

Grow Your Own Herbal Tea

Overview: Herb plants engage your senses and are easy to grow indoors or outdoors, making them perfect plants for youth gardeners. This lesson provides ideas for introducing students to herbs by crafting their own herbal teas.

Grade Level/Range: K-5

Objectives:

- To grow herbs in indoor or outdoor gardens (optional).
- To engage students' senses by sampling herbal teas.

Time: If planting your own herbs: 6 to 8 weeks; Sampling activity: 1 hour

Materials:

If growing your own herbs:

- herb seeds (commonly grown herbs for teas include bee balm, borage, cinnamon basil, chamomile, fennel, lemon balm, mint, and sage)
- pots
- potting soil
- plant markers

Sampling activity:

- fresh or dried herbs
- tea strainer
- tablespoon and cup measure
- boiling water and tea pot
- heat resistant cups to drink from

Background Information: Herbs are often defined as plants that are used as an ingredient for flavor, fragrance, or healing. These aromatic plants, which are surrounded by centuries of folklore and ritual, played vital roles in earlier times. Imagine how people coped hundreds or thousands of years ago without drugstores, grocery stores, sanitary facilities, cosmetic stores, or adequate clean bathing water. Without refrigeration, food would have spoiled quickly. What better way to disguise the odors and tastes of rotten food than with aromatic plants? The fragrances of many of these plants, in the form of potpourri, perfumes, and lotions, were also used to keep homes and bodies smelling fresh. What might people in those days have done for a stomach ache? Through trial and error, they discovered that certain plants could be used to treat illness and injury. As it turns out, these observant people were onto something. In the late 1800s, chemists began isolating the chemicals in plants used to promote healing. (The word “drug” comes from the old Germanic word “drigan,” which means “to dry,” since drugs were originally dried herbs.)

Herbs are still an important part of our lives today. When trying to eat a more nutritious diet, herbs can serve as a healthy food additive, providing flavor without the negative side effects of seasonings like salt and sugar. Of course their magic is not just in their taste, scientists believe that 75 percent of what we perceive as taste actually comes from the aromas we take in! And no surprise; after all, we only perceive four flavors (salty, sweet, sour, and bitter; some add a fifth, called umami), but our brains perceive more than 30,000 smell sensations! Most of us can only recognize about five to ten thousand.

Sampling herbal teas can be a fun way to explore the power of herbs. When we take a sip of tea, odor molecules also go straight from our mouths to a place deep within our nasal cavity. In both cases, aromatic signals travel to an area of the brain associated with memories and emotions.

Advanced Preparation: Below you will find instructions for planting herbs if you would like to grow your own for this activity. Alternatively, you can purchase herbs at a garden center for this activity.

Planting

1. Moisten potting soil. Squeeze a handful—it should be as damp as a well-wrung sponge, with no water dripping out. Fill pots to within a ½ inch of the lip. On the plant markers, write the name of the herb and the planting date. For specific planting directions, consult the table (below/at right).

Herb	Planting Depth	Seed Spacing	Days to Germination
Bee balm	Sprinkle on soil surface	Sprinkle on soil surface	10-14
Borage	1/2"	1"	10-14
Cinnamon basil	1/4"	Sprinkle evenly over soil surface	15-20
Chamomile	1/4"	Sprinkle evenly over soil surface	10-14
Fennel	1/2"	1"	10-14
Lemon balm	1/4"	Sprinkle evenly over soil surface	10-14
Mint	Sprinkle on soil surface	Sprinkle evenly over soil surface	10-14
Sage	1/4"	1"	15-20

For seeds with an assigned planting depth, make holes with a pencil in which to plant seeds. Where we recommend “sprinkling”, these miniscule seeds will roll and nestle into crevices in the rough soil surface. Try distributing them slowly and evenly from the seed packet, or mix them with a bit of sand to make them easier to sow. Reseal packets that contain extra seed for another sowing, and keep them in a cool, dry place out of direct light.

By mixing the soil as directed above, it should be moist enough that you don’t need to water after sowing.

