

Wallingford Public Schools - HIGH SCHOOL COURSE OUTLINE	
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Course Title: Plant Science 4	Course Number: 8363
Department: Agriculture Education	Grade(s): 12
Level(s): Academic	Credit(s): 2
Course Description This senior year course continues to build a foundation for students interested in plant science. Topics studied include: garden center greenhouse management, holiday shop, current trends in agriculture, and flower design. Students will continue to participate in the Lyman Hall Chapter of the national organization, FFA. Students will complete the development of their portfolio and further develop skills to prepare for future careers in plant science.	
Required Instructional Materials Sufficient Hands-on Materials	Completion/Revision Date Approved by Board of Education October 15, 2007

Mission Statement of the Curriculum Management Team
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The mission of the Career and Technical Education Curriculum Management Team is to ensure that students, as a result of their experiences in K-12, will demonstrate transferable skills, knowledge, and attributes for successful life management, employment, career development, post-secondary educational opportunities, and life long learning.
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Enduring Understandings for the Course

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| <ul style="list-style-type: none"> • Self-reflection of learning experiences, in and out of school, fosters the development of a life long learner. Life long learners are able to apply and refine skills as they prepare for their post-high school endeavors. • The planning, growing, marketing, and sales of a crop require not only plant science knowledge but also business skills to be successful. • A florist is a multifaceted business that requires creativity, time management, and business knowledge to manage successfully. • The research process requires the use of a variety of resources to ensure validity. • Organization is critical to the acquisition, application, and evaluation of information. • Critical examination and evaluation of data is essential to making informed decisions. • Recognizing a diversity of viewpoints benefits all. • Writing is a tool used for thinking & learning. • Event planning requires one to design an entire visual package that is appealing while integrating the individual components of managing budgets and preparing materials while displaying technical expertise |
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LEARNING STRAND

1.0 Transferable Skills

ENDURING UNDERSTANDING(S)

- Self-reflection of learning experiences, in and out of school, fosters the development of a life long learner. Life long learners are able to apply and refine skills as they prepare for their post-high school endeavors.

ESSENTIAL QUESTION(S)

- What is the importance of maintaining a portfolio?
- What are the qualities of an effective oral presentation?
- What safety precautions do I have to follow?
- What can I do differently next time?
- What does a cooperative group require to function successfully?
- How can I assess the situation and implement change?
- What are the characteristics of an organized person? What do I need to do to be more organized?
- How can I manage informational research, organize the information, and present it professionally?
- What is a leader?

LEARNING OBJECTIVES The students will:

- 1.1 Demonstrate public speaking skills using appropriate visuals and tailoring the presentation to specific audiences.
- 1.2 Communicate in writing about a topic using different formats applying relevant vocabulary, supporting evidence and clear logic.
- 1.3 Self-assess transferable skills and reflect on areas of strengths and improvement.
- 1.4 Identify and use the appropriate tools and equipment safely.
- 1.5 Work cooperatively with fellow peers, teachers, and employers to complete a task.
- 1.6 Apply problem solving skills to critically approach a situation and work through the steps to solve the problem.
- 1.7 Develop organizational skills that assist with data collection, data analysis and synthesis.
- 1.8 Apply research skills to collect information, summarize the findings and to cite the sources used.
- 1.9 Recognize leadership skills such as: motivating others, negotiating,

