

# NATURAL DYES: PART 1

Together we're going to make some art, but it may not be like art that you are used to. Unlike drawing or painting, we'll be making a natural dye! Making natural dyes is very fun – it can feel like you're creating a magic potion or doing a science experiment!

Instructional videos available at [lanearts.org/online-learning](http://lanearts.org/online-learning)

## LET'S TALK ABOUT DYES

A **dye** is something that changes the color of another thing like fabric, yarn, or paper. Usually, we dunk fabric in a **dye bath** (a container of colored liquid).

Now, if you look at your clothes, they probably have different colors on them- almost all of these colors were made with synthetic dyes. **Synthetic dyes** are dyes that are made of harsh chemicals. Big factories dye cloth and fabric with unhealthy synthetic dyes and dump all these very toxic chemicals into the ocean! It's not good for the environment at all!

Instead, we can use natural dyes! It doesn't hurt the earth to make these dyes. Natural dyes are made from **natural ingredients** - from things like plants, vegetables, fruits, berries, bark, grass, roots, mushrooms, and more!

When we go through the process of making a dye, there is one very important step we have to do to make sure the dye doesn't completely wash away. We add a natural material called a **mordant**. Mordants are added to dyes to make sure the color holds onto the fiber of whatever we are dyeing. However, mordants can be really surprising and completely change the color of the dye! Adding a mordant could make a color brighter, darker, keep it the same, or completely change the color into a brand new color! Crazy to think about, right?

I'll share more about natural dyes as we go, and remind you of the things I just shared with you. For now, I want to be able to get you started with our first activity so you can learn the basics of exploring natural dyes!

## FORAGING

First off, we have to get our natural ingredients! You know, the plants, vegetables, fruits, berries, bark, grass, roots, mushrooms, and other awesome pieces of nature we walk by every day! Natural ingredients are things you can find outside at a park, in a neighborhood, on a hike, or even in a grocery store.

When we gather our natural ingredients from outside we call it **foraging**. So, for this activity I want you to go out and forage! But before you do that- there are rules! (yes, there are rules to foraging.) These are meant to keep you safe and respectful as you grab things from mother nature.

### **Basic Safety Rules of Foraging:**

1. Have an adult mentor with you.
2. Have permission to forage in the area.
3. Know what a plant is before you touch it. This includes knowing if it is rare or endangered!
4. Only harvest what you need and leave the rest.
5. Only pick the part of the plant that you will use.

Now that you know the rules- it's time! *You'll need to collect 2 handfuls of 1 type of natural material.*

I want you to find things that excite you or seem interesting. Are you curious to see what kind of dye certain flower petals could make? Do you think you could make a dye out of a vegetable growing in a garden? Do you want to pick the grass from a lawn and try to make a grass dye? Are there any interesting weeds around? Any cool berries you can pick? An interesting smelling herb?



One of the most exciting things about this process is that you're exploring things you're curious about. It's important to remember that this is an experiment and this may turn out a number of ways. What you forage may not make a vibrant dye and that is okay. It's important to let yourself explore!

If you're very worried about making sure that what you forage will make a strong dye. Here are some natural materials you can forage for outside. I know these will make some interesting colors

- Lawn grass
- Dandelions
- Rose petals
- Camas flowers
- Lavender
- Fennel
- Lemon balm
- Edible berries

Alright, have some ideas? Remember the rules? Yes? Wonderful! You are ready. So now, go out there! Take your time, go roam the land, and begin your foraging adventure!

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## HYPOTHESIZE!

If you're reading this you've gone foraging and you have your natural material! What'd you collect? You want to put whatever you collected in a safe place where it can dry. We don't know what will happen when you try to make a dye out of your foraged materials but I'm sure you have an idea!

This idea is an important part of the experiment! You first have a **question** – Your question is...What kind of color dye will this natural material make? Next we want to answer this question. Will the color of your dye be light green? Pink? Dark red? The answer to the question will be your **hypothesis**.

Take the time to write out or talk about your hypothesis with an adult! We'll look at this later.

Now that you've learned a little about natural dyes, you went foraging, and you've made your hypothesis- you've completed the first part of making a natural dye. Good job!

I encourage you to keep foraging and writing or talking about your ideas!

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## NATURAL DYES: PART 2

In Part 2, we will be making our dye! Make sure you have your foraged items from Part 1 and follow along!

