



Choosing and buying paints

It is natural to assume that there is little difference in formulation between one brand of watercolour paint and another. In reality, the types and proportions of ingredients used by manufacturers differ, so there are often variations in consistency, colour strength, handling qualities, and even permanence between paint ranges.

It is worth trying out several brands of paint initially, as you may find that one suits your style of working better than another. You don't have to stick to one brand, however; good-quality watercolour paints are compatible across the ranges, and you may discover that certain individual colours perform better in one range than another. Viridian is a good example: in some brands it has a tendency to be gritty, while in other ranges it is perfectly smooth and clear.

Types of paint

Watercolours are available in two main forms – as small, compressed blocks of colour, which are called 'pans' or 'half pans' according to their size, and as moist colour in tubes. The formulations of tube and pan colours are very similar, and which



A selection of watercolours, including pans, half pans and tubes.



A watercolour box with small pans is light and portable, making it convenient for painting outdoors on location.



type you choose is a matter of personal preference. Traditional watercolour boxes containing pans are designed to be portable and are ideal for working outdoors on location. Good-quality equipment will repay you with many years of loyal service, so it is never worth trying to cut corners and make false economies when you are purchasing your painting materials.

Differences between brands

Be aware that colours that are mixtures of pigments, such as sap green and Payne's grey, may show a marked variation in hue between brands because they are formulated differently, so you should not expect a familiar colour name to be exactly the same in a different brand.



Using charts

When buying paints, don't depend on manufacturers' colour charts as a guide to a colour's appearance. Most of them are printed with inks that are not accurate representations of the colours. Handmade tint charts produced with actual paint on swatches of watercolour paper are more reliable; ask your art supplier if they have one you can refer to.



Pans and half pans



Preventing lids sticking
After a painting session, always remove any excess moisture from the pan colours with a damp sponge.

Pans and half pans

Pans and half pans slot neatly into their tailor-made, enamelled-metal boxes with special recesses to hold them in place and separate them, and a lid that doubles as a palette when opened out.

You can either buy boxes containing a range of preselected colours or, preferably, fill an empty box with your own choice of pans. Colour is released by stroking them with a wet brush; the wetter the brush, the lighter the tone obtained.

Pans are light and easy to use when you are painting out of doors. The colours are always in the same position in the box when you want them, and they do not leak. They are also very economical to use, with minimal wastage of paint. However, it takes a little effort to lift enough colour onto the brush. Paints become dirtied when you dart from one to the other without rinsing out your brush in between.

Care of pans

New pans tend to stick to the inside of the lid when you close the box; when you next open the lid, they may scatter out of order. It is good practice to remove any excess moisture from pans with a damp sponge after a painting session. Leave the box open in a warm room for a few hours to let the colours dry off before closing the lid, and dry the palette on the inside of the lid before closing it, or the paints will absorb the moisture and become sticky.

When using pan colours for the first time, wet them with a drop of water and leave until the water has been absorbed.

This will ensure easier paint release when the pans are stroked with the brush.

Improvised pans

Always replace the caps of tube colours immediately, otherwise the paint will harden in the tube. If this does happen, however, just cut open the tube and then you can use it as an improvised pan. So long as the paint is not so old that the gum-arabic binder has become insoluble, it should be possible to reconstitute the paint with some water.



Tubes

Tubes of colour are available in sizes ranging from 5–20ml (0.17–0.66 US fl oz), the standard size being 15ml (0.5 US fl oz). The smaller sizes are designed to fit into travelling watercolour boxes, but the bigger tubes are more economical for large-scale work. Tubes can be bought either singly or in pre-selected sets. Choosing your own tubes means that you can obtain precisely the colours you need.

Tube colours are more cumbersome than pans when painting out of doors, but they are more suitable for large-scale work in the studio. Because tube paint is more



fluid than the equivalent pan form, it is better for mixing large amounts of paint. Tubes can be more wasteful than pan colours, however, because it is easy to squeeze out more paint than you need, and the paint can leak and solidify if the cap is not replaced properly. Tube colour is also prone to settling, as old stock may harden or separate in the tube.

