and the name of the paint, with some way of easily identifying the colour in the container. This might be by a printed colour dot, a painted swatch or simply by having a clear bottle that the colour can be seen through. There should also be address details for the manufacturer and health labelling.

Companies may also include the ASTM rating, pigment numbers, alternate names, and chemical descriptions of each of their paints on the labels. Some manufacturers will supply this information through printed formats and not on their labels. So what does it all mean?



ASTM AND LIGHTFASTNESS

Lightfastness is best described as the paint's ability to hold its colour, or not fade, over time due to the effects of light on the paint. Ultraviolet light, which is one of the most destructive wavelengths, can take its toll very quickly on pigments that are not lightfast.

ASTM stands for the American Society for Testing and Materials. The ASTM has a standard which rates pigments by their lightfastness. This is done by exposing paints to unusually strong and prolonged artificial light, and rating them according to the degree to which they have faded or discoloured. A scale of one to four is used for this.

If your paint has an ASTM rating of 1 it has excellent lightfastness and the pigment will remain unchanged for more than 100 years. An ASTM rating of 2 means that the pigment in the paint has very good lightfastness so that it will remain unchanged for about 100 years.

Fair lightfastness, with an ASTM rating of 3, will remain unchanged for 20 to 100 years, while paints rated ASTM 4, poor lightfastness, or 'fugitive', will show discoloration in less than 20 years. Paints that have an ASTM rating of three or four will fade much quicker if they become diluted or thinned with other paints or mediums.

As an artist, especially if you are selling your paintings and not just exploring the use of colour, you should try to choose paints with an ASTM rating of one (excellent lightfastness) or two (very good lightfastness), because if you choose a paint that has a low ASTM rating, it is likely that the colours in your painting will fade over time. You will also need to consider other things that will affect your paint, such as exposure to moisture and acids often found in paper.

But that's enough theory for now... let's start doing something!




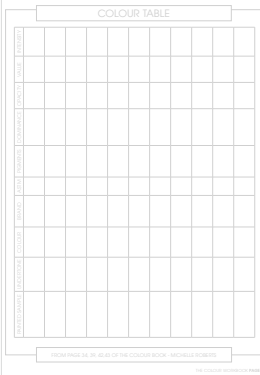
COLOUR TABLE

This activity will be continued throughout the book. As you learn something new, you will be asked to complete certain sections of this table. By the end of this book, you will have an excellent information source for your painting needs.

ACTIVITY

1. Sort out your paints into alphabetical order.
2. Paint swatches of each of the colours you own in the first column of the table (if you have a lot of paints, you might like to create a page for each colour group).
3. In the third column of the table, write down each of the names of these paints.
4. Include the brand of paint in the fourth column, beside the name, as there may be many brands with the same colour.
5. Write down the ASTM rating for each of the paints you have.

PAINTED SAMPLE	UNDERTONE	COLOUR	BRAND	ASTM
		<i>Matisse Red Light</i>	<i>Matisse</i>	<i>1</i>



FROM PAGE 4 OF THE WORKBOOK

Whenever you buy new paints, add a swatch of it to one of these pages. Or, if you're at a workshop or painting with another artist, take your workbook with you and keep building your information on the paints.

This information, along with the knowledge you gain from other activities in this book, will help you predict the way a colour will react when mixed with another, which will save you a lot of heartache and frustration in the future.



PIGMENTS

Pigments are what the colour in paint is made from. In historical times these pigments came from nature, and you can still purchase and use some of these pigments today. Nowadays nearly all pigments are “manufactured”, or at least treated in some way to standardise their particle size, purity and chemical make-up.

Many companies will use the same standardised names for paint colours. Some are based on the chemical make-up of the pigments in the paint, such as Phthalocyanine Blue, while some are named after the artist who was well known for using a particular colour, such as Turner’s Yellow.

When naming the colours of the paints, there are no real legal requirements for companies to use specific names for colours. It is a legal requirement that the labels on paints do not claim to be something that they’re not. For example, a company is not allowed to name paint Cadmium Yellow if there is no cadmium used in the creation of the pigment.



Sometimes, paint companies will use alternative colours that look similar to the original, to give a colour that closely resembles the original named colour. When they do this, manufacturers will often use the words *Hue* or *Tint* in the name of the paint. For example, Cadmium colours can be quite expensive to produce, and may be toxic, so you may find some companies prefer to create a Cadmium Hue to make a more affordable paint or for use by children. There may be other valid reasons for using a Hue colour. One of these is that the original pigment may not be lightfast, or it may be too toxic for safe use. .



Some pigments that originally came from natural sources may have had the colour chemically created. This could be because the original pigment source may also be limited in supply such as Ivory Black, which is made from the soot of burnt ivory. Other pigments are made in such a dubious manner that the processes have dropped out of use due to deviations in the colour and quality created. An example of this is Indian Yellow which, legend has it, was originally created by collecting and concentrating the urine of cows that had been fed mangos.

Due to the variety of sources of pigments for paints, they will each have their own particular qualities. Because of this, colour chemists need to create special formulas to suit each pigment. You did the same sort of thing when making your own paint earlier. You would have noticed you needed more water with some pigments and less with others.

For example, if you were to take two glasses of water, add equal amounts of flour to one, and jelly crystals to the other, the glass with the flour being added would thicken more quickly than the glass with the jelly crystals. The same can be said about pigments. Pigments are even more different than flour is to jelly crystals. Comparing different pigments would be like comparing flour, to jelly crystals, to marbles, and cotton wool.

Ideally, for artist quality paints, you would expect them to be as highly pigmented as possible. You would also expect paints from the same manufacturer to be consistent in their formulation, with a similar amount of acrylic in the paint. Because of their different properties, colour chemists need to carefully determine how much pigment each colour can absorb without compromising the consistency of the paint. They also need to take into account other factors of the pigments.

Because of their different qualities, some pigments are of a lower or higher standard than others. You probably wouldn't like to paint with your 'cocoa paint' because the colour was weak and grainy. Good quality paint manufacturers will only use the best possible pigments in their paint.

It is interesting to know that Phthalocyanine (Phthalo) Blue is a very fine pigment, and is also a highly staining pigment, and because of this a lot more of the pigment can be added to the paint mixture. In fact, Phthalo Blue can be made up to 40 times stronger than most other paint colours.



Let's look at the pigments that make up your paints.

ACTIVITY

1. Find where the pigment information is kept for your brand of paint. These will be coded something like PBr7, or PG34.
2. Using the pigment number, sort your paint into the following paint groups.
Pigment Black – PBk
Pigment White – PW
Pigment Yellow – PY
Pigment Red – PR
Pigment Brown – PBr
Pigment Orange – PO
Pigment Green – PG
Pigment Blue – PB or PBl
Pigment Violet – PV
3. If any of these have more than one pigment name on the label, remove it from the group.
4. What you have left are known as *single pigment colours*.
5. Locate in your colour workbook the pigment activity pages and paint a small rectangle (swatch) of each colour under the pigment name.
6. Above each swatch, write the name of the colour, the brand of paint and the pigment number (see example).

Name Ultramarine Blue
Brand Matisse Flow Formula
Pigment PBr2


FROM PAGE 5 OF THE WORKBOOK



Now, let's work with the ones that have more than one pigment. These are commonly called *blends* or *mixtures*.

ACTIVITY

1. Create a separate page for each of the pigments by adding the pigment name (i.e. Pigment Red) to the top of the page.
2. Paint a swatch of these colours on the page labelled Pigment Blends under each pigment that is shown for that colour. For example, for Burgundy you would paint a swatch under both. Pigment Red blends and Pigment Black blends.
3. Under each swatch, write the name of the colour, the brand of paint and the pigment number (see example).

