**Regional Science Consortium**

**Herbarium – Plant Pressing**

**Background**

An herbarium is a collection of dried and pressed plant specimens and is used as a botanical library. Collecting plant specimens in this manner allows for them to be studied over a period of many decades, makes them more mobile, and allows for related plants to be studied side by side. Herbariums can be used to help with plant identification, plant location, ecology, as a permanent record of extinct species, research, and for education on plant taxonomy, morphology, and ecology.

**Objective**

Students will apply their knowledge of herbariums by collecting and pressing their own specimens.

**Instructions**

Specimen Collection

1. Obtain at least 1 large plastic bag, a pair of scissors or shears, a moist paper towel, a field book or piece of paper, and pencil.
   1. Other useful materials include a plant identification guide or the Seek app by iNaturalist on a mobile device.
2. Begin by heading outside and locating a specimen you wish to preserve.
3. Identify the plant using personal knowledge, a plant identification guide, or the Seek app by iNaturalist on a mobile device.
   1. If you cannot identify all the way to species that is okay! Do your best to identify to at least the family level.
4. Record the following in your field book before taking your specimen.
   1. Date
   2. Collector(s)
   3. Collection number – Start at 1.
   4. Plant identification: FAMILY Genus species
      1. The plant family should be written in all capitals. Genus should be capitalized and underlined. Species should be in all lowercase and underlined.
   5. Plant description
      1. Tree, shrub, vine, wildflower
      2. Flower/fruit color, scent
      3. Plant height
      4. Unusual plant features – colored sap, bark texture
      5. Specific locality features – near a stream, on a rock, in water, etc.
   6. Locality – specific description of where you found the plant.
      1. GPS point if possible
      2. Country, State, city
      3. Distance and direction (N, S, E, W) from nearest city or landmark
      4. Nearby vegetation type – field, forest, etc.
5. Collect your specimen by cutting. Only take cuttings that will fit within the boundaries of your pressing paper. Collect both fertile and sterile material.
   1. Fertile material: flowers and fruits of a plant.
   2. Sterile material: leaves, stems, roots and other plant parts unrelated to the plant’s reproduction.
6. GENTLY place your specimen into a large plastic bag. Be careful not to damage it.
   1. A moist paper towel can be added to the bag to prevent wilting.
7. Once all collections have been obtained, head back inside to begin the plant pressing procedure.

Plant Pressing

1. Obtain pressing newspaper, 2 sheets of blotting paper, 2 sheets of corrugated cardboard, and a set of plant pressing boards with straps.
   1. If you do not have these materials available, use regular paper in place of the newspaper and blotting paper, and a few large, heavy books in place of the plant pressing boards.
2. Begin by placing one sheet of cardboard on your work surface and placing a sheet of blotting paper directly on top of the cardboard. Unfold one piece of pressing newspaper and place one side on top of the blotting paper. This half of the newspaper is where you will arrange your plants.
   1. Take note of which direction the fold of the paper is in as all pages will need to be placed in the same direction when pressed.
3. To remove the specimens from the plastic bag, gently turn it over and dump them onto the newspaper.
4. Clean the plant by brushing off loose soil and blotting off any moisture.
5. Begin arranging your specimens following the specifications below.
   1. If stems must be bent, they should be broken into a V or N shape, not curved into a U.
   2. If plants are small, place several on one sheet to fill it.
   3. Arrange plants so the same surface is facing upwards as will be seen once the specimen is mounted.
   4. Arrange plants so both surfaces of leaves and reproductive structures can be viewed – both top and bottom. Press some flowers open, some closed, and others split to show internal reproductive structures.
      1. If only one leaf is available, it should be folded back on itself so both the top and bottom can be seen.
      2. Do not cover flowers with leaves. Fold the leaves beneath the flowers.
   5. Cut off excess leaves but always leave the base of the leaf behind to show its position off the main stem.
   6. If a leaf is too large to fit on the page, fold the base and tip inward so both can be seen.
6. Once you have finished arranging your specimen, add a piece of paper to the page that includes information from your field book such as the date, collector(s), collection number, plant identification, and locality.
   1. Do not use abbreviations.
7. Next you will fold the sheet of newspaper back over your specimens, enclosing them inside. You can stack newspaper sheets containing specimens on top of this for as many as may be needed.
   1. Make sure the folds of the stacked newspaper sheets are located on the same side.
8. Once all your specimens have been stacked, place the second sheet of blotting paper on top of the stack, then place the second sheet of cardboard on top of that.
9. Now take the stack and place it on top of a plant pressing board. Place the second plant pressing board at the top.
10. Use the straps to tighten the boards together and compress the stack of papers.
11. Once secure, place the assembled press in an area to dry such as a press dryer (located at the RSC), next to a fan, or near a small space heater with a fan for a few days or a week. If none of these are available, simply leave the press in a dry area for 1-2 weeks.