Care of tubes

Always clean the tube thread before you replace a cap, or it may stick – the gum arabic in the paint acts as a glue. Stuck caps can be opened either with pliers, or by holding the tube under a hot tap so that the cap expands and is easier to remove.

Do not throw away tubes of hard paint, as it is often possible to salvage the contents (see below for how to do this).

Salvaging tubes

It is possible to bring dried-up tube paint back to its former paste-like consistency. Just unroll the tube and then cut the end off before adding a few drops of water. Now let the hardened paint absorb the moisture, and rework it back to a paste.



Standard tube sizes

As shown here, tubes of colour are available in several standard sizes. Buy larger tubes of the colours you tend to use frequently.



Artists' paints
Containing high-quality pigments, artists' paints are more expensive than students' paints but create more professional results.

Grades of paint

There are two grades of watercolour paint: artists' (first quality) and students' (second quality). Although student-grade oil paints can be recommended for those beginners wishing to experiment without breaking the bank, student-grade watercolours are usually a false economy because they lack some of the subtlety and transparency of first-quality artists' paints.

Artist-quality paints, however, are more expensive, but they are worth the extra money, and, besides, you do not need to possess a truckload of paints in order to produce a good watercolour painting.

Having said this, the reputable paint manufacturers go to great lengths to maintain high standards at an economic price, and some artists will find students' colours perfectly acceptable for everyday

use. Certain student-grade colours may even have particular qualities which you prefer over the artists' equivalent. Thus, for example, if you want a bright green, you may find that a mixture of student-grade cobalt blue and cadmium yellow is better than the subtle green produced by the same mixture in artists' colours.

Artists' paints

Artist-quality watercolour paints contain a high proportion of good-quality, very finely ground, permanent pigments. The colours have the advantages of being transparent and luminous as well as mixing well, and there is a wide range to choose from.

Paints are often classified by 'series', which are usually numbered from 1 to 5, according to the availability and cost of the pigments. Generally, series 5 pigments are the most costly, and series 1 the least. Go into your local art supplies store and take a look at the paint ranges on display.

Students v. artists

Mixing student-grade cobalt blue and cadmium yellow may give you a brighter colour than that achieved by the same mixture in artists' colours.



Students' paints

Student-quality paints are usually labelled with a trade name, such as 'Cotman' (Winsor & Newton) or 'Georgian' (Daler-Rowney), and they should not be confused with the very cheap paints that are imported from the Far East and which should always be avoided.

Students' paints are sold at a uniform price, which offers the beginner an affordable yet versatile selection of colours. These paints do contain less pure pigment and more fillers and extenders than artists' paints, and many of the more expensive pigments, such as the cadmiums and cobalts, are substituted by cheaper alternatives. Such substitution is commonly indicated by the word 'hue', which is printed after the pigment name. The selection of colours available is usually smaller than that of the artists' ranges, so you may be limited to what colours you can use.



Permanence

Watercolour is as permanent as any other medium, provided that permanent colours are used. Therefore you should always check out the manufacturer's permanency rating, which is printed either on the tube label or in their catalogue. It is also important to use acid-free paper, and to protect watercolour paintings from bright sunlight, which can cause them to fade. An interesting experiment is to paint a patch of colour onto some paper, then cover half with a piece of card and place it in bright, indirect light for several weeks. When you remove the card, you can judge the colour loss. Most good-quality paints will show little or no fading.

Testing colour permanence

This colour chart of student-quality watercolours was left taped to a window with half of it exposed to northern light for four months. The effects of fading can be clearly seen.





Starter palette

These are the only colours that you will need to get you started in watercolours.