Name	<i>Burgundy</i>
Brand	<i>Matisse Flou Formula</i>
Pigment	<i>PR22, PR20, PBl7</i>
	



FROM PAGE 6 OF THE WORKBOOK

What did you notice when you were sorting the paints? Were there some with a few different pigments? Make sure you add these colours to each of the pages. Did any of the mixtures surprise you?

You may have noticed that some paints have the same pigment numbers, but are completely different to look at. This can be for many different reasons. Within the same brand of paint, the difference will simply be how the pigment has been treated to obtain the colour. Some of them have been baked at a higher heat, or oxidized (this is where the pigment binds chemically with oxygen from the air), or undergone other chemical processes. For example, Raw Umber would be the umber pigment (PBr7) as it is manufactured, while Burnt Umber is where the pigment has been

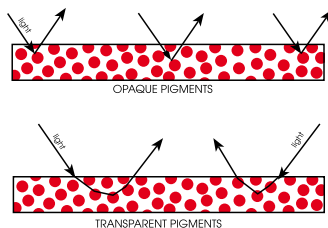


TRANSPARENT v OPAQUE

So, now we know what colour the pigments are that make up our paint, let's find out a little more about them.

You may have noticed that some paints, when you use them, cover really, really well, while others seem to show up what's underneath them. This is because some pigments, and indeed paints, are opaque, which simply means they cover well, while some are transparent, similar to coloured glass letting the light shine through.

Perhaps this diagram will make it a little easier to understand. This is a simplified cross section of how a paint with opaque pigments works. Basically, the light hits the surface of the pigments and the colour you see is reflected up to you.



With transparent pigments, the light hits the pigment and passes through, allowing you to also see the underlying surface. For this reason, transparent paint is excellent for glazing techniques. *Glazing* is simply applying thin layers of transparent paint over your existing painting. This technique was often used by master painters to build up a depth of colour in their paintings.

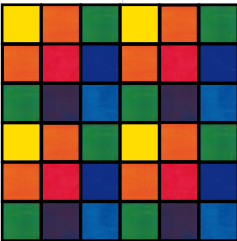
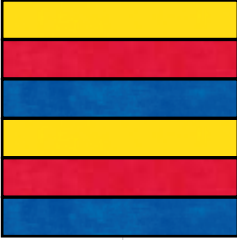
Often paint manufacturers will provide you with information on whether a particular colour in their range is transparent or opaque. There are also paints that are semi-transparent, or translucent. This maybe because they are made from semi-transparent pigments or they are made from a blend of pigments, some being transparent and some being opaque.

To see how this works in real life, let's try making some tartan using a glazing technique.



ACTIVITY

In your workbook there is a grid which is six squares wide by six squares long. Let's try painting it using a selection of transparent paints, namely Yellow Light Hansa, Brilliant Alizarine and Phthalo Blue.



1. Using Yellow Light Hansa paint a horizontal line that fills the first and fourth rows, making sure you use a consistent amount of paint for each row.
2. You may want to add a little Faux Finish and Marbling Gel (Matisse) to allow easy coverage.
3. Next, paint a row of Brilliant Alizarine in the lines immediately underneath each of the yellow rows in the same manner.
4. Finally, paint a row of Phthalo Blue in the remaining two rows. Because Phthalo Blue is such a strong colour, you will need to make sure you thin it down a lot more than the other colours.
5. Dry and then paint each of the colours vertically in the same manner, again making sure you are using an even amount of paint.
6. You should end up with something similar to the diagram on the bottom right.
7. With the second grid, paint it in exactly the same manner using opaque colours, namely Cadmium Yellow Medium, Matisse Red Light and Ultramarine Blue.

FROM PAGE 7 OF THE WORKBOOK



Compare the differences. What happened when you painted the blue over the yellow in the transparent tartan? Did the same thing happen with the opaque tartan? How did the colours change when you painted the same colour overlapping each other?

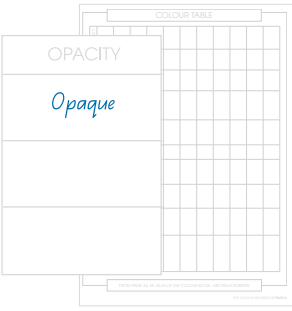
With the transparent tartan, you will see other colours glowing through. The opaque tartan looks more like you were trying to paint stripes. The opaque paint covered up the colours underneath. Of course, how much it covered would depend on the lightness and darkness of the colour underneath, and how thinly you applied the layers, but there is a definite difference in how they appear.

Did you notice that the transparent paints got darker when layer upon layer was built up? Can you think why? Remember the diagram we drew earlier that shows how light can penetrate transparent paints to reflect some of the surface? With multiple layers of paint, or a thick coating of paint, the surface, which in this case was white paper, is harder to see. Transparent colours can only be seen when light is reflected back through the paint film from the surface. In thick films, the light is absorbed and the colour appears darker. If you want a colour to remain stable, and not change when you paint successive layers, you need to use opaque paint.

COLOUR TABLE

ACTIVITY

1. Write down on the colour table whether each of your colours are transparent, semi-transparent or opaque. Depending on your paint this information might be on the label, the colour card, or website.



FROM PAGE 4 OF THE WORKBOOK

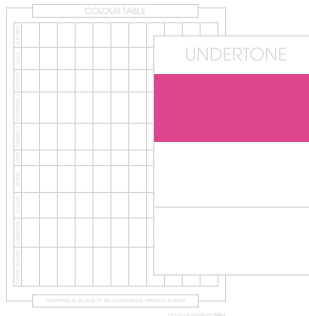


TOP TONES AND UNDERTONES

Top tone, sometimes also known as *mass tone*, is the way a colour looks when you paint a solid coverage of it. However, there are many colours, especially transparent ones, which will change colour when thinned to a wash or glaze. This is called an *undertone*. Because the two colours can vary dramatically, you should be aware of the differences.

ACTIVITY

1. In your Colour Table, beside each of the colour swatches, paint a wash, or glaze of each colour to create an undertone.



FROM PAGE 4 OF THE WORKBOOK

HINT: When painting washes or glazes (a wash is what you start with, a glaze is applied over other painting), remember to blot your brush on some absorbent paper or cloth to stop puddles of colour occurring on your paper.



CHAPTER SEVEN

Mixing Paint



MIXING PAINT

Primary colours in painting are simply the three colours that cannot be mixed from other colours, that is, red, blue and yellow.

When you start making your own colour wheel, you want the purest colours you can find. Colours that have a touch of black or complementary pigments will make ‘muddy’ mixes, or dull finishes. This doesn’t mean you can’t use them; it’s just easier to learn about colours when you use clean colours to start with.

For the activities in this book we would recommend the following primary colours in Matisse Structure or Flow Acrylics (see page 91 for alternatives in Derivan Artist and Derivan Student):

RED

- Naphthol Scarlet
- Cadmium Red Medium
- Naphthol Crimson
- Brilliant Alizarine
- Matisse Red Light

BLUE

- Phthalo Blue
- Ultramarine Blue

YELLOW

- Yellow Light Hansa
- Yellow Mid Azo
- Cadmium Yellow Medium
- Cadmium Yellow Light
- Yellow Deep

If you are just starting out, the Matisse Flow or Structure Primary Set is a good start to your colour collection.



When you want to mix paint, there are a couple of things you should remember. The first is that not all colours are created equal. This means that when you mix colours, there will often be a dominant colour. An example of a very dominant colour is Phthalo Blue. You'll see why a little later.

When there is a dominant colour, you should always add small parts of this colour to the lighter colour. It's a lot easier to add a touch more to the mix of the stronger colour, than it is to have to add a large portion of the weaker colour. Imagine having to add white to black to make a light grey. It would take a lot of white. But if you wanted to add a little bit of black to the white, you'd be able to mix the grey colour without too much paint.

Secondly, acrylic, the binder or glue in acrylic paints, is slightly milky while the paint is still wet, so when acrylic paints dry they will become slightly darker and brighter.

