

Take a Bite Out of Climate Change

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Introduction

“Si planificas para un año, siembra trigo. Si planificas para una década, planta árboles. Si planificas para una vida, educa personas”. Kwan Tzu. – If you plan for a year, plant wheat. If you plan for a decade, plant trees. If you plan for a life, educate people ¹

In this unit designed for a World Language class, I will focus on meals in the target language, specifically school lunches, and making healthy food choices for our bodies and also for our Earth. Students will learn the impact that their food choices not only have on their bodies but also the impact their choices have on the Earth and the implications those choices have for the future of our world. Students will learn how to read and interpret authentic texts in the target language using the *Visual Thinking Strategies* method.² The same strategies that students employ for close reading of text are easily applied to the interpretation of infographics. Students will practice both strategies as they read about and research sustainable school lunches.

Background

I currently teach at The John Dickinson School in Wilmington, Delaware in the International Baccalaureate Middle Years Programme, which has been in existence for four years. The middle school is located within the high school building in a wing of its own and was created as an extension to the International Baccalaureate Diploma Programme for grades 11 and 12. The Diploma Programme was initiated at Dickinson five years prior to the inception of the Middle Years Programme (MYP). MYP was implemented to encourage more students to participate in the Diploma Programme. In its first year, MYP included grades six, seven, eight and this year will be expanding to include grade nine. A continuous sixth through twelfth grade International Baccalaureate Programme will be established at Dickinson in the near future. Our Middle Years Programme will be growing in size this coming school year from about 285 students to the maximum of 300.

Students must apply to participate in MYP. To be eligible, students must be motivated to learn. I am currently the only Spanish teacher in MYP teaching Spanish 1A (Grade 6), Spanish 1B (Grade 7), and Spanish 2 (Grade 8), meeting with my classes for forty-five minutes every day.

Open-mindedness is one of the ten attributes included in the IB Learner Profile. To be considered open-minded students “critically appreciate our own cultures and personal histories, as well as the values and traditions of others. We seek and evaluate a range of

points of view, and we are willing to grow from the experience.”³ Our school population is fairly diverse but the students typically have a shallow understanding of various cultures not only around the world, but also close to home. They need opportunities to immerse themselves culturally in order to appreciate the similarities in our human experiences that on the surface appear to be different. My plan is to use authentic Spanish language texts in order to present students with opportunities to immerse themselves in the Hispanic culture using authentic target language nonfiction writing; news articles, web pages, and books, accompanied by culture rich realia such as infographics, menus, and recipes. It is my intention to incorporate authentic texts and realia into this unit so that students can have exposure to Hispanic culture through the materials from the everyday life of native speakers. Authentic text exposes students to culture because it is written for native speakers, by native speakers and has clear context. Some authentic texts and realia, objects from real life used in classroom instruction to improve students’ understanding of other cultures and real life situations, have built in supports for language learners like pictures, graphs, and maps. Both can offer language in small chunks making it more manageable for students. The language included in such realia such as infographics, menus, and recipes is highly contextualized making it easy for students to acquire new vocabulary quickly. “Language expresses cultural reality.”⁴

Incorporating authentic text and realia not only enriches students’ vocabulary in the target language but it increases their understanding of the target language culture(s). Realia involves the senses in the learning process therefore fostering creativity and stimulating the mind. Through realia, students are exposed to real discourse, which in turn engages and motivates them in the process of language learning while they simultaneously learn to use the target language in various contexts. Authentic materials keep students informed about what is happening in the world while increasing their global awareness. Bringing realia and authentic text into the World Language classroom creates opportunities for students to be active learners and teachers to be facilitators allowing lessons to be more interactive and students more independent. Students feel more comfortable with authentic materials and realia, which increases student motivation. Increased motivation leads to increased language use which leads to improved proficiency.⁵

Content Objectives

I am focused on four goals in the creation of this unit. First, I would like my students to gain a cultural appreciation and understanding of meals, specifically school lunches, and food choices in Hispanic countries. I plan to incorporate school lunch menus from various Hispanic countries to allow students to compare and contrast menu items not only amongst the Hispanic schools but their own school menu, as well. Students will delve further into each menu to determine what each country considers to be a healthy lunch.

Second, I would like the students to increase their global awareness on the issue of climate change by exploring the connections between food systems and sustainability. Delving into the topic of climate change in the target language for first- and second-year students of the language will seem quite daunting and almost impossible initially. Hence a visual, an infographic, can be a useful tool for teaching beginning language students, especially those who are visual learners. A graph, chart, or infographic can clarify meaning and may be a tension diffuser. It is my hope that with the use of a visual, the students will explore the food systems and climate change connection in depth, spurring them on to make personal changes in their food choices.

Third, I would like students to identify the ways in which the food system contributes to carbon emissions through the use of Movie Talk, a technique for language learning. In Movie Talk a short film or short film segment of a longer related film with little to no dialog is shown. The film is to be watched not listened to. I plan to narrate the film in the target language as the students view it. In doing this, I can pause and play the film as needed while describing everything in the target language and providing the students with the vocabulary they need. This also allows me the freedom to check for comprehension as needed. Again, I am using realia, a film created by a native speaker of the language for native speakers.

Lastly, I would like students to find ways to reduce their carbon footprints through changes in food consumption. Using all of the information previously gathered about school lunches in various Spanish-speaking countries and the effects of our food system on the environment, I plan to have students create a school lunch menu in the target language, for one week of school that is both healthy for the body and healthy for the environment.

As previously mentioned, authentic material and realia in the target language will enrich the vocabulary and improve the proficiency of my students. Both realia and authentic text provide comprehensible input because students are seeing images of what is being described, not written translations. Both can be used to provide differentiated instruction because students will pick up on whatever they are able to based on their current level of language ability.

Unit Overview

It is my goal to design a unit in which students will use authentic text and realia, as a springboard to creating their week of school lunches that are both healthy for the body and healthy for the environment. The class will research school lunches in Spanish-speaking countries using the following learning strategies; vocabulary, close reading and visual thinking, and CAFE - check for understanding. Students will study the connections between food systems and climate change through the use of infographics. The class will explore the ways in which food system contributes to carbon emission using the Movie

Talk learning strategy. To conclude the unit, students will create a school lunch menu, in the target language, for one week. The menu will be healthy for both the body and the Earth.