2. Keep an eye on the soil and use the misting bottle to keep the surface slightly moist until seeds germinate. Resist overwatering, which can cause seeds to rot in the soil before they get a chance to sprout. If soil seems to dry out quickly, apply more water gently with a watering can so you don't disturb the seeds, or cover the pots with a piece of plastic wrap to hold moisture in. As soon as seedlings start to come up, place pots under lights or in a south-facing window.
3. Keep grow lights within a couple of inches of the top of the pot to ensure that seedlings get enough light. If you're growing your herbs in a window, consider surrounding the pots with reflective "walls", made of something such as white poster board, to more evenly distribute sunlight around the plants. This should result in more balanced growth.

Water gently with a watering can to maintain evenly moist soil conditions. Point an electric fan at the plants, or gently run your palm across the tops of the seedlings each day. This simulates wind, which encourages seedlings to develop thick stems and compact growth.

4. Once seedlings have two or three sets of true leaves and before they become crowded, thin or transplant them to three or four per pot. (If you have more pots and plenty of room, feel free to pot up more of your seedlings.) Supply nutrients via a liquid fertilizer such as fish emulsion; mix and apply according to label instructions.
5. If you plan to transplant your herbs outdoors, challenge your students to choose the location and design a layout. Here are some tips to guide them:
 - Do some research to determine which of the herbs are perennials and which are annuals. This could influence where you decide to plant them.
 - Keep all plants that are members of the mint family (including lemon balm and bee balm) in pots or in an area where they aren't able to spread to other beds. They grow vigorously and can become invasive. Harvesting them regularly for tea will help keep them in bounds.
 - Mint family herbs can grow in full sun to part shade. All other suggested herbs (and most herbs in general) do best in full sun.
 - Use herbs (aside from mint) as companion plants interspersed among your vegetables and flowers. Their flowers attract pollinators and other beneficial insects to your garden.

Laying the Groundwork: Ask students, what are some of the ingredients we add to our foods to enhance their flavor? Are all of these additives good for us? Are there any additives we should limit in our diet? What else might we use to help us enjoy our food more?

Exploration:

1. Harvest your herbs. Aromatic oils are most concentrated when herb plants are in bud, so that's the best time to harvest (from the list above, chamomile is the only herb which you'll harvest blossoms instead of leaves). Using sharp scissors, remove no more than half of a single plant at a time, and leave at least two leaves per stalk so plants will have means to create the energy they need to regrow. (If there is a lot of soil on leaves near the bottom of a stalk, cut above them, or cut them separately, rinse in cool water, and use them fresh for tea or seasoning.) Fertilize plants lightly to aid their quick recovery.

Chamomile's blossoms are the part used for tea. When grown outdoors, the blossoms are ready for harvest in about 65 days. Clip blossoms from stems when petals have opened fully. To dry, spread them on a screen.
2. Brew your teas. In "merry olde England," a tea with one ingredient was called a "simple." Students should start by sampling some simples so they can become familiar with the flavors of the various herbs they've grown. Then they can experiment with creating herbal blends of those they like best. Specific steps for brewing tea includes:
 - Chop fresh herbs or snip them with scissors to help release the essential oils. Crumble dried herbs gently, just so they're big enough that they won't slip through the strainer.

- Measure herb. One tablespoon of dried herb or three of fresh makes one eight-ounce cup of tea. If you're brewing several cups at once, add an extra tablespoon "for the pot." (Explain to students that you need more of a fresh herb than a dried one to make a flavorful tea because the flavor is more concentrated in a dried leaf because the compounds responsible for flavor – essential oils – are no longer diluted by water in the plant's cells.)
- Pour boiling water over the herbs, cover, and let steep for one to three minutes, or more to taste. Unlike black and green teas, herb teas are naturally pale.
- If students desire a fuller flavor, add more tea, not more time, to the brewing process. Extra time releases more tannic acid from plants, which can upset the stomach.
- Students should taste their labor of love first before adding sweetener or milk.

