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| **Unit Name** | **Resources** | **Scaffolding** | **Driving**  **Question** | **Activities** | **Assessment** | **Pacing** |
| *Exploring Horticulture* | | | | | | |
| Exploring Horticulture  Standards:  HS I.1, I.2, I.3 | Text  Computer  Internet Access  Scrabble Games  Guest Speaker:  Rubrics | Pre/Post Test  Crossword:vocab  Guest Speaker  Cornell Notes | What do you want to be “when you grow up” as it relates to the horticulture industry? | Short Research paper  \*Job description  \*Demand  \*Personal Qualifications  \*educational Qualifications  \*Working Conditions  \*Salary  \*Where would “YOU” go to receive training?  ^Job Interview  ^Resume  ^Job Application  #Horticulture Scrabble  @Field Trip to Purdue Hort Facilities: Hort Park, Greenhouses, Classrooms, Gardens, etc. | Research Paper  Reflection – on going | 6 days |
| How Plants are Named  PS B-1.1, PS B-1.2, PS B-1.3, PS B-1.5, PS B-1.6 | Text  Lab Manual (LM) | Explanation/Notes  Word Match: LM  How to use a Field Guide |  | Game: Find the Genus and species that match the pictures  Making a Tree *Fin*der for the Flora Park: Talk to DNR Forester Summerfield  What is my name? Scavenger Hunt ( Flora Park or Mr. Mills wood) | Traditional Test  Lab Practical/Using a Dichotomous Key  For Tree Identification | 6 days |
| *Plant Science* | | | | | | |
| Parts are Parts  PS B-2.3, PS B-2.4, PS C-1.1, PS C-1.3, PS C-2.1, PS C-2.5 | Text  Lab Manual | Vocabulary  Notes |  | \*Draw & Label the main parts of a plant  Compare a monocot and dicot plant parts  Flower Dissection  Respiration activity  Photosynthesis activity w/ duckweed | Traditional test  Lab Notebook grades | 5 days |
| Environmental Requirements for good plant growth  HS B.8, HS B.9, HS B.10, HS C.1, HSC.2, HS C.4 | Text, lab manual, lab notebook | Instruction on plant requirements  KWL chart | How can reclaimed or degraded land be utilized to produce biomass for green energy? | Specialist’s Roles:  \*NPK  \*Porosity  \*Seed Germination  \*Soil Texture | Presentation, community member or organization present. | 11 days |
| *Plant Propagation* | | | | | | |
| It’s Stimulating!  PS C-1.2, PS C-1.4, PS C-2.2, HS A.5, HS A. 7, HS A.9, HS C.11 | Text  Computers  Internet Access | Instructional notes  Crossword-Vocab | What common things we use around the house can be used as a plant rooting stimulant? | \*Research active ingredients of plant stimulants  \*What environmental conditions are necessary for proper rooting to take place  \*Research commonly used household items that may be utilized as stimulants. | Traditional Test | 7 days |
| Plant Propagation Methods & Techniques  HS A.1, A.2, A.3, A.4, A.5, A.6, A.7, A.8, A.9, A.10 | Text  Green Plants  Rooting media/trays  Lab Manual  Gro-lights attached under the cabinet area in back of classroom to simulate a greenhouse. | Instructional notes  Lab : Plant Propagation |  | Students will divide into groups and choose one propagation technique for a plant. They will then tend to these plant materials until they are successfully rooted | Rooting of plant materials; presentation of method to remainder of class; Test over class presentations/methods of plant propagation | 14 days |
| Seeds  Gather Ragweed  HS A.1, A.2, A.3, A.4, A.5, A.6, A.7, A.8, A.9, A.10, HS B.8 | Text  Seeds  Growing media  Contaminated soil  Refrigerator  Oven  Black cloth | Seed germination in a baggie: observation  Soil texture and seed germination  Introduce soil texture triangle  Allelopathy experiment design and implementation | Ultimately, we will be farming from different type of media, water, soilless media; what are challenges associated with one of these methods concerning seed germination? | Students will research alternative methods for growing food for a growing population.  Students will consider the challenges associated with the above mentioned methods and develop hypotheses for resolution of said problems.  Students will apply concepts concerning seed viability.  Students will calculate seed germination percentage  Students will learn to use the soil texture triangle to compare soil types and compare to seed germination rates. | Conduct Research and design experiments.  Conduct Experiments to answer driving question.  Presentation of findings to peers, member of agriculture community, and administration.  Contact Mr. Grayson from Indian Trails vocational cooperative to attend. | 20 days |
| Soft & Hard wood Cuttings/Grafting Techniques  HS A.1, A.2, A.3, A.4, A.5, A.6, A.7, A.8, A.9, A.10, F.2 | Text | Lab Manual sheets |  |  |  | 15 days |