When painting with acrylics, a simple wet palette can be made from an ordinary house tile, a kitchen cloth (the thin sponge variety are best) and some greaseproof paper. Wet the sponge, and lay it on the tile. Then take a sheet of greaseproof paper and wrap over the sponge and the tile.

The tile keeps the sponge cool, and the moisture from the sponge slowly seeps up to keep the paints moist. This can be kept in a shallow Tupperware-type container in the fridge with the lid on until you want to use your paints again. If you're still having trouble, keep a spray bottle of water handy and regularly spray a mist of water over the paints.

HINT: You will be able to use a variety of surfaces as palettes. These could include a traditional wooden palette, an ice cream container lid, or even a piece of glass. If you are going to be painting in a hot, humid location you may want to consider a wet palette.



Brush mixing is just using your brush to scoop up a bit of paint from each colour and blending them on your palette.

Sometimes artists will refer to 'using a dirty brush' to mix a colour. All this means is, don't wash the paint out of your brush before putting a new colour on. Leaving a little of the original colour on your brush will help to carry it through your whole design.

Another way to mix colour is to use a palette knife. Whenever you are mixing larger amounts of colour on your palette with a palette knife, try to mix towards the centre of the puddle of paint. If you pull it out from the centre, you will find you end up with a lot less paint, and that the paint you do have will dry out a lot more quickly.

If you are trying to mix a particular colour from a formula (or recipe) you need to try and make sure you get the ratios correct. A ratio tells you how much of each paint to use. The easiest way of mixing paint this way is to put out small dots of each colour. Instead of trying to guess what 4 parts of Yellow Light Hansa is compared to 1 part, you would just put 4 little dots of Yellow Light Hansa and 1 little dot of Phthalo Blue beside each other. Of course, you would need these dots to be of the same size for this to work.



Brush Mixing



Using a palette knife
Correct mixing



Using a palette knife
Incorrect mixing



Correct ratio mixing



Incorrect ratio mixing



An alternate way of mixing colour is to do it 'optically' by simply placing the colours beside each other on your painting rather than mixing them on your palette. Your eyes are tricked into mixing the paint for you. Pointillism is a style that uses a very structured version of this method; however, experienced painters will often use a simple form of this in their paintings.



All we need to do now is to start mixing some of these together.

ACTIVITY

Let's discover what happens when you mix two of the primary colours together, that is:

- Blue and Yellow
- Red and Yellow
- Red and Blue

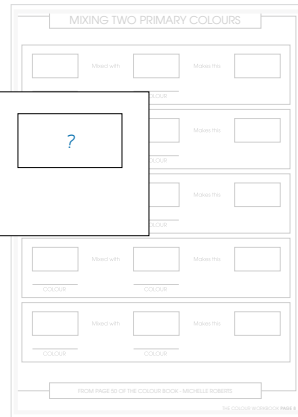
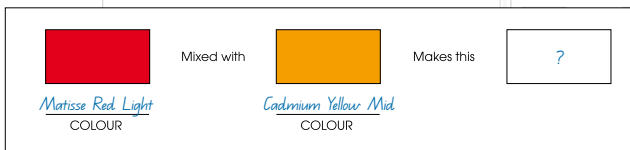
For this exercise, you will only need to 'brush mix' a sample of each colour to make the mix. However, if you want to practice mixing by using your palette knife, or using the ratio method, please do so.

1. Put a small amount of each of your primary colours at the top of your palette as shown. Make sure you leave yourself room to mix paints.



ACTIVITY

2. On the activity page, paint a sample of each of these colours you are about to mix BEFORE you mix them together and write the name of each of the colours underneath the painted sample.
3. Finally, mix together a small amount of each colour to find out what colour they make.



FROM PAGE 8 OF THE WORKBOOK

Try combinations with the different primary colours you have in your kit, making up a simple mixture recipe for each one.

Make sure you make a note of which two colours you have used to make these mixes – they will make a great source reference for your future painting.

These mixes are called secondary colours. A secondary colour is simply a colour made from two primary colours. That is, green, orange and purple.

The easiest way of remembering this is to think of adding two primary colours together as a simple sum. If you think of a primary colour being 1 and a secondary colour being 2 then it's easy to remember $1 + 1 = 2$.



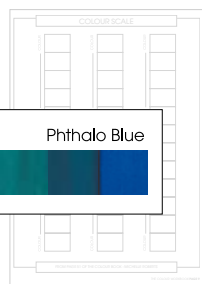
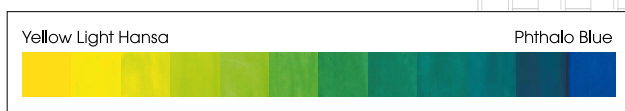
You would have noticed when doing this activity that sometimes there was a colour that dominated the colour mix. This would have been especially true when mixing with Phthalo Blue. Phthalo Blue is a darker colour, and it has a lot of pigment in the paint. Compare the strength of the mixes made with Phthalo Blue to those made with Ultramarine Blue.

This means, when mixing colours, you don't always mix a 1:1 ratio to get the secondary colour, especially when there's a dominant colour involved.

For this activity, we will be making a colour scale between selected primary colours. We will start with Yellow Light Hansa and Phthalo Blue.

ACTIVITY

1. Start at the left (yellow) side of the scale and paint in a square of pure Yellow Light Hansa.
2. Gradually add small amounts of Phthalo Blue to the yellow to create, firstly, shades of yellow green
3. Paint a swatch of each new colour you create on the scale working your way towards the Phthalo Blue.
4. In the last square, paint a sample of pure Phthalo Blue.



Now create a colour scale for these:

Cadmium Yellow Medium ----- Matisse Red Light
Ultramarine Blue ----- Brilliant Alizarine

FROM PAGE 9 OF THE WORKBOOK



On each of these colour scales, work out which one you would consider being the true secondary colour (green, orange or purple). Were any of these in the middle? Were any all the way over to one side?

Yellow Light Hansa

Phthalo Blue



The ones that are over to one side probably have a dominant colour.

If you have any that are this way, readjust the way you are mixing the paint by adding smaller amounts to the mixture initially. As the colour starts to become more like the dominant colour, then you will need to start adding this colour in slightly larger amounts.

On your colour information chart you may want to make a note of these colours as dominant, so that when you use them in a mix, you remember to add them sparingly.

The colours that fall between the Primary and the Secondary colours on this colour scale are Tertiary colours ($1 + 2 = 3$). You probably have tubes of paint in these colours. Some of the common names for these tertiary colours are Turquoise, Viridian, Violet and Magenta.

It's important when mixing colours to understand the range of colour you can achieve, and how adding more, or less, of a particular colour affects this. Did you notice how you were able to create a greater range of colours using blue and yellow than you could using blue and red?

This has a lot to do with the difference in lightness and darkness of the two colours being used, but we'll talk more about that later on.

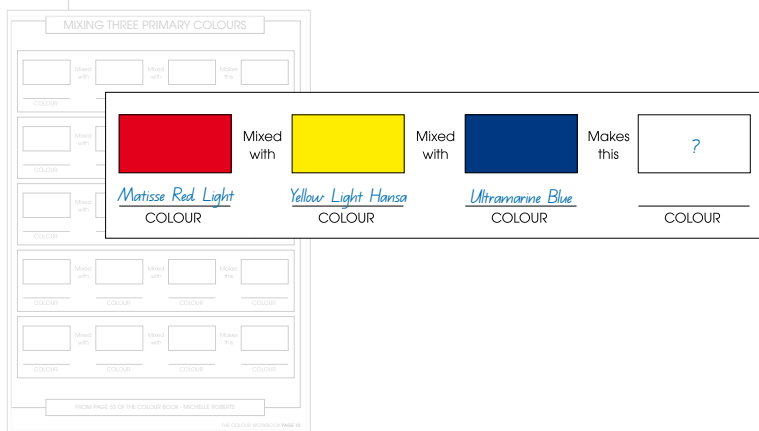


MIXING 3 PRIMARY COLOURS

Let's see what happens when you mix 3 of the primary colours, that is, Red, Blue and Yellow.

