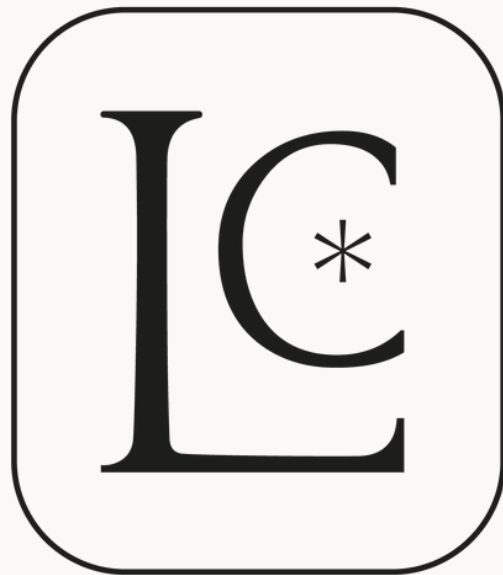


# LANCASTER & CORNISH

BOTANICAL DYES  
FOR STORIES AND CONSCIENCE



STUDY NOTES  
KITCHEN



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# STUDY NOTES KITCHEN

## WELCOME

A warm welcome from me, Sian Cornish.

I am a textile artist combining traditional natural dye processes, shibori techniques and contemporary artistic practice to create beautiful textiles that reflect the seasons and landscapes of my studio and home of Cornwall in south west England.

I use colour and pattern to express my connection to the natural world, creating enigmatic markings to reflect tidal ebb and flow, waves, landforms or perhaps the shape of a petal, modifying processes through the introduction of unique foraged and found items including branches, seaweed, shells and leaves. The colour palette produced from plant matter echoes the flora and fauna I observe in the environment. I aim to translate the feeling of the land, sensing deeper geological and meteorological forces, or the more gentle pastoral scenes, into the textiles I create.

Sustainability is a key part of my work, whether working to reduce resource use, minimising harm to the environment, or enhancing wellbeing through a deeper connection between ourselves and the world around us.

I work from my studio and dye garden in Lostwithiel, Cornwall and teach the art and science of natural dyes at craft centres and locations around Cornwall and the UK.

I invite you to join me on this joyful and exploratory journey into the world of natural dyes.

# INTRODUCTION

There is something very satisfying and soulful about producing colour from nature.

From mark making to dress making, colour plays an important part in all of our lives. Humans are hard-wired to preserve colour and historically this was achieved using natural dyes, minerals and earth pigments. Scientific evidence confirms the presence of natural reds and oranges in Egyptian tombs dating back to 2600BC and, further back in time, archaeological evidence suggests over 10,000 years of plant dyeing in human history. Perhaps the ability to preserve traces of landscape and plants creates a feeling of permanence, an artistic impression recording a part of everyday life, nature and earth.

In the present day we can explore ways to create colour and pattern on textiles and paper using those same ingredients. It seems likely that at least some botanical colours were originally discovered by chance as a by-product of the cooking processes, and so it makes perfect sense to start our quest for colour in the kitchen, the heart of the home.



## HOW TO USE THE STUDY NOTES

These Plant Dye Kitchen Study Notes are intended both for the complete novice as well as artists and craftspeople interested in developing their practice and creating colour in a way that feels instinctive and life-affirming.

This Note series include simple instructions on creating natural colour using kitchen cupboard staples, a joyful beginning to your natural colour journey. Using fabric scraps, paper and even dried beans to soak up your botanical colour you can develop a fun, low cost and sustainable craft practice, using items that might otherwise be wasted, an unexpected source of colour in your own home. Even the smallest kitchen can fit a small pot of herbs, some tea bags and a jar of spices to get you started!

Through experimentation and practice, colour produced in a cooking pot can then be used to dye simple garments, paper or home linens. Embracing slow living and slow craft movement principles in the creation of colour it is easy to imagine that we are forging links with the past, re-imagining colour alchemy in our own homes.

As you expand your library of plant colour, use the space and prompts in these papers to record your own observations and include samples of the textiles or paper that you dye. The Notes can be stored safely in your envelope, building your resources with future Notes series, or transferred to your binder if you prefer.

You can adapt old recipes or create new ones unique to you, use the notes to help you replicate the colour in the future, taking pleasure in the process and celebrate your own beautiful personal record of your natural colour journey. Immerse yourself in this soothing process and discover your own passion for botanical colour.

EXPLORE ✨ EXPERIMENT ✨ ENJOY

# HEALTH & SAFETY

*Please read the safety information before starting*

Whilst you will only be using items from your kitchen in conjunction with these study notes, it is always best practice to keep separate utensils and pans used for dyeing only.

Store all dyes in clearly marked storage containers, in a dry place out of reach from children and animals.

Work in a well ventilated area and avoid inhaling vapour from the dye pot. Do not eat, drink or smoke whilst working with dyestuff. Protect your skin, clothes and the dyeing area.

Do not consume the dye liquids and keep them separate from food. Handle all chemicals (e.g. baking soda, bleach) with care, and use gloves and aprons as necessary. Avoid skin contact and accidental ingestion and inhalation.