INSTRUCTIONAL SUPPORT MATERIALS

- See other learning strands for integration

SUGGESTED INSTRUCTIONAL STRATEGIES

- See other learning strands for integration

SUGGESTED ASSESSMENT METHODS

- See other learning strands for integration

<p>participating in meetings, gaining confidence, and gaining self-awareness, etc.</p> <p>1.10 Apply computer-based tools such as PowerPoint, Word, Excel, and Access, to organize and present information.</p> <p>1.11 Demonstrate self expression and creativity through different projects.</p> <p>1.12 Develop a positive attitude and become an independent learner in order to prepare for the future.</p> <p>1.13 Organize and maintain a four year portfolio including a compilation of student products and reflections.</p> <p>1.14 Document SAE (Supervised Agricultural Experience) monthly. This includes recording hours, expenses, income, tasks and applied skills.</p>	
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<u>LEARNING STRAND</u>	
2.0 Garden Center Greenhouse Management <ul style="list-style-type: none"> • Approximately 8 weeks 	
<u>ENDURING UNDERSTANDING(S)</u> <ul style="list-style-type: none"> • The planning, growing, marketing, and sales of a crop require not only plant science knowledge but also business skills to be successful. • A florist is a multifaceted business that requires creativity, time management, and business knowledge to manage successfully. 	<u>ESSENTIAL QUESTION(S)</u> <ul style="list-style-type: none"> • How do different fertilizers impact the growth of poinsettias? • What factors determine a salable poinsettia? • How can a business plan be used for planning, implementation and evaluation of a business?
<u>LEARNING OBJECTIVES</u> The students will: <p>2.1 Compare and contrast greenhouse structures and components</p> <ul style="list-style-type: none"> • Poly hoop house • Glass gable / ridge & furrow • Lean-to • Cold house • Lath house • Heating/cooling • Shade • Mist systems • Watering systems • Bench systems <p>2.2 Describe poinsettia cultural requirements including:</p> <ul style="list-style-type: none"> • Watering • Propagation • Containers • Growing Medium • Fertilizers • Pinching • Growth retardants <p>2.3 Identify and demonstrate watering techniques for greenhouse crops.</p> <p>2.4 Identify common greenhouse insects and determine appropriate controls</p> <ul style="list-style-type: none"> • Insect classification • Types of control <ul style="list-style-type: none"> ○ Mechanical ○ Chemical ○ Biological <p>2.5 Investigate different types of fertilizers and analyze results.</p> <p>2.7 Produce a poinsettia crop.</p>	<u>INSTRUCTIONAL SUPPORT MATERIALS</u> <ul style="list-style-type: none"> • Poinsettia cuttings, containers, soil • Excel spreadsheet • Assorted fertilizers – dark weather feed, peat-lite, etc. • Digital cameras, measuring tools, <u>SUGGESTED INSTRUCTIONAL STRATEGIES</u> <ul style="list-style-type: none"> • Raise a crop of poinsettias • Poinsettia fertilizer experiment • Develop a business plan – include inventory, pricing, signage, profit • Each student plants and cares for own assigned area of poinsettias • Model how to pinch poinsettia for optimal blooming • Tour local greenhouses • Compare and contrast features of commercial greenhouses • Written review of greenhouse field trip • Create a sales flyer for Holiday Shop • Create an insect informational page • As a class write articles and create a class greenhouse magazine • Analyze fertilizer experiment data on Excel and draw conclusions <u>SUGGESTED ASSESSMENT METHODS</u> <ul style="list-style-type: none"> • Business plan • Fertilizer experiment results and lab report • District lab report grading criteria • Daily log of observations and completed tasks • Portfolio items may include:

- 2.8 Produce a business plan for a poinsettia crop.
- Plan for supplies and inventory
 - Produce crop
 - Market and prepare poinsettia crop for sale
 - Evaluate business success and refine for future

- Skill sheet
- Fertilizer lab report
- Writing sample

<u>LEARNING STRAND</u>	
<p>3.0 Holiday Shop</p> <ul style="list-style-type: none"> Approximately 4 weeks in December 	
<p><u>ENDURING UNDERSTANDING(S)</u></p> <ul style="list-style-type: none"> A florist is a multifaceted business that requires creativity, time management, and business knowledge to manage successfully. 	<p><u>ESSENTIAL QUESTION(S)</u></p> <ul style="list-style-type: none"> What are the components of a pleasing arrangement? What makes an arrangement salable? What personal attributes are necessary for success in the floral business? What does a florist consider when managing seasonal sales? What is professional? (behavior, merchandise)
<p><u>LEARNING OBJECTIVES</u> The students will:</p> <p>3.1 Demonstrate flower arranging skills such as:</p> <ul style="list-style-type: none"> Design principles such as balance, focal point, rhythm, depth, proportion and unity Designing seasonal items using dried material Designing a variety of boxwood and seasonal fresh arrangement Designing wreaths per customer orders Preparing plants for holiday sale Establishing price and create sales tag for merchandise <p>3.2 Demonstrate customer service skills such as:</p> <ul style="list-style-type: none"> Preparing assorted orders for delivery or pick-up Answering customer questions Initiating and completing sale and reflect on customer satisfaction Assisting with daily organization of wreath and plant orders <p>3.3 Assess inventory of supplies and recommend purchases</p> <p>3.4 Assist with supervision if shop activities and aid in the training of new students assisting in shop</p>	<p><u>INSTRUCTIONAL SUPPORT MATERIALS</u></p> <ul style="list-style-type: none"> Assorted wire, tags, wreaths, ribbon, pots and potting material, holiday embellishments, seasonal floral decorations Holiday plants and greenery Seasonal cut flowers and mixed seasonal greens Dried material and forms, bases and containers <p><u>SUGGESTED INSTRUCTIONAL STRATEGIES</u></p> <ul style="list-style-type: none"> Prepare and manage the Holiday Shop for the community Model different floral design techniques Model and critique former dried products Peer assist arrangement principles for new students Peer demonstrate method for attaching wire hangers, wreath sizing, and attaching tags Design and construct wreaths, green arrangements, etc. based on customer requests Review and discuss student expectations during the Holiday Shop unit <p><u>SUGGESTED ASSESSMENT METHODS</u></p> <ul style="list-style-type: none"> Teacher observation Daily log Individual student work samples with written critique Dried items catalog Sales Inventory – dried items

- Individual price tags for each dried item
- Holiday Shop written review – personal assessment and critique of the Holiday Shop
- Portfolio pieces may include:
 - Dried catalog
 - Sales inventory
 - Written critique of holiday shop
 - Unit skill sheet
 - Log of daily activities

