

## COURSE UNIT PLAN

**Title of Unit:** Tree Physiology, Anatomy & Taxonomy  
**Curriculum Area:** Horticulture I – Urban Forestry

**Grade Level:** 10 – 11  
**Time Frame:** 2 week

### DESIRED RESULTS

Common Core State Standards	College and Career Readiness Standards
<p><b><i>What standards are you specifically targeting in this lesson?</i></b></p> <p><u>CCSS.ELA-LITERACY.RST.11-12.5</u>                      Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas.</p> <p><u>CCSS.ELA-LITERACY.RST.11-12.7</u>                      Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem.</p> <p><u>CCSS.ELA-LITERACY.RST.11-12.8</u>                      Evaluate the hypotheses, data, analysis, and conclusions in a science or technical text, verifying the data when possible and corroborating or challenging conclusions with other sources of information.</p>	<p><b><i>Which technical standards/21<sup>st</sup> century skills are you specifically targeting in this lesson?</i></b></p> <p>Creativity, critical thinking, communication and coloration.</p> <ul style="list-style-type: none"> <li>• Has a focus on creativity, and innovative problem solving and creative thinking used to formulate sound judgement, to communicate and collaborate to accomplish task and develop solutions.</li> <li>• Apply appropriate academic and technical skills.</li> <li>• Employ valid and reliable research strategies.</li> </ul> <p>Information, Media and Technology</p> <ul style="list-style-type: none"> <li>• Has a focus on information and media literacy to improve productivity, solve problems and create opportunities</li> </ul> <p>Career Development</p> <ul style="list-style-type: none"> <li>• Has a focus on personal and social, academic, career content and employability skills</li> </ul> <p>Leadership</p> <p>Has a focus on applying leadership skills in real-world, business and industry applications</p>

Understandings/Knowledge/Skills	Essential Questions
<p><b><i>What do you want students to understand, know, and/or be able to do at the end of this unit?</i></b></p> <ul style="list-style-type: none"> <li>• Cite scientific method of classification</li> <li>• Use of dichotomous keys</li> <li>• Plant species identification</li> <li>• Factors that influence plant growth</li> </ul>	<p><b><i>What questions will foster inquiry, understanding, and transfer of learning?</i></b></p> <ul style="list-style-type: none"> <li>• How would you tell the difference between a maple and an oak? A pine and a fir?</li> <li>• What resources are available to help identify trees? How are they used?</li> </ul>

The following tool should be used in the development of differentiated instruction within the selected course by factoring students' individual learning styles and levels of readiness within the ranges of course material. Content adapted from the Common Core Standards Initiative © Copyright 2010, ASCD, Grant Wiggins, and Jay McTighe and Center for Urban Education <http://teacher.depaul.edu> © Copyright 2012. National Governors Association Center for Best Practices and Council of Chief State School Officers. All rights reserved.

## COURSE UNIT PLAN

**Title of Unit:** Tree Physiology, Anatomy & Taxonomy

**Grade Level:** 10 – 11

**Curriculum Area:** Horticulture I – Urban Forestry

**Time Frame:** 2 week

<ul style="list-style-type: none"> <li>• Plant Anatomy             <ul style="list-style-type: none"> <li>○ Cells</li> <li>○ Tissues</li> <li>○ Organs</li> </ul> </li> <li>• Prepare and Implement a Plant Management Plan - PS3 - Propagate, Culture and Harvest Plants</li> <li>• Plant Physiology</li> <li>• Water &amp; sugar transport</li> <li>• Plant hormones</li> </ul>	<ul style="list-style-type: none"> <li>• What type of trees grow in our area?</li> </ul>
-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------

### ASSESSMENT EVIDENCE

Performance Task	Other Evidence
<p><b><i>How will you authentically assess students to determine if they have mastered the material?</i></b></p> <ul style="list-style-type: none"> <li>• Students will create a leaf collection.</li> <li>• Students will assess knowledge and skills associated with tree identification, pest/disease identification, and tool/equipment identification.</li> <li>• Students will perform various experiments in order to answer the question:             <ul style="list-style-type: none"> <li>○ How do plants eat?</li> <li>○ Sugar Cane inquiry and molasses production</li> </ul> </li> </ul> <p><b><i>What criteria will you use to assess the levels of mastery?</i></b></p> <p>Students will be assessed weekly on their knowledge of the different tree species and will be able to chart their level of mastery with identification.</p>	<p><b><i>Tests, quizzes, independent practice, journals, formative assessments, etc.</i></b></p> <ul style="list-style-type: none"> <li>• Weekly tree identification quiz</li> <li>• Research and lab reports</li> </ul> <p><b><i>How will students reflect upon and self-assess their learning?</i></b></p> <p>Students will complete a KWL chart before, during and at the end of the unit.</p>

The following tool should be used in the development of differentiated instruction within the selected course by factoring students' individual learning styles and levels of readiness within the ranges of course material. Content adapted from the Common Core Standards Initiative © Copyright 2010, ASCD, Grant Wiggins, and Jay McTighe and Center for Urban Education <http://teacher.depaul.edu> © Copyright 2012. National Governors Association Center for Best Practices and Council of Chief State School Officers. All rights reserved.

## COURSE UNIT PLAN

**Title of Unit:** Tree Physiology, Anatomy & Taxonomy  
**Curriculum Area:** Horticulture I – Urban Forestry

**Grade Level:** 10 – 11  
**Time Frame:** 2 week

### LEARNING PLAN

Focus of the Week	Learning Activities	Assessments (Formal and Informal)
<p>Week 1: Apply plant classification, anatomy, physiology to production, and management                      Define the following terms: Photosynthesis, Autotroph, Heterotroph, Cellular Respiration, Simple Leaf, Leaf Blade, Stomata Epidermis, Cuticle</p> <p>Week 2: Prepare and implement a plant management plan</p> <p>Propagate, culture and harvest plants</p> <p>Photosynthesis, cellular respiration, transpiration</p>	<p>Plant Anatomy Puzzle Pieces – Student groups will assemble plant anatomy puzzle pieces along with their correct definitions to understand the anatomical parts and physiological systems of plants.</p> <p>Leaf anatomy diagram/Interactive</p> <p>Arrange the chemical processes on the correct portions of a leaf: Photosynthesis, cellular respiration, transpiration</p>	<p>Leaf anatomy diagram/interactive</p> <p>Plant anatomy diagram quiz</p> <p>Plant ID quiz</p> <p>Individualized project</p> <p>Teacher observation</p> <p>Peer assessment</p>

The following tool should be used in the development of differentiated instruction within the selected course by factoring students' individual learning styles and levels of readiness within the ranges of course material. Content adapted from the Common Core Standards Initiative © Copyright 2010, ASCD, Grant Wiggins, and Jay McTighe and Center for Urban Education <http://teacher.depaul.edu> © Copyright 2012. National Governors Association Center for Best Practices and Council of Chief State School Officers. All rights reserved.