Use appropriate gloves when handling hot saucepans. Large saucepans full of liquid are heavy and it is safer to let the liquid cool down before handling them.

Dispose of used dyes responsibly.



## WHAT YOU NEED

### EQUIPMENT & MATERIALS

Natural textiles (cotton, linen, silk, hemp). Old/vintage fabric that has been used and washed.

Cotton string or thread.

Paper (uncoated)

Household items to dye in place of paper or fabric such as eggs, dried pulses, beans, pasta, rice

Plastic, stainless steel or glass pots to soak the fabric / paper in

Stainless steel or non-reactive pan(s)

Stovetop for heating water

Separate utensils for stirring dye baths and removing dyed items

Paint brushes (optional)

### DYES

Coffee

Tea

Turmeric

Onion skins

Mint

Red Cabbage (*for cabbage chemistry*)

### MODIFIERS

Lemon

Vinegar

Bicarbonate of soda

Baking powder

# PREPARATION

We recommend preparing your textile, whether silk, cotton, hemp, linen or paper for natural dying by washing in a pH neutral detergent. However, if you are able to use second hand pre-loved textiles, such as old linen or cotton tea towels and bedsheets that have been used and washed, simple uncoated paper, or even pasta or dried beans/pulses then no further preparation is required.

For simplicity, and to allow you to use this study resource in your own kitchen with no specialist or bought ingredients, we have included simple dye processes that do not require additional steps such as mordanting prior to dyeing and that can produce satisfying results without this additional step, allowing you to work with what you have in your own store cupboard.

# MAKING YOUR DYES

All of these dyes use a simple principle of immersion dyeing, where the fabric or materials to be dyed is immersed in a solution of the dye (such as tea), which we call the 'dye bath' for a length of time until the dye is taken up.

# CARE & A NOTE ON COLOUR AND LIGHTFASTNESS

Natural colour can last for centuries, but some may be more fleeting, and we call these 'fugitive' dyes, including many berries and red cabbage. In this guide we have included dyes that are 'substantive', in other words the dyes bond with a fibre without the use of a mordant (with the exception of red cabbage, included for its chemical properties). However, lightfastness and colourfastness varies from dye to dye. For example, the incredible golden yellow dye of Turmeric is notoriously quick to fade. We would encourage you to embrace this aspect of natural colour, use it to make your own observations about how long the colour lasts, and in what conditions (by a window or in a dark box, for example). Re-dye old pieces, perhaps with using a different dye with a longer lasting result, such as a combination of tannin rich tea and coffees.

Treat with care and colour will last longer. Gentle washing, and natural drying will increase longevity. However we encourage you to enjoy and use your dyed textiles if you want to, embrace slow-crafting, and re-infuse the item with love and colour as colours fade and seasons change.



# USEFUL TERMS

## \*WEIGHT OF FIBRE (WOF)

A convenient way of measuring the amount of dye and mordant used, expressed as a percentage of the dry weight of fibre.

Weight of Fibre x % = Weight of Dyestuff

Weight of Fibre x % = Weight of Mordant

### Example:

To dye a medium shade of orange with *Coreopsis tinctoria*, use 20% WOF

So, to dye 100 grams of silk, we would need 20 grams of dye stuff.

Weight of Fibre (WOF) 100 grams x 20 % = 20 grams

100 x 20 %

100 grams (WOF) x 0.2 = 20 grams (Dyestuff)

## MORDANT

From the French verb 'mordre – to bite', mordants are metallic salts (including aluminium, iron and copper) that help the bonding of the dyestuff pigments to the fibre. Fibres are typically soaked in a solution of these metal salts, using various chemical combinations depending on the nature of the textile (protein or cellulose).

## MODIFIER

Modifiers may be substances that alter the acidity or alkalinity (pH) of the dye bath. These can be acids, e.g. white vinegar, lemon juice, citric acid, or alkalis e.g. soda ash or wood ash water. They can also be solutions of iron or copper can also be used as modifiers as well as mordants. A small quantity of the modifier is added either to a pot of water or to some of the used dye bath.

## DYE BATH

A container filled with dye used for the purposes of dyeing textiles.

## PROTEIN FIBRES

Fibres from animals, such as silk and wool.

## CELLULOSE FIBRES

Fibres from plants, including cotton, linen (flax), hemp and jute.

## TANNIN

Natural chemicals produced by plants and contained in various concentrations within dyestuffs such as tea and coffee, also used as part of the mordant process for cellulose fibres. Can be colourless or impart their own colour.

## FUGITIVE DYE

Fugitive 'dyes' do not last and the colour fades away due to external factors such as sunlight, heat and humidity.

## SUBSTANSIVE DYE

A dye in which dye molecules are attracted by physical forces at the molecular level to the textile, requiring no mordant to bind.

# ONIONS (*allium cepa*)

The papery outer skin of the common onion is a very useful and readily available dyestuff. Use waste onion skins as a by-product of cooking, or ask your local shop to save the skins that would otherwise be thrown away. A wonderful yellow can be obtained from the skins of a white onion.