Objectives

This unit will be based on two IB MYP Objectives, two Delaware World-Readiness Standards for Learning Languages and one Common Core State Standard. I will focus on IB Language Acquisition Objective Criterion C: Comprehending Written Text requiring the student to understand information and engage with the text by supporting opinion and personal response with evidence from the text. I will also evaluate Criterion D: Communicating in Written Form which expects the student to organize and express thoughts, feelings, ideas, opinions and information in writing, write for specific purposes, and develop accuracy when writing in the target language. The Delaware World Readiness Standards for Learning Languages are Standard 1.3 Presentational Communication: Learners present information, concepts, and ideas to inform, explain, persuade, and narrate on a variety of topics using appropriate media and adapting to various audiences of listeners, readers or viewers; and Standard 2.1 Relating Cultural Practices to Perspectives: Learners use the language to investigate, explain, and reflect on the relationship between the practices and perspectives of the culture studied. I will focus on the Common Core Standard CCSSELA – Literacy RI.9 – 10.7 Integration of Knowledge and Ideas: Analyze various accounts of a subject told in different mediums (e.g., a person's life story in both print and multimedia), determining which details are emphasized in each account.

Background Content

Student Background Knowledge

During the semester of Spanish prior to this unit, students completed a six-week unit of study on the life cycle of the Amazon Rainforest, specifically the effects of deforestation on global water cycles. As a part of this unit, students read the TPRS (Teaching Proficiency through Reading and Storytelling) novel *El Capibara Con Botas* in which they learn in detail the water cycle. In the story, which is set in Ecuador, the natural water cycle is interrupted due to the destruction of the plants and trees in the rainforest. In this unit, my students delved into the effects of deforestation in climate change. In addition, in their Social Studies class, the students learn about the impact of climate change on ecosystems and the rising sea level, sustainability of resources especially energy, renewable sources, the carbon cycle, and sustainable farming practices.

Key Content

Definition of Sustainability

I believe it helpful to understand the concept of sustainability. In addition to understanding the concept, it is also essential to understand the history and development of sustainability. These understandings will allow you to develop a framework of skills necessary for teaching this topic. The simple definition of sustainability is “capable of being sustained.”⁶ The United Nations Bruntland Commission, in 1987, defined sustainability as “meeting the needs of the present without compromising the ability of future generations to meet their own needs.”⁷ The Rio Declaration on Environment and Development and Agenda 21 accords signed at the Earth Summit declare a new paradigm for sustainability of society, economics and the environment. In 1993, at the European Union’s Fifth Environmental Action Programme, the focus of sustainability expanded into industry, transport, energy, agriculture and tourism. Sustainability was also endorsed by the Clinton administration in 1994. Sustainability is practiced today in biology, economics, sociology, ethics, urban planning, and various other realms. As Andrew Basiago states in his article *Methods of defining ‘sustainability,’* “ ‘sustainability’ has emerged as a universal methodology for evaluating whether human options will yield social and environmental vitality.”⁸

Sustainability consists of the three essential pillars; environmental protection, social development, and economic growth. It is necessary to protect nature and the environment rationally as they are not inexhaustible resources. Social development is promoted through sustainability pursuing cohesion amongst communities and cultures in order to achieve an adequate quality of life, health, and level of education. Finally, sustainability targets economic growth that generates the ability for future generations to compete for wealth.

Recently, cultural sustainability is increasingly being perceived as the fourth pillar of sustainability. Cultural sustainability involves efforts to preserve the tangible and intangible cultural elements of society in ways that promote environmental, economic, and social sustainability.⁹ Published on the website, *The Living Principles for Design*, is a diagram detailing the sustainability theories of Adam Werbach. According to Werbach, economic sustainability is concerned with “actions and issues that affect how people and organizations meet their needs, evolve and define economic success and growth.” Environmental sustainability seeks to lower the usage of nonrenewable resources and energy consumption, eliminate waste to landfills, etc. It is concerned with “actions and issues that affect natural systems, including climate change, preservation, carbon footprint, and restoration of natural resources.”¹⁰ Social sustainability focuses on meeting as many needs of a community as possible, like appropriate facilities for the aged, youth and cultural groups. It is concerned with “actions and issues that affect all aspects of society, including poverty, violence, injustice, education, healthcare, safe housing, labor, and human rights.”¹¹ Cultural sustainability is concerned with “actions and issues that affect how communities manifest identity, preserve and cultivate traditions, and develop belief systems and commonly accepted values.”¹²

An alternative model of sustainability exists in which the essential components interpreted as dimensions rather than pillars. In this alternative model, cultural is perceived as holding various roles such as culture in sustainable development in which it holds an independent, supportive, and self-promoting role; culture for sustainable development in which it works as an intermediary between the other dimensions; and culture as sustainable development in which culture is an all-encompassing dimension incorporating all of the others.¹³

Culture has also been explored in diverse levels of Sustainable Culture, Cultural Sustainability, and Cultures of Sustainability. These levels are interdependent. Sustainable Cultures require cultural strategies for sustainability in, for example, media channels, to share the values of cultures of sustainability. Meanwhile, Cultures of Sustainability demand fundamental shifts in communication for more inclusive cultural sustainability and sustainable cultures.¹⁴

The significance of these debates is that they demonstrate the complexity of culture and the huge role that it plays in the possibilities of developing a more sustainable world. They challenge models that attempt to reach a universal standardized application and claim for more integrated approaches in connection to local cultures and expertise, which embrace various particular worldviews, value systems, and symbolic universes.¹⁵

Definition of Sustainable Agriculture

For the purpose of this unit, it is important to understand the definition of sustainable agriculture and even more importantly, the benefits of employing it. According to organization Food Future WA, “Sustainable agriculture is the efficient production of safe, high quality products in a way that protects and improves the natural environment, the social and economic conditions of farmers and their local communities, whilst safeguarding the health and welfare of all farmed species.”¹⁶ In order to develop and maintain a sustainable food supply sustainable productions systems must be in place. These production systems can be defined as sustainable if the outputs of all products harvested are balanced by the inputs back into the system.¹⁷ Production systems in use that do not meet this sustainability requirement can lead to a decline in soil nutrient levels over time, in turn reducing yields and profitability while resulting in an increased use of fertilizers and other chemicals. If the additives to the soils are not balanced, various impacts to the environment occur such as excessive richness of nutrients in water systems due to runoff (otherwise known as eutrophication), the decline of soil structure, the loss of soil ecology, erosion and the acidification of soil.