Instructional videos available at [lanearts.org/online-learning](https://lanearts.org/online-learning)

### THE THINGS YOU NEED

- Stove top
- 6-8 cups of water
- A pot that can hold *at least* 8 cups of water
- A large container that can hold at least 8 cups of water
- A large stirring spoon for your pot
- A strainer
- Measuring spoons
- Measuring cups
- An oven mitt and a pot holder
- A container that will be able to hold all your dye. Preferably something clear that can hold near boiling water (like a very large mason jar).



### GROCERY STORE INGREDIENTS TO DYE WITH

Besides the list of natural ingredients I gave you in Part 1, here are natural ingredients that you can get from the store that WILL make dyes: *Onion skins, Turmeric, Beets, Berries, Purple cabbage, Avocado skins/pits, Pomegranates, Prunes, Spinach, Black beans, Coffee, Black tea, Artichokes, Celery leaves.*

Here are **mordants** you can get at the store. These are most commonly found in a canning aisle or spice aisle: *Alum, Pickling salt, Kosher salt, Citric acid.*

Alright! I've given you a couple of lists. Make sure you check in with your adult so you have everything you'll need. Once you are ready, read the next part.

### MAKING THE DYE!

We're finally going to make our own dye! It's going to feel like cooking. It's going to be similar to cooking macaroni or spaghetti. For this first activity, I want you to use one of the natural materials I have listed *before* using your natural ingredient you foraged in the first part.

Just like last time, there are safety rules! You may already know how to stay safe in a kitchen, but I'd like to review!

#### **Basic Safety Rules When Using A Stove:**

1. Have an adult mentor with you.
2. Never touch a stove or pot with a bare hand.
3. Wear an oven mitt when stirring hot water to protect your hand from hot steam.
4. Be prepared to take turns so an adult and student can take turns to assist each other.
5. Always stir a pot calmly so you don't bump it off the stove.

Do you have other ideas for staying safe and responsible in the kitchen? Talk about them with your adult!

Once you have talked about safety, read the steps I've listed out below. Once you've said all the steps out loud together then you can go back and begin.

1. Fill the pot with 6-8 cups of water considering how much material you have. The ratio of water is roughly 2 parts water 1 part natural material. For powdered ingredients, it's about a 3-4 cups of water for each tablespoon of powder.
2. Bring the water to a boil.
3. Place your natural material in the boiling water.
4. Turn the stove to medium-high heat.
5. Stir occasionally.
6. Keep this up until you see the color of the water change OR the color from your natural material dull until there is no change. Depending on the natural material this will take about 15 minutes or so.
7. Turn off your stove and drain your natural material from your dye. Make sure you don't strain your dye down the drain! Have a different container under your strainer before you pour.
8. Pour your dye into the container you want to keep it in. For me, I like using very large mason jars!
9. Dump in your mordant of choice. You will be using about 2 tablespoons worth of mordant for this activity.
10. Stir your mordant in and observe any changes that may occur.

Alright, you've done it! You've made a dye! Did the color turn out the way you expected? **Did it match your hypothesis?** Was it different than you thought? These surprises are part of the fun of making natural dyes! How do you feel? Write down or talk about what was exciting, frustrating, and surprising with your adult.

Now that you've made dye once, I want you to try to make a dye out of the foraged material you found in Part 1. Go for it! Be safe and have fun! Now that you've done it once, can you help with something new? Do you want to do something differently the second time around?

In the next activity, we'll prep material for tie-dyeing with our natural dye!

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## NATURAL DYES: PART 3

In this part, we'll be tie-dyeing our fabrics with the natural dye we made!  
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### GATHER YOUR MATERIALS

- Fabric that has been washed in water only (no laundry detergent used). This can be any near white fabric you'd like to dye. I'll be calling our fabric a shirt for these instructions.
- Rubber bands
- The dye you've made. Make sure the container can hold your fabric without spilling over!
- A flat surface that everyone can easily reach. This can be a table or the floor.

### PREPARE TO TIE-DYE

We'll be tie-dyeing with the natural dye you've made. Tie-dyeing is usually done by folding, twisting, or crumpling fabric or fiber and wrapping it up with string or rubber bands.

When choosing our fiber for tie-dyeing, it's important to remember that you **don't have to buy new fabric to tie-dye**. Lots of things can be dyed that have been used or thrown away by others. When you go looking for materials for dyeing, try to find clothes that are made out of **cotton** or **wool**. Think about some of the fabric you could tie-dye besides shirts. Talk about it with your adult!