The ASTM (American Society for Testing and Materials) codes:

ASTM I: excellent lightfastness

ASTM II: very good lightfastness

ASTM III: not sufficiently lightfast

Basic watercolour palettes

The enormous range of colour pigments available makes it difficult to choose colours in a considered way. Who can resist those endless rows of gorgeous colours in the local art store? Of course, sets of good-quality watercolours are available in boxes, but these are expensive and they may contain far more colours than you need. A wiser course is to buy an empty box and then fill it with the colours of your own choice.

Starter palette

The colours shown here (right) will make a suitable starting selection for beginners. Colour is a highly subjective area, but these colours have been chosen for their all-round uses and permanence. It is also possible to mix a wide range of hues from them.



Cadmium yellow

Permanence excellent (ASTM I). An opaque colour with a warm and orange-yellow hue. Very clear and bright.

Cadmium red

Permanence excellent (ASTM I). An opaque colour with a bright vermilion tone. Very clear and bright.



Permanent rose

Permanence good (ASTM II). A transparent colour with a cool pinkish-red hue. A softer and more permanent alternative to alizarin crimson.



French ultramarine

Permanence excellent (ASTM I). An excellent transparent colour with a deep blue, violet-tinged hue. Makes a range of subtle greens when mixed with yellows.



Cobalt blue

Permanence excellent (ASTM I). A transparent colour with a soft blue hue. Cooler than French ultramarine.



Raw sienna

Permanence excellent (ASTM I). A transparent colour, excellent for layering washes, with a deep golden-yellow hue. A very lightfast and durable colour.



Burnt sienna

Permanence excellent (ASTM I). A transparent colour with a deep red-brown hue. Mixes well with other pigments, giving muted and subtle colours.



Burnt umber

Permanence excellent (ASTM I). A more transparent colour than raw umber, with a warm brown hue. This is excellent in mixtures of pigments.



Auxiliary palette
 These additional paints will supplement your starter palette and add colour and variety to your paintings.

Auxiliary palette

The seven colours that are shown here (right) have been selected as a range that will extend your starter palette (see pages 26–27) for watercolour painting. Apart from the additional possibilities that they provide you with for further mixing and experimentation, you will also find that they are extremely useful when you are painting on location outdoors, particularly for creating landscapes.

Preselected boxes

The typical shop-bought watercolour-pan box contains the colours listed below, but you can substitute or add new pans.



Cerulean blue
 Permanence excellent (ASTM I). A semi-transparent colour with a cool and greenish-blue hue. Ideal for painting skies.

Phthalocyanine blue
 Permanence good (ASTM II). A transparent colour with a deep, intense blue hue and a cold, sharp tone. A strong staining colour.



Cobalt violet

Permanence excellent (ASTM I). A transparent colour with a bright, red-violet hue. A pure violet that cannot be mixed or imitated.



Raw umber

Permanence excellent (ASTM I). A transparent colour with a greenish-brown hue. Useful in mixes.



Yellow ochre

Permanence excellent (ASTM I). A transparent colour with a soft golden-yellow hue. Has a calming effect on other colours.



Viridian

Permanence excellent (ASTM 1). A transparent colour with a cool bluish-green hue. Makes a good basis for warm, bright greens.



Venetian red

Permanence excellent (ASTM 1). A semi-opaque colour with a warm terracotta-red hue. Very useful for mixing flesh tones.

Brushes and accessories

Brushes are a very important element in watercolour painting, so it is always worth buying the best quality that you can afford. Indeed, cheap brushes are a false economy, as they do not perform well and quickly wear out. As well as brushes, you will need to buy palettes for mixing paints and some essential accessories.

A good brush

A good brush should have a generous 'belly', which is capable of holding plenty of colour, yet releases paint slowly and evenly. The brush should also point or edge well; when loaded with water, it should return to its original shape at the flick of the wrist.

The best brushes have a seamless ferrule made of cupro-plated nickel, which is strong and resistant to corrosion. Lower-grade brushes may have a plated ferrule with a wrapover join, but with repeated use this may tarnish or open up.