Definition of Regenerative Agriculture

According to Regenerative Agriculture Initiative at California State University, Chico and The Carbon Underground, “Regenerative Agriculture describes farming and grazing practices that, among other benefits, reverse climate change by rebuilding soil organic matter and restoring degraded soil biodiversity – resulting in both carbon drawdown and improving our water cycle. Specifically, Regenerative Agriculture is a holistic land management practice that leverages the power of photosynthesis in plants to close the carbon cycle, and build soil health, crop resilience, and nutrient density.”¹⁸ Regenerative agriculture improves soil health via the implementation of farming practices that increase soil organic matter. This increases the soil biodiversity both above and below the surface, improves the soil’s capacity to hold water. In addition, the soil develops the ability to hold carbon at greater depths, drawing down climate-damaging levels of carbon dioxide. Restorative agriculture reverses the damaging effects to the soil from tillage, applications of agricultural chemicals and salt-based fertilizers, and carbon mining.¹⁹

Regenerative agriculture consists of four core practices: no till/minimum tillage; application of cover crops, crop rotations, compost, and animal manures; soil inoculation with composts or compost extracts, and finally, well managed grazing practices. The no till/minimum tillage method, along with the other regenerative practices, boosts soil aggregation, water absorption and retention, and carbon sequestration. The application of cover crops, crop rotation, compost, and animal manures biologically increase soil fertility in regenerative systems thereby reducing and often eliminating the use of artificial and synthetic fertilizers that have been scientifically proven to create imbalances in the function and structure of the microbial communities in soils which in turn creates a dependency upon these fertilizers for plant nutrition, leading to less resilient crops. With the injection of composts or compost extracts into the soil, we begin building biological ecosystem diversity to restore the population, network and functionality of the soil microbial community. This can be accomplished through full-time planting of numerous inter-crop plantings, cover crops including a variety of species, and borders planted to attract beneficial insects and provide a habitat for bees. Through well managed grazing practices plant growth is improved, soil carbon deposits increase, and overall pasture and grazing land productivity improve. Additionally, soil fertility, insect and plant biodiversity, and soil carbon sequestration increase.²⁰ Not only do these practices improve environmental health, they also improve animal and human health due to the availability of improved micronutrients and better omega dietary balances.²¹

Regenerative Versus Sustainable Agriculture

To be successful in this unit, I believe that it is important to understand the difference between regenerative agriculture and sustainable agriculture. The primary difference between regenerative agriculture and sustainable agriculture is the objective to invigorate, or restore, the yield and growth potential of what is being regenerated.²²

The aim of sustainable agricultural practices is to maintain the status quo, while regenerative agricultural practices employ management techniques to restore currently impacted systems to improved productivity. The same basic practices can be implemented in both regenerative and sustainable agriculture, the difference lies in their application and management. The sustainable farmer employs the practice of pulses (purposefully including legumes in a crop rotation to balance and manage soil nutrients), variations in energy use and storage. Examples of pulses are periods or seasons of growth followed by periods of rest and decline. The regenerative farmer also uses the practice of pulses, but s/he uses it within a holistic management framework to restore what is under management. In this holistic management framework, the regenerative farmer may employ, for example, the practice of pulses in conjunction with the practice of feedback. Feedback is the ecological principle that triggers and magnifies the pulse. The predator-prey dynamic is an example of feedback in that the predator works to control the amount of prey thereby maximizing the performance of the entire ecosystem. This system is holistic overall because one part of the system (e.g., environment) is not sacrificed for another (e.g., economy). The holistic management of regenerative agriculture not only allows us to create what sustainable farmers pursue - a means to continue to live with our environment. Through this type of management, we can restore our lands to their former productivity.

Teaching Strategies

Vocabulary

In this unit the students will be exposed to a large amount of new vocabulary. In order to prepare them, before delving into each activity I will use a Knowledge Rating Scale to conduct a knowledge rating of the significant vocabulary in the activity. I will use a rating scale that is Spanish to English since the language of the activities is Spanish. Students will be given a list of words from the activity and will be asked to rate how well they know each one. Rating scales help students activate prior knowledge and make them aware of the new vocabulary, exposing them to it before engaging it in context. Having students identify the vocabulary terms with which they are unfamiliar helps the teacher to be able to better prepare them to engage with the information presented in each activity. The students will be better prepared to read, listen to, discuss and write about the text. In using formative assessments like rating scales, the teacher is better able to assess the students' prior knowledge. The Knowledge Rating Scale is a graphic organizer that contains each new vocabulary term in Spanish for that activity. The rating categories included are "Have No Clue," "Have Seen It or Heard It," "I Think It Means," "Know It Well," and "Definition."