## TIPS:

- Store in a dry and well ventilated space
- Keep the waste skins from cooking in a paper bag until ready to use
- No mordant is necessary, however an alum or iron mordant will improve lightfastness and colourfastness.
- Colour fades to a paler yellow with time

## HISTORY:

Onions were introduced into Britain over 1000 years ago from Asia. They are one of the oldest cultivated vegetables, recorded in India, China, Arabia, Greece and Egypt. \*

\* Ref: The Origin of Plants, Maggie Campbell-Culver, Eden Project Books, 2001

## MAKING YOUR DYE

Put one or two onion skins into a pan. Add enough water to cover and bring to a boil. The greater the quantity of skins you add, the stronger the resulting dye. Simmer on low heat for approximately 15 minutes. Strain the onion skins from the water, keeping the dye water.

*Tip: As a guide, try using half the weight of the fibre you want to dye (WOF) to dyestuff.*

## DYE PROCESS

Using the dye you have created you can now dye fabric, paper, string or other store cupboard staples, such as dried beans or pasta.

- If using fabric, soak in cold water for half an hour or so before and wring dry.
- Allow the dye bath to cool from boiling.
- Optional: If you have let the dye bath cool completely gently raise the temperature again until hot, but not boiling, turn off the heat and continue.
- Place your items into the prepared dye pot using a spoon.
- Ensure the fabric / paper or other item is fully immersed in the dye bath, use your hands or a spoon to push the item down, move it around to ensure even dyeing.
- The dye bath should cover the fabric when added, so they can move freely. A patchy finish may result if the fabric is too cramped (although this can be desirable and part of your experiment)
- For paper, push down torn strips or squares so that the dye soaks in.
- Leave for 1/2 hour or more. The longer you leave them, the stronger the colour that will develop.
- Remove after your desired colour has been achieved, squeeze out excess dye (fabric /string) and rinse in cold water until the water runs clear.
- Leave to dry naturally.
- Make notes and take samples of your process and the colours achieved.

## Variations

- Use red onion skins as an alternative to white onions.
- Make a stronger solution (more onion skins) and/or leave the fibre in for a longer time and record the results.

## Ideas

- Create paint swatches using a simple paintbrush to transfer the colour from your dye bath to your notes
- Dye strips of an old cotton bedsheet or pillow case to make rustic ribbons
- Re-vitalise a cotton string bag or tote bag in a larger pot of onion skin dye



# ONIONS

WEIGHT OF FIBRE (WOF): \_\_\_\_\_

FIBRE OR MATERIAL TYPE: \_\_\_\_\_

DYE MATTER: \_\_\_\_\_

PLANT NOTES: \_\_\_\_\_

WEIGHT OF DYE MATTER: \_\_\_\_\_ AT \_\_\_\_\_ % WOF  
(or number of onion skins)

VOLUME OF WATER USED: \_\_\_\_\_

DYE BATH NOTES: \_\_\_\_\_  
\_\_\_\_\_

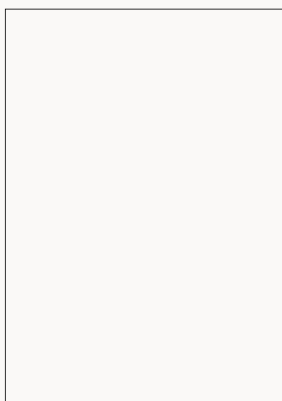
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TEMPERATURE: \_\_\_\_\_

LENGTH OF IMMERSION TIME: \_\_\_\_\_

OBSERVATIONS: \_\_\_\_\_  
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SWATCH 1:



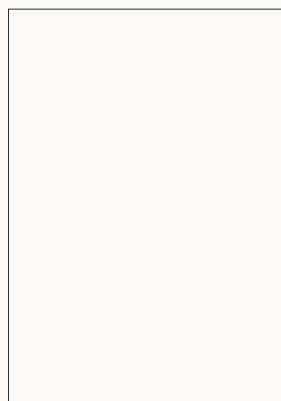
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SWATCH 2:



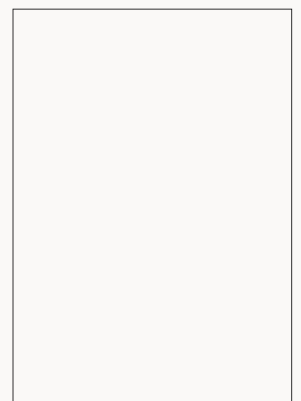
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SWATCH 3:



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SWATCH 4



/ /

# FURTHER NOTES



# TEA (*camellia sinensis*)

Tea, named *Thea Sinensis* when first brought to the UK, is a quintessential drink associated with the British. Whether using loose leaf or tea bags, this is an immensely satisfying home dye, rich in tannins which create good colour fastness. Low cost tea bags can be very rich in black tea, and even re-using a tea bag after it has been used to make a cup of tea will yield good results and orange to yellow colours

## TIPS:

Store in a dry and well ventilated space

No mordant is necessary, but tea used with an alum mordant or iron mordant/modifier will improve lightfastness and colourfastness and extend your colour palette

## HISTORY:

Whilst already a popular drink, the tea plant arrived in Britain in 1768 from China. It can be grown outdoors in the UK, and in Cornwall the milder climate has enabled the success of the Tregothnan Estate growing tea since 2005.