ACTIVITY

1. Put a small amount of each of the primary colours at the top of your palette. Make sure you leave yourself room to mix paints.
2. On the activity page, paint a sample of each of these colours you are about to mix BEFORE you mix them together and write the name of each of the colours underneath the painted sample.
3. Finally, mix together a small amount of each colour to find out what colour they make. Make sure you create a mix that includes a red, a blue and a yellow.



FROM PAGE 10 OF THE WORKBOOK

HINT: Remember what colours are more dominant, and add less of these.



Let's recap.

You now know that:

- Yellow + Blue = Green
- Blue + Red = Purple
- Red + Yellow = Orange

You have also learnt that:

- Red + Blue + Yellow = Brown

So, it makes sense that:

- Green + Red = Brown
- Purple + Yellow = Brown
- Orange + Blue = Brown

So how does this help you, and how will this affect you when you are trying to mix colours?

Have another look at some of the pigments your paints are made of. Are there any that have more than one pigment colour? It's important to understand how mixing some colours will give you brown, even if the 'rules' would suggest another colour. Just because a colour is called Beautiful Blue, it doesn't mean that there are only blue pigments in the mixture. A little knowledge can save you a lot of heartache.

Let's start putting what we know all together.



CHAPTER EIGHT

The basic colour wheel



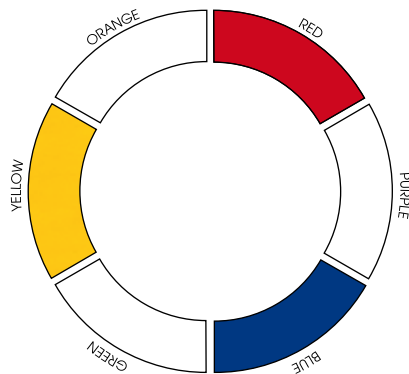
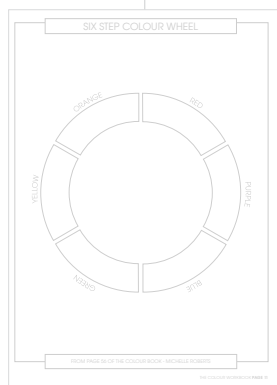
BASIC COLOUR WHEEL

Colour wheels have traditionally been used to help understand basic colour theory. They also help when determining colour schemes later on in the book. Often artists will work from a limited palette of colours, preferring to mix their colours from a basic few. In this exercise, you will be creating various palettes of colours.

ACTIVITY

1. Choose one of each of the primary colours, red, blue and yellow.
2. On the colour wheel, paint in the segments for each of these colours. There should be a space between each of these colours.
3. Name each of the primary colours on your colour wheel with the name and brand of the paint that you used.
4. Make a mix of each of the primary colours to either side of the space, remembering to allow for any dominant colours in the mixture, and paint these colours in the spaces labelled Green, Purple and Orange.

Try choosing different red, blues and yellow paint to see what different colour combinations you get. Create new colour wheels with these.



FROM PAGE 11 OF THE WORKBOOK

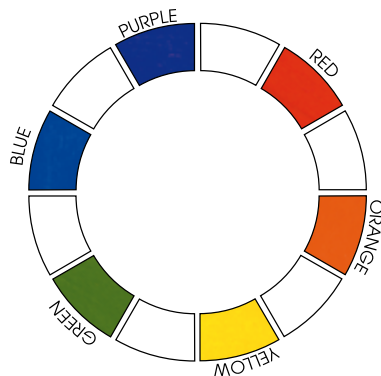


12 STEP COLOUR WHEEL

You now have a colour wheel that has all the primary and secondary colours, but what about the tertiary colours? Let's expand on our basic colour wheel to add a tertiary between the primary and secondary colours.

ACTIVITY

1. Choose one of each of the primary colours, red, blue and yellow.
2. On the colour wheel, paint in the segments for each of these colours. There should be three spaces between each of these colours.
3. Name each of the primary colours on your colour wheel with the name and brand of the paint that you used.
4. Make a mix of each of the primary colours as you did for the previous activity, remembering to allow for any dominant colours in the mixture, and paint these colours in the spaces labelled Green, Purple and Orange.
5. In the space between the primary and the secondary colours (i.e. between Blue and Green) mix a colour that would be between these two on the colour scale activity you completed earlier. (i.e. between Blue and Green, you will mix a Turquoise colour, between Red and Orange, it will be simply a reddy-orange as opposed to a yellowy-orange on the other side.)



FROM PAGE 12 OF THE WORKBOOK



Try choosing different red, blues and yellow paint to see what different colour combinations you get. Create new colour wheels with these.

You can also try these palettes:

OLD MASTER PALETTE

Yellow Oxide, Ultramarine Blue and Burnt Sienna.

This is an excellent traditional portrait palette. By adding white to the browns you can make simple flesh tones, using the earthy greens and violets for shadows. This is a simple palette for beginners and is also useful for landscapes. As the name suggests, the wheel evokes an ambience of the Old Masters.

IMPRESSIONIST PALETTE

Naphthol Scarlet, Cadmium Yellow Medium, Ultramarine Blue.

This is a warm palette with brilliant oranges, subtle violets and earthy greens. For more brilliant greens, use Phthalo Blue which isn't as 'reddish' as Ultramarine Blue. This is a more vibrant and clear palette than the Old Masters or Modern Palette.

MODERN PALETTE

Naphthol Scarlet, Yellow Light Hansa and Phthalo Blue.

A cool, moody palette. The Phthalo Blue and Yellow Light Hansa produce brilliant greens and turquoises for seascapes, while the Yellow Light Hansa and Naphthol Scarlet produce greyer oranges for earth and flesh tones. The grey blue violets are excellent for backgrounds in landscapes. The vibrant colours produced make this an excellent expressionist still life palette, using bold, free brush and knife strokes.

As you can see, there are no wrong palettes, just different uses for different palettes.



CHAPTER NINE

Hue, tone & intensity



THREE COMPONENTS OF COLOUR – HUE, TONE AND INTENSITY

Up to now, we have only been looking at one component of colour – its hue.

HUE

Hue is simply another name for colour. Phthalo Green, Spruce, Alpine Green, Hooker's Green are all of the same hue, being green. If I was to ask you what colour it was, you'd tell me it was green.

INTENSITY

Intensity is how bright or how strong a colour is. You would talk about intense colours as being vivid, vibrant or pure. When colours have their complementary colour, or black or white, mixed with them, they will become noticeably less intense.

This is important when painting because you cannot add intensity to a colour, you can only take it away. This is why paint manufacturers provide a lot of different colours already in tube form for you, because whenever you mix colours you will lose some of the intensity.

TONE

Tone is basically the 'lightness' or 'darkness' of a colour. Tone in black and white is very easy to distinguish, black is dark, white is light. There is a distinct 'tonal range' between black and white; this is commonly known as a *greyscale* or a value scale. Generally there are nine or eleven steps with black being zero or one and white being nine or ten. Value, or tone, will give a painting depth and definition. Without tone a painting will appear flat, no matter which colours you use.

Some colours are naturally lighter than others. If I was to ask you which colour was lighter, yellow or blue, you would probably tell me that most yellows are lighter than blue. But within these hues there are differences in tone also. If you were to compare Cadmium Yellow Medium with Yellow Light Hansa, you would see that Cadmium Yellow Medium is 'darker'.