Before beginning each activity, the activity vocabulary will be pre-taught. This will be done to help the students understand what they are reading or hearing and to ensure that they understand the discussions that we are having in the classroom about what they are

reading or hearing, especially when unfamiliar and new vocabulary is being used. For the actual vocabulary instruction, the students will use a different graphic organizer to write the term in Spanish, the definition/meaning in English, write a sentence in Spanish using the term and draw an example. The vocabulary chart will be revisited throughout the unit as students refine their understanding of the vocabulary.²³

Close Reading

The Delaware Department of Education - World Languages current focus is connecting proficiency and the Common Core State Standards for ELA with a focus on Reading and Writing. Close reading is a technique used to teach students to carefully study a piece of writing by reading it several times, each time looking for a different bit of information. The process can begin with a pre-reading question, or a “hook” with the teacher asking the class a question or providing some background information. Then the teacher will have the students identify the text feature of the reading. The first reading is done aloud by the teacher as students follow along circling any words they do not know and annotating any sentence(s) or paragraph(s) they do not understand with a question mark. After the first reading, using a graphic organizer for learning and reflection, students will write a Learning/About statement, a statement telling about what they just read, and a brief summary. The students complete the second reading independently. As the students read, they underline details in the text that support their Learning/About statements. Next, the students, using the same graphic organizer from the first read, write a reflection. The reflection can be questions they still have about the text, predictions, or a personal connection that they have to that particular part of the story. With a shoulder partner, each student discusses the details they selected from the text and how they support their Learning/About statement. Reflections are also shared. The teacher then conducts a whole class discussion regarding the details of the text in order to check for understanding. In addition, the teacher addresses student questions about the reading. This discussion is followed up with a series of text dependent questions. Students work through these questions in pairs. The teacher continues the close process with a whole class discussion of the questions and the text in order to check for accuracy.²⁴

Movie Talk

Movie Talk is an interpretive listening activity in which the teacher essentially narrates a video or movie clip in the target language that is projected for the class to view. In order to use Movie Talk effectively in this unit, I will select a video or movie clip driven by visuals and not by dialogue as this will allow me to narrate what is being viewed using target language that can be comprehended by the students. The video or movie clip that I will use will be between thirty seconds and four minutes in length. Anything shorter than thirty seconds will not allow for rich comprehensible input and anything longer than four minutes will require a great deal of repetition in order for students to comprehend the language.

In Movie Talk there are three steps: establish meaning, ask the story, read and discuss. In order to establish meaning, before I begin the Movie Talk I will consider which two to four words I will use most often when narrating the video, and I will provide the translations to the students of these words. These will be my guide words/phrases, which I will write on a piece of chart paper with their English translations beside them and make readily visible for my students. I will reference these guide words every time that I use them in my narration by pointing to them on the chart paper. Then students will begin watching the video/movie clip. At a predetermined place I will pause the video/movie clip and describe to the students in the target language everything that is visible and what has happened up to that point. I will then resume playing the video/movie clip. This cycle of playing the video/movie clip, pausing it, and then describing what is seen continues until the entire video/clip has been viewed.²⁵ This is where asking the story comes into play.

There are three key skills that are essential in providing Movie Talk input that is comprehensible and compelling for our students: circling, personalization, and checking for comprehension. “Circling is the instructional practice of asking a series of prescribed questions in the target language about a statement in the target language.”²⁶ Circling is used in the World Language classroom to help students understand a vocal expression in the target language. It provides the language learner with the repetition of a language structure needed for her/him to acquire it as a part of her/his permanent vocabulary. Research indicates that language learners need between 70 – 150 repetitions of a structure to have it become a permanent part of their vocabulary.²⁷ Circling, however, is not used in the World Language classroom for the purpose of repetition instead it is used for the purpose of comprehension. In circling with my students, I will begin by making a statement in the target language that contains one of my new guiding words/phrases while the rest of my statement will consist of previously acquired vocabulary, cognates, and proper nouns making the statement completely comprehensible to my students. I will follow up my statement with yes/no, either/or, and open-ended question in the target language, and then I will restate/recast the original statement after the answer to each question is given. Personalizing the narration of the video/movie clip will allow me to make the target language input that much more comprehensible and compelling for my students as they will now have some type of personal connection to what they are viewing and hearing. In order to achieve personalization I will ask my students questions in the target language that connect them to the story. To perform a quick check for student comprehension I will have my students complete an Up/Down Listening Assessment in which they will put their heads down, and I will ask true/false questions about the video/movie clip. To indicate that a statement is true, students will put their thumbs up; to indicate that the statement is false they will put their thumbs down. Once I have evidence of comprehension from my students, we can then advance to the read and discuss phase.

Using the key skill of read and discuss, I will read the Movie Talk story in its entirety with my students. In order to do this, I will project the story and have my students read it aloud with me stopping frequently to ask circling, personalization, and comprehension questions about what we just read. This allows me to further circle guide words that students have not yet acquired, personalized the content even more, and get an even more accurate read on my students' comprehension of the story. After reading the story together in its entirety, we will begin activities. There are a plethora of post Movie Talk activities available on the internet on such websites as Teaching Comprehensibility, The Comprehensible Classroom, Maestra Loca, Spanish Mama, and Ben Slavic.

CAFE – Check for Understanding

CAFE consists of learning strategies to check for students' Comprehension (I understand what I read), Accuracy (I can read the words), Fluency (I can read accurately, with expression, and understand what I read), and Expanded lists the various strategies. The teaching strategies are used to assess the students' understanding of a concept, determine if the students can transfer the lesson objectives to a new situation, emphasize the key points of the lesson, or extend the lesson's content. The strategy used is usually brief and is typically used as a formative assessment, helping the instructor to determine a course of action for the learning activities that will be implemented in the near future.²⁸

Classroom Activities

Activity 1: Introduction

The first activity is designed as a hook to get the students to engage with the themes that will be covered throughout the unit. This activity consists of two parts: Access Prior Knowledge, and Review Sustainability.

Step 1: Access Prior Knowledge – Deforestation and the Water Cycle

To assess what the students already know I will present the students with questions in the target language like “What do you know about deforestation?” “What do you remember from *El Capibara con Botas* about deforestation and the water cycle?” “How would you describe what happened to the lake in the story when the puma and the jaguar cut down all of the surrounding trees and plants?” Students will record their responses on paper in the target language. They will share their responses aloud with a shoulder partner. I anticipate that some students will mention that the water level in the lake decreased when the puma and the jaguar destroyed the surrounding vegetation and name stages of the water cycle such as evaporation, condensation, precipitation, and infiltration.

After, the students share their responses with a shoulder partner, I will direct a whole class discussion related to the questions. I suggest conducting a class poll related to the

questions having the students create bar graph or a pie chart of the results. This will give students visual data indicating the various responses, similar and differing, of classmates.