\* Ref: *The Origin of Plants*, Maggie Campbell-Culver, Eden Project Books, 2001

Tregothnan <https://tregothnan.co.uk/>

## MAKING YOUR DYE

Put several tea bags or a few large spoons of tea leaves in to your pan and pour over hot water, around 250 ml. Leave for 15 minutes to steep and for the colour to develop.

## DYE PROCESS

Using the dye you have created you can now dye fabric, paper, string or other store cupboard staples, such as dried beans or pasta.

- If using fabric, soak in cold water for half an hour or so before and wring dry.
- Allow the dye bath to cool from boiling.
- Optional: If you have let the dye bath cool completely gently raise the temperature again until hot, but not boiling, turn off the heat and continue.
- Place your items into the prepared dye pot using a spoon.
- Ensure the fabric / paper or other item is fully immersed in the dye bath, use your hands or a spoon to push the item down, move it around to ensure even dyeing.
- The dye bath should cover the fabric when added, so they can move freely. A patchy finish may result if the fabric is too cramped (although this can be desirable and part of your experiment)
- For paper, push down torn strips or squares so that the dye soaks in.
- Leave for 1/2 hour or more. The longer you leave them, the stronger the colour that will develop.
- Remove after your desired colour has been achieved, squeeze out excess dye (fabric /string) and rinse in cold water until the water runs clear.
- Leave to dry naturally.
- Make notes and take samples of your process and the colours achieved.

## Variations

- *·Leave your tea bags/tea leaves in the dye bath during the process, which will give a mottled result.*
- *·Use green tea, herbal teas or rooibos tea as an alternative*
- *·Try making a stronger solution, leaving the fibre in for a longer time and record the results.*
- *·Combine tea with coffee for a less orange colour.*

## Ideas

- *Use 8-10 tea bags and 2 litres of water to dye a larger item such as a re-purposed cotton shirt or fabric to give a 'vintage' tea-stained look.*
- *Put your samples in the dye bath in for a variety of times, recording each one next to a sample of the colour achieved.*
- *Experiment with some simple tie-dye techniques by using elastic bands (even tied around dried beans) to create patterns on a linen napkin.*

# TEA

WEIGHT OF FIBRE (WOF): \_\_\_\_\_

FIBRE OR MATERIAL TYPE: \_\_\_\_\_

DYE MATTER: \_\_\_\_\_

PLANT NOTES: \_\_\_\_\_

WEIGHT OF DYE MATTER: \_\_\_\_\_ AT \_\_\_\_\_ % WOF  
*(or number of onion skins)*

VOLUME OF WATER USED: \_\_\_\_\_

DYE BATH NOTES: \_\_\_\_\_  
\_\_\_\_\_

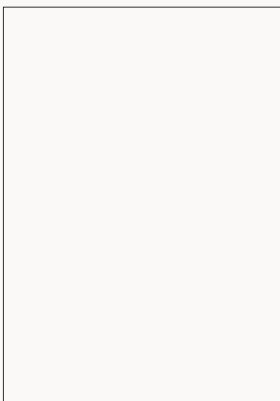
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LENGTH OF IMMERSION TIME: \_\_\_\_\_

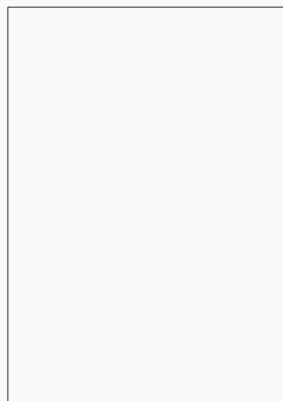
OBSERVATIONS: \_\_\_\_\_  
\_\_\_\_\_  
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\_\_\_\_\_

SWATCH 1:



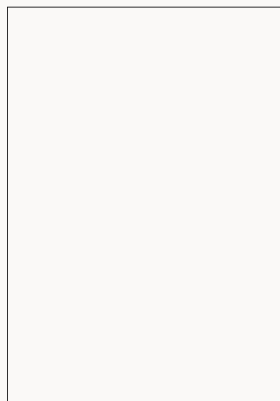
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SWATCH 2:



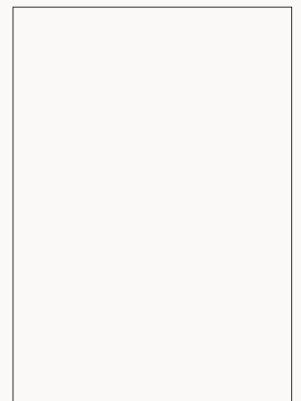
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SWATCH 3:



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SWATCH 4



/ /

# FURTHER NOTES



# COFFEE (coffea arabica)

Roasted coffee beans create a rich brown dye that varies in depth according to the level of roasting the beans have undergone. Instant coffee from a jar is easy to store and a great source of this kitchen cupboard dye, but it is also possible to use leftover coffee grounds which can be collected, stored and dried out - ask your local coffee shop if you can collect their waste coffee grounds for dye projects. Coffee is rich in tannins that serve as a colouring agent. Even if you don't like the taste, the smell of coffee can really make your kitchen feel like home!