Note: Herbs grown indoors are likely to have lower concentrations of essential oils than those grown outdoors, so you may need to use a greater amount of indoor herbs to make a truly flavorful cup of tea. Recommend that students measure the amount of herb they use for each simple so they can keep track of how much it takes to make a tasty brew. If you extend your herb garden to the outdoors, you can compare tea made from equal amounts of indoor herbs to outdoor herbs to see which have stronger flavor.

- Record your observations. Line up a selection of brewed teas on a table or counter. As students go from cup to cup with a notebook in hand, direct them to carefully smell each one and then write these things in their notebooks: 1) any memory, feeling, or activity the aroma brings to mind, 2) words that describe what they smell, 3) guesses about what they are actually smelling. Nonwriters can discuss their responses with you. After documenting their observations from smell, you can ask them to try tasting the brews.
- Try blending different herbs together. After students have cultivated more awareness of their senses, you can challenge them to develop enticing herbal tea blends. This sample recipe can serve as an example for blending:

Maytime – Yields six cups of tea

(developed by Evelyn Gaspar)

- 3 tablespoons dried chamomile flowers
- 1 tablespoon dried bee balm leaves
- 2 teaspoons dried rosemary leaves
- 2 teaspoons crushed coriander seed
- 2 teaspoons dried peppermint leaves

Some additional blending hints:

- Choose one flavor or family of flavors (e.g., lemon) to carry your message.
- For accent, add small amounts of other herbs or other flavorings. Use about three parts of your dominant ingredient(s) to one part of accent items.
- Crumble dried leaves if necessary to mix evenly, but not enough to go through your strainer.

Making Connections:

- Discuss students' experiences and notebook entries. Ask, *Which smells did you like most, and why? How do you think the substances taste? Which did you like least? Which were easier (harder) to describe, and why? What conclusions can you draw about our sense of smell?*
- Ask, *which do you think is more important when we eat and drink: our sense of smell or our sense of taste?* Consider having students explore this question by sampling of two teas that taste similar, such as spearmint and peppermint. Have partners work together on the challenge. One student should be blindfolded and hold his or her nose. The other should give the taster the slices, one at a time. Ask, *Are the samples the same or different? How can you tell? What does each taste like?* Next, students should unplug their noses, taste again,

and try to identify the flavors. Ask, *What did you notice about the taste test? What do you think made the difference? What new questions do you have?* Revisit and discuss the initial question.

Branching Out:

Drying Your Herbs: If you wish to preserve some of your harvest, here's how to dry the leaves. Be sure to prepare labels to attach to drying trays or bundles first — the leaves all look pretty much the same once they're dry!

Harvest leaves in late morning, after dew has evaporated from the leaves. Herbs picked while wet are more likely to form mold during the drying process. Inspect leaves and remove any insects or eggs you may find.

There are two general drying methods:

- **Tray Drying:** Trim leaves from the stems and spread them in a single layer on a tray or screen. Daily monitoring will tell you when you need to turn the leaves to ensure even drying. This method works best for plants with large, soft stems that hold a lot of moisture and slow the drying process.
- **Hang to dry:** Use rubber bands or twine to make loose bundles of several stalks. Suspend bundles from hooks, rods, or coat hangers.

Dry herbs in an airy place out of direct sun and protected from insects. You'll have best results if you check daily and remove any moldy leaves. The process is complete when leaves crumble easily when you crush them. Store in glass jars or plastic zip bags in a cupboard — exposure to light diminishes flavor.

History of Herbs: Encourage students to explore the origins and traditional uses of herbs. Where were they first grown and used? Do they have symbolic significance (e.g., sage: wisdom)? Were they grown for medicinal, culinary, or other applications? Are there modern products that are still derived from these important plants? Make a chart to match the uses of various herbs with newer medicines or products that have assumed the same role in modern times. Decorate your chart with pictures from magazines, student illustrations, or images from the Internet.

Create Your Herb Business: There are many types of herb products you can make and then sell to help raise money for your garden program. Ideas include fragrant sachets, herb vinegars, or even just selling fresh herbs for cooking.