Sable

Sable hair is obtained from the tail of the sable marten, a relative of the mink. Sable brushes are undoubtedly always the best choice for

watercolour painting. They are expensive, sometimes alarmingly so, but they give the best results and, if cared for well, will last a lifetime. Sable hair tapers naturally to a fine point, so that brushes made from it have very delicate and precise tips which offer maximum control when painting details. Good-quality sable brushes are resilient yet responsive; they hold their shape well and do not shed their hairs, and have a spring and flexibility which produce lively, yet controlled brushstrokes.

Bristles

The bristles should point well. When loaded with water, they should return to their original shape.



Belly

This should hold a lot of colour, and release the paint slowly and evenly.

Ferrule

A seamless, cupro-plated nickel ferrule is strong and will not corrode.

Handle

This should be lacquered against water, chipping or cracking. Size, type and series are embossed on the handle.

Kolinsky sable

The very best sable is Kolinsky sable; it comes from the Kolinsky region of northern Siberia, where the harshness of the climate produces hair that is immensely strong, yet it is both supple and springy.

Red sable and pure sable

Brushes marked 'red sable' or 'pure sable' are made from selected non-Kolinsky hair. They do not have the spring and shape of Kolinsky, but they are perfectly adequate and more moderately priced.

However, you should beware of buying very cheap sable brushes just because they carry the name 'sable' – good-quality sable is springy and strong, while being at the same time fine and soft.



Brush making

Even today, brush making is largely a hand-skilled process, utilizing traditional components and natural materials.



Portable brushes

Small retractable brushes, with a 'travelling' set of pans, are ideal for making sketches when painting out of doors.

Squirrel hair

This is dark brown in colour, and it is much softer than sable. Although at first sight it is much cheaper than sable, squirrel-hair brushes are generally a false economy, as they do not tend to point very well and have little resilience. Squirrel-hair 'mop' brushes, however, retain a large amount of colour, allowing extensive washes to be laid quickly and evenly. This makes them an

economical alternative to large-size sable wash brushes and well worth buying.

Ox hair

This hair comes from the ear of a breed of cow and is strong and springy, but quite coarse in texture. Although it does not point well and is not suitable for making fine-pointed brushes, it is, however, a very good hair for use in square-cut brushes.



Components and materials used in brush making

Ox-hair brushes usually have a long hair-length, which increases their flexibility.

Goat hair

This type of hair is often used in traditional Oriental watercolour brushes. The hair is soft but sturdy, and goat-hair brushes hold a lot of water. This makes them ideal for laying broad washes and for working wet-in-wet.

Synthetic fibres

These brushes have been introduced in an attempt to achieve the performance of natural hair at a cheaper price. Sable-type synthetics are a golden-yellow colour and are made from polyester filaments with tapered ends, which imitate the real thing. They can be a little stiff and unsympathetic in comparison to natural hair, and have less colour-holding capacity, but synthetics in smaller sizes are a better choice for fine work than, say, squirrel hair.

Combination brushes

Some manufacturers offer brushes that combine synthetic hair with real sable, to achieve good colour-holding and pointing properties at a reasonable cost.

Kolinsky sable

The best of all watercolour-brush hair: very expensive, immensely strong, yet supple and springy.

Red or pure sable

More moderately priced, springy and strong, yet fine and soft.

Squirrel hair

Softer and cheaper than sable, this does not point well and has little resilience. A less-costly alternative to large-size sable wash brushes.

Ox hair

Strong and springy, but quite coarse, ox hair does not point very well. Good hair for square-cut brushes.

Goat hair

Soft but sturdy, goat hair is ideal for laying broad washes.

Synthetic fibres

Synthetic fibres can be a little stiff and unsympathetic, with less colour-holding capacity than animal hair.

