







TEACHER GUIDE:

TEA TIME: EXPLORING ORCHARD HERBS THROUGH THE SENSES

- **What are HERBS?**
 - any plant with leaves, seeds, or flowers used for flavoring, food, medicine, or perfume. Some **ANNUAL** (planted year after year like basil and parsley), some are **PERENNIAL** (grow back year after year, moving through its entire life cycle in one season), and some are **BIENNIAL** (grows and sets off seed every 2 years like mullein)
- **WHAT PARTS** can be used?
 - can include bark, seed, flower, fruit, leaves
- What **MAKES AN HERB MEDICINAL?**
 - A complex web of **secondary plant metabolites**, the medicinal component of plants are the plant's immune system. What the plant produces oftentimes to deter pests from eating it, or from other plants infringing on its growing space, is what we consume when we make use of a plant's aromatics, flavoring, or medicinal constituents.
- **WHY** do we grow **HERBS in the orchard?**
 - They have pretty leaves and/or flowers; attract beneficial pollinators like honeybees, birds, butterflies; help to deter pests; accumulate nutrients and help build the health of the soil; serve as groundcovers to outcompete weeds; and provide benefits for human use in food, medicine, and craft.
- **HOW MIGHT WE USE HERBS?**
 - Tea, food, tinctures, lotions/salves, dye, art, textiles...
- **HOW DO WE LEARN OF A PLANT'S USE?**
 - through direct experience and communication with the plant, longstanding histories of use, tradition, storytelling, scientific study, clinical trials with humans or animals, ongoing testing.
- **WE ARE GOING TO EXPLORE WAYS OF KNOWING:** there are many ways of obtaining knowledge:
 - **OBSERVATION OR EXPERIENCE,**
 - **REASON OR LOGIC**
 - **TESTIMONY**
 - **AUTHORITY**
 - **REVELATION.**
- **SAFETY PRECAUTION:** while there are many plants are helpful and beneficial for us to partner with, there are plants that are dangerous for us to consume or even to touch. It's important that we take the necessary precautions - in a city space: **avoid harvesting from places of pollution or runoff; avoid harvesting endangered plants (ex. ramps); understand there are some plants used as medicinal in small doses vs some that can be eaten with relatively little concern. The most important thing is that you trust your**

body, go slow with incorporating any new plants into diet! *All of the plants we are sampling are safe.*

- **SENSES:** Our senses are what we rely upon to generate understanding of the outside world. They're wired to our **NERVOUS SYSTEM AND THE BRAIN** which sends signals in response to the brain for processing - catalyzing our movement to and from stimuli.
- **AMONG THE FIRST SENSES TO DEVELOP IN US AS INFANTS** is the sense of **TOUCH** (8 weeks) and then **SMELL AND TASTE** (14 WEEKS), followed by **SOUND** (16), and **SIGHT** (32 weeks) - **we're going to explore SMELL AND TASTE to experience 'other' / PLANTS**
 - **The TONGUE** is covered in bumps called **TASTE BUDS (10K)** - **on top of each one are PAPILLAE** thousands of bumps with little hair receptors called **MICROVILLI** - that send messages to the brain in response to chemicals in our food - which signal the flavor. As we chew / **MASTICATE** food, chemicals are released which travel up the **PALETTE**, UP into **OLFACTORY RECEPTORS** in our nose - smell & taste are combined. What flavors are detected relate to the chemical composition of the **FOOD**. **THIS IS MEANINGFUL BECAUSE THROUGH TASTE WE CAN UNDERSTAND CERTAIN PHYSICAL AND CHEMICAL IMPACTS OF FLAVOR AND WHAT IT SIGNALS IN THE BODY.**
- **FLAVORS AND WHAT THEY SIGNAL:**
 - **SWEET:** sugars, starches, polysaccharides - glucose, fructose, sucrose - **BUILDING, PLEASING, TONIC** (taste of mother's milk); usually in fruits, roots, shoots, tubers - **STORAGE**
 - **SOUR:** acetic acid, vinegar - citric, malic, and ascorbic acids - **CLEANSING, CLEARS HEAT, ASTRINGENT, STIMULATES FLOW OF LIQUIDS**
 - **SALTY :** sodium chloride, **DISSOLVES OBSTRUCTIONS**, associated with **KIDNEY**, moves **FLUID IN BODY**
 - **BITTER :** back of tongue, signal of potential poisons, alkaloids, glycosides, **CLEARING, PURIFYING - NERVOUS SYSTEM, CIRCULATION**
 - **PUNGENT :** burning, numbing sensations, essential oils, ex peppermint - moves circulation and breaks up stagnation
- *Teacher takes turn passing samples of tea for students to explore. Students note their observations. After the following .*

