

Middle-level CTE Learning Experience Title: Vegetables A to Z Educator: Jessica DeVries, Unadilla Valley CSD Length of Lesson: 6 days (40 minute periods) Grade Level: 6	CTE Area: Agriculture CTE Theme: Financial and Consumer Literacy CTE Content: Plants in the Agriculture Industry Date Created: March 28, 2019
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PLANNING	
Curriculum Goal	Students list the letters of the alphabet from A to Z. Next to each letter, students write the name of a vegetable beginning with that letter. Share the lists with the class. Students investigate the consumer information provided on packets of seeds for sale, such as cost, seed origin, seed distributor, and planting, growing, and harvesting specifications. Students create model seed packets for the "Vegetables A to Z" showing accurate consumer information. Post the models on the class webpage as resources for others.
Essential Question(s)	What knowledge and skills are necessary to demonstrate an introductory understanding of how money can be managed and how individuals can create and achieve financial goals while managing financial challenges? What knowledge and skills are necessary to demonstrate introductory understanding of the development, management, and care of plants in the agriculture industry?
National Standards	Common Career Technical Core Standards https://www.careertech.org/career-ready-practices Career Ready Practices <ol style="list-style-type: none"> 1. Act as a responsible and contributing citizen and employee 2. Apply appropriate and academic and technical skills 3. Attend to personal health and financial well-being 6. Demonstrate creativity and innovation 7. Employ valid and reliable research strategies 8. Utilize critical thinking to make sense of problems and persevere in solving 11. Use technology to enhance productivity National Agricultural Education Standards https://www.ffa.org/thecouncil/afnr PS.02. Apply principles of classification, plant anatomy, and plant physiology to plant production and management.
NYS Standards	New York State Career Development and Occupational Studies (CDOS) Standards Intermediate Level http://www.p12.nysed.gov/cte/ Standard 1: Career Development Students will be knowledgeable about the world of work, explore career options, and relate personal skills, aptitudes, and abilities to future career decisions.

	<p>Standard 2: Integrated Learning Students will demonstrate how academic knowledge and skills are applied in the workplace and other settings.</p> <p>Standard 3a: Universal Foundation Skills Students will demonstrate mastery of the foundation skills and competencies</p>	
<p>Learning Objectives</p>	<p>Financial and Consumer Literacy 4. Buying Goods and Services Students will</p> <ul style="list-style-type: none"> a) Define the term "consumer" and describe the role of the consumer in the economy e) Explain the influence of peers, advertising, technology, and the economy on consumer decisions h) Analyze consumer rights, responsibilities, and protections provided by local, state, federal, and global laws and policies i) Demonstrate personal development of consumer skills through practice of these skills in a variety of classroom applications <p>Plants in the Agriculture Industry 1. Plants Students will</p> <ul style="list-style-type: none"> a) Classify plants based on their specific characteristics <p>2. Conditions and Practices for Plant Growth Students will</p> <ul style="list-style-type: none"> a) Explain the importance of light, air, temperature, and water on plant metabolism and growth b) Describe the physical and chemical characteristics of growing media and explain the influence they have on plant growth c) Identify the essential nutrients for plant growth and tell about the major functions of each <p>4. Plant Products Students will</p> <ul style="list-style-type: none"> b) Research and evaluate programs to ensure the safety of plant products for consumption 	
<p>Vocabulary</p>	<p>Academic Accurate, consumer, model, cost</p>	<p>Content Vegetable, seed, origin, distributor, planting, growing, harvesting, seed packet, advertising, consumer protection, economy</p>
<p>Materials and Resources</p>	<p>Agriscience notebooks (Day 1-5) PennState Extension – Information on seed packets (Day 2-5) https://extension.psu.edu/information-on-seed-packets Gardening Know How Website (Day 2-5)</p>	

	<p>https://www.gardeningknowhow.com/garden-how-to/propagation/seeds/seed-packet-information.htm Veggie Gardner – How to read a seed packet (Day 2-5) https://www.veggiegardener.com/how-to-read-seed-packet/ computers for research (Day 3-5) measuring tools, paper, art supplies, seed packet template (Day 3-5)</p>		
INSTRUCTION	What will the teacher do?	What will the students do?	How much time for each activity?
Pre-assessment	<p>Day 1- Teacher gathers and displays various seed packets for students to examine. Teacher asks, "Which seed packets are for vegetable plants?"</p>	<p>Day 1- Students get out their Agriscience notebooks. Students consider the seed packets on display, noting those that they think are vegetables.</p>	<p>40min 10 min</p>
Do-now/Hook	<p>Teacher sets out a number of different vegetables for students to touch, feel, and taste.</p> <p>Teacher leads a summary discussion:</p> <ul style="list-style-type: none"> • Which seed packets are vegetables? Why do you think so? <p>Teacher provides a definition of vegetable: a plant's edible stem, root, tuber, leaf or flower.</p> <ul style="list-style-type: none"> • Why are some fruits (produce containing the seed) often classified as vegetables? • What characteristics do your favorite vegetables have in common? 	<p>Students investigate vegetables through sensory evaluation and record the characteristics (such as color, flavor, texture) of at least 3 different vegetables.</p> <p>Students participate in the teacher-led summary discussion.</p> <p>Students write the definition of vegetable in their Agriscience notebooks</p>	<p>20 min 10min</p>