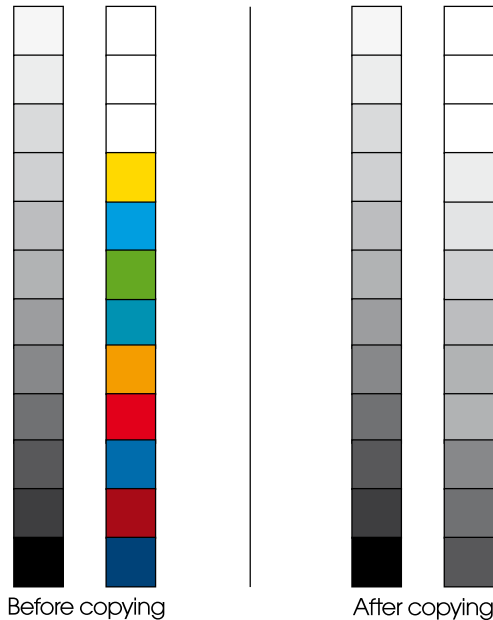
But where do the other colours fit on this tonal range? Let's find out...



TONE / GREYSCALE

ACTIVITY

1. Take a selection of colours that you consider to be light and dark.
2. Using the first column of the chart, paint a patch of each colour beside the grey square that you consider matches the lightness or darkness of the colour of the paint.
3. When you have finished, photocopy the whole page.
4. What you're looking at now is the tone (lightness or darkness) of the colour you have painted. Are any in the wrong place? Try to re-order them in the next column.
5. Repeat until you are happy that you have the colours in tonal order.

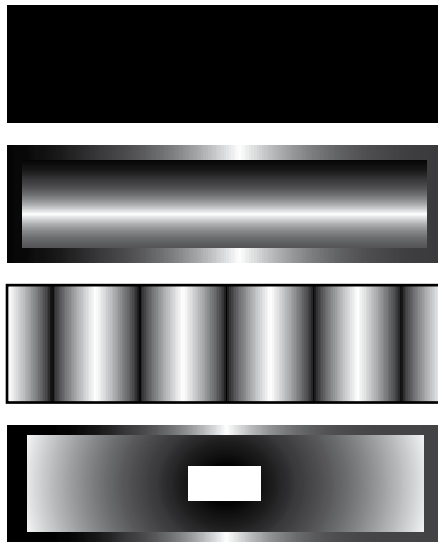


FROM PAGE 13 OF THE WORKBOOK



In a painting, you can use darker tones to help make an object recede, and lighter tones to make parts of an object appear to come forward. You can also use dramatic changes in tone to give a painting emphasis.

Have a look at these rectangles. Each has used dark and light tones to create an effect. Without a change in tone each of these would seem very two dimensional, but with the addition of some lighter greys and whites they become three dimensional.



You can also have a tonal range of a single colour or hue. This can be simply made by adding black to make the colour darker, or adding white to make it lighter. Or, as many artists prefer to do, you can add a small amount of a complementary colour to create a darker tone of colour.

If we didn't use tone and contrast in our paintings, they would look dull and lifeless. We also use a variety of tones to make objects appear three dimensional.

Remember the apple that we looked at before? It had a range of 'tones' in green, so how do we make these colours?



TINTS, SHADES, GREYS AND COMPLEMENTARY MIXES

So far we've only been working with very intense colours in our colour wheels, but of course when painting, you will often want to use colours that are more muted, or lighter to create different moods. You also need to be able to create highlights and shadows, and use different colours to give emphasis and direction in the composition of your painting. To do this, you also need to know how to mix tints, shades, greys and complementary colours.

TINTS AND SHADES

Tints are very simply the addition of white to a colour, while shades are the addition of black. The amount of black or white you can add to a colour to effect a visual change will depend on the tonal value of the colour, and the intensity of the colour. Colours with a high tinting strength are very strong colours and can overpower mixtures, as we found with Phthalo Blue when we first attempted making a colour scale. These colours will withstand considerable additions of white. Colours with a low tinting strength will produce a smaller range of colour changes. Also, because black is a staining colour, or has a high tinting strength, you only need to add very small amounts to colours to change them.

Let's try this theory:

TINTS

ACTIVITY

1. In the first box paint a square of Cadmium Yellow Medium.
2. Mix in a small amount of Titanium White and paint in the next square.
3. Continue until there is little to no visible change in colour.
4. On the worksheet write down the name of the paint and write down the word "tint" in the type section.
5. Repeat with Yellow Light Hansa, Matisse Red Light, Brilliant Alizarine, Phthalo Blue and Ultramarine Blue.



Matisse Red Light Tint

FROM PAGE 14 OF THE WORKBOOK



Compare the range of colours you were able to achieve using the base colour. Which colour had the highest tinting strength? Which ones had a low tinting strength?

SHADE

ACTIVITY

1. In the first box paint a square of Cadmium Yellow Medium.
2. Mix in a very small amount of Mars Black and paint in the next square.
3. Repeat until there is little to no visible change in colour.
4. On the worksheet write down the name of the paint and write down the word "tint" in the type section.
5. Repeat with Yellow Light Hansa, Matisse Red Light,
6. Brilliant Alizarine, Phthalo Blue and Ultramarine Blue.



Cadmium Yellow Medium - Shade

FROM PAGE 15 OF THE WORKBOOK

Did some of these mixes surprise you? Did some look like familiar colours, such as Burgundy, or Antique Gold? Which colours changed the most?



GREY

ACTIVITY

1. On a separate area of your palette, mix a grey by adding a small amount of Mars Black to Titanium White. This should be a low level grey.
2. In the first box paint a square of Cadmium Yellow Medium.
3. Mix in a small amount of your grey mix and paint in the next square.
4. Repeat until there is little to no visible change in colour.
5. On the worksheet write down the name of the paint and write down the word "tint" in the type section.
6. Repeat with Yellow Light Hansa, Matisse Red Light, Brilliant Alizarine, Phthalo Blue and Ultramarine Blue.



FROM PAGE 16 OF THE WORKBOOK

When adding grey to a colour you immediately reduce the intensity and increase the opacity of each colour. You would notice also, if you look down the rows of colours you have created, that they seem to harmonise with each other more. Try covering up all the columns except one to see how much the colours start to soften in together. The more vivid, or intense colours seem to compete for your attention, but the greyer colours seem happy to co-exist.



COMPLEMENTARY COLOURS

ACTIVITY

1. In the first box paint a square of Cadmium Yellow Medium.
2. Mix in a small amount of the complementary colour. This is the colour that is directly opposite on the colour wheel. i.e. red's complementary is green, purple's is yellow, and blue's is orange, or vice versa.
3. Repeat until there is little to no visible change in colour.
4. On the worksheet write down the name of the paint and write down the word "tint" in the type section.
5. Repeat with Yellow Light Hansa, Matisse Red Light, Brilliant Alizarine, Phthalo Blue and Ultramarine Blue.



Blue - Orange Complementary

FROM PAGE 17 OF THE WORKBOOK

Many artists do not like to use black in their paintings, preferring to make the darker shades by mixing colours with their complementaries.

Now you have a whole other range of colours you can place on your colour wheel, but before we do, let's also look at the different colours we are using for our mixtures.



CHAPTER TEN



Discovering colour bias

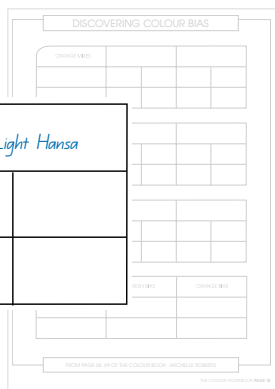


DISCOVERING COLOUR BIAS

ACTIVITY

- Using the tables shown below, paint swatches of each of the combinations of the following six primary colours:
 - Ultramarine Blue
 - Phthalo Blue
 - Cadmium Yellow Medium
 - Yellow Light Hansa
 - Brilliant Alizarine
 - Cad Red Medium
- In the first box, paint a solid version of the secondary colour mix
- In the second box, paint a wash of the secondary colour mix.

