I. Introduction
   A. Tradition and folklore – ethnobotany
      • Use local examples when possible
      • Share traditional planting calendars – plant peas when forsythia and daffodils bloom, eastern tent caterpillars hatch when crab apples bloom
      • Beaver moon; oak before ask, in for a splash; etc.
   B. Group discussion – seasonal indicators: list items that occur during each season. What reminds you of each season?
   C. Define phenology, a big picture concept that ties everything together
   D. History and phenology
      • Nature journaling, traditional record keeping
      • Robert Marsham, Thomas Jefferson, Henry David Thoreau, Aldo Leopold
      • Cloned lilac program, spring index

II. Climate and Life Zones
   A. Weather vs. Climate - define
   B. Plants and Climate:
      a. USDA planting zones, Sunset planting guide (for west coast) – show local zones
         o Why is climate important to Master Gardeners?
         o Why is weather important to Master Gardeners?
      b. Precipitation and growing degree days affect seasonal growth
   C. Phenology application
      ✓ Life-cycles
      ✓ Seasonal changes and planting guides

III. Species and Diversity
   A. Biology and Ecology – Sunshine, light energy, systems, oh my!
      o What does Biology and Ecology have to do with MGs?
   B. Species classification and organization
   C. Biomes and biogeography
   D. Life-cycles of plants and animals
   E. Botany Review – You are experts!
      o Plant, flower, fruit and seed structure
   F. “Phenophases” - measurable, reoccurring, observable stages in an animal or plant life-cycles
   G. Phenology Application
      ✓ Vegetative development
      ✓ Plant physiology
IV. Phenology
   A. Overview of USA National Phenology Network and Nature’s Notebook

V. Master Gardeners and Phenology
   A. If you’ve already done *any* gardening, you are a phenologist!
   B. Landscape plant maintenance – Healthy and balanced gardens are a must!
      ✓ Phenology Application
   C. Integrated Pest Management (IPM) – Long-term prevention using a mix of techniques, including phenological indicators!
      ✓ Phenology Application
   D. Desert landscape plants – Knowing what is appropriate for our zone, until it changes!
      ✓ Phenology Application
   E. Home & Landscape Water Use – Study the effects of water use in the garden vs. naturally occurring plants
      ✓ Phenology Application
   F. Propagation – Plants are replicated for monitoring across the US to determine phenology, based strictly on environmental conditions.
      ✓ Phenology Application
   G. Vegetable and Fruit Trees – What’s in your garden?
      ✓ Phenology Application
   H. Nature’s Notebook in your Garden!

VI. Future Applications
   A. “Hypotheses” for Gardeners – What do YOU want to know?
   B. Class assignments for course credit: Data collection for the remainder of the MG session. Phenology will return on April 23rd, so have your data entered and be ready to discuss what we found in the garden!