Now, I'll be sharing some basic ideas on how to prepare your material. However, you ultimately get to decide how you want to make your creation. To begin, go to your flat surface with your shirt and rubber bands. Before you commit to a specific design, try folding and twisting your shirt in different ways. It works best if you practice some of the folds and twists first. I also recommend asking an adult for help. They can help by holding part of the shirt as you work. It'll be really hard to wrap some of these rubber bands really tightly but don't give up! **The tighter the rubber bands are, the sharper your image will look.** Some parts will be hard but you can do it!

### EXPLORING A GRID PATTERN

Lay your shirt out flat. Start at the bottom of the shirt and fold the shirt back and forth in 1 inch strips like a paper fan. Once you are done folding the entire shirt, wrap a rubber band in the middle of the shirt as tight as you can! Wrap rubber bands on the shirt a few more times. You get to decide how close together or far apart the rubber bands are!

### EXPLORING A SWIRL PATTERN

Lay your shirt out flat. Find the center of your swirl pattern and pinch it tightly with two fingers. Spin this center point around and around as tight as you can. The shirt will want to wrap itself around and into a circular shape. Ask an adult to help you hold the shirt in place while you wrap a rubber band around the entire shirt as tightly as you can. Adjust the shirt as needed and tie another rubber band. When you are done you should have 2 rubber bands making an 'X' shape. Keep wrapping more and more rubber bands around the shirt. Like I said before, practice wrapping and folding your shirt before you wrap it with rubber bands. Once you've taken the time to do that, you can begin!

### PUTTING THE FABRIC IN THE DYE!

If you're reading this, you've successfully wrapped your tie-dye shirt. It may have been frustrating or challenging for you, but I hope you're excited to see the kind of pattern you've made! Now that you are done wrapping your shirt, you get to put it in your dye! Before you place it in your dye bath, dampen your shirt. It'll work better when the fabric is damp. For natural dyes, I recommend letting your shirt sit in a dye bath for **at least 24 hours**. Stir it at least once halfway through soaking. Place it in a safe place. The hard part is waiting! There will be more waiting but I think you can do it! In the next section we'll learning how to remove your shirt from the dye and open it up.

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## NATURAL DYES: PART 4

After you've let your fabric sit in dye for at least 24 hours, you can follow along with part 4 to finalize your dyes!

Instructional videos available at [lanearts.org/online-learning](https://lanearts.org/online-learning)

### GATHER YOUR MATERIALS

- Your container of dye that is holding the object you're tie-dyeing.
- A place with running water such as a sink, shower, or bathtub
- Tongs (optional)
- Scissors (optional)
- A pair of gloves (optional)
- A way to air dry your tie-dye object. You want to dry it when it is still wrapped up in rubber bands and when you've taken off the rubber bands.



### REMOVE YOUR FABRIC FROM THE DYE

Now that you've waited, it's time to remove your tie-dye from your dye bath. I find it's best to do this in a place where extra dye can drip safely into a sink, shower, or bath. So, go to one of these places with your material before we begin.

1. Once you're ready to go, use your tongs to remove your shirt from your dye.
2. Turn on the water and gently rinse your shirt in the water. The color of your shirt will most likely lighten up a little depending on your natural material and mordant mix.
3. Wring out your shirt as best as you can so it is damp instead. Try to do this without removing any rubber bands.
4. With your shirt still wrapped in rubber bands, find a place for your shirt to air dry. I found it's best to place your shirt in a sunny location or in front of a fan. The drier you can get your shirt before you unwrap it, the sharper your tie-dye pattern will look. This will involve more waiting, but I promise the results are worth it!
5. Once your shirt is dry, unwrap it! I like to save rubber bands for future projects. Reusing materials is a great practice. However, sometimes rubber bands break or you may need to use scissors to cut off a really tight rubber band.

### DRY YOUR SHIRT, THINK BACK TO YOUR HYPOTHESIS, & CELEBRATE!

Before you wear it or give the shirt to anyone, make sure you air dry the shirt. It's also important to know that you can't wash this shirt in the washing machine. Most laundry soaps are designed to wash out natural dyes so hand wash only!

Hey! Look at you! Look at your shirt! You now have a VERY cool natural tie-dye shirt! How does it look? Did it turn out the way you imagined? Does it look different than you thought?

I hope you have fun, because you did it! You went on a crazy awesome natural dye adventure! I'm so proud of you! I hope you felt challenged, got excited, and now want to explore more natural dyes. Everything I explained are my tips and tricks I've learned but I encourage you to try new things. Ask more questions! Make more hypotheses! Test them out! See what happens! Reflect upon what you discover! We've reached the end friends! Happy dyeing!

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