

## Culturally Responsive Schooling within Indigenous Communities

Learning to Start a Vegetable Garden for Food Security and Healthy Lifestyle for the White Mountain Apaches  
in Cibecue, Arizona

Leo Racca

Teacher Leadership Shilgozhóó Institute (TLSI)

2022

### Author Note:

Leo Racca is a junior high school and high school Talented and Gifted teacher at Dishchii'bikoh Community School. Correspondence about this curriculum can be addressed to Leo Racca, 314 S Elm Dr, Cibecue, AZ 85911. Email contact: [leolanglor@yahoo.com](mailto:leolanglor@yahoo.com)

## Introduction

My name is Leo Langelo N. Racca and I am from the Philippines. I have been teaching since 1999 and during this time I have learned a lot about the best ways to teach and how to support students not only in the transfer of knowledge but to help them to grow holistically and to inspire them to become better individuals with the right values and attitude to prepare them so they will succeed in life.

I have taught at Dishchii'bikoh Community School for almost four years. At first, it was a challenge. This was my first experience with teaching abroad and it was difficult being in a new environment and teaching students of different culture. This experience has taught me a lot, and as time passed by I have learned more about my Apache students and I am able to understand them better. Being part of the TLSI program has been a good opportunity for me to learn more about my students and their culture and traditions. It will also help me become more connected and able to build better relationships with my students.

## Context

### Dishchii'bikoh Community School

The Dishchii'bikoh Community School was originally known as Cibecue Community School and was run by the Cibecue Community Education Board, Inc. The name was changed to Dishchii'bikoh to honor the community's Apache language and culture in 1991 (General Information, 2022). It is a K-12 Title I Grant School which is primarily funded by the Bureau of Indian Affairs. It was established as 501(c)3 Non-Profit under Cibecue Community Education Board, Inc. The school is located on the White Mountain Apache Reservation and was established to serve the children and families of Cibecue and its adjacent towns. There is an emphasis on academic accomplishment as well as the preservation of Apache culture and language (School Profile, 2022).

The majority of the students at Dishchii'bikoh are Apache; it is estimated that ninety percent (90%) of them are fluent in the Apache language. The school employs roughly 103 people and has separate facilities for elementary, junior high school, and high school students that are all housed on one site on the outskirts of Cibecue (General Information, 2022). The school is located in Cibecue, Arizona, which is a rural community in the Southwestern United States. It is situated northwest of Whiteriver (the main tribal headquarters) on the Fort Apache Indian Reservation, more commonly referred to as the White Mountain Apache Reservation (Cibecue Community, 2022). The majority of non-tribal members who work at the school commute from Show Low, Arizona because the school is located on the White Mountain Apache Reservation. Shuttles are provided by the school to and from Show Low and Whiteriver. There are also a limited number of on-campus accommodations available for employees (General Information, 2022).

There are 383 students in kindergarten to 12<sup>th</sup> grade and 59 teachers. For the past five academic years, the population has grown by 26% while the teacher population has increased by 37%. The student to teacher ratio is 6:1, which is significantly lower than the Arizona state average of 17:1. Dishchii'bikoh Community School has a diversity score of 0.00 meaning that 100% of the students are of Native descent, either an Apache or a Navajo, which is much lower than the state average score of 0.65. Over the last five years, the school's diversity has remained largely stable (Dishchii'bikoh Community School District, 2022). For the 2018–19 school year, only 1% of pupils achieved math competence, which is lower than the 45% state average for Arizona, while 5% of students achieved competence in reading and language arts, which is lower than the 45% state average for

Arizona. American Indians make up the student population, which has a minority enrollment rate of 100% (which means that all the students enrolled are Native Americans) exceeding the state average of 64% for public schools in Arizona (which is mostly Hispanic) (Dishchii'bihoh Community School, 2022).

Dishchii'bihoh Community School is dedicated to fostering educational excellence in collaboration with students, families, and the community. While giving students the chance to grow intellectually, emotionally, socially, and physically, the school will foster an environment that respects the culture and language of the Apache people. This will enable students to succeed and make a positive contribution to their tribal community and the larger global society (Dishchii'bihoh Community School, 2022).