LEARNING STRAND	
4.0 Current Trends in Agriculture <ul style="list-style-type: none"> Approximately 4 weeks 	
ENDURING UNDERSTANDING(S) <ul style="list-style-type: none"> The research process requires the use of a variety of resources to ensure validity. Organization is critical to the acquisition, application, and evaluation of information. Critical examination and evaluation of data is essential to making informed decisions. Recognizing a diversity of viewpoints benefits all. Writing is a tool used for thinking & learning. 	ESSENTIAL QUESTION(S) <ul style="list-style-type: none"> Why do I research? What is the best way to persuade an audience? What are the benefits of using multiple media to locate information? How do I know my information is reliable (accurate, unbiased, current, and appropriate)? How does organizing the results of my research help me to use it? How does the consideration of different viewpoints influence how I think & act? What am I trying to achieve through my writing? Presentation? What are the qualities of an effective oral presentation? How can a visual enhance an oral presentation?
LEARNING OBJECTIVES – The students will: <ul style="list-style-type: none"> 4.1 Develop a central research position related to a current trend in agriculture. 4.2 Generate questions related to the topic. 4.3 Locate & retrieve information that is stored in print (books, magazines, etc.) as well as in digital forms (Internet, databases, videos, etc.) to support the position presented as well as the opposing view. 4.4 Evaluate validity of sources to authenticate research. 4.5 Organize ideas and information logically and effectively using note cards and outlining. 4.6 Use the writing process to compose a research position paper that is focused, organized, elaborated, supported and edited for standard English conventions. 4.7 Revise written pieces to demonstrate improvement. 4.8 Use MLA citation for textual support. 4.9 Persuade audience during an oral presentation with accompanying visuals. 	INSTRUCTIONAL SUPPORT MATERIALS <ul style="list-style-type: none"> Access to print and non-print sources Assorted trade magazines and journals Presentation materials SUGGESTED INSTRUCTIONAL STRATEGIES <ul style="list-style-type: none"> Collaborate with library media specialists to help assist with research Create a PowerPoint presentation or design a tri-fold board as a visual aid for the oral presentation Create an informational hand-out to “call to action” information for the audience After student presentations, students select one topic to write “a letter to the editor” by agreeing or disagreeing with the position presented Model and assist students through the research process Model appropriate Internet searching techniques Peer review and feedback Provide due dates of individual parts (note

cards, outline, rough draft, etc.) of research project

- Conferencing with teacher

SUGGESTED ASSESSMENT METHODS

- Rubrics for presentation, paper, and visual
- Checklist for research process
- Self and peer assessments
- Portfolio products may include:
 - Skill sheet
 - Persuasive research paper and outline
 - Photo of visual and student
 - Informational “call to action” hand-out
 - Writing sample “letter to the editor”

<u>LEARNING STRAND</u>	
5.0 Flower Design <ul style="list-style-type: none"> Approximately 6 weeks 	
<u>ENDURING UNDERSTANDING(S)</u> <ul style="list-style-type: none"> Event planning requires one to design an entire visual package that is appealing while integrating the individual components of managing budgets and preparing materials while displaying technical expertise 	<u>ESSENTIAL QUESTION(S)</u> <ul style="list-style-type: none"> How do you select suitable flowers? How do you coordinate colors for a large function? What are the components of a pleasing arrangement? What does a florist consider when managing seasonal sales? How do you price, plan and implement flower design for a function and be successful?
<u>LEARNING OBJECTIVES</u> The students will: <ul style="list-style-type: none"> 5.1 Compare and contrast attire and bouquet types for weddings based on variety of settings. <ul style="list-style-type: none"> Formal Informal 5.2 Identify flowers and greens suitable for wedding bouquets. 5.3 Describe styles of wedding bouquets. 5.4 Demonstrate methods of securing flowers in bouquets. 5.5 Identify members of a wedding. 5.6 Determine suitable flower arrangements for each member of a wedding party. 5.7 Determine color coordination of flowers with dresses, suits, etc. 5.8 Determine pricing sheets for each item. 5.9 Integrate knowledge of wholesale flower orders with a wedding order. 	<u>INSTRUCTIONAL SUPPORT MATERIALS</u> <ul style="list-style-type: none"> Assorted holders, wire, ribbon, pins, etc. associated with the wedding flower design industry Flowers and greens typically used in wedding flower designs Order forms Fabric and ribbon <u>SUGGESTED INSTRUCTIONAL STRATEGIES</u> <ul style="list-style-type: none"> Design a suitable flower piece for each member of a wedding party Complete a price sheet for each item Complete a wholesale flower order Design a poster board displaying the items created with related pricing sheets Create a color wheel Complete a written critique of final project Copy a design and execute the design from a floral magazine of a wedding flower item <u>SUGGESTED ASSESSMENT METHODS</u> <ul style="list-style-type: none"> Teacher observation Final poster board and written critique Color coordination activity Copy of an item Portfolio products may include: <ul style="list-style-type: none"> Work sample pictures and captions Writing assignment – critique of project Skill sheet