Science of Healing Plants Pre-/Post-Test: Lavender & Peppermint

1. Which of these plants is native to Hawai‘i?
   a) Lavender (Lavendula)
   b) Lamiaceae (mint & lavender family)
   c) Mint (mentha haplostachys haploystachya)
   d) All of the above
   e) None of the above

2. The lavender farm on Maui is in business to …
   a) create and sell lavender products
   b) heal people with lavender products
   c) teach people to care for the land
   d) only ‘a’ & ‘b’ above
   e) only ‘a’ & ‘c’ above

3. The soap factory on O‘ahu is in business to …
   a) create and sell mint products
   b) create and sell soap products
   c) heal people with mint products
   d) only ‘a’ & ‘c’ above
   e) all of the above

4. Medicinal oils from lavender and mint can be used …
   a) topically (on the skin)
   b) internally (digested)
   c) internally (inhaled)
   d) only ‘b’ & ‘c’ above
   e) all of the above

5. Using mint oil for medicinal purposes …
   a) has been studied by scientists and seems to help body functions
   b) has been studied by scientists and does not help body functions
   c) has not been studied by scientists because it is illegal
   d) has not been studied by scientists because mint is a folk remedy
   e) none of the above
Teacher’s notes: Science of Healing Plants—Lavender & Peppermint

Safety: few people are allergic to plants in the mint family (peppermint & lavender included), but ask students first and note some students may be sensitive to direct topical use of peppermint if not diluted with oil or water.

Supplies to Pre-Order:
- Pure oil of peppermint and lavender
- Clean spray bottle
- Light body (massage) oil
- Hot water & cold milk
- Optional: lavender & peppermint tea, fresh lavender and mint herbs (can be varieties)

Suppliers: local health food stores and bath shops have all these supplies. Prices start at about $10 for 15 mL of pure oil (this goes a long way if kept out of student hands – only 1 drop is needed for a single treatment). Online suppliers also have these supplies and can usually ship within a few days. For best results, get pure oils uncut with any synthetic ingredients.

Suggested Sequence of Activities:
Prep before class – get 2 students to boil water; organize supplies at 3 stations: A) smelling, B) massage and C) tasting
1. Peppermint Pre-Test – give students the option of spraying peppermint (diffused in water or, for better results, a light massage oil) into the palms of their hands to inhale gently but deeply just before taking the unit pre-test &/or the post-test. Students who opt out can be ‘control’ participants while others are ‘treatment’ participants. Before and after, have students discuss how focused they feel their brain is and how they would describe how they feel before smelling the oil (ie have a headache? tired? excited? sad? etc).
   **ANSWER KEY:** 1) C; 2) E; 3) B; 4) E; 5) A
2. Reading Preview – hand out Science of Healing Plants: Lavender & Mint sheet and point out the boxes with classification notes and the vocabulary in bold (see bottoms of p. 1 and 2)
3. Read – can be done silently as group &/or with small reading circle, or done aloud and discussed as you proceed
4. Activity – encourage students to do at least 1 test at each station, and at least 1 test for both plant oils; they can do more if time allows
5. Guest speaker options: most towns have at least 1 massage therapist &/or aroma-therapist you or your students can invite in to explain and demonstrate different oils, lotions and techniques to the class. Note: self-massage & acupressure are best done on hands, head, neck or feet to avoid students getting distracted (tell them in advance!)

Science of Healing Plants Activity & Reading: Lavender & Peppermint

Hawaiians like their plants! Find out why … With a partner, or on your own, try out the essential oil products in class & test the power of these plants for yourself:

Smell it! 🌿 Rub it on! 🌿 Taste it!

1st … Read about Medicinal Plants in Hawai‘i
Local folks have turned their interest in healing plants into science careers that help people and the ‘aina all over.