## The Community

Cibecue is a small town located in eastern Arizona. The topography is relatively hilly, with a lot of tree and shrub species from the high alpine desert. Show Low, Globe, and Whiteriver are the closest commercial centers in the area which are all approximately 50 miles away. The summers are hot, but not as hot as Phoenix, colloquially known as "the Valley." Cibecue has moderate levels of rain and snowfall. The winters are bitterly cold with temperatures occasionally below zero degrees Fahrenheit. Propane, electricity, and wood are all popular sources of heat. Due to the semi-arid climate, most people use swamp coolers throughout the summer (Dishchii'bihoh Community School, 2022).

The city of Cibecue is in Navajo County and has a population of 1,836. Between 2010 and 2020, Cibecue's population grew by 1.10% and is currently expanding at a rate of 0.55% annually. Cibecue has a poverty rate of 67.79% and an average household income of \$24,739. The median cost of rent is \$543 per month, while the median price of a home is \$57,800. Cibecue has a median age of 18, with the average age of males being 21.5 years old and females being 15.7 years old. Its racial composition according to the latest current American Community Survey (ACS) revealed that the city is 96.24% Native American, 1.96% Asians, and 1.80% white (Dishchii'bihoh Community School, 2022).

For medical services and emergencies, full-service EMTs are on duty in the community. There is also one nurse on staff, who serves the elementary school, junior high school, and high school. The closest hospitals are in Whiteriver and Show Low. Native Americans are served by a local clinic administered by IHS (Indian Health Services). Non-tribal members must seek medical care in Show Low (a one hour drive) or Phoenix (a three hour drive) (Dishchii'bihoh Community School, 2022).

Cibecue has telephone, internet, television, and cellular providers; however, cable service is not available. CellularOne is the most popular cellphone service provider in the reservation. Other providers are either slow or unable to receive and transmit data (Dishchii'bihoh Community School, 2022).

Basic necessities are available at the Commercial Center that has a convenience shop, small grocery store, deli, and local retailers. The nearest commercial centers where one can find a variety of local stores or businesses such as Walmart, Kmart, Safeway, Basha's, and others are in Show Low and Whiteriver. There is a US Postal Service in the community, and UPS and FedEx are also able to deliver to the area. Show Low is the closest place with available lodging (Dishchii'bihoh Community School, 2022). There is also a Headstart which is for preschoolers, Tribal Offices, Housing Authority Office, ambulance and Fire Station, a few churches of various denominations, and a gas station (Dishchii'bihoh Community School, 2022).

The Apache language and culture are part of our school, and students have many opportunities to honor, learn, and celebrate their rich cultural heritage. As part of our school and community's commitment to the preservation of native languages, history, and culture, the Apache language is taught to all students. Apache language is still the primary language that is spoken by many in the community (Language & Culture, 2022).

### My Students and the Talented and Gifted Program

This curriculum unit is designed for grade 7 Junior High School Talented and Gifted students. Students in the talented and gifted program have the potential to perform at greater levels in one or more domains than students of same age, experience, and environment. The students have different areas of interest and to reach their full potential, they must have ample access to a variety of learning opportunities. Incorporating gardening into the curriculum is an effective way to provide students with a new method of learning.

During the creation of this curriculum unit, I had conversations with my students about their experience with gardening and found that most do not have a vegetable garden or an orchard. Most of my students and their families are not interested in gardening. Some of the reasons they mentioned were a lack of water sources as well as the expenses that will be incurred by creating a garden. Additionally, they were not well aware of the benefits of planting or having a garden to produce their own food. Most of their food is bought from nearby stores and moreover, most of their food preferences does not reflect a healthy lifestyle.

### Rationale

According to food advocacy groups, Apache County children had the least reliable access to healthy food in the nation in 2014. Forty-one point five percent of children are considered "food insecure;" however, this is just the most extreme example of a problem seen throughout the state where more than one in four children are food insecure. The Trust for America's Health has recently stated that food insecurity contributes to obesity. "We know children who don't have access to fresh nutritious food have lifelong problems," said David Martinez an advocacy outreach specialist for St. Mary's Food Bank in Phoenix. According to Martinez, who also has worked to deliver free nutritious meals to Apache County, families with low incomes tend to opt for meals that are more affordable, and these are often less healthy. The problem of food insecurity affects both urban and rural areas, but in remote rural areas like Apache County, the problem may be compounded by sheer distance to a grocery store (Scalise & Cronkite News, The Arizona Republic, 2016).

