Unit 6: Floral Culture 2 and Design 2024

Content Area: **CTE**
Course(s): **Horticulture I**
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Unit Overview

Exploring the Horticulture Industry/Floral Designing

Enduring Understanding

A centerpiece is a floral arrangement designed to be placed on a table or a buffet.

Floral design is the art of organizing the design elements inherent in plant materials and accessories according to principles of design art.

Major holidays for the floral industry are Valentine's Day, Easter, Mother's Day, Thanksgiving, and Christmas.

The advantage of a knife is that using one is faster than using shears or scissors.

A common technique used in naturalistic designs is grouping.

An arrangement with good rhythm will cause the viewer to look at the entire arrangement.

As soon as a flower is cut from the mother plant, it begins to deteriorate because the flower no longer has a water or food source.

Balance, meaning design equilibrium and equality in weight, can be achieved through several different methods.

Conditioning plant materials includes a number of steps.

Designers need to visualize the shapes they plan to use in their designs.

In floral design, three aspects determine proportion.

Sales in the floral industry typically fall into one of two categories: direct sales or consultative sales.

The ability to decorate potted plants is a very important skill for a person working in a floral shop.

Two needs for maintaining the health of cut flowers are water and sugar.

Career Education Connection

AGRI.9-12.1	Food Products and Processing Systems Pathway
AGRI.9-12.4	Power, Structural, and Technical Systems
AGRI.9-12.9.4.12.A.(1).1	Examine and conduct food product development and research activities that demonstrate application of food science principles to enhance product quality and appeal.
AGRI.9-12.9.4.12.A.(2).1	Examine and apply knowledge of basic plant anatomy and physiology, using taxonomic and other classifications to build a working understanding of functional differences among plant structures.
AGRI.9-12.9.4.12.A.(2).2	Describe and implement the principles of plant production and management in both domesticated and natural environments, applying principles of anatomy and physiology to enhance plant production.
AGRI.9-12.9.4.12.A.(2).3	Evaluate and implement the fundamentals of production and harvesting when producing plants to demonstrate plant management and production techniques.
AGRI.9-12.9.4.12.A.(2).4	Exercise elements of design commonly used by professionals in plant systems careers by enhancing an environment (e.g., floral, forest, landscape, or farm) for a variety of purposes.
AGRI.9-12.9.4.12.A.(4).1	Examine structural requirements and estimate project costs in order to facilitate effective planning for projects within this pathway.
AGRI.9-12.9.4.12.A.(4).2	Plan design and construction support services to facilitate the development of agricultural machinery, equipment, buildings, structures, and technical systems.
AGRI.9-12.9.4.12.A.(4).4	Explain physical science principles and apply them to engineering applications involving mechanical equipment, structures, biological systems, land treatment, power utilization, and technology to facilitate work within this pathway.
AGRI.9-12.9.4.12.A.(5).1	Communicate about natural resources using effective public venues to heighten awareness regarding conservation and resource preservation.

Data and Analysis

Student completion of Labs in class

SAE evatulation

CDE Results

Assesement of FFA Manual

Essential Questions

How are cut flowers and foliage conditioned to maximize vase life?

How does a floral preservative extend the life of cut flowers?

What are some primary holidays in which floral arrangements are in demand, and what is an appropriate arrangement for each of these holidays?

What are the principles of floral design?

What are the qualities of a good salesperson?

What basic geometric designs exist?

What causes a flower to deteriorate and die?

What is naturalistic designing?

What supplies are used for centerpieces, sprays, and vase arrangements?

What tools do floral designers use?

When a flower is cut, what are its needs?

Standards/Indicators/Student Learning Objectives (SLOs):

- 9.4.12. Career and Technical Education. All students who complete a career and technical education program will acquire academic and technical skills for careers in emerging and established professio
- 9.4.12.A. Agriculture, Food, & Natural Resources Career Cluster
- 9.4.12.A.34. Examine and summarize roles within teams, work units, departments, organizations, inter-organizational systems, and the larger environment to understand the nature and scope of this cluster and related organizations.

