**TEXAS CTE LESSON PLAN**

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| **Lesson Identification and TEKS Addressed** |
| **Cluster** | Hospitality and Tourism |
| **Course** | Advanced Culinary Arts |
| **Lesson/Unit Title** | Back to the Future – An Introduction to Sustainability in Food Service |
| **TEKS Student Expectations** | **130.255. (c) Knowledge and Skills**(5) The student demonstrates an understanding of sustainability in the restaurant industry and its local and global effect. The student is expected to: (A) evaluate practices for water and energy conservation across the food service industry; (B) identify waste management options to promote sustainability; and(C) evaluate current sustainable food practices. |
| **Basic Direct Teach Lesson** |
| **Instructional Objectives** | **Students will:*** Identify industry vocabulary as it relates to sustainability
* Discuss the connection between sustainability and ethical standards
* Apply information on sustainability to problem-solve industry case studies
* Research, analyze, prioritize, and apply sustainability and conservation practices
* Brainstorm ideas to assist their community practice sustainability
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| **Rationale** | Current trends in the food service industry support communities. Gaining awareness of the importance of sustainability practices will allow students to understand business policies and procedures. |
| **Duration of Lesson** | Four 45-minute class periods |
| **Word Wall** | **Brownfield site:** A previously abandoned industrial site that, once cleaned up, can be repurposed for commercial business use**Composting:** A natural form of recycling that occurs when organic material decomposes to form organic fertilizer**Conservation:** The practice of limiting the use of a resource**Environmental Protection Agency (EPA):** A federal agency whose mission is to protect human health and the environment**Food miles:** The amount of travel that some food products must make to reach consumers**Fossil fuels:** Fuels that are formed from a plant source or animal remains buried deep in the earth, such as, natural gas, coal, propane, and petroleum**Green building:** One that has been designed, built, or renovated and reduces the overall impact on the environment**LEED (Leadership in Energy and Environmental Design):** Contractors and architects that have been trained in building facilities that comply with national standards for green construction**Local source:** Food produced in the surrounding growing region**Overfishing:** Catching a species at a faster rate than it can reproduce**Renewable energy source:** Does not rely on a finite supply of a resource, does not emit greenhouse gases, or contribute to air pollution**Repurposed food:** Food that customers did not eat, but the back-of-the-house staff prepared, cooked, cooled and held safely (usually food that was prepared ahead of time but not sold)**Sustainability:** The practice that meets current resource needs without compromising the ability to meet future needs |
| **Materials/****Specialized Equipment Needed** | **Equipment:*** Computer for PowerPoint presentation
* Computer with Internet (be sure to follow school district guidelines)

**Materials:*** Butcher paper
* Stickers (round or Post® It Notes – various colors)
* Tape

**Supplies:*** Compost bucket (if available)
* Recycling bucket, trash can or box
* Copies of handouts

**PowerPoint:*** Back to the Future – An Introduction to Sustainability in Food Service

**Technology:*** Free iPad App:
	+ iRecycleProvides access to more than 1,600,000 ways to recycle over 350 materials<https://itunes.apple.com/us/app/irecycle/id312708176?mt=8>
* TED Talks:
	+ Leyla Acaroglu: Paper beats plastic? How to rethink environmental folkloreMost of us want to do the right thing when it comes to the environment. But things aren’t as simple as opting for the paper bag says sustainability strategist Leyla Acaroglu. A bold call for us to let go of tightly-held green myths and think bigger in order to create systems and products that ease strain on the planet.<http://www.ted.com/talks/leyla_acaroglu_paper_beats_plastic_how_to_rethink_environmental_folklore>

**Graphic organizers:*** Back to the future notes
* Back to the future notes (key)

**Handouts:*** Back to the future consensogram template
* FCCLA planning process
* FCCLA planning process worksheet
* Rubric for community leadership and teamwork experience
* Sustainability in food service – where we stand today e-zine article review
* Sustainability in food service – where we stand today e-zine article review (key)
* Sustainability vocabulary quiz
* Sustainability vocabulary quiz (key)
* Sustainable food service web quest
* Sustainable food service web quest (key)
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| **Anticipatory Set** | **Note to teacher:*** Become familiar with the lesson:Service Learning with a Smile: Hospitality and Tourism

This lesson will assist the students in the Guided Practice section.**Before class begins:**Display as many of the materials and supplies from the Materials or Specialized Equipment Needed section as you have available on a table in front of the classroom.Prepare the Consensogram templates using the instructions on Back to the Future – Consensogram Template using butcher paper or the white/chalk board. Be sure to save the template to use in Lesson Closure.As students enter the classroom, distribute colored dot stickers or sticky notes to each student (one for each statement) and allow them to read the statement below each template. Students will place their stickers in the appropriate space.Ask students the following questions:* What do you think is happening in the video?
* Do you agree with manufacturers adding enhancers to our food?
* What changes can we make?
* Why is sustainability important?
* What can you do to make improve the recycling efforts in our community?
* Is our community recycling, conserving water, and reusing materials?
* Give some examples.
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| **Direct Instruction with Special Education Modifications/****Accommodations** | Introduce lesson objectives, terms, and definitions.Distribute handout Back to the Future Notes so that students may take notes during the slide presentation.Introduce PowerPoint Back to the Future – An Introduction to Sustainability in Food Service and lead a discussion about sustainability in our community.View video from the Environmental Protection Agency (EPA):* Food Scraps to Green EnergyFood waste is the second largest portion of garbage going into landfills in the United States, accounting for over 30 million tons each year.<http://youtu.be/vhyekv1V32s>