Step 2: Review of Sustainability

The next part of this lesson will extend and refine student understanding of sustainability through the use of a video in the target language. This type of media works well in my curriculum as a large percentage of my students acquire information visually, from charts, illustrations, photographs and videos. Before delving into this topic, I suggest using photographs or a video to review the definition of sustainability to provide the students some context. There is a colorful and informative short animated video on *You Tube* titled “Mundo Sostenible” (Sustainable World)²⁹ featuring a young girl, about the age of my students, which explains sustainability in a manner that my first- and second-year language learners will be able to understand. This video also addresses the implications of sustainability for the human race. Using visuals, such as videos and pictures, is especially helpful for students with special needs as they assist these students in acquiring background knowledge and putting the elements of the lesson into context. After watching the video, or as students look at photographs, I will ask questions in the target language such as “What is sustainability?” “Why is sustainability important?” “Individually, what can you do to live sustainably?” “What evidence from the video led you to these conclusions?” and “Did you like the video?”

Activity 2: Study of Sustainable Agriculture

For the purpose of this unit, I suggest dividing the study of sustainable farming into two sections: Part 1 – Introduction; A general overview of sustainable agriculture, and Part 2 – Practices; Best practices for sustainable farming. These sections, in progression, provide the students with some information and statistics about sustainable agriculture. It is my hope that my students will develop a greater appreciation for the Spanish language through the study of sustainable agriculture and that they will incorporate the information in these learning episodes into the culminating activity of this unit.

Part 1: Introduction to Sustainable Agriculture

Vocabulary – Access Prior Knowledge

To get the lesson started I will provide each student with a knowledge rating scale chart, prior to any instruction of the terms. The chart will have a list of twenty or so vocabulary words in the target language related to sustainability and agriculture. My students will rate themselves on their level of familiarity with each term by placing a check in a column under one of the following headings; “Have No Clue,” “Have Seen or Heard,” and “I Know It Well.” I will instruct the students to provide the English meaning of the word in another column labeled “Definition” if they know a word on the list enough to

provide their own definition. If a student has seen or heard a vocabulary term from the list I will direct them to write an educated guess as to the meaning of the word in the column labeled “I Think It Means.” It is important to encourage them to be honest, as their responses will determine how much time will be devoted to the instruction of each vocabulary term.

Vocabulary – Direct Instruction

After the students reflect on their knowledge of the target language vocabulary, I will use a vocabulary chart made up of two columns, one with the vocabulary terms and the other with their English meanings, to clearly teach the vocabulary. Using this chart makes certain that all students have the needed vocabulary to participate in class discussions and activities. Students use the definitions to complete a graphic organizer based on the vocabulary terms in the target language by writing a definition or meaning of the word in English, writing a sentence in the target language using the term in context, and sketching the vocabulary word. Initially I will instruct the students to complete each section of the graphic organizer for every term with the end goal in mind of each student determining which option; definition, sentence, or sketch is the most effective tool for him/her to learn and remember the vocabulary.

Close Reading

I will provide each student with the infographic titled *Agricultura Sustentable* (Sustainable Agriculture).³⁰ An infographic is a combination of written information and pictures/graphics that combines data into design. According to The Best Practices Foundation, using infographics in the classroom may improve students’ learning up to 400%. Vision trumps all other human senses when it comes to learning as the average learner can recall 65% of visual information 10 days later but only 10% of what they heard. The majority of students (close to 65%) are visual learners.³¹ Incorporating visual media into my lessons has proven to increase student engagement with the material being taught and student motivation to learn. In addition, in the World Language classroom infographics provide clarification of content being taught as well as enhance vocabulary comprehension due to the visual clues included in the infographic. As previously stated, the use of visuals is especially helpful for students with special needs as they assist these students in acquiring background knowledge and putting the elements of the lesson into context.

The infographic *Agricultura Sustentable* is divided into four sections: The definition of agricultural sustainability and how it benefits climate; The agro-ecological bases for sustainable agriculture; Who or what it supports, and The global challenges of humanity that it addresses. As the students prepare to view the infographic I will explain to them that they will be using a strategy called Close Reading, working both independently and collaboratively to closely analyze the infographic. I will further explain that they will read

the infograph a couple of times, each time focusing on a different aspect of it. I suggest that the infograph to be studied be divided into three separate viewings. In the first reading, I will ask the students to view at the infograph in silence for a minute or two and think about what they see. After a minute or two I will ask the entire class, in the target language, "What do you observe in the infograph?" I anticipate the students to respond with the obvious — "There are a lot of vegetables. There is information about CO₂. The infograph is divided into 4 sections." When a student provides an answer, I will ask her/him to supply more information. "You said it has information about CO₂. What makes you say that?" The students will justify their answers by providing evidence from the work. They may say, "One of the graphics includes two smoke stacks with smoke/gas that is labeled CO₂." Next I will encourage the students to share differing opinions and provide justification for their opinions. This will deepen the conversation and allow for a wider variety in the student interpretations of the various elements of the infograph. One student may say, "This infograph is about sustainably farming fruits and vegetables because the focal point of the infograph is a large pile of various fruits and vegetables." I would then ask if everyone agrees with the statement. Another student might say that s/he doesn't agree because even though the focal point of the infograph is a large pile of fruits and vegetables there are graphics that contain images of animals and infograph. I will summarize what the students said. After the discussion, the students will use a graphic organizer; a one-page paper divided in half with the first half labeled *Learning* and the other half labeled *Reflection*, to write a Learning/About statement and a brief summary.

The second reading is reading with purpose. Students will study the infograph independently noting in writing details of the infograph that support their learning statements. Using the above graphic organizer, students reflect upon what they just read. I will explain to the students that the reflection can include questions they still have about the work, observations, or a personal connection that they have to a particular part of the infograph. With a shoulder partner, each student will discuss the details they selected from the infograph and how they support their Learning/About statement. Reflections are also shared. I will then conduct a whole class discussion regarding the details of the text in order to check for understanding. In addition, I will address student questions about the infograph.