## TIPS:

Store in a dry and well ventilated space

No mordant\* is necessary, but used with an alum or iron mordant will improve lightfastness and colourfastness and change the colours achieved.

## HISTORY:

Arabian Coffee, introduced to the UK from it's native Ethiopia and the Yemen in the 1600's, was hunted by British plant hunters in Victorian times, including William Lobb, leaving from Falmouth in Cornwall to Brazil in the 1840's and finding hundreds of acres of forest already felled to make way for coffee plantations when he arrived.

\* Ref: The Origin of Plants, Maggie Campbell-Culver, Eden Project Books, 2001

## MAKING YOUR DYE

Coffee - Put 5 teaspoons of instant coffee into your pan and pour over very hot water, around 250 ml. The more coffee you add in relation to the water, the stronger the final colour will be. Leave for 15 minutes.

## DYE PROCESS

Using the dye you have created you can now dye fabric, paper, string or other store cupboard staples, such as dried beans or pasta.

- If using fabric, soak in cold water for half an hour or so before and wring dry.
- Allow the dye bath to cool from boiling.
- Optional: If you have let the dye bath cool completely gently raise the temperature again until hot, but not boiling, turn off the heat and continue.
- Place your items into the prepared dye pot using a spoon.
- Ensure the fabric / paper or other item is fully immersed in the dye bath, use your hands or a spoon to push the item down, move it around to ensure even dyeing.
- The dye bath should cover the fabric when added, so they can move freely. A patchy finish may result if the fabric is too cramped (although this can be desirable and part of your experiment)
- For paper, push down torn strips or squares so that the dye soaks in.
- Leave for 1/2 hour or more. The longer you leave them, the stronger the colour that will develop.
- Remove after your desired colour has been achieved, squeeze out excess dye (fabric /string) and rinse in cold water until the water runs clear.
- Leave to dry naturally.
- Make notes and take samples of your process and the colours achieved.

## Variations

- *Experiment with fresh coffee grounds as well as dried.*
- *Vary the strength of the dye bath by adding more or less coffee, and try leaving the fabric or item to be dyed for a longer time and record the results.*

## Ideas

- *Make a large pan of strong coffee to dye small cotton garments such as t shirts.*
- *Dye an old natural cotton tote bag to give it a new lease of life.*
- *Compost your coffee grounds for healthier soil (particularly if your soil is alkaline)*

# COFFEE

WEIGHT OF FIBRE (WOF): \_\_\_\_\_

FIBRE OR MATERIAL TYPE: \_\_\_\_\_

DYE MATTER: \_\_\_\_\_

PLANT NOTES: \_\_\_\_\_

WEIGHT OF DYE MATTER: \_\_\_\_\_ AT \_\_\_\_\_ % WOF  
(or number of onion skins)

VOLUME OF WATER USED: \_\_\_\_\_

DYE BATH NOTES: \_\_\_\_\_  
\_\_\_\_\_

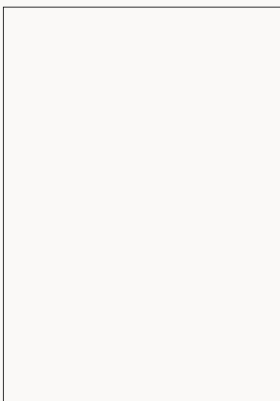
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LENGTH OF IMMERSION TIME: \_\_\_\_\_

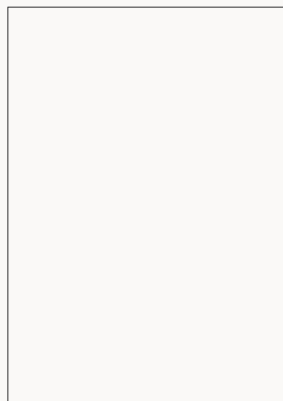
OBSERVATIONS: \_\_\_\_\_  
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SWATCH 1:



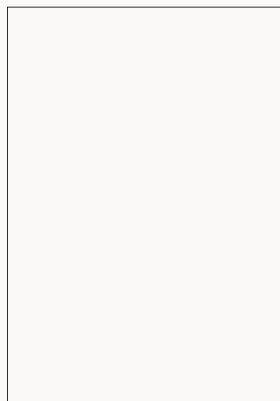
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SWATCH 2:



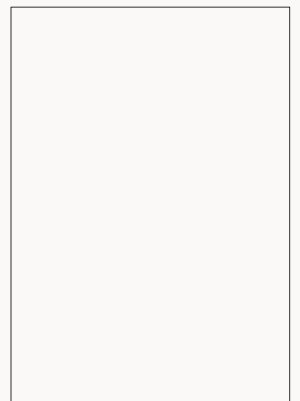
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SWATCH 3:



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SWATCH 4



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# FURTHER NOTES





# TURMERIC (*curcuma longa*)

Turmeric is an orange/yellow coloured strongly flavoured spice, producing a dye of the same colour. Celebrated for centuries as both food and medicine, the root like stem (rhizome) produces the turmeric spice, processed through drying and grinding this part of the plant to produce a powder.