ORANGE MIXES	<i>Cadmium Yellow Medium</i>	<i>Yellow Light Hansa</i>		
<i>Matisse Red Lt</i>				
<i>Brilliant Aliz.</i>				



FROM PAGE 18 OF THE WORKBOOK

In theory, you should be able to make all the colours you need from three basic primary colours. In reality, each of these primary colours has a *bias*, or preference for creating a particular secondary colour. For example, if you were to paint a patch of each of the yellows beside each other, you would notice that Yellow Light Hansa has a green tinge to it and Cadmium Yellow Medium has an orange tinge.



This means that Cadmium Yellow Medium makes a very good orange, but when you use it to make a green the colour becomes muddy and not as intense, while Yellow Light Hansa can make a brilliant green, but doesn't mix as well to make an orange.

Understanding this bias will help you to mix the types of colours you need when creating your own work of art.

ACTIVITY

1. Look at your secondary colour mixes from the previous activity.
2. Determine which are the most intense, or vivid mixes. i.e. which are the brightest greens, or the most vivid oranges.
3. Using the table below, write the colours that make the most intense mixes under their secondary colour.
4. If you have done this correctly, you each of the six primary colours should be listed once.

PURPLE BIAS	GREEN BIAS	ORANGE BIAS
?	?	?
?	?	?

FROM PAGE 18 OF THE COLOUR WORKBOOK



CHAPTER ELEVEN

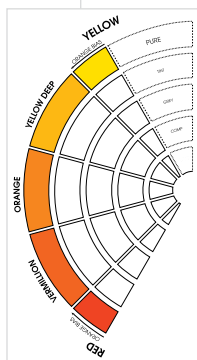
Bias Colour Wheel



BIAS COLOUR WHEEL

This activity is quite long, and you may want to work one section of the wheel at a time, completing each of the rims before moving onto the next section.

ACTIVITY



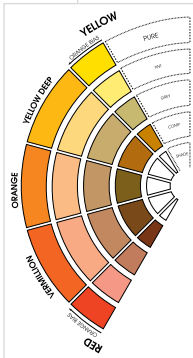
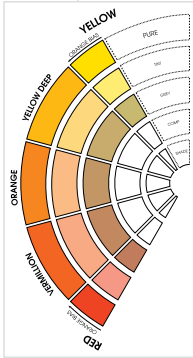
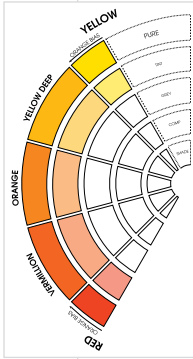
OUTER RIM

(Please make sure you create extra of each of the mixes required for this rim, as you will be using them for each of the five rims in this exercise.)

1. Using page 18 of the Workbook as a guide, choose a primary colour from each of the bias colours listed. You will have a total of six colours, being 2 x yellow, 2 x red and 2 x blue.
2. On your colour wheel, write the name and brand of the primary colours you chose.
3. Place a moderate amount of Yellow (orange bias) and Red (orange bias) on your palette. *It is advisable to work one section at a time, so for this example, we will be creating the Yellow - Red section. You will notice that the colour wheel has divided each primary colour into two sections to allow you to create specialised bias colour mixes.*
4. Paint the corresponding Yellow (orange bias) and Red (orange bias) sections of your colour wheel. *You will notice on the colour wheel that these have an arrow pointing towards orange.*
5. Using the Yellow and the Red create a mid range orange mix on your palette and use this to paint the corresponding Orange section of your colour wheel.
6. In the spaces between the primary and the secondary colours (i.e. between Yellow and Orange) create a mix of tertiary colour that would be between these two and paint in this section.
7. You should now have a five step colour scale from one primary colour to the next.

FROM PAGE 19 OF THE WORKBOOK

ACTIVITY



SECOND RIM

1. Using the colours you mixed for the outer rim, create a tint of each colour by adding Titanium White.
2. Paint this into the segment underneath the original mixture on the second rim of the colour wheel.

THIRD RIM

1. On a separate area of your palette, mix a grey by adding a small amount of Mars Black to Titanium White. This should be a low level grey.
2. Using the colours you mixed for the outer rim, mix in some of this grey mix.
3. Paint this into the segment underneath the second mixture on the third rim of the colour wheel.

FOURTH RIM

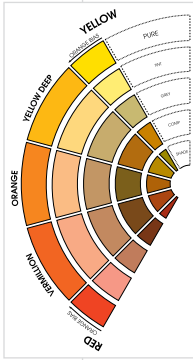
(You may wish to complete this rim last as it relies on mixtures from other sections of your colour wheel - if so, simply skip and come back to this rim when all 3 sections are completed.)

1. Using the colours you mixed for the outer rim, create a complementary shade of each colour by adding a small amount of the mixture on the opposite side of the colour wheel.
2. Paint this into the segment underneath the third mixture on the fourth rim of the colour wheel.

FROM PAGE 19 OF THE WORKBOOK



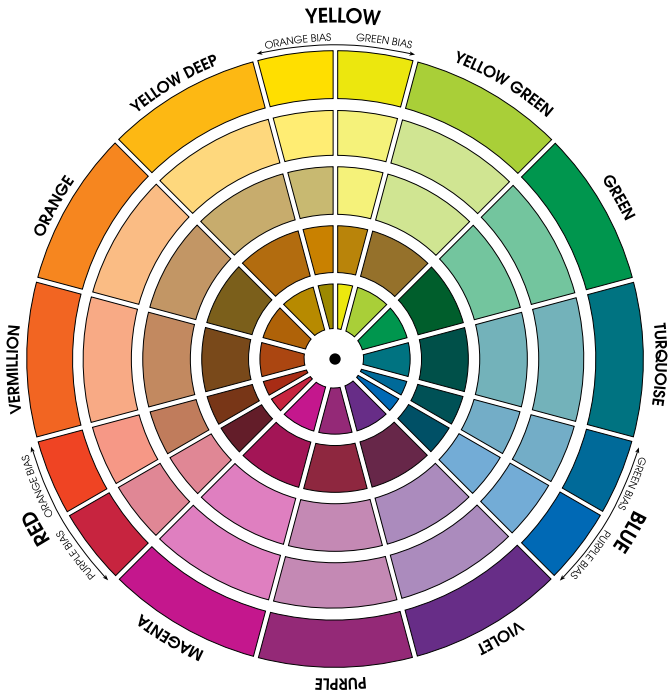
ACTIVITY



FIFTH RIM

1. Using the colours you mixed for the outer rim, create a shade of each colour by adding a small amount of black.
2. Paint this into the segment underneath the fourth mixture on the fifth rim of the colour wheel.

Repeat these steps for the other primary colours until you have completed each segment of the wheel, creating something similar to the one below.



FROM PAGE 19 OF THE WORKBOOK

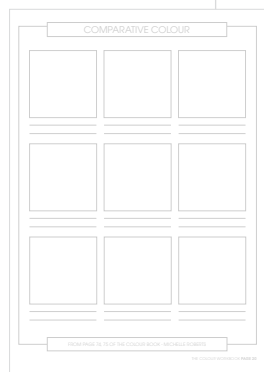
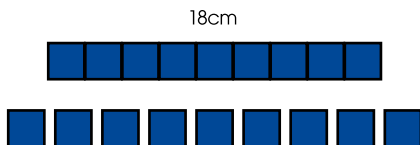


COMPARATIVE COLOUR

One of the other elements you will need to consider when you are trying to use colours for a particular effect in a painting is to consider the effects of other colours on the colour you want to use.