When I drive around and look at the community of Cibecue, I notice that there are very few households that have gardens or fruit bearing trees. I realized that teaching the students about having a garden at home, particularly in their yards can promote healthier diet and food security for the family. Home grown organic vegetables and fruits are very healthy which is very essential in promoting a healthy lifestyle. In addition to being able to supply nutritious food for individual households, gardens also provide shelter and an abundance of food for animals, as well as shade during the hot summers. Gardens also create beautiful landscapes at home and in the community. Seeing plants, especially having different colors is very pleasing to the eyes which can bring out a form of relaxation and calmness. Furthermore, teaching students about gardening will promote greater awareness about the native plants that are growing in the community. This lesson will teach students to learn about their names, characteristics, and use of these particular plants, as well as what plants are easier to grow, what plants can be harvested in a short period of time, and how to plant and propagate different plants. It is also a good diversion for students when they are at home, especially during weekends, holidays, or school breaks. They can focus their energy on more productive and worthwhile chores like gardening. More

importantly, the students will learn how to become good stewards of living things. They will realize that if they take good care of the natural world, then nature will take care of them as well.

Students have different areas of interest, and in order for them to discover and attain their full potential, they must have access to a wide range of relevant learning opportunities that can be achieved by adding gardening into the curriculum. This curriculum unit will help students become more involved in their own health, environmental stewardship, and with their traditions, as well as better their skills in reading and writing. The activities in this curriculum will also capture their interest in reading articles and books about plants, gardening, and learning about how plants relate to their culture, health, and way of life. Writing assignments based on their actual observations and experiences will be easier and more fun for my students. This curriculum will help students become more involved in their own health, culture, the environment, as well as in their reading, and writing.

## **Content Objectives**

This curriculum unit is intended for Junior High School students, particularly Grade 7 Talented and Gifted Students. It was created with the goal to improve and develop their writing skills by relearning and applying the Six Plus One Traits of Writing, types of writing, and writing processes. Writing is so much fun if the students are writing about topics that interests them, like gardening, which is a big part of their culture. These lessons will inform students about how their ancestors produced their own food and teach them about their traditions and culture surrounding agriculture. They will also realize and understand about the importance and benefits of having a healthy source of nutrition and a healthy lifestyle. They will learn more about plants that are native to the community as well as plants that can be grown in gardens, particularly vegetables and common fruit bearing trees, including how to plant, propagate, and care for them. Most importantly, it will help promote food security among the students' families.

- **Lesson 1: Relearn Writing Traits, Types, and Process**

Students will relearn and master the Six Plus One Traits of writing, writing styles, and writing process. Mastering the traits of writing and writing process promotes writing abilities and assures clarity of thought (Qoura & Zahran, 2018).

The Six Plus One Trait is a method for teaching, demonstrating, and evaluating writing instruction. Writing is characterized by six characteristics: voice, ideas, presentation, conventions, organization, word choice, and sentence fluency. In order for students to become familiar with the terms used in writing, it establishes a common vocabulary and norms for teachers to utilize in class. As student progress through the grades, it becomes more consistent. The Six Traits methodology makes writing instruction more manageable and efficient by allowing teachers and students to concentrate on one or two writing-related components at once. Through the evaluation of their writing, it also serves as a method for giving students detailed feedback. The Six Traits assist both students and teachers in identifying the writing skills that students need to concentrate on enhancing. The Six Traits are essential to good writing. Presentation of the writing is the "Plus One" quality. Unlike the other features, this one is not explicitly or directly taught and is taken into account in all writing (Geneva, Home, 2022).

Every person has a distinctive writing style that they use to communicate their thoughts and ideas to other people. It is crucial for them to understand the variations between writing styles since they have an impact on how information is presented in a variety of contexts, including emails for work, school, and other

places. It is also crucial for students to think about their audience prior to deciding on what writing style and message they want to convey (Csiadmin, 2022).