## TIPS:

Turmeric is quick to fade over time. It is worth dating your samples, perhaps even leave a sample in the light and note how quickly the colour changes with time.

Embrace the transient nature of this dye, and dye pieces through the seasons.

## HISTORY:

Though now be found throughout the tropics, India has been the largest producer of turmeric since ancient times. Thought to have natural healing properties, the plant has been used medicinally for over 4,500 years.

## MAKING YOUR DYE

Add hot water to several teaspoons of spice in a heat proof container or jar. Stir to dissolve and then pour over hot water, around 250 ml.

## DYE PROCESS

Using the dye you have created you can now dye fabric, paper, string or other store cupboard staples, such as dried beans or pasta.

- If using fabric, soak in cold water for half an hour or so before and wring dry.
- Allow the dye bath to cool from boiling.
- Optional: If you have let the dye bath cool completely gently raise the temperature again until hot, but not boiling, turn off the heat and continue.
- Place your items into the prepared dye pot using a spoon.
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- For paper, push down torn strips or squares so that the dye soaks in.
- Leave for 1/2 hour or more. The longer you leave them, the stronger the colour that will develop.
- Remove after your desired colour has been achieved, squeeze out excess dye (fabric /string) and rinse in cold water until the water runs clear.
- Leave to dry naturally.
- Make notes and take samples of your process and the colours achieved.

## Variations

- *If you can source fresh turmeric root, use this cut into small pieces as an alternative for a stronger dye colour.*
- *Try in cold water for a paler shade – heat application will produce darker and more orange tones.*

## Ideas

- *Transform an old cotton shopping bag in a large pot of turmeric dye.*
- *Re-vitalise a tired wool sweater.*
- *Turmeric is a good dye to work with on a project with children, naturally non-toxic, and vibrant results.*
- *Dip on end of a cotton or linen napkin or cloth and watch the colour soak up.*

# TURMERIC

WEIGHT OF FIBRE (WOF): \_\_\_\_\_

FIBRE OR MATERIAL TYPE: \_\_\_\_\_

DYE MATTER: \_\_\_\_\_

PLANT NOTES: \_\_\_\_\_

WEIGHT OF DYE MATTER: \_\_\_\_\_ AT \_\_\_\_\_ % WOF  
*(or number of onion skins)*

VOLUME OF WATER USED: \_\_\_\_\_

DYE BATH NOTES: \_\_\_\_\_

\_\_\_\_\_

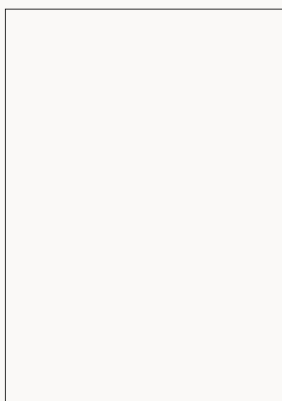
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TEMPERATURE: \_\_\_\_\_

LENGTH OF IMMERSION TIME: \_\_\_\_\_

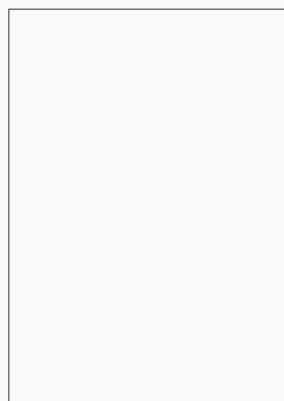
OBSERVATIONS: \_\_\_\_\_

SWATCH 1:



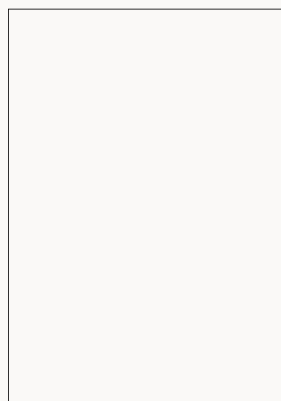
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SWATCH 2:



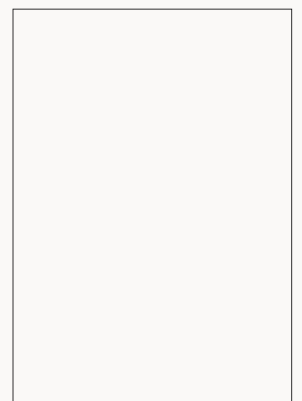
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SWATCH 3:



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SWATCH 4



/ /

# FURTHER NOTES



# MINT (mentha)

Mint is an aromatic perennial herb, easy to grow (peppermint and spearmint are the most common species). The herb produces a soft taupe colour due to the presence of tannins and flavanoids and fresh mint produces a deeper and richer colour than dried. The herb is easy to grow and can be used to infill awkward areas where other plants would not thrive.

## TIPS:

Enjoy a delight for your olfactory sense with the mint dye bath – fresh mint or mint tea creates wonderful smell.

Used with an iron mordant/modifier will improve lightfastness and colourfastness and change the colours achieved to a wonderful green.