Other videos available:* National Restaurant Association’s Conserve Program Serving Up Sustainability<http://conserve.restaurant.org/Community/Videos>

*Individualized Education Plan (IEP) for all special education students must be followed. Examples of accommodations may include, but are not limited to:** assisting with notes
* checking for understanding and clarification
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| **Guided Practice with Special Education Modifications/****Accommodations** | Note: Refer to the PowerPoint in the Service Learning with a Smile: Hospitality and Tourism lesson to clarify the FCCLA Planning Process.Distribute handout FCCLA Planning Process that will explain the decision-making process.As a class, brainstorm ideas that would benefit your community in practicing sustainability.Visit the Environmental Protection Agency (EPA) website for ideas:* Reduce, Reuse, RecycleLearn how reducing, reusing, and recycling can help you, your community, and the environment by saving money, energy, and natural resources. Recycling programs are managed at the state and local level—find information on recycling in your community.<http://www2.epa.gov/recycle>

Distribute the FCCLA Planning Process Worksheet to plan the community project.Refer also to Service Learning Projects for more ideas.*Individualized Education Plan (IEP) for all special education students must be followed. Examples of accommodations may include, but are not limited to:** encourage participation
* check for understanding
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| **Independent Practice/****Laboratory Experience with Special Education Modifications/****Accommodations** | There are many activities students can do to assist their community in the practicing recycling and sustainability.Allow students to work on the community sustainability project as a team.Distribute Rubric for Community Leadership and Teamwork Experience so that students will understand what is expected.Distribute handout Sustainability in Foodservice – Where We Stand Today E-Zine Article Review and allow students to read the article and answer the questions.Remind students of a vocabulary quiz at the end of the lesson.*Individualized Education Plan (IEP) for all special education students must be followed. Examples of accommodations may include, but are not limited to:** extended time
* peer tutor
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| **Lesson Closure** | Review lesson objectives, terms, and definitions.Review the Back to the Future – Consensogram Template from the Anticipatory Set.Distribute different colored stickers to each student. Allow the students to put a new dot on the consensogram indicating their new level of understanding at the end of the lesson.Continue the discussion with your students reviewing the following statements and noting their answers on the board:* Explain the difference between sustainability and conservation.
* A restaurant serves fresh bread each day. At the end of the day they have 10 to 15 loaves of leftover bread. Identify several options the restaurant may have in order to deal with the extra loaves.
* What are the 3 R’s of conservation? Explain the difference between each.
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| **Summative/End of Lesson Assessment with Special Education Modifications/****Accommodations** | Distribute handout Sustainability Vocabulary Quiz to assess the student’s knowledge.Students will be assessed with appropriate rubric.*Individualized Education Plan (IEP) for all special education students must be followed. Examples of accommodations may include, but are not limited to:** shortened quiz
* quiz read orally
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| **References/****Resources** | **Textbook:*** *Foundations of restaurant management and culinary arts, Level two.* (2011). Boston: Prentice Hall.

**Website:*** Reduce, Reuse, RecycleLearn how reducing, reusing, and recycling can help you, your community, and the environment by saving money, energy, and natural resources. Recycling programs are managed at the state and local level—find information on recycling in your community.<http://www2.epa.gov/recycle>

**YouTube:*** Food Scraps to Green EnergyFood waste is the second largest portion of garbage going into landfills in the United States, accounting for over 30 million tons each year.<http://youtu.be/vhyekv1V32s>
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| **Additional Required Components** |
| **English Language Proficiency Standards (ELPS) Strategies** | * Use “word wall” for vocabulary words
* Work with a peer tutor
* Peer to read materials
* Highlighted materials for emphasis
* Shortened simplified instructions
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| **College and Career Readiness Connection[[1]](#footnote-1)** |  |
| **Recommended Strategies** |
| **Reading Strategies** | Encourage students to read the following articles pertaining to this lesson:* How to Go Green at Work: 10 Simple IdeasMake a few simple changes and do your part to go green. Small actions can create big change, especially when it comes to the environment.<http://www.ehow.com/how_2309342_green-work-simple-ideas.html>
* Sustainability in Food Service: Where We Stand TodaySustainability has become a standard part of the food service industry’s lexicon. Individual members of the community have long embraced the concept. But actually, putting it into practice? Well, that’s been a different story. Until now.<http://www.fesmag.com/features/foodservice-issues/11479-sustainability-in-foodservice-where-we-stand-today>
* What Is Sustainability in the Workplace?Flip through university catalogs and you may find a new major that was virtually unheard of 20 years ago: sustainability. These programs meet the needs of a changing business world that is becoming as seriously committed to earth preservation issues as it is to the bottom line of corporations.<http://www.ehow.com/info_12085897_sustainability-workplace.html>

**Reading Strategy**Encourage students to connect reading and their life experiences or prior knowledge. |
| **Quotes** | Learning about such issues as sustainability and locavorism are things you need to have as part of you as a chef because it will make you cook more delicious food. **-Rene Redzepi*** Note: Locavorism is the idea that it is irresponsible to eat food that was produced more than a short distance from where it is eaten.