Lesson Titles:

Identifying Floral Design Tools and Supplies

Caring for Fresh Cut Flowers and Foliage

Designing Basic Floral Work

Designing Centerpieces

Designing Holiday Arrangements

Selling Floral Orders

Understanding the Principles of Floral Design

- Understanding FFA Officer Duties and Responsibilities

Career Readiness, Life Literacies, & Key Skills:

	Students leverage technology to take an active role in choosing, achieving and demonstrating competency in their learning goals, informed by the learning sciences.
TECH.K-12.1.1.a	articulate and set personal learning goals, develop strategies leveraging technology to achieve them and reflect on the learning process itself to improve learning outcomes.
TECH.K-12.1.1.b	build networks and customize their learning environments in ways that support the learning process.
TECH.K-12.1.1.c	use technology to seek feedback that informs and improves their practice and to demonstrate their learning in a variety of ways.
	Students recognize the rights, responsibilities and opportunities of living, learning and working in an interconnected digital world, and they act and model in ways that are safe, legal and ethical.
TECH.K-12.1.2.a	cultivate and manage their digital identity and reputation and are aware of the permanence of their actions in the digital world.
TECH.K-12.1.2.d	manage their personal data to maintain digital privacy and security and are aware of data-collection technology used to track their navigation online.
	Students critically curate a variety of resources using digital tools to construct knowledge, produce creative artifacts and make meaningful learning experiences for themselves and others.
	Students use a variety of technologies within a design process to identify and solve problems by creating new, useful or imaginative solutions.
TECH.K-12.1.5.a	formulate problem definitions suited for technology-assisted methods such as data analysis, abstract models and algorithmic thinking in exploring and finding solutions.
TECH.K-12.1.6	Creative Communicator
TECH.K-12.1.7.d	explore local and global issues and use collaborative technologies to work with others to investigate solutions.

Assessments

Summative Assessment:

- CDE Results

- POA Results
- Presentation

Benchmark Assessments

Writing Prompt

Skills Based Assessment

Reading Response

Practical Lab

Alternative Assessment

Performance tasks

Project-based assignments

Problem-based assignments

Presentations

Reflective pieces

Concept maps

Case-based scenarios

Portfolios

Formative Assessment:

- Class discussion
- Edpuzzle
- Group work
- Oral response to questions
- peer evaluation
- Quizlet

- self evaluation and discussion with teacher

Inter-Disciplinary Connections:

	Language: System and structure, effective use, and vocabulary
	Reading: Text complexity and the growth of comprehension
	Writing: Text types, responding to reading, and research
SCI.K-2.K-2-ETS1-1	Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.
SCI.K-2.K-2-ETS1-3	Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.
SCI.K-2.K-2-ETS1-3.4.1	Analyze data from tests of an object or tool to determine if it works as intended.
FCSE.9-12.1.1.1	Summarize local and global policies, issues, and trends in workplace, community, and family dynamics that affect individuals and families.
FCSE.9-12.1.1.3	Analyze ways that individual career goals can affect the family's capacity to meet goals for all family members.

Diversity, Equity, and Inclusion

Amistad Mandate

1. Historical Context of Forced Labor:

- **Agricultural Practices:** Discuss how enslaved Africans were often forced to work on plantations, including agricultural tasks like gardening and horticulture.
- **Plant Knowledge:** Explore the potential knowledge and skills enslaved Africans may have brought with them, such as traditional plant-based medicine or horticultural techniques.

2. Food Justice and Equity:

- **Access to Healthy Food:** Discuss the historical and ongoing disparities in access to healthy food, particularly for marginalized communities.
- **Sustainable Agriculture:** Explore how sustainable agriculture practices can contribute to food justice and environmental sustainability.

3. Cultural Diversity and Exchange:

- **Indigenous Knowledge:** Discuss the contributions of Indigenous peoples to horticulture and agriculture, including plant domestication and traditional ecological knowledge.
- **Cultural Exchange:** Explore how cultural exchange and the sharing of knowledge can lead to innovation and progress in horticulture.

4. Ethical Considerations and Social Responsibility:

- **Ethical Consumption:** Discuss the ethical implications of food choices and the importance of supporting sustainable and fair-trade practices.
- **Environmental Stewardship:** Explore the role of horticulture in environmental conservation and restoration.
- **Fair Labor Practices:** Discuss the importance of fair labor practices in agriculture and the challenges faced by agricultural workers.

By incorporating these themes into floriculture lessons, students can develop a deeper understanding of the historical and social context of agriculture, as well as the ethical and environmental implications of their work. This can help them become more responsible and socially conscious professionals in the field.