The next step in the close process is a series of text-dependent questions. I will model for the students the process of answering these questions by working through the first question with them. The process requires the students to begin by reviewing the infograph. Next, they will review the completed graphic organizer. Then they will seek the answer to the question and discuss the question with a partner checking for accuracy and clarification. The final step is where the students write their best possible answer using all of the information that they have gathered to adequately answer the question.

To end the close reading process I will lead a whole class discussion of the questions and the work in order to check for accuracy and address any inaccurate responses.

Check for Understanding

This check for understanding for the introduction to sustainable agriculture portion of the unit can be used to assess students' comprehension of the infograph. I will provide each student with a paper copy of the infograph, which they will glue or tape onto a loose-leaf sheet of paper. I will direct the students to write six sentences in the target language about the infograph. The sentences can be statements or questions. Students will share their sentences with the class. This allows the students to have a visual with their own notes to remind them of what they are learning and thinking, and it provides for me a quick check for understanding of their comprehension of the work.

Part 2: Best Practices of Sustainable Agriculture

Vocabulary

The vocabulary introduced in this theme will be related to agricultural terms and vocabulary specific to the best practices in sustainable agriculture; crop rotation, crop diversity, integrated pest management, beneficial animals, soil fertility, controlled grazing, physical removing of weeds, water management, growing and selling local, and use of alternative energy. In order to provide consistency throughout unit, I will use the same procedures for accessing prior knowledge and direct instruction of vocabulary as in the previous lesson with the exception of the completion of a graphic organizer for vocabulary definitions. Instead of using the graphic organizer I will have students create digital flashcards using the website Quizlet or a similar site. On sites such as Quizlet students can create their personalized study stack of vocabulary terms allowing the students to be active participants in the learning process. Digital media works well in my curriculum because of it has multisensory appeal and will engage my visual, auditory, and kinesthetic learners.

Close Reading

In order to maintain consistency I will employ the same close reading processes used in the previous lesson when reading about the best practices in sustainable agriculture. Some examples of the realia that could be used for this activity are “Las diez mejores prácticas para una Agricultura Sostenible,”³² an article found on the Xataka Ciencia website, “7 prácticas para realizar una agricultura sostenible,”³³ a recent blog post on the Larrosa-Arnal website, and “Buenas prácticas en agricultura sostenible,”³⁴ a narrated video in the target language by LIFE+ Crops for better soil which can be found on the website diaroresponsable.com. I will have my students read the first article mentioned. To get started, I will explain to the students that they will be reading the text a couple of times, each time focusing on a different aspect of it. The first read of the article is read aloud by the teacher. Students follow along circling any words they do not know and

annotating any text they do not understand with a question mark. After this first read students use a graphic organizer, a one-page paper divided in half with the first half labeled *Learning* and the other half labeled *Reflection*, to write a Learning/About statement and a brief summary.

The second reading is reading with purpose. Students read independently underlining details in the article that support their learning statements. Using the above graphic organizer, students reflect upon what they just read. I will explain that the reflection can be questions they still have related to the article. With a shoulder partner, each student will discuss the details they selected from the text and how they support their Learning/About statement. Reflections are also shared. I will then conduct a whole class discussion regarding the details of the text in order to check for understanding. In addition, I will address student questions about the article.

The next step in the close process is a series of text-dependent questions. I will model for the students the process of answering these questions by working through the first question with them. The students will be reminded of the close reading process. The students will begin by reading the section of article again. Next, they will take notes to help better understand the section of the text. They will discuss the question with a partner. To finish they will write their best possible answer using all of the information that they have gathered to the question.

To end the close reading process I will lead a whole class discussion of the questions and the text in order to check for accuracy.

Check for Understanding

To assess the students' understanding of the best practices of sustainable agriculture we will play the Marker Game. Students form two lines facing one another. They may be seated in chairs or on the floor. A marker is placed upright in between each pair of students. I will read a true/false question about a sustainable agriculture practice. For my visual learners, each question is projected on a slide. If the statement is true, each pair of students attempts to grab the marker first. The team (line) with the most markers in hand earns a point. If the statement is false, students do not touch or grab the marker. Both teams (lines) have the opportunity to earn a point if no one touches a marker. If both teams have markers in hand, the one with the most loses a point. If a student grabs a marker and then puts/throws it down the student sitting opposite silently stands up. The team (line) with the student who threw the marker loses two points. This game provides me with a quick and easy check of understanding of all of my students and it provides them with a fun review of the material learned.

Activity 3: Sustainable and Healthy Eating

For the purpose of this unit, I suggest dividing this activity into two sections: Part 1 – Sustainable Food Choices, and Part 2 – Healthy Food Choices. These sections, in progression, provide the students with some information and statistics about food choices that are both healthy for the environment and for the body. The students will then learn, through the study of both sustainable and healthy food choices, and the study of school lunches from around the world, to make healthy and sustainable food choices in order to create a weekly school lunch menu in the target language. It is my hope that my students will develop a greater appreciation for the Spanish language through the creation of a healthy and sustainable school lunch menu.

Part 1: Sustainable Eating

Vocabulary

The vocabulary introduced in this theme will be related to food terms and vocabulary specific to sustainable meal choices. In order to provide consistency throughout unit, I will use the same procedures for accessing prior knowledge and direct instruction of vocabulary as in previous lessons including the completion of a graphic organizer for vocabulary definitions. As stated previously, the students' responses on the graphic organizer will determine how much time will be devoted to the instruction of each vocabulary term.

Close Reading

For this learning episode I will provide each student with the infograph titled *Kilogramos de emisiones de gases inverdadero por porción* (Kilograms of greenhouse gases per part).³⁵ As previously stated, incorporating visual media into my lessons has proven to increase student engagement with the material being taught and student motivation to learn. Infographs provide clarification of content being taught as well as enhance vocabulary comprehension due to the visual clues included in the infograph.

