

# Botany Ninja: 12 Module Plan

This plan guides you through "Botany in a Day," focusing on one major plant family or concept per module. Each module assumes roughly one week of study, but adjust pacing as needed for mastery. Emphasize hands-on observation!

## Module 1: Introduction & The Patterns Method

**Reading:** Introduction and Chapters on Plant Evolution, Terminology, and the Patterns Method in "Botany in a Day."

**Activities:**

- Start your Nature Journal. Practice drawing basic leaf shapes, arrangements, and flower parts described in the book.
- Define key terms (e.g., opposite, alternate, whorled, simple, compound, pistil, stamen, petal, sepal).
- Go outside and observe different plants. Try to identify the basic parts without worrying about names yet. Note the diversity.

## Module 2: The Mint Family (Lamiaceae)

**Reading:** Chapter on the Mint Family.

**Activities:**

- Learn the key patterns: square stalks, opposite leaves, often aromatic, specific flower shape.
- Find examples (mint, sage, salvia, dead nettle, oregano, thyme). Draw the square stalk, opposite leaves, and flower structure in your journal.
- Crush leaves – note the aroma. Document observations.

## Module 3: The Parsley Family (Apiaceae)

**Reading:** Chapter on the Parsley Family.

**Activities:**

- Learn the key patterns: compound umbel flower structure, often hollow stems, alternate compound leaves, often aromatic. Caution: Includes highly poisonous members (Poison Hemlock)!
- Find examples (wild carrot/Queen Anne's lace, parsley, dill, fennel, celery). Carefully observe and draw the compound umbel and leaf structure.
- Discuss the importance of caution with this family.

## Module 4: The Mustard Family (Brassicaceae)

**Reading:** Chapter on the Mustard Family.

**Activities:**

- Learn the key patterns: 4 petals forming a cross, 6 stamens (4 tall, 2 short), often alternate leaves, characteristic seed pods (siliques/silicles).
- Find examples (wild mustard, shepherd's purse, garlic mustard, radish, cabbage family plants). Draw the flower structure and seed pods.

- Taste test edible members (use caution, only if 100% certain of ID from a reliable source).

## Module 5: The Pea Family (Fabaceae)

**Reading:** Chapter on the Pea Family.

**Activities:**

- Learn the key patterns: distinctive "banner, wings, and keel" flower shape, compound leaves (often pinnate), fruit is a legume (pod), nitrogen-fixing nodules on roots (optional observation).
- Find examples (clover, vetch, beans, peas, lupine, black locust). Draw the flower structure, compound leaves, and legume pod.
- Discuss nitrogen fixation.

## Module 6: The Lily Family (Liliaceae sensu lato)

**Reading:** Chapter on the Lily Family (note Elpel's discussion of family splits).

**Activities:**

- Learn the key patterns: flowers parts in threes (3 sepals, 3 petals often looking alike - tepals, 6 stamens, 3-parted pistil), parallel leaf venation, often grow from bulbs/corms/rhizomes.
- Find examples (daylilies, true lilies, tulips, onions, garlic, asparagus - note traits may vary as families have been split). Draw the flower parts (count them!) and parallel leaf veins.

## Module 7: The Mallow Family (Malvaceae)

**Reading:** Chapter on the Mallow Family.

**Activities:**

- Learn the key patterns: 5 separate petals, stamens fused into a distinctive column around the pistil, often palmate venation/lobing on leaves, mucilaginous texture.
- Find examples (common mallow, hollyhock, hibiscus, marsh mallow). Draw the flower focusing on the stamen column and the leaves.
- Feel the texture of the leaves/stems (mucilaginous).

## Module 8: The Aster Family (Asteraceae)

**Reading:** Chapter on the Aster Family.

**Activities:**

- Learn the key patterns: composite flower head made of many tiny flowers (disk and/or ray flowers), bracts below the flower head. This is a huge and diverse family!
- Find examples (sunflower, daisy, dandelion, thistle, chicory, aster). Draw a composite flower head, distinguishing between ray and disk flowers if present. Observe the bracts.
- Dissect a flower head (like a dandelion) to see the individual flowers.

## Module 9: Mid-Course Review & Field Practice

**Activities:**

- Review the patterns for the families covered so far (Mint, Parsley, Mustard, Pea, Lily, Mallow, Aster).

- Go on a field trip specifically to identify plants from these families. Use your journal and the book.
- Focus on distinguishing between families with similar traits (e.g., leaf arrangements, flower parts). Document at least 10 different plants identified to the family level.

## Module 10: Grasses, Sedges, Rushes (Optional Advanced Patterns)

**Reading:** Chapters/sections on Grasses (Poaceae), Sedges (Cyperaceae), Rushes (Juncaceae).

### Activities:

- Learn the distinguishing features: "Sedges have edges, Rushes are round, Grasses have nodes where leaves are found" (or hollow/jointed stems). Examine flower structures if possible (often tiny).
- Find examples of each. Document stem shape, leaf arrangement, and any visible flower/seed structures in your journal. This requires close observation!

## Module 11: Trees & Woody Plants

**Reading:** Apply pattern recognition to woody plants; consult relevant sections if needed.

### Activities:

- Focus on applying pattern thinking to trees and shrubs. Look at leaf arrangement (opposite/alternate), leaf shape (simple/compound), bark, buds, and any flowers or fruits.
- Can you place any local trees into the families already learned (e.g., Black Locust in Pea Family)?
- Identify 5 different common trees/shrubs in your area using patterns (leaf, twig, bark) and supplement with a tree guide if needed. Document in your journal.

## Module 12: Final Project & Assessment

### Activities:

- **Option 1: Plant Family Portfolio:** Choose 5 families learned. For each family, create detailed journal pages with drawings, pressed samples (optional), photos, locations found, and descriptions of 2-3 different species within that family found locally.
- **Option 2: Guided Nature Walk:** Lead a short (15-20 min) guided walk for family/friends, identifying plants to the family level using the patterns method and explaining the key characteristics. Prepare notes/talking points.
- **Option 3: Local Plant Inventory:** Conduct an inventory of plants in a specific small area (e.g., 10x10 ft square in the yard or park), identifying as many as possible to the family level using patterns. Document findings with sketches/photos and pattern notes.
- **Self-Assessment:** Review your nature journal. How confident are you in identifying the major families? Which patterns are easiest/hardest to spot?