Combination hair

The brush shown is a combination of squirrel and goat hair. Other blends of animal hairs are also available, as are animal-synthetic combinations.





Starter selection
For a good starter set of brushes, choose Nos 3, 5 and 12 round brushes.

Brush shapes and sizes

Art-supply stores and manufacturers' catalogues offer you a wide range of variations on watercolour brushes, but those detailed below will provide all you need for successful watercolour painting.

Round brushes

The round is perhaps the most useful and most common brush shape. A brush of this type can be used for both fine, delicate strokes and broader strokes and flat washes. Apart from the standard length of brush head, rounds also come in short lengths ('spotter' brushes) and long lengths ('rigger' brushes).

Spotter brushes

Retouching or spotter brushes have a fine point, and the very short head gives you extra control. These brushes are used mainly by miniaturists and botanical artists, for creating precise details.

Rigger brushes

A long-haired round brush is known as a designer's point, writer or rigger (from when the brush was used for painting the finely detailed rigging on sailing ships). The long

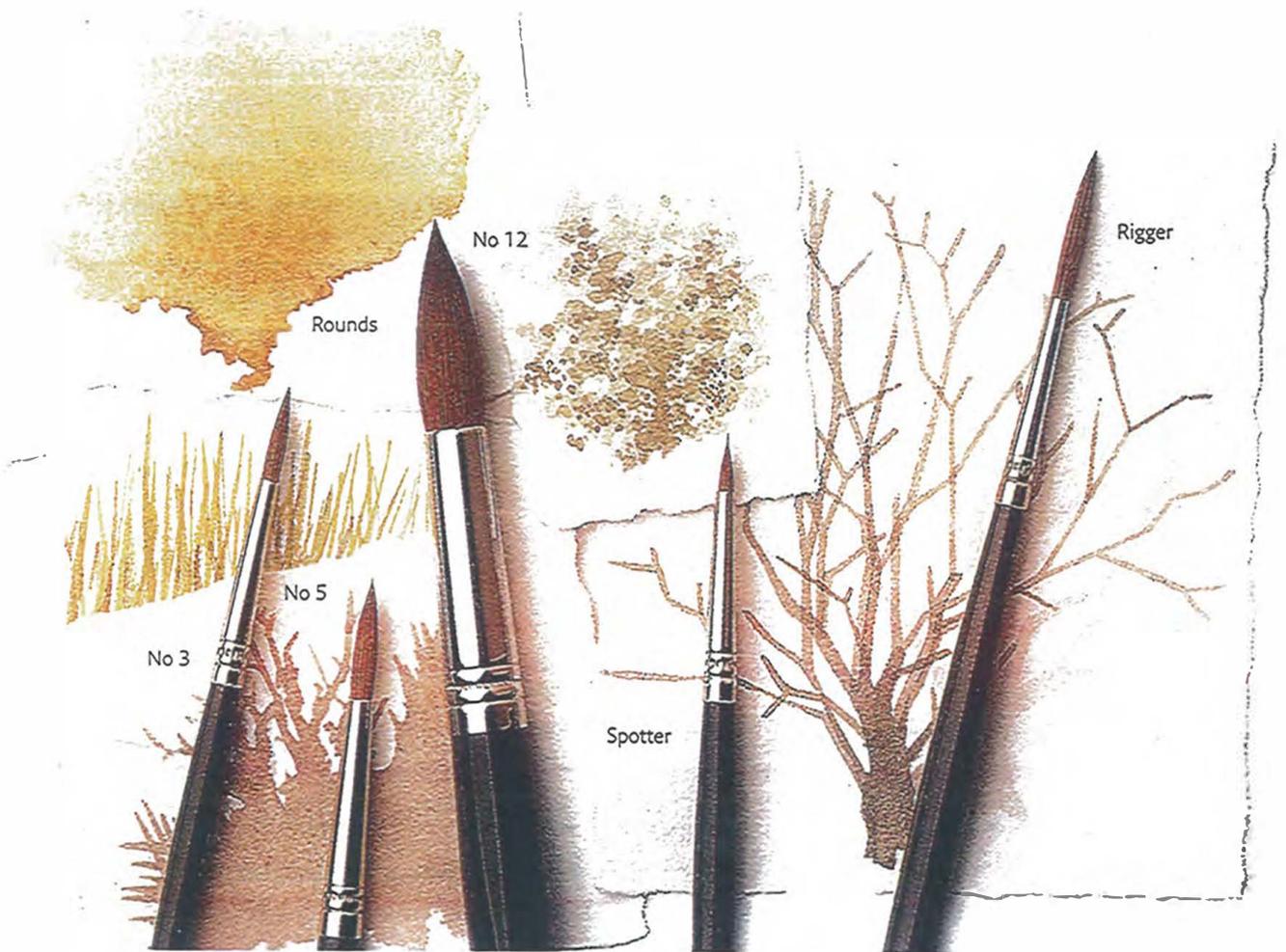
shape gives an extra-fine point and good colour-holding properties, allowing fine lines and tapered strokes.