To remain consistent throughout the unit, I will employ the same procedures for a close read of an infograph as used in the previous lessons dividing the close read of the infograph into three separate viewings. In the first reading, I will ask the students to view the infograph in silence for a minute or two and think about what they see. After a minute or two I will ask the entire class, in the target language, "What do you observe in the infograph?" I anticipate the students to respond with the obvious — "Beef emits the most kilograms of greenhouse gases per part. Chocolate emits a lot of greenhouse gases. There are fifteen kinds of food/drink listed on this chart." When a student provides an answer, I will ask her/him to supply more information. "You said chocolate emits a lot of greenhouse gases. What makes you say that?" The students will justify their answers by providing evidence from the infograph. They may say, "Chocolate is listed as the fourth highest in greenhouse gas emissions on the chart." Next I will encourage the students to

share differing opinions and provide justification for their opinions. This will deepen the conversation and allow for a wider variety in the student interpretations of the various elements of the infograph. After the discussion, the students will use a graphic organizer; a one-page paper divided in half with the first half labeled *Learning* and the other half labeled *Reflection*, to write a Learning/About statement and a brief summary.

The second reading is reading with purpose. Students will study the infograph independently noting in writing details of the infograph that support their learning statements. Using the above graphic organizer, students reflect upon what they just read. The reflection can include questions they still have about the work, observations, or a personal connection that they have to a particular part of the infograph. With a shoulder partner, each student will discuss the details they selected from the infograph and how they support their Learning/About statement. Reflections are also shared. I will then conduct a whole class discussion regarding the details of the text in order to check for understanding. In addition, I will address student questions about the infograph.

The next step in the close process is a series of text-dependent questions. I will model for the students the process of answering these questions by working through the first question with them. The process requires the students to begin by reviewing the infograph. Next, they will review the completed graphic organizer. Then they will look for the answer to the question and discuss the question with a partner checking for accuracy and clarification. In the final step the students write their best possible answer using all of the information that they have gathered to adequately answer the question.

To end the close reading process I will lead a whole class discussion of the questions and the work in order to check for accuracy and address any inaccurate responses.

Check for Understanding

To check for student understanding of the sustainable eating portion of this unit I will instruct the students to complete a timed free write. A timed free write is one way that I am able to quickly assess a student's language acquisition as well as his/her understanding of the material. When asking a student to write for five or 10 minutes, I am able to evaluate what a student knows and what s/he can produce in the target language with no time for editing or second guessing. I will provide each student with a free write sheet, a paper that includes a line for each word with ten lines per row. A free write sheet can be found on various websites on the Internet, like on the Teaching Comprehensibly blog. The students will have five minutes for the free write. I will direct the students to write without stopping in the target language about the infograph. The use of English is prohibited. I will encourage the students to keep their writing simple and to use what they know. I will tell them not to stress about grammar and spelling and remind them to use the information posted around the room as help. Their sentences can be

statements or questions. After the five minutes have passed, I will randomly pair the students. In pairs, each student will share his/her free write aloud. This allows the students to express what they are learning and thinking both in writing and verbally, and it provides for me a quick check for understanding of their comprehension of the work.

Part 2: Healthy Eating

Vocabulary

The vocabulary introduced in this theme will be related to food items specific to the Movie Talk activity and vocabulary specific to healthy meal choices. In order to maintain consistency throughout the unit, I will employ the same learning strategy of direct vocabulary instruction from a previous learning episode. I will use a vocabulary chart made up of two columns, one with the vocabulary terms and the other with their English meanings, to clearly teach the vocabulary. Using this chart makes certain that all students have the needed vocabulary to participate in class discussions and activities. Students use the definitions to complete a graphic organizer based on the vocabulary terms in the target language by writing a definition or meaning of the word in English, writing a sentence in the target language using the term in context, and sketching the vocabulary word. Initially I will instruct the students to complete each section of the graphic organizer for every term with the end goal in mind of each student determining which option; definition, sentence, or sketch is the most effective tool for him/her to learn and remember the vocabulary.

Movie Talk

In order to use Movie Talk effectively in this unit, I have chosen a video from YouTube titled *Cómo lucen los almuerzos escolares en diferentes países* (What school lunches look like in different countries).³⁶ I selected this particular video because it is driven by visuals and not by the dialogue. The visuals included in this video relate the differences in eating habits and how culture and climate of each country influence those choices. With what little dialogue there is muted, I will narrate to my students what is being viewed using target language that they are able to comprehend. The video is approximately two minutes in length, which allows for rich comprehensible input without requiring a great deal of repetition in order for my students to comprehend the language.

In Movie Talk there are three steps: establish meaning, ask the story, read and discuss. In order to establish meaning, before I begin the Movie Talk I will consider which two to four words I will use most often when narrating the video, and I will provide the translations to the students of these words. For this Movie Talk my guide words/phrases are *verduras* (vegetables), *carne* (meat), *sostenible* (sustainable), and *saludable* (healthy), which I will write on a piece of chart paper with their English translations beside them and make readily visible for my students. I will reference these guide words every time

that I use them in my narration by pointing to them on the chart paper. Then students will begin watching the video. After narrating the introductory portion of the video in the target language, explaining to the students using generalities what they can expect to view in the video, I will pause the video at the visual of a typical school lunch in Italy and describe to the students in the target language everything that is visible and what has been included up to that point. I will then resume playing the video and pause it at the next visual of a typical school lunch. This cycle of playing the video, pausing it, and then describing what is seen continues until the entire video has been viewed. This is where asking the story comes into play.

There are three key skills that are essential in providing Movie Talk input that is comprehensible and compelling for our students: circling, personalization, and checking for comprehension. In circling with my students, I will begin by making a statement in the target language that contains one of my new guiding words/phrases while the rest of my statement will consist of previously acquired vocabulary, cognates, and proper nouns making the statement completely comprehensible to my students. I will follow up my statement with yes/no, either/or, and open-ended question in the target language, and then I will restate/recast the original statement after the answer to each question is given. Personalizing the narration of the video/movie clip will allow me to make the target language input that much more comprehensible and compelling for my students as they will now have some type of personal connection to what they are viewing and hearing. In order to achieve personalization I will ask my students questions in the target language that connect them to the story. To perform a quick check for student comprehension I will have my students complete an Up/Down Listening Assessment in which they will put their heads down, and I will ask true/false questions about the video/movie clip. To indicate that a statement is true, students will put their thumbs up; to indicate that the statement is false they will put their thumbs down. Once I have evidence of comprehension from my students, we can then advance to the read and discuss phase.