| Tissue Culture  HS C.1, HS C.5, HS C.8, HS C.11, HS C.12, PS C-2.4, PS G-1.1, PS G-1.6, PS I-1.1, I-1.2, I-1.3, I-1.4, I-1.5, I-1.6, I-1.7 | Text | Lab Manual  Sterile Tissue Culture Area  Venus Flytraps |  | Students will research and design their own tissue culture lab area.  Students will culture Venus Flytraps | Tissue Culture success/completion/design/research  Traditional Test | 5 days |
| Bulbs  PS C-2.3, C-2.5, | Text | KWL Chart  Bulbs  Forcing bulbs. | Why are bulbs planted in the fall, if they don’t bloom until the spring? | Bulb Sale: Students must be able to describe items to customers | Each student will be assigned a particular type of bulb plant and they will prepare a presentation of the cultural requirements and how that plant is used in the landscape, it’s origin, does it have medicinal properties or is it poisonous, etc. | 20 days |
| Greenhouse Mgt.  HS B.1, B.2, B.3, B.4, B.5, B.6, B.7, B.8, B.9, B.10, B. 11, D.1, D.2, H. 1, H1.2, H 1.3, H. 1.4, H.5, H.6, H.7, H.8, H.9, H.10, H.11, | Chrysanthemums  Text  Entomology samples | Lab Manual  Potted Mums for practice  Field trip and practice (?)  Entomology practices & instruction |  | Plant Mums around school to familiarize students with the characteristics of the plants | Lab Practical/Traditional Test | 5 days |
| Poinsettias  H D.5 | Text | Lab Manual  Field Trip  KWL chart |  | Sell Poinsettias for Christmas time. Not really a money maker project, more a learning experience | Traditional Test | 5 days |
| *Integrated Pest Management* | | | | | | |
| Biological Controls  Resources Needed: Cameras w/ ability to transfer into time lapse movie  HS H.1, H.3, H.5, H.7, H.9, PS H.5, H.6, I.6 |  | Vocab : Crossword  Or Quizlet Flascards  Biological control insects  Insect pests  Purdue contacts  Field Trip to Trader’s Mark Creamery to demonstrate the responsibility of organic production. | DQ: What’s the big deal in the relationship between Bt and Monarch butterflies? | Students will research the biological controls used for pesticide control  Students will witness the process of biological control. | Students will create a movie of time lapsed photography of the predator/prey relationship of the process of biological control | 15 days |
| The Safe Use of Pesticides  HS C.7, H.4, H.5, H.8, PS H.4 | Text  Lab Manual | Pesticide pre/post test  Excerpt from Silent Spring  Skype an interview with a curator of the Rachel Carson Institute. | DQ: How was Rachel Carson’s view of pesticide use relevant to today’s issues concerning GMO crops? | Students will experiment with pesticides on crickets and observe the reactions  Students will research the reactions that are caused when applied to insects.  Students will investigate the effects pesticides can have on Humans.  Students will research the driving question and create a school brochure concerning the school’s IPM procedures and protocol | Pesticide Safety Test  Pesticide Application Test  IPM Brochure | 7 days |
| Insecticides  HS H.3, H.7, H.9, H.11, H.12, PS H.1, H.4, H.6 | Text  Lab Manual | Field Trip to Purdue and discuss insecticides with an entomology professor  See museum |  | Students will understand how insecticides react with insects metabolisms and nerve impulses | Traditional Test  Application safety | 4 days |
| Organic Gardening  PS B-2.8, H.4, H.6, H.9, H.F10, H.11, H.12, H.14 | Notes  Mother Earth News Magazine | Guest Speaker: Organic Gardener or Organic Farmer | DQ: Is organic gardening the way of the future due to rising petroleum costs? | Students will investigate the affects of organic farming on the environment.  Students will apply concepts relating to petroleum and the production of fertilizers.  Students will compare the inputs and outputs of organic gardening | Report and Organic Meal | 5 days |
| Fungicides, Rodenticides, Molluscicides, & Nematodes  PS H.8, HS D.3 | Text  Lab Manual | Notes  Poster of nuisance pests/treatment/symptoms |  |  | Traditional test  Poster will also count as a test grade. | 3 days |
| Herbicides  HS H.2, H.3, H.8, H.10, H.11. | Text  Lab Manual | Weed ID  Crossword: Vocab  Mixing rates |  | Students will identify weeds and weed seeds  Students will apply concepts of pest control to weeds  Students will compare grass herbicides to broadleaf control herbicides.  Students will investigate how herbicides kill the plants. | Practical Test  Weed collection | 6 days |
| Container Grown Plants | | | | | | |