- African Slave Trade
- Amistad
- Contributions of African Americans to our Society
- Slavery in America
- Vestiges of Slavery in this Country

Holocaust Mandate

Topic:

Materials Used:

Addresses the Following Component of the Mandate:

- Bias
- Bigotry
- Bullying
- Holocaust Studies
- Prejudice

LGBTQ and Disabilities Mandate

Topic (Person and Contribution Addresses):

Materials Used:

Addresses the Following Component of the Mandate:

- Economic
- Political
- Social

Climate Change

Climate change is a significant challenge facing the floriculture industry. The industry is highly sensitive to changes in temperature, precipitation, and atmospheric CO2 levels. Here are some of the key impacts of climate change on floriculture:

Direct Impacts

- **Temperature Fluctuations:**
    - **Heat Stress:** High temperatures can lead to heat stress in plants, resulting in reduced growth, flower quality, and yield.
    - **Chilling Requirements:** Some plants require specific cold periods to initiate flowering. Climate change can disrupt these chilling requirements, affecting flowering time and quality.
- **Altered Precipitation Patterns:**
    - **Droughts:** Prolonged dry periods can stress plants, leading to wilting, reduced growth, and poor flower quality.
    - **Floods:** Excessive rainfall can lead to waterlogging, root rot, and other plant diseases.
- **Increased Pests and Diseases:**
    - Warmer temperatures and increased humidity can create favorable conditions for pests and diseases, leading to significant crop losses.

Indirect Impacts

- **Soil Degradation:** Climate change can exacerbate soil erosion, nutrient loss, and salinization, impacting plant health and productivity.
- **Pollinator Disruption:** Changes in temperature and precipitation patterns can affect the behavior and abundance of pollinators, impacting fruit and seed set.
- **Supply Chain Disruptions:** Extreme weather events can disrupt supply chains, leading to shortages of essential inputs like fertilizers, pesticides, and packaging materials.

Adapting to Climate Change

To mitigate the negative impacts of climate change, floriculture businesses can adopt the following strategies:

- **Climate-Smart Crop Selection:** Choose plant varieties that are tolerant to heat, drought, and pests.
- **Efficient Water Management:** Implement water-saving irrigation techniques, such as drip irrigation and rainwater harvesting.
- **Soil Health Management:** Improve soil health through practices like composting, cover cropping, and

reduced tillage to enhance water retention and nutrient cycling.

- **Integrated Pest Management (IPM):** Use a combination of cultural, biological, and chemical control methods to manage pests and diseases in a sustainable way.
- **Shade and Protection:** Use shade nets, windbreaks, and other protective measures to mitigate the effects of extreme weather conditions.
- **Climate-Controlled Production Systems:** Invest in controlled environment agriculture technologies, such as greenhouses and hydroponic systems, to regulate temperature, humidity, and light conditions.
- **Research and Development:** Support research and development efforts to develop climate-resilient plant varieties and innovative cultivation techniques.

By adopting these strategies, the floriculture industry can become more resilient to climate change and continue to produce beautiful and high-quality flowers.

Asian American Pacific Islander Mandate

Topic (Person and Contribution Addresses):

Materials Used:

Addresses the Following Component of the Mandate:

- Economic
- Political
- Social

Materials:

Core Instructional Materials

Mycaert: A Web-Based System Allowing Teachers to plan, document, deliver, and assess standards-based instruction.

National FFA Organization Teacher Resources toolbox.

FFA.org. Agricultural education prepares sutdents for successful careers and a lifetime of informed choices in the global agriculture, food, fiber and natural resource systems.

Supplemental Materials

Periodicals about florals, horticulture.

FFA Videos and resources.

Texts at Various Levels

Horticulture text book.

Instructional Strategies, Learning Activities, and Levels of Blooms/DOK:

- Conduct Official FFA meeting
- Cooperative Learning
- Delsea One Tutoring
- Drill and Practice
- Field Trips
- Guided Practice
- Individual Projects
- Internet Research
- Partner projects
- Presentations
- Problem Solving
- Recruitment
- Reflective Discussion
- Research Projects
- SAE Supervised Agricultural Experience

Modifications

MLL Modifications:

- Choice of test format (multiple-choice, essay, true-false)
- Continue practicing vocabulary
- Provide study guides prior to tests
- Read directions to the student
- Read test passages aloud (for comprehension assessment)
- Vary test formats