**Lavender**

The Ali‘i Kula Lavender Company on the slopes of Haleakalā has over 10½ acres with 45 varieties of lavender plants blooming. The business employs 24 people who use lavender to make foods like hot lavender tea, lavender jelly, scones & rolls, lavender chicken salad, & lavender lemonade! They also give garden tours & sell soaps, candles & other lavender products. They partner with over 25 local businesses, not just to create & sell lavender products, but also to care for the land and the people. (Learn more about their business philosophy at: [www.aliikulalavender.com](http://www.aliikulalavender.com))

Lavender is not native to Hawai‘i, but it grows well here as **annuals, herbaceous plants & small shrubs**. The medicinal uses of lavender studied by scientists & healers include:

- anti-inflammatory (for swelling or burns)
- antiseptic (for sores or bites)
- treatment for headaches, nerves or to induce sleep.

**Scientific classification**

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<thead>
<tr>
<th>Kingdom</th>
<th>Plantae</th>
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<tbody>
<tr>
<td>Division</td>
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<td>Genus</td>
<td><strong>Lavandula</strong></td>
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**Mint**

The North Shore Soap factory began with a soap recipe from an organic chemist. The Driscoll’s learned how to blend coconut, soybean, palm & olive oils, without the harsh grease-cutting lauryl sulfate found in other soaps, to make a variety of healthy bath products. They also use local macadamia, kukui, and tangerine in their formulas. Mint is used in their bath salts & massage oil.

Many scientists have studied the effects of mint on digestive organs, the liver, the respiratory system, & the brain to find out why it appears to help us with gastric problems (eating), respiration (breathing), & brain functioning (focus, appetite). Mint feels great in massage oil applied to the stomach, soles of the feet, or temples. You can also put a drop of oil on the tongue, drink mint tea or add it to milk. It has been used as a preservative, as well.

**Mentha** (mint) is a genus of about 25 species (and 100’s of varieties) of flowering plants in the lamiaceae family (say lay-mee-AY-see-ay). Several mint hybrids, such as peppermint, commonly occur. Mints are almost exclusively **perennial** herbs. There are five recorded species of haplostachys mint endemic to Hawai’i, but only one remains today, and that is H. *haplostachya* (say hap-low-STAY-kiss hap-low-STAKE-yah), known to Hawaiian scientists as honohono.
Science of Healing Plants: Mini-Lab Notes
Lavender & Peppermint

1. Pre-Test Data
Which experimental group are you in? (check one)
treatment (inhaled mint before test)  control (didn’t inhale mint)

What results do you expect on your Pre- & Post-Tests for this unit? Give details & reasons.

______________________________________________________________________________

______________________________________________________________________________

2. Laboratory Research (after reading & while experimenting!)
Check one: I worked alone with a partner (give name): __________________________

A) My/our lavender research included (check any you tried):

rubbed diffused oil in the palms of our hands & breathed deeply

Results noticed were (give details): _____________________________________________

______________________________________________________________________________

rubbed diffused oil on the temples soles of the feet

Results noticed were (give details): _____________________________________________

______________________________________________________________________________

tasted oil on the tongue in a beverage, namely:

Results noticed were (give details): _____________________________________________

______________________________________________________________________________

Further research I would like to do on lavender is: (give details & reasons)

______________________________________________________________________________

______________________________________________________________________________

______________________________________________________________________________

______________________________________________________________________________
B) My/our mint research included (check any you tried):

rubbed diffused oil in the palms of our hands & breathed deeply
Results noticed were (give details): __________________________________________
_______________________________________________________________________

rubbed diffused oil on the temples soles of the feet
Results noticed were (give details): __________________________________________
_______________________________________________________________________

rubbed diffused oil on the temples soles of the feet
Results noticed were (give details): __________________________________________
_______________________________________________________________________

rubbed diffused oil on the temples soles of the feet
Results noticed were (give details): __________________________________________
_______________________________________________________________________

Further research I would like to do on mint is: (give details & reasons) ______
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

3. Post-Test Data (do at end of Healing Plants lessons)
Which experimental group were you in? (check one)
treatment (inhaled mint before test) control (didn’t inhale mint)

Summarize your findings based on your test results and other observations you have made about the use of peppermint when taking a test.
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

Are these results reliable & valid? How could this experiment be improved?
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________