ACTIVITY

1. Paint each of the 6cm squares on the activity sheet a different colour, being:
 - Ultramarine Blue
 - Phthalo Blue
 - Cadmium Yellow Medium
 - Yellow Light Hansa
 - Matisse Red Light
 - Brilliant Alizarine
 - Grey (Mars Black and Titanium White mix)
 - Mars Black
 - Leave one white
2. Cut six strips of paper measuring 18cm x 2cm
3. Paint one strip each of:
 - Ultramarine Blue
 - Phthalo Blue
 - Cadmium Yellow Medium
 - Yellow Light Hansa
 - Matisse Red Light
 - Brilliant Alizarine
4. Cut the strips into 9 squares measuring 2cmx2cm.
5. Write the initials of each colour on the back of the squares as you cut them out.

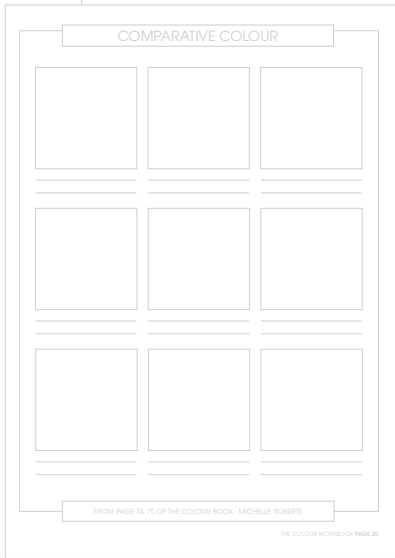


FROM PAGE 20 OF THE WORKBOOK



ACTIVITY

6. Take all the Yellow Light Hansa squares, and place one on each of the 6cm square colours.
7. Look at the squares of colour. Each has the same coloured centre with a second colour surrounding it. How does the surrounding colour change the appearance of the centre colour? Which one makes the colour look brighter? Duller? Greener, bluer, redder?
8. Repeat using the other squares.



Your mind KNOWS that they are the same colour, but it still sees them differently. The same thing will happen when you use colours in your palette depending on which colour choices you make.



FROM PAGE 20 OF THE WORKBOOK



CHAPTER TWELVE

Colour Schemes

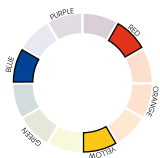


COLOUR SCHEMES

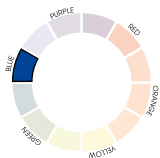
Colours affect the mood of a painting considerably. When you see coloured images you will often associate a feeling. You may think of a garden scene as calming, or a clown's costume as cheerful. Others may be drab, or a cacophony of colour. You cannot say that one particular colour makes this happen; it's the way colours interact with each other. These colour combinations are called *colour schemes*.

Understanding how these colour schemes work will help artists to capture feelings in their paintings. However, as every person is different, so is their reaction to colour combinations.

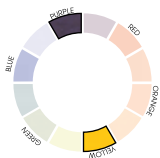
Using the colour wheel, it is easy to see how the colour schemes fit into a certain style, depending on where the colours are placed on the wheel. Let's look at some of these schemes. For the schemes mentioned below, we are using a basic colour wheel with primary, secondary and tertiary colours. You can extend your colour wheel to include a greater range of these colours (such as tints and shades) when you are painting. They will still work in the same manner.



TRIADIC – this is where the colours are evenly placed in a triangular shape around the wheel. The primary grouping of Red, Blue and Yellow is a triadic scheme, as is the grouping of the secondary colours, Orange, Purple, and Green.

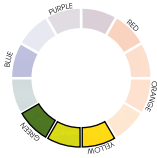


MONOCHROMATIC – Using a single colour and its various shades and tints.



COMPLEMENTARY – Colours that appear directly opposite each other on the colour wheel. The most famous of this combination is Red and Green, as often seen in Christmas designs.

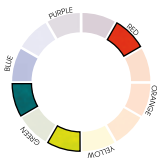




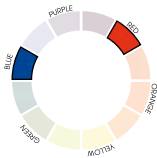
ANALOGOUS – This is a grouping of colours that are beside each other on the colour wheel, for example, Red-Orange, Orange and Yellow-Orange. The easiest way to use this scheme is to pick a colour and choose one or two either side of it.



MUTUAL COMPLEMENTS – A combination of a complementary scheme and an analogous scheme. To do this, you simply choose your original colour, and then select its complementary and the complementary colour's two neighbours. Alternatively, select a group of three analogous colours, and then the complementary colour, opposite the centre of the group.



SPLIT COMPLEMENTARY – Choose one colour and then the two colours that directly adjoin the complementary to that colour. For example, if Blue was your first choice of colour, its complementary would be Orange. The colours on either side of Orange are Yellow-Orange and Red-Orange, so the scheme would combine Blue, Yellow-Orange, and Red-Orange.



CONTRASTING – A contrasting colour is one that has three colours between it and the original colour, for example, Blue and Red. If you are using a larger colour wheel, these are two of the colours from a triadic colour scheme.



DOUBLE SPLIT COMPLEMENTARY – The same as a split complementary scheme, but also choosing the two colours that adjoin the original colour. So, with Blue as our original choice, you would choose the two colours beside Blue, and the two colours beside Blue's complementary colour Orange. Our Scheme would end up with Blue-Green, Blue-Purple, Yellow-Orange and Red-Orange.

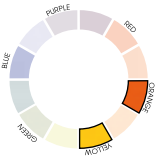




TETRAD – A contrast of four or more colours on the colour wheel. It can be created by drawing a square or rectangle. The scheme will always have two sets of complementary colours. A double split complementary scheme may also be a tetrad scheme.

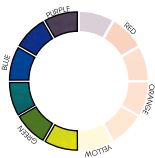


POLYCHROMATIC – All of the 12 colours are used.

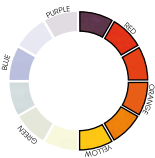


DIAD – Two colours that are two colours apart on the colour wheel, for example, Red and Orange. Choose your first colour, leave a space and then choose your second colour.

It should be noted that, when you paint colours of the same hue next to each other, some will appear cooler or warmer, depending on their colour bias. For example, Matisse Red Light will seem warmer than Brilliant Alizarine.



COOL - This is a colour scheme that uses all cool colours. Cool colours are basically those that fall into the purple-blue-green range, including Yellow Green.



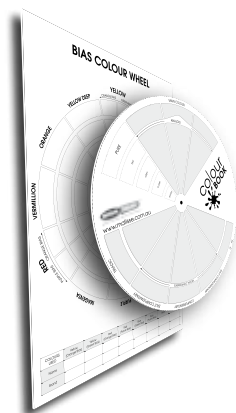
WARM – This is a colour scheme that uses all warm colours. Warm colours are basically those that fall into the red-orange-yellow range. However, there is some disagreement over which colours are warm or not. Generally you can split your colour wheel in half with Magenta and Yellow being the ends of the warm colour scheme range.



IDENTIFYING COLOUR SCHEMES

ACTIVITY

1. Copy the guides from the colour workbook, and carefully cut out along the dotted lines.
2. Cut out and remove all of the grey , and remove segments.
Hint: As you will be using this guide quite a lot, it would be beneficial to copy it onto thicker card.
2. Pierce a hole through the guide in the centre where it has been marked.
3. Pierce a similar hole in the centre of the Bias Colour Wheel that was painted earlier in the bias colour wheel activity.
4. Add split ring from the front to attach one of the guides on top of the bias colour wheel, ensuring that the wedges of the wheel and guide match.
5. Turn the guide to show your chosen colour in the main colour window.
6. From this, follow the guide to discover what the complementary colour is.
7. Experiment with the guides to see if you discover other colour scheme combinations.