Mops and wash brushes

These are made from synthetic, goat or squirrel hair, and are used for laying in large areas of colour quickly. Wash brushes are generally wide and flat, whereas mops have large round heads.

Flat brushes

Flat watercolour brushes are also known as 'one-strokes'. These square-ended brushes, which are set into a flattened ferrule, are designed to give a high colour-carrying capacity and free flow of colour for laying in broad washes, while the chisel end creates firm, clean linear strokes. As with round brushes, a longer-haired flat is available, made from hard-wearing ox hair.





Brush sizes

All the watercolour brushes are graded according to size, ranging from as small as 00000 to as large as a No. 24 wash brush. The size of a flat brush is generally given by its width, measured in millimetres or inches. Brush sizes are broadly similar between one manufacturer and another, but they do not appear to be standard – thus a No. 6 brush in one range will not necessarily be the same size as a No. 6 in another.

Choosing brushes

It is a good idea to experiment with all types and sizes of brush to discover their potential. Eventually, as you develop your individual approach to watercolour, you will settle on a few brushes which are suited to

Oriental brushes

Oriental brushes, made from goat, wolf or hog hair set into hollow bamboo handles, are inexpensive and versatile. The thick, tapering head can make broad sweeps of colour and can be drawn up to a very fine point for painting delicate lines. The heads are coated in starch size; remove this by soaking and teasing the hairs in a jar of water for a minute or two.

your own way of painting, and which you find comfortable to hold. To start with, a selection of three sable brushes – for instance, a No. 3, a No. 5 and a No. 12 round – should be sufficient.

As a rule, you should choose the largest suitable brush for any given application, as it is more versatile and holds more colour than a smaller version. A relatively large, good-quality brush, such as a No. 12, will cover large areas, yet come to a point fine enough to paint precise details.

Care of brushes

- Brushes will last longer and be far more pleasant to work with if you follow a few simple rules.
- While painting, do not leave brushes resting on their bristles in water for long periods, as this can ruin the hairs and handles.
- Immediately after use, rinse brushes in cold running water, making sure that any paint near the ferrule is fully removed.
- After cleaning, shake out the excess water and gently shape up the hairs between

finger and thumb. A little starch solution or thinned gum solution stroked onto the bristles will help them retain their shape; it is easily rinsed out with water when the brush is used again.

- Leave your brushes to dry either flat or up-ended in a pot or jar. When storing brushes for any length of time, make sure

they are perfectly dry before placing them in a box that has a tight-fitting lid – mildew may develop if wet brushes are stored in an airtight container.

- Moths are partial to animal-hair bristles, so protect your brushes in the long term with mothballs or a sachet of camphor. Horse chestnuts also keep moths at bay.



Sable rounds

The brushes shown here range from 000 up to 12; even smaller and larger brushes are available.