## HISTORY:

Although there are some native species of mint to the UK, the stronger flavoured species arrived from southern Europe with the Romans over 1000 years ago. 'Mint of Mentha' dates back to Greek mythology where it was grown across expanses of fields.

Grieve, Margaret. "A Modern Herbal-Mints." Botanical.com. 23 Feb 2008

## MAKING YOUR DYE

Mint - Put a large handful of fresh mint into your plan and pour over hot water, around 250 ml. Leave for 15-30 minutes or longer for the colour to develop. Add more herbs for a stronger result.

## DYE PROCESS

Using the dye you have created you can now dye fabric, paper, string or other store cupboard staples, such as dried beans or pasta.

- If using fabric, soak in cold water for half an hour or so before and wring dry.
- Allow the dye bath to cool from boiling.
- Optional: If you have let the dye bath cool completely gently raise the temperature again until hot, but not boiling, turn off the heat and continue.
- Place your items into the prepared dye pot using a spoon.
- Ensure the fabric / paper or other item is fully immersed in the dye bath, use your hands or a spoon to push the item down, move it around to ensure even dyeing.
- The dye bath should cover the fabric when added, so they can move freely. A patchy finish may result if the fabric is too cramped (although this can be desirable and part of your experiment)
- For paper, push down torn strips or squares so that the dye soaks in.
- Leave for 1/2 hour or more. The longer you leave them, the stronger the colour that will develop.
- Remove after your desired colour has been achieved, squeeze out excess dye (fabric /string) and rinse in cold water until the water runs clear.
- Leave to dry naturally.
- Make notes and take samples of your process and the colours achieved.

## Variations

- Use loose mint herbal tea or mint tea bags, and strain the plant matter after the desired colour is achieved.
- Leave the tea bag or tea leaves in the dye bath for a mottled effect.

## Ideas

- Dye a small piece of silk ribbon to use as a gift or hair tie
- Create a Japanese style Furoshiki wrap (re-useable gift wrapping) by dyeing a square of vintage fabric
- Compare the results from fresh and dried mint

# MINT

WEIGHT OF FIBRE (WOF): \_\_\_\_\_

FIBRE OR MATERIAL TYPE: \_\_\_\_\_

DYE MATTER: \_\_\_\_\_

PLANT NOTES: \_\_\_\_\_

WEIGHT OF DYE MATTER: \_\_\_\_\_ AT \_\_\_\_\_ % WOF

*(or number of onion skins)*

VOLUME OF WATER USED: \_\_\_\_\_

DYE BATH NOTES: \_\_\_\_\_

\_\_\_\_\_

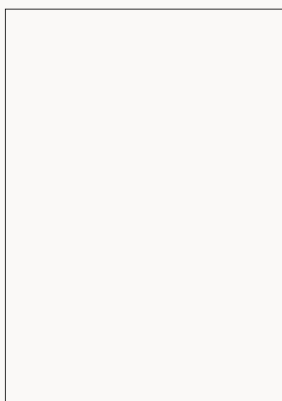
PH: \_\_\_\_\_

TEMPERATURE: \_\_\_\_\_

LENGTH OF IMMERSION TIME: \_\_\_\_\_

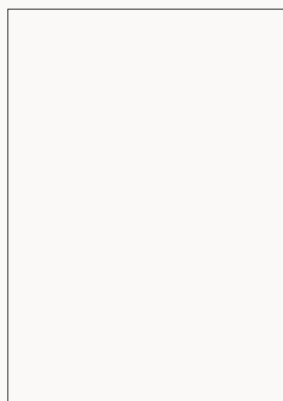
OBSERVATIONS: \_\_\_\_\_

SWATCH 1:



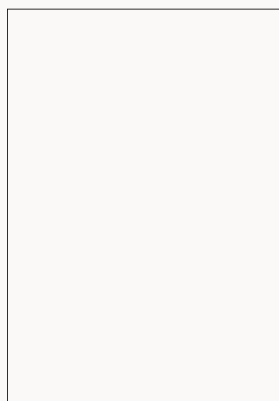
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SWATCH 2:



/ /

SWATCH 3:



/ /

SWATCH 4



/ /

# FURTHER NOTES



# RED CABBAGE

## EXPLORING MODIFIERS WITH CABBAGE CHEMISTRY

Red cabbage is a member of the cabbage family (Brassicaceae) forming a tight round head with waxy leaves that are purple/violet in colour. As a fugitive dye, we have included this plant as a way to explore modifiers which alter the pH of the dye bath, and show wonderful colour variation with red cabbage dye. The vegetable contains a chemical called anthocyanin that changes colour depending on the acidity of its environment. In an acidic environment it is reddish-pink, in a neutral environment it is purple, and in a basic (or alkaline) environment it turns bluish-green and even yellow.

*This is not a good dye to use for fabric, but it is a great way to explore and demonstrate some natural dye chemistry in your kitchen!*

### TIPS:

Red cabbage dye is fugitive, but we love how it can be used to produce a wide variety of different colours by altering the pH of the dye bath.

### HISTORY:

The cabbage was most likely an import from Europe in the 1500's, although may have been introduced to Britain earlier by the Romans.