When sustainability is being a matter of survival for your business, I believe you can create massive change.**-Cameron Sinclair**Inaction is no longer acceptable. **-Eric Lowitt**The future is green energy, sustainability, renewable energy.**-Arnold Schwarzenegger** |
| **Writing Strategies** | **Journal entries:*** I should turn off light switches when I leave a room because …….
* If I were to start a sustainability/conservation program in my restaurant I would start by \_\_\_\_\_\_\_\_\_\_\_ because ……….
* I understand that conservation/sustainability is important because ……
* I already follow these recycling practices:

**Writing Strategy:**RAFT* + Role: student
	+ Audience: community leaders
	+ Format: letter
	+ Topic: starting a recycling program in the community
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| **Communication 90 Second Speech Topics** | * Three expenses of starting a sustainability program in a restaurant are ….
* Describe a dinner menu that can be re-purposed to eliminate food waste.
* Three ways to conserve water or energy in a restaurant are ….
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| **Other Essential Lesson Components** |
| **Enrichment Activity** | Encourage students to demonstrate sustainability practices in the lab settings. A container may be set aside to begin a compost pile of the scraps of food that are not used in the lab. This compost pile may be donated to the horticulture program, if your school has one available, to use as fertilizer or to community members who are growing gardens.**Sustainable Food Service Web quest**Distribute handout Sustainable Food Service Web quest and encourage students to research the answers to the problems on website below.<http://www.sustainablefoodservice.com/>**Infographic:**Infographics are graphic visual representations of information, data or knowledge intended to present complex information quickly and clearly.The infographic below is related to this lesson. Allow students to view the image on a projector and lead a discussion concerning the information provided.* Infographic: Together We Can Make a Difference Make a difference today! If we all take small steps every day to reduce the amount of waste we produce, we can help protect our planet for generations to come.<http://www.epa.gov/wastes/nonhaz/municipal/infographic/index.htm>

**TED Talks:**TED is a nonprofit organization devoted to spreading ideas, usually in the form of short, powerful talks (18 minutes or less).The video below is related to this lesson. Allow students to view the video and lead a discussion concerning the TED Talk.* Leyla Acaroglu: Paper beats plastic? How to rethink environmental folklore.Most of us want to do the right thing when it comes to the environment. But things aren’t as simple as opting for the paper bag says sustainability strategist Leyla Acaroglu. A bold call for us to let go of tightly-held green myths and think bigger in order to create systems and products that ease strain on the planet.<http://www.ted.com/talks/leyla_acaroglu_paper_beats_plastic_how_to_rethink_environmental_folklore>
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| **Family/****Community Connection** | Involve family and friends in a community recycling program. Encourage them to recycle items so there is little or no waste.Visit the EPA website for ideas:* U.S. Environmental Protection AgencyWastes – What You Can Do at Home and in the Garden
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| **CTSO connection** | **Family, Career, Community Leaders of America (FCCLA)**<http://www.texasfccla.org>**Star Events:*** Environmental Ambassador An individual or team event – recognizes participants that address environmental issues that adversely impact human health and well-being and who actively empower others to get involved.
* Hospitality, Tourism, and Recreation An individual or team event, recognizes participants who demonstrate their knowledge of the hospitality, tourism, and recreation industries and ability to translate their knowledge into a hypothetical or real business. Project must relate to culinary, lodging, recreation, tourism, or event coordination.
* Illustrated Talk An individual or team event – recognizes participants who make an oral presentation about issues concerning Family and Consumer Sciences and/or related occupations. Participants use visuals to illustrate content of the presentation.

**SkillsUSA*** Community Action Project (Demonstration)Purpose: To evaluate the ability of a team of two contestants to develop, execute, document, and present a project that was completed in their community or school, which provides a benefit to the community or the school. To evaluate local activities that benefit the community and to recognize excellence and professionalism in the area of community service. This event also enables the community to become aware of the outstanding work being performed by career and technical education students.
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| **Service Learning Projects** | True service learning is developed with student voice about concerns and needs. As the students are learning and researching this topic, ask them to think about ways they can maximize their learning to benefit others. For more information, visit:[www.ysa.org](http://www.ysa.org)Brainstorm with your students for a service project pertaining to this lesson. Ask students how they will use what they have learned about marketing and communications.Example:* If your school does not have one, start a recycling program
* Collaborate with a local garden club and elementary school to create a community garden and upon harvesting, make a meal using items grown in the garden
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1. Visit the Texas College and Career Readiness Standards at <http://www.thecb.state.tx.us/collegereadiness/CRS.pdf>, Texas Higher Education Coordinating Board (THECB), 2009. [↑](#footnote-ref-1)