FROM PAGE 21 & 22 OF THE WORKBOOK

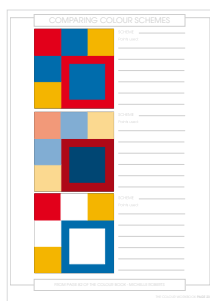


COMPARING COLOUR SCHEMES

Let's try some of these schemes in action now. *You will need multiple copies of pages 23-25 of the Colour Workbook for this exercise.*

ACTIVITY

1. Using the bias colour wheel and guides from pages 20-22 of the Colour Workbook, select a triadic colour scheme.
2. Create mixes of these colours, if not already available, using only the bias primary colours as shown in Chapter 11.
3. Using these three colours, paint in the areas of the 'Comparing Colour Schemes' worksheet from page 23 of the Colour Workbook.
4. Beside your example, write the name of the colour scheme, and the paints used to create this scheme (include brand names if you are using multiple brands).
5. If you have created a mix of colour, record the ratio of each paint used, for example Yellow Light Hansa: Phthalo Blue (2:1) and the approximate percentage this colour makes up of the total design.
6. Create alternatives of this scheme by:
 - Using tints
 - Using shades
 - Using tones
 - Changing the location of the colours in the samples
 - Including black or white areas



Note: You may want to plot these colour schemes using the guide on page 26 of the Colour Workbook at this stage. Please refer to the instructions on page 83 before commencing

7. Changing the colour scheme, repeat this exercise with the worksheets on pages 23-25 of the Colour Workbook making sure you complete one worksheet for each of colour schemes discussed at the beginning of this chapter.

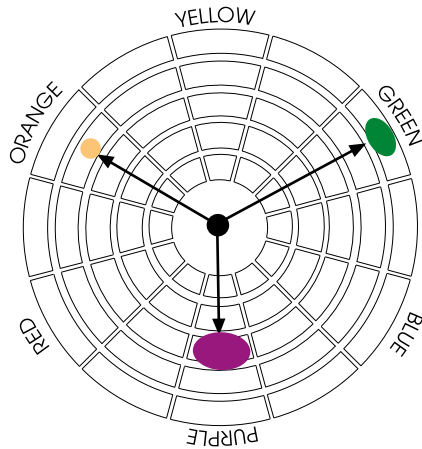
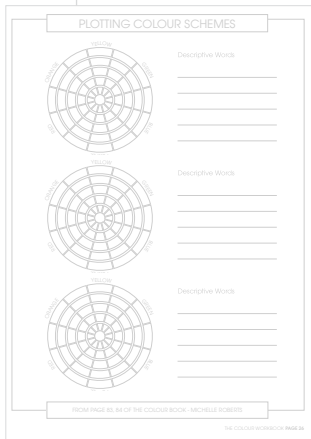
FROM PAGE 23, 24 & 25 OF THE WORKBOOK

PLOTTING COLOUR SCHEMES

To keep track of how the colours you have used fit into the colour schemes we've learnt; let's plot each of the colour schemes:

ACTIVITY

1. On the blank colour wheel, paint a dot of the colours you created in the appropriate locations, remembering if you added a tint, shade, grey or complementary, to plot it in the segment that would correspond to that colour.
2. If a colour is dominant in your colour scheme, make that colour a larger dot than other colours.
3. Draw arrows that show the relationship of the colours of your scheme.



FROM PAGE 26 OF THE WORKBOOK



DESCRIBING YOUR COLOUR SCHEME

Each colour scheme you create, or indeed see, will create some sort of mood or feeling that is particular to you. You may consider a painting as fresh and bright while others may see the same paintings as lurid and overdone.

Colours may also have a cultural or social significance. When you see certain colour schemes they may remind you of your favourite sporting team, a religious event such as Christmas, evoke feelings of nationalism, or simply remind you of a friend.

The following exercise is to get you to think about what each colour scheme means to you. This will help you to replicate a mood, or capture an emotion when creating your own artworks.

ACTIVITY

1. Beside each colour scheme combination, write some descriptive words for each scheme.

PLOTTING COLOUR SCHEMES

RED GREEN

Descriptive Words

RED GREEN

Descriptive Words

RED GREEN

Descriptive Words

FROM PAGE 85 86 OF THE COLOUR BOOK - MICHELLE ROBERTS

THE COLOUR WORKBOOK PAGE 26

Descriptive Words

funky

modern

snazzy

bright

FROM PAGE 26 OF THE WORKBOOK





CREATING YOUR OWN COLOUR SCHEME

Colour schemes are used all around you. We are surrounded by items where colours have been used to convey emotion, to symbolise feelings, and to generate responses from us. You can find these colours in a variety of items, not just works of art. Let's explore some other colour schemes:

ACTIVITY

1. Collect samples of:
Wrapping paper, cards, packaging, advertisements, brochures, patterned material, pictures of landscapes, pictures of seascapes photos of flowers, copies of favourite paintings, pictures of team uniforms, pictures of flags and websites.
2. Glue each of these samples into the area shown in the workbook on page 27, making sure you select a large enough sample to be able to see the whole range of colours used.
3. Under each of the samples write down some words to describe the colour scheme

CREATING COLOUR SCHEMES



Descriptive Words

Colour Scheme

FROM PAGE 26, 27 OF THE COLOUR BOOK - MICHELLE ROBERTS

THE COLOUR BOOK PAGE 27




FROM PAGE 27 OF THE WORKBOOK



ACTIVITY

4. Using whatever paints you have available and the knowledge about colour mixes you have gained, create mixes of the colours used in the colour scheme of your sample.
5. Under the heading Colours in Scheme, paint a swatch of the colour mixture you created.
6. Beside this swatch, write down the recipe you used to create the colour, remember to include the:
 - name of paint
 - brand of paint
 - ratio of the mixtures.
7. Include beside each swatch, the approximate percentage of each colour used in the scheme. i.e Cadmium Yellow Medium : Titanium White 2:1 70%

CREATING COLOUR SCHEMES




Descriptive Words

Colours in Scheme

Matisse Red Light 50%

Ultramarine Blue 35%

Cadmium Yellow Medium 15%

Titanium White 70%

FROM PAGE 26, 28, 31 OF THE COLOUR BOOK MICHELLE SHERBET

SEE COLOUR WORKBOOK PAGE 27

Matisse Red Light 50%

Ultramarine Blue 35%

Cadmium Yellow Medium 15%

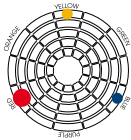
FROM PAGE 27 OF THE WORKBOOK



ACTIVITY

8. Plot the colours from your sample scheme on the colour wheel, making the dominant colour a larger dot.
9. Repeat using other source materials.


CREATING COLOUR SCHEMES





Descriptive Words:

Bright _____
Cheerful _____
Happy _____

Colours in Scheme:

 Medium Red Light mix

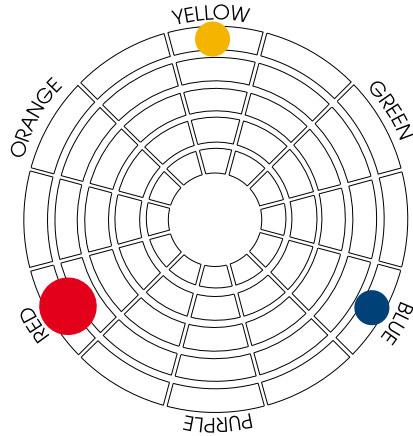
 Ultimate Blue mix

 Golden Yellow Medium mix

 _____

FROM PAGE 26, 27, 28 OF THE COLOUR BOOK MICHELLE HOBBS ©

THE COLOUR WORKBOOK PAGE 27



FROM PAGE 27 OF THE WORKBOOK



CONCLUSION

Congratulations on completing all the activities. Each of these will be a great resource for you to use in your future painting, and will also allow you to confidently mix your own colours, as well as creating great colour schemes. With recipes for each of the colour mixes, and your improved understanding of how colours work, you will be able to quickly create the colours you need for any artwork.

When you add any colours to your paint collection, remember to update your worksheets, and create new schemes and recipes from your new colours. The world is your palette!



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MICHELLE ROBERTS

The Colour Book - Keeping it Simple

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