<p>Procedure for Instruction/ Learning Activities</p>	<p>Day 2- Teacher delivers a direct instruction lesson on:</p> <ul style="list-style-type: none"> the consumer right to accurate information ("the right to be informed about the quality, quantity, potency, purity, standard and price of goods or services... so as to protect the consumer against unfair trade practices" in the Consumer Protection Act of 1986.) the important consumer information required on a seed packet. <p>Resource PennState Extension – Information on seed packets (Day 2) https://extension.psu.edu/information-on-seed-packets</p> <ul style="list-style-type: none"> Teacher leads students in locating the required information on an actual seed packet (use packets from the pre-assessment activity) Teacher defines and evaluates the understanding of key academic and content vocabulary. <p>Day 3-5 Teacher asks students to choose a partner. Partners work together to</p>	<p>Day 2- Students take notes, in their Agriscience notebooks, on the main ideas presented during the teacher's direct instruction lesson.</p> <p>Students examine a seed packet and identify the required consumer information</p> <p>Students engage in a vocabulary activity for comprehension and retention of important terms.</p> <p>Day3-5 Students work in pairs to list the letters of the alphabet from A to Z. Next to each letter, pairs</p>	<p>40min</p> <p>40 min x 3 days 10 min</p>
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	<p>list the letters of the alphabet from A to Z. Next to each letter, partners write the name of a vegetable beginning with that letter (for as many as they can in the time period allowed for this activity).</p> <p>Teacher creates a class master list, from which students will choose a vegetable for their individual seed packet project.</p> <p>Teacher describes the Vegetables A to Z project.:</p> <ul style="list-style-type: none"> • Students will produce a model of a seed packet for their chosen vegetable. • Packets must include accurate information, based on student research • Packets must include all required consumer information <p>Teacher provides links for packet information, to be used to support information already in students' class notes:</p> <ul style="list-style-type: none"> • PennState Extension – Information on seed packets https://extension.psu.edu/information-on-seed-packets • Gardening Know How Website https://www.gardeningknowhow.com/garden-how- 	<p>write the name of a vegetable beginning with that letter (for as many as they can in the time period allowed for this activity).</p> <p>Pairs share their answers as the teacher creates a class master list. Each student chooses a vegetable from the A-Z list. This will be the vegetable the student will use for his/her seed packet project.</p> <p>Students create a model of a seed packet for their chosen vegetable with all required consumer information.</p> <p>Students conduct online research to gather accurate information about their vegetable to include on their seed packets. Citations for online resources will be noted in their Agriscience notebooks.</p> <p>Students utilize their class notes and teacher links to check that their packets include all required consumer information.</p>	<p>10min</p> <p>20 min Day 3, and Days 4 and 5</p>
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	<p>to/propagation/seeds/seed-packet-information.htm</p> <ul style="list-style-type: none"> • Veggie Gardner – How to read a seed packet https://www.veggiegardener.com/how-to-read-seed-packet/ <p>Teacher provides seed packet template, measuring tools, paper, and art supplies to create individual seed packets.</p> <p>Day 6 (and a future date)- Teacher arranges for an elementary class to visit. Students will work with the elementary class to teach elementary students about the important information found on a seed packet. Teacher assists students in answering elementary students' questions.</p> <p>Teacher makes arrangements for a future date, when students and elementary students work together in the school gardens to plant vegetable seeds. They will use the information provided on a seed packet, such as row and seed spacing and seed depth.</p>	<p>Day 6 (and a future date) - Students work with the elementary class to teach elementary students about the important information found on a seed packet. Students use their model seed packets as examples.</p> <p>Students answer elementary students' questions. Following the elementary visit, students hang their seed packet models on the wall outside the agriculture room, and/or post them to the class website.</p> <p>On a future date, students and elementary students work together in the school gardens to plant vegetable seeds using the information provided on the packet regarding row and seed spacing and seed depth</p>	<p>40min (and future date) 35min</p> <p>5min</p>
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Differentiation	Students will be grouped by their abilities and interests. Teacher will provide scaffolded support where needed. Students who have physical disabilities will be accommodated for. Students who are meeting all of the expectations will be challenged to go above and beyond.
Closure	Students work with the elementary class to teach elementary students about the important information found on a seed packet. Students use their model seed packets as examples. On a future date, students and elementary students work together in the school gardens to plant vegetable seeds using the information provided on the packet regarding row and seed spacing and seed depth.
ASSESSMENT	
College, Career, and Life Readiness Skills	See below Based on Middle-level Life/Career Rubrics available at https://nyctecenter.org/middle-level-life-career-rubric-database/rubrics

Performance Measure	Exemplary	Proficient	Developing	Beginning
Uses Technology to Locate and Evaluate Information	Effectively and consistently uses multiple technology tools to collect, organize, evaluate, and/or communicate information.	Uses technology effectively as a tool to collect, organize, evaluate, and/or communicate information.	Uses popular technology tools to collect and/or communicate information.	Attempts to use technology to collect and/or communicate information are ineffective.
Interprets Information and Draws Conclusions	Is able to look at complex information and successfully draw conclusions and apply them to consumer situations.	Is able to look at information and successfully draw conclusions in consumer situations.	Looks at information and sometimes draws conclusions in consumer situations.	Looks at information but rarely draws a conclusion in consumer situations.
Analyzes Critical Information	Thoroughly evaluates the reliability of the source and the information researched using internal and external validation.	Thoroughly evaluates information researched using internal and external validation.	Evaluates information researched but not thoroughly.	Does not evaluate information.
Demonstrates Originality and Inventiveness	Consistently demonstrates creativity in new situations.	Demonstrates creativity in many new situations.	Demonstrates creativity but does not always understand how to express it.	Does not demonstrate creativity.
Maintains Focus to Completion of the Project	Stays focused consistently, prioritizes tasks, recognizes time constraints of projects, and avoids distractions while meeting deadlines.	Develops a timeline for the work to be completed and stays focused throughout the project.	Is occasionally off task in regards to accomplishing the project, thus only a portion of it is completed.	Is often off task and does not complete the project.