| Dish Gardens/Container Gardens  HS C.6, H.8, E.1, E.2, E.3, E.7, E.9 | Text  Lab Manual  Container |  |  | Students will create their own container gardens.  Students will calculate a price for container garden.  Students will exhibit their gardens.  Gardens will be auctioned off and $$ will be given to charity. | Silent Auction | 3 days |
| Bonsai  HS B.8, B.10, C.5, C.6, E.1,E.2, E.3, E.7, E.9, PS O.5 | Text  Lab Manual  Bonsai materials | Skype National Botanical Garden Bonsai Garden in Washington, D.C. |  | Explain Purpose & general techniques of bonsai  List steps  Describe care of bonsai  Repotting procedures | Traditional test | 5 days |
| Interiorscapes  HS B.8, B.10, C.5, C.6, C.10,H.8, E.1, E.2, E.3, E.7, E.9, | Text  Lab Manual | Light meters  Green plants  Differentiate Low, Medium, and High light intensity plants and environments. |  | Students will design an interiorscape for the cafeteria or main office.  Must apply concepts of knowledge of human behavior as plants are concerned  Students will investigate and utilize sustainable/organic methods to keep plants healthy and pest free. |  | 3 days |
| Shrubs & Trees  HS C.6, C.7, C.9, F.1, F.4, F.5, G.2, G.3 | Text  Lab Manual  Potting soil |  |  | Students will:  List advantages and disadvantages of container grown plants.  Explain orally the characteristics of a good growing site.  Prepare a soil mix.  Set up a growth control schedule.  Discuss winter storage methods.  Discuss shading methods | Practical Test | 4 days |
| Using Plants in the Landscape | | | | | | |
| Annual Bedding Plants  LM C-2.1, C-2.2, C-2.3, C-2.4, C-2.5, C-2.6, C-2.7 | Text  Lab Manual | Notes and identification of popular annual plants |  | Students will: Discuss the functionality of bedding plants in the landscape  Select an annual and grow said plant. |  | 2 days |
| Perennials  LM C-2.1, C-2.2, C-2.3, C-2.4, C-2.5, C-2.6, C-2.7 | Text  Lab Manual | Identification of plants  Poster of perennials for sun, shade, and partial shade.  Define each of the light requirement categories. | DQ: How can a home owner/hobby gardener entice bees and other pollinators into the garden? |  | Test incorporated with chapter 25: practical test as well as paper test | 4 days |
| Evergreens  PS M.1, M.2, M.3, M.4, M.5, M.6, M.7, M.8, M.9, M.10, M.11, M.12, M.13, N.1  LM C-1.1, C-1.2, C-1.3, C-1.4, C-1.5 | Text  Field trip to Christmas Tree Farm | Identification of popular evergreen species  Planting of windbreaks using evergreens as a community service activity. |  | Students will identify popular evergreens by visual comparison.  Students will establish a protocol for trimming/pruning and annual maintenance of evergreens.  Students will differentiate the cultural characteristics of popular evergreen plants used for home landscaping. | Practical test:  These species must be remembered for the wreath making activity | 3 days |
| Deciduous Trees & Shrubs  PS M.1, M.2, M.3, M.4, M.5, M.6, M.7, M.8, M.9, M.10, M.11, M.12, M.13, N.1  LM C-1.1, C-1.2, C-1.3, C-1.4, C-1.5 | Text  Lab Manual | Identification of leaves from deciduous trees and shrubs |  | Students will verify the functions of trees and shrubs in the landscape.  Students will demonstrate the proper planting technique for bare root, balled & burlapped, container grown trees, and shrubs. | | 4 days |
| Ground Covers  PS M.1, M.2, M.3, M.4, M.5, M.6, M.7, M.8, M.9, M.10, M.11, M.12, M.13, N.1  LM C-1.1, C-1.2, C-1.3, C-1.4, C-1.5 | Text  Lab Manual | Project: Scenario given.  Plan for the appropriate species of ground cover to be utilized in said area. |  | Students will identify ground cover species.  Students will confirm the uses of ground covers  Students will describe cultural requirements responsible for healthy growth of ground covers.  Students will design a plan for selecting a ground cover. | Traditional and Practical test of Chapters 29-31 combined | 1 day |
| Pruning  LM C-1.1, C-1.2, C-1.3, C-1.4, C-1.5, C-3.1, C-3.2, C-3.3, C-3.4, C-3.5,C-3.8, C-3.10, D-1.5 | Text  Lab Manual | Project: Plan and present a protocol for pruning trees at school |  | Students will verify reasons for pruning.  Students will select and define types of pruning techniques.  Students will demonstrate pruning at proper angles.  Students will establish and verify the correct time to prune plants.  Students will create an espalier design.  Students will analyze topiary designs. |  | 2 days |
| Landscaping  LM A-4.1-5, C-1.1-5, C-2.1-7, C-3.1-5, C-4.1-10, C-5.1-16, C-6.1-8, D-2.1-7, | Text  Lab Manual |  | DQ: Green spaces in the midst of a concrete jungle can have several affects both mentally and upon ones physical health. Design a green space for a space on the classroom roof. | | Project Presentation | 15 days |