<p>#1 Name of Plant: <u>FENNEL</u> Latin Name: <u>Foeniculum vulgare</u> Part of Plant Used: <u>SEED</u> Harvest Season: <u>LATE FALL</u> Medicinal Use: <u>soothes the stomach, freshens breath, calms irritation of mucous membranes</u></p>	<p>#2 Name of Plant: <u>ROSE HIPS</u> Latin Name: <u>Rosa rugosa</u> Part of Plant Used: <u>ROSE HIPS, FLOWERS</u> ALSO Harvest Season: <u>WINTER</u> Medicinal Use: <u>high in vitamin C, astringent diarrhea, tightening, strengthens the veins and capillaries, seed helps with stretch marks, regenerates scar tissue regrowth</u></p>
<p><i>SWEET, warming, moistening</i></p> 	<p><i>SOUR, cooling, drying</i></p> 
<p>#3 Name of Plant: <u>DANDELION LEAF</u> Latin Name: <u>Taraxacum officinale</u> Part of Plant Used: <u>LEAF</u> Harvest Season: <u>SPRING</u> Medicinal Use: <u>mineral rich, high in zinc and potassium, cleanses kidneys, diuretic</u></p>	<p>#4 Name of Plant: <u>THYME</u> Latin Name: <u>Thymus vulgare</u> Part of Plant Used: <u>LEAF</u> Harvest Season: <u>SPRING, SUMMER, FALL</u> Medicinal Use: <u>thymol, dispersing, breaks up upper respiratory congestion, great for strep, pungent and spicy, strongly antiseptic, diaphoretic</u></p>
<p><i>SALTY, cooling, drying</i></p> 	<p><i>PUNGENT, warming, drying</i></p> 

#5

Name of Plant: YELLOW DOCK

Latin Name: Rumex crispus

Part of Plant Used: root

Harvest Season: FALL

Medicinal Use: CLEANSING, supports LIVER, constipation, clean the blood

REFLECT: Which plants did you enjoy the most? Which did you enjoy the least? What did you learn? What surprised you?

BITTER, cooling



- Role scenarios: Your friend has a thick cough with lots of white thick mucus - what plant will you use? **OREGANO** (white mucus is the sign of a cold congestion - the warm pungent volatile oils of oregano will help to dry the congestion)
- Role scenarios: You just ate a big cheesesteak with fried onions and your stomach is gripping in pain, what plant will aid you in calming your stomach and freshening your breath? **FENNEL** (the sweet aromatic compounds of fennel help to stimulate the flow of saliva, freshen and sweeten breath. The seed is also an antispasmodic for stomach pain and indigestion).
- You've been constipated for three days, what will help ease your troubles? **YELLOW DOCK** (as a bitter root with anthraquinones, yellow dock stimulates the flow of gastric juices and helps to soften condensed bowel)
- It's been a very hot day and you've lost a lot of fluids from perspiration, which plant will help dry you so you can rehydrate yourself? **ROSE HIPS** - (the sour flavor of the herb from fruit acids help to dry excess perspiration and are used for rehydrating the body from electrolyte loss)
- It's the middle of winter - what herbs might you be able to harvest now? **ROSE HIPS** - (harvest when the hips are slightly tender to the touch, and **YELLOW DOCK** (roots are more medicinally active in the winter)

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| | <ul style="list-style-type: none">- <i>What is one of the earliest greens of spring growing before your lettuce is ready?</i>
<i>DANDELION LEAF - (dandelion leaf makes a great salad green, it's high in minerals like zinc, potassium and vitamins C, K, B)</i>- <i>Role scenarios: fluid retention? Puffy swollen flesh? DANDELION LEAF - (dandelion leaf is a potassium-sparing diuretic. It dries and flushes excess moisture in the body without compromising an individual's mineral levels).</i> |
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