G&T Modifications:

- Alternate assignments/enrichment assignments
- Enrichment projects
- Extension activities
- Higher-level cooperative learning activities
- Pairing direct instruction with coaching to promote self-directed learning
- Provide higher-order questioning and discussion opportunities
- Provide texts at a higher reading level
- Tiered assignments
- Tiered centers

At Risk Modifications

The possible list of modifications/accommodations identified for Special Education students can be utilized for At-Risk students. Teachers should utilize ongoing methods to provide instruction, assess student needs, and utilize modifications specific to the needs of individual students. In addition, the following may be considered:

- Additional time for assignments
- Adjusted assignment timelines
- Agenda book and checklists
- Answers to be dictated
- Assistance in maintaining uncluttered space
- Books on tape
- Concrete examples
- Extra visual and verbal cues and prompts
- Follow a routine/schedule
- Graphic organizers
- Have students restate information
- No penalty for spelling errors or sloppy handwriting

- Peer or scribe note-taking
- Personalized examples
- Preferential seating
- Provision of notes or outlines
- Reduction of distractions
- Review of directions
- Review sessions
- Space for movement or breaks
- Support auditory presentations with visuals
- Teach time management skills
- Use of a study carrel
- Use of mnemonics
- Varied reinforcement procedures
- Work in progress check

IEP & 504 Modifications:

*All teachers of students with special needs must review each student's IEP. Teachers must then select the appropriate modifications and/or accommodations necessary to enable the student to appropriately progress in the general curriculum.

Possible Modifications/Accommodations: (See listed items below):

- Allow for redos/retakes
- Assign fewer problems at one time (e.g., assign only odds or evens)
- Differentiated center-based small group instruction
- Extra time on assessments
- Highlight key directions
- If a manipulative is used during instruction, allow its use on a test
- Opportunities for cooperative partner work
- Provide reteach pages if necessary
- Provide several ways to solve a problem if possible
- Provide visual aids and anchor charts
- Test in alternative site
- Tiered lessons and assignments
- Use of a graphic organizer
- Use of concrete materials and objects (manipulatives)
- Use of word processor

Technology Materials and Standards

TECH.K-12.1.1.a	articulate and set personal learning goals, develop strategies leveraging technology to achieve them and reflect on the learning process itself to improve learning outcomes.
TECH.K-12.1.1.b	build networks and customize their learning environments in ways that support the learning process.
TECH.K-12.1.2.a	cultivate and manage their digital identity and reputation and are aware of the permanence of their actions in the digital world.
TECH.K-12.1.3.b	evaluate the accuracy, perspective, credibility and relevance of information, media, data or other resources.
TECH.K-12.1.3.c	curate information from digital resources using a variety of tools and methods to create collections of artifacts that demonstrate meaningful connections or conclusions.
	Students use a variety of technologies within a design process to identify and solve problems by creating new, useful or imaginative solutions.
TECH.K-12.1.4.a	know and use a deliberate design process for generating ideas, testing theories, creating innovative artifacts or solving authentic problems.
TECH.K-12.1.4.b	select and use digital tools to plan and manage a design process that considers design constraints and calculated risks.
TECH.K-12.1.4.c	develop, test and refine prototypes as part of a cyclical design process.
TECH.K-12.1.4.d	exhibit a tolerance for ambiguity, perseverance and the capacity to work with open-ended problems.
	Students develop and employ strategies for understanding and solving problems in ways that leverage the power of technological methods to develop and test solutions.
TECH.K-12.1.5.a	formulate problem definitions suited for technology-assisted methods such as data analysis, abstract models and algorithmic thinking in exploring and finding solutions.
TECH.K-12.1.5.d	understand how automation works and use algorithmic thinking to develop a sequence of steps to create and test automated solutions.
TECH.K-12.1.7	Global Collaborator
TECH.K-12.1.7.a	use digital tools to connect with learners from a variety of backgrounds and cultures, engaging with them in ways that broaden mutual understanding and learning.
TECH.K-12.1.7.b	use collaborative technologies to work with others, including peers, experts or community members, to examine issues and problems from multiple viewpoints.
TECH.K-12.1.7.c	contribute constructively to project teams, assuming various roles and responsibilities to work effectively toward a common goal.
TECH.K-12.1.7.d	explore local and global issues and use collaborative technologies to work with others to investigate solutions.