Using the key skill of read and discuss, I will read the Movie Talk story in its entirety with my students. In order to do this, I will project the story and have my students read it aloud with me stopping frequently to ask circling, personalization, and comprehension questions about what we just read. This allows me to further circle guide words that students have not yet acquired, personalized the content even more, and get an even more accurate read on my students' comprehension of the story. After reading the story together in its entirety, we will begin activities.

Popcorn Read

To perform a popcorn read students pair up and take turns reading and translating the text, assisting one another when they get stuck on a word or a phrase. It is an excellent activity to check for students' comprehension of a text as well as good way to review what was read. For this activity I will randomly assign a partner to each student using

pairs of rows (five students per row, two rows beside each other, three pairs of rows equals 30 students). I will provide each student with a copy of the Movie Talk text in the target language. Next, I will set a timer for three minutes. Then I will instruct the youngest student of each pair to begin the popcorn read by reading aloud the first sentence in the target language. Next, I will direct the other partner to translate that sentence aloud into English and to read the next sentence of the text aloud in the target language. The first partner translates that aloud into English and reads the third sentence aloud in the target language. This popcorn read continues until the three minutes have passed at which time the students change partners and each new pair determines at what point in the text to continue the popcorn read by where they left off with the previous partner. I will encourage them to begin at the spot that is the least far along. I will reset the timer and continue the popcorn read process until all students have finished the text. As students are performing the popcorn read, I will circulate around the room listening in on various pairs. This allows me to spot check individual student comprehension and to address any student questions about the text. If I feel the need for an additional check for comprehension of the text once the students have completed the popcorn read, I could direct each student to take out a sheet of loose leaf paper and with his/her current partner work to write out an English translation of the text. I then collect the written translations. Reading through the translations provides me with a detailed picture of individual student comprehension.

Modeling

In order to prepare the students to create their own sustainable and healthy school lunch menu, I will employ the teaching strategy of modeling. Using the information that we gathered together as a class from our discussions about the sustainable and healthy eating in Activity 3, Parts 1 and 2, I will model for my students how to create a week worth of sustainable and healthy school lunches. I will begin by using a Think Aloud by verbalizing my thoughts about what foods that we discussed as both sustainable and healthy would be the best and/or appealing to include as part of a school lunch menu. I may pose the question, “Which vegetables are both sustainable and healthy, and are appealing to middle school students?” or “What is an alternate source of protein that is appealing, sustainable, and healthy?” The use of Think Aloud is an effective way for me to model thinking skills for my students. This strategy will give my students a framework for conducting the activity on their own.

Once we as a class have determined appropriate food choices, we can confirm the sustainability of each food item by employing *La calculadora que te dice cómo lo que comes y bebes impacta en el ambiente* (The calculator that tells you how what you eat and drink affects the environment)³⁷ which can be found on the BBC News website. I model how to use this calculator by selecting on the calculator the food item in question; rice for example, and then I will select how frequently the food item will be consumed; 1-2 times per week. The calculator will then provide the following information based on an individual's annual consumption of this food item: how many added kilograms to the individual's annual greenhouse gas emissions and its equivalency to driving a gasoline powered car, the amount of water used (measured in liters) in the production of the food item and its equivalency to an eight-minute shower. The calculator also provides a comparison by kilograms of greenhouse gases per serving with similar food products. This will be a very useful tool for students as they create their lunch menus.

Sustainable and Healthy School Lunch Menu

After experimentation with combining sustainable, healthy and appealing food items to create a balanced meal, my students will create a school lunch menu containing a week's worth of healthy food that is sustainable while appealing to middle school students. I will remind the students to review the graphic organizers about they completed in throughout the unit as they begin to create their menus.

Once students have selected their foods for their menus, I will encourage them to employ the emissions calculator found on the BBC News website and to experiment using different foods in order to discover the best food combination to create a sustainable, healthy and appealing lunch. I anticipate that most of my students will select foods that are personally appealing over some foods that are more sustainable and/or healthy because these foods are familiar and comfortable, and the students will be less likely to waste these foods. I will instruct my students to follow the same share out process that we completed previously in the *Check for Understanding* portion of the unit. The students will peer edit each other's menus while sharing in pairs.

Each student will share the final draft of his/her weekly school lunch menu on Schoology, the learning management system used by our district. I will instruct my students to view each other's works and provide, in the Comments section, three statements; one statement will be a positive comment about the menu, the second statement will discuss something that the commenter noticed about the menu that is unique, and the third statement will be an inquiry about the menu. I will provide students with the following sentence frames to facilitate and standardize the commenting process: "I really like _____ about your menu because _____," or "My favorite part of your menu is _____ because _____." "I noticed _____ about your menu which made me think _____," or "I think that _____ makes your menu unique

because _____.” “I wonder _____ about this food choice,” or “I would like to know more about _____.”

Appendix A: Standards

This unit will implement two IB MYP Objectives, two Delaware World-Readiness Standards for Learning Languages and one Common Core State Standard. I will focus on IB Language Acquisition Objective Criterion C: Comprehending Written Text requiring the student to understand information and engage with the text by supporting opinion and personal response with evidence from the text. I will also evaluate Criterion D: Communicating in Written Form which expects the student to organize and express thoughts, feelings, ideas, opinions and information in writing, write for specific purposes, and develop accuracy when writing in the target language. The Delaware World Readiness Standards for Learning Languages are Standard 1.3 Presentational Communication: Learners present information, concepts, and ideas to inform, explain, persuade, and narrate on a variety of topics using appropriate media and adapting to various audiences of listeners, readers or viewers; and Standard 2.1 Relating Cultural Practices to Perspectives: Learners use the language to investigate, explain, and reflect on the relationship between the practices and perspectives of the culture studied. I will focus on the Common Core Standard CCSSELA – Literacy RI.9 – 10.7 Integration of Knowledge and Ideas: Analyze various accounts of a subject told in different mediums (e.g., a person's life story in both print and multimedia), determining which details are emphasized in each account.

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