Propagation Methods:
How We Make Things Grow in Hawai‘i

DIRECTIONS: Read the many ways people try to make plants grow better. Which ways did the old Hawaiians use? Which ways do farmers & botanists in Hawai‘i use now?

WRITE in the blanks on the right what you think, like this:
> past ... if you think only Hawaiians long ago tried this
> present ... if you think only farmers & botanists today try this
> both ... if you think people in the past & people now try this

A) WAYS TO HELP PLANTS GROW Past, Present, or Both?

1. Seeds & Cuttings
   (like coconut or ilima flower & roots or branches of kalo or cactus)
   o **germinate** - make sprout in dirt or water ____________________
   o **time** - plant during certain moon phase, season or weather ____________________
   o **scarify** - scratch open the seed husk to grow faster ____________________
   o **graft** - to attach a root or branch of 1 plant to another ____________________

2. Soil (dirt plus peat moss, additives, extenders)
   o **fertilize** - add plant food like
     manure or chemicals like phosphorus, nitrogen or potassium ____________________
   o **aerate** - add air by digging up with tool or hands or additives ____________________

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- **hydroponic** - grow with no soil
  - only water & nutrients (food)

3. **Water** (tap water, rain water)
   - **monitor** - limit amount & schedule given to each plant
   - **add nutrients** - use rain or chemicals to make grow bigger or faster

4. **Light** (sun or different electric sources)
   - **monitor** - limit amount & schedule given to each plant
   - **boost** - increase amount with electric light

5. **Control Disease or Parasites**
   - **prevent** - use natural or chemical methods so plants don’t get sick
   - **companion plant** - plant near other plants like garlic, or near certain birds’ or animals homes
   - **eradicate** - remove pests by hand, introduce insects that kill problem bugs, or use pesticides

**B) IMPORTANT CHEMICALS FOR PLANTS**

**DIRECTIONS:** listen to the lecture & write where we get these chemicals & why plants need them

<table>
<thead>
<tr>
<th>Chemical Name, Symbol</th>
<th>Main Source</th>
<th>Effects on Plant</th>
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<tbody>
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