\* Ref: The Origin of Plants, Maggie Campbell-Culver, Eden Project Books, 2001

### MAKING YOUR DYE

Roughly cut 1/2 a red cabbage and put into pan. Add enough water to cover and bring to a boil. Simmer on low for approximately 15 minutes. Strain the cabbage from the water, keeping the dye water.

### CABBAGE CHEMISTRY EXPERIMENTS

We invite you to explore cabbage chemistry with these colour variation ideas.

Pour a little of the cooled dye into different pots. You can use glass jars, plastic pots, an old ice cube tray or even milk bottle tops. Leave one of the containers with the original red cabbage dye (add nothing) then try adding some of the following:

- a. drop of tap water
- b. squeeze or drops of lemon juice
- c. drop or two of vinegar (white or any kind)
- d. few drops of washing up liquid
- e. few drops of liquid soap
- f. pinch of baking powder
- g. pinch of bicarbonate of soda
- h. a tiny drop of household bleach (caution - use gloves and keep away from children- this is a very strong chemical)

Make notes of what you have put in to each container and observe the colour change in each pot or container.

### Ideas

- *Make your own pH indicator strips with paper - you can leave one end of the strip in each solution to soak up the colour.*
- *Using an old fine paint brush, apply a little of each colour to your notes.*

# RED CABBAGE

DYE MATTER: \_\_\_\_\_

PLANT NOTES: \_\_\_\_\_

DYE BATH NOTES: \_\_\_\_\_

PH: \_\_\_\_\_

## OBSERVATIONS (NOTES ON COLOUR, PH ETC)

MODIFIER 1: \_\_\_\_\_

MODIFIER 2: \_\_\_\_\_

MODIFIER 3: \_\_\_\_\_

MODIFIER 4: \_\_\_\_\_

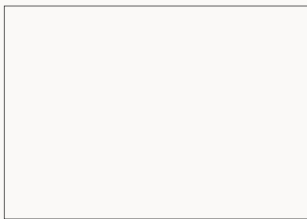
MODIFIER 5: \_\_\_\_\_

MODIFIER 6: \_\_\_\_\_

MODIFIER 7: \_\_\_\_\_

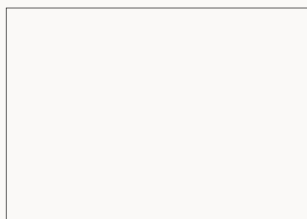
MODIFIER 8: \_\_\_\_\_

DYE PAINT  
SWATCH 1



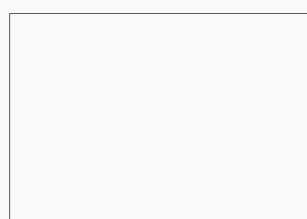
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DYE PAINT  
SWATCH 2



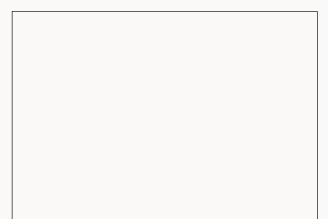
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DYE PAINT  
SWATCH 3



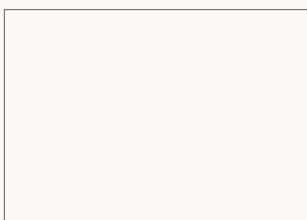
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DYE PAINT  
SWATCH 4



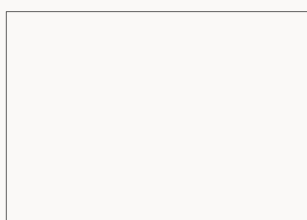
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DYE PAINT  
SWATCH 1



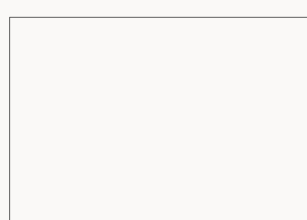
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DYE PAINT  
SWATCH 2



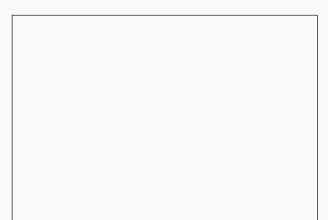
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DYE PAINT  
SWATCH 3



/ /

DYE PAINT  
SWATCH 4



/ /

As the colours will fade due to the fugitive nature of this dye, you may wish to take photographs alongside any swatches or dye paint samples, and make notes of colour descriptions when they are fresh.



## FURTHER EXPLORATION

We really hope that you have enjoyed your introduction to natural dyes with our Kitchen Study Cards. If you want to explore other kitchen ingredients, we suggest:

Carrot tops  
Pomegranate rind  
Avocado skins

\*  
\* \*

The following pages are blank swatch cards for you to create your own experiments.

We would love to see these results, and you can share via Instagram  
[@lancasterandcornish](https://www.instagram.com/lancasterandcornish) or emailing [sian@lancasterandcornish.co.uk](mailto:sian@lancasterandcornish.co.uk)

EXPLORE ✧ EXPERIMENT ✧ ENJOY



LANCASTER  
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BOTANICAL DYES  
FOR STORIES AND CONSCIENCE