| Xeriscaping  LM A-4.1-5, C-1.1-5, C-2.1-7, C-3.1-5, C-4.1-10, C-5.1-16, C-6.1-8, D-2.1-7,  PS N.1, N.2, N.4, N.6, | Text  Lab Manual  Field Trip Chicago Botanical Gardens | Zen Garden: Howcast video.  Japanese Garden Elements | DQ: Why is Zen gardening so Zen? | Students will list the basic concepts of xeriscaping  Students will analyze ways soil can be amended to conserve water.  Students will plan a front foundation planting for a home with xeriscaping concepts.  Students will identify xeriscaping plants. | Design a Zen Garden and build a table top model or design Japanese Garden to scale, labeling plants with correct taxonomy, etc. | 3 days |
| Turf & Lawn | | | | | | |
| Establishing a lawn  LM A-4.1-5, C-.1-11, C-3.1-4, C-5.1-5, C-5.7-9 | Text  Lab Manual |  | Students will list reasons for establishing and maintaining a lawn.  Describe methods of establishment and proper drainage  Students will apply concepts for amending soil with organic matter.  Students will demonstrate the steps of seeding a lawn. | | Traditional Test | 3 days |
| Maintaining a lawn  LM D-3.1-4,  HS C.2, C.4, C.7, C.8, C.9, H.1, H.2, H.3, H.9, | Text  Lab Manual  Field trip to John Deere and Guest Speaker to talk about the differences in lawn mowers and safety features. |  |  | Students will analyze the factors of good lawn maintenance and explain orally.  Students will describe the analysis of turf fertilizers.  Students will demonstrate proper mowing safety.  Students will recommend treatments for fungal infestations in lawns. | Safety test  Traditional Test | 4 days |
| Renovating a lawn  LM A-4.1-4, A-2.5-8, A.3.1, B-3.1-4, B-8.6, C-1.3-4, C-3.1-4, C-4.1-11, C-5.1-9, C-5.13-16 | Text  Lab Manual |  |  | Students will evaluate a lawn area and determine if it requires renovation.  Students will determine methods of renovation  Students will identify the step by step process to renovate a lawn | Traditional test | 5 days |

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| Vegetable Garden: Standards addressed: HS G.1-18, H.1-11 | | | | | | | |
| Planning site | Text |  |  | |  |  | 2 days |
| Planting & Care | Text |  |  | |  | Diagram of planned vegetable gardens. | 5 days |
| Favorite Garden Veggies & Herbs | Text | Vocabulary  Notes  Lab Manual  Cook Book Search  “Spaghetti Pot”-indoor herb garden. | DQ: What types of herbs were found most often in Colonial American homes and why? Why was the herb garden “just out the back door”? Design a Colonial herb garden in asymmetrical form. | | | Project presentation to audience members | 7 days |
| Small Fruits: Standards addressed: HS G.1-18, H.1-11 Fruit/Veggie Bar for Teachers!! | | | | | | | |
| Strawberries |  | Strawberry plants  Container/land to plant strawberries | Students will create a strawberry garden (container or bed design).  Students will design a strawberry patch and maintenance protocol with timeline for a 2 year production period | | | Strawberry jam cookoff | 2 days |
| Blueberries |  |  |  | | Utilizing blueberries as a dual purpose plant in the landscape. |  | 1 day |
| Brambles |  |  |  | | Proper pruning techniques  Identification of species |  | 1 day |
| Grapes |  | Guest speaker on wine: Tour Wildcat Winery | |  |  | Traditional test | 4 days |

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| Holiday Crafts & Florals: Standards Addressed: E.1-9, | | | | | | |
| Wreaths, Centerpieces, Swags | Text | Pinecones and other small natural seeds/fruiting bodies; dried flowers  Grapevine wreaths  Floral wire  Glue guns  Glue sticks  Wreath machine  ribbons |  | Students will make a wreath using products found in nature. | Students will be graded on materials they bring in for their designs as well as the names of the items they used in the designs.  Students will sell Christmas Trees, Poinsettias, and make wreaths and swags from the clippings to sell or keep for family. | 3 days |
| Floral Design | Text | Guest Speaker on Basics of Floral Design, the industry and where to get training.  Floral Design equipment: tape, silk flowers, floral wire, glue guns, ribbon, etc. |  |  | Students will create a silk floral design and be graded on the originality, application of concepts, and overall aesthetics.. | 3 days |
| Prom Florals |  | Fresh and silk flowers, other floral design items |  | Students will operate a floral design business and take orders for prom florals such as bouquets, boutonnieres.  Students will continue to apply application concepts to previous knowledge | Students will take orders from student body and sell the orders. | 2 days |