Writing is a process that involves prewriting, drafting, revising and editing, rewriting, and publication. The students will be able to divide writing into small portions and concentrate on producing high-quality content by employing the writing process. The last step, publishing, guarantees that students have a readership. Students can even mentor one another throughout the process to place an even greater emphasis on the audience and foster better teamwork while editing. According to studies, children who are taught the writing process perform better on state writing exams than those who merely receive education in the abilities that are tested. With the help of real writing, students can use their writing abilities across all subject areas and become lifelong learners. The attitude, drive, and engagement of a student have a significant impact on their writing success. By allowing students to organize their writing and produce a publishable, final draft of their work that they can be proud of, the writing process takes these factors into account. It speaks to the demand of students for a genuine audience and for the time to draft and rewrite their work. By guiding students through the writing process frequently throughout the year and in a variety of subject areas, students are encouraged to give careful thought to each stage of their writing (Implementing the Writing Process, 2022).

## Lesson 2: Apache's Traditional Food Sources

Students will learn more about the Apache's traditional food sources. It is important that students must learn and discover how their ancestors produce their food from the preparation of seeds and seedlings before planting, soil preparation, how they plant and propagate their crops, how they care for them, how they harvest particular crops, how they store and preserve food, and what dishes they make from specific crops and how they prepare these dishes. Learning all these things will not just educate the students about their culture and tradition but will also encourage them to become more self-sufficient, and become conscious of how their ancestors maintain a healthy life. It shall also inspire them to restore or preserve their culture and tradition that is either gone or slowly fading.

Traditional cuisines are dishes that have been enjoyed for a very long period throughout history and have been passed down from generation to generation. These dishes are customary and frequently have historical precedents in regional, local, or national cuisines. Ethnic food is essential for improving immunity as well as for fulfilling nutritional needs. Local and ethnic food systems are also crucial because they unite identities and cultures and have an impact on economies and environments (The Importance, n.d.).

Building a strong nation can begin with a healthy society, which is facilitated by raising awareness of the traditional food system. For a particular geographical setting, traditional culinary knowledge is thought to be the greatest. Societal health may be harmed by a change in eating habits. As a result, it is critical to understand the value of a balanced diet and excellent eating habits from our own culture (Bhat, n.d.).

People used to survive entirely on food from the land and the sea. For the majority of people nowadays, a combination of market and traditional cuisine is typical, although traditional food is still an important source of many nutrients. According to a study conducted in 43 Arctic settlements, people's diets were healthier on days when they consumed both traditional foods and those from the market. The benefits of including traditional foods in the diet include:

- Fewer calories that are beneficial for maintaining weight
- Less saturated fat is better for the heart.

- More lean fish and meats.
- More iron is beneficial for blood and muscles.
- More zinc promotes faster wound healing and infection prevention.
- More vitamin A is excellent for combating disease and improving vision.
- More calcium promotes stronger bones and teeth.
- Improved cultural well-being and capacity (McGill, 2011).

Indigenous food plants can play a crucial role in the local diet for a number of reasons, including:

- Native food plants are frequently more nutrient-dense than some introduced ones.
- Native plants grow well in the areas from whence they came. They can develop under incredibly challenging circumstances and are frequently free of pests and diseases (in very dry areas or in very acidic or alkaline soil, for example). They are now occasionally even regarded as weeds.
- Eating local vegetables increases diversity and boosts food security. Instead of relying just on one type of food crop, a variety of food plants are consumed and relished. If one does not develop and bear fruit, others can be consumed in their place (Berkelaar, 2011).

### Lesson 3: Starting a Vegetable Garden

First and foremost, students will realize and learn about the benefits of having a vegetable garden at home, and alongside with this, they will be learning how to prepare the soil for planting. They also learn about the importance of compost, how it is prepared, and how plants can benefit from it. They will also get familiar and learn more about the tools, equipment, and all other relevant things in gardening that they need know to start a vegetable garden. More so, students will also learn how to prepare seeds and seedlings before planting, how to plant particular vegetables, how to propagate the plants, and how to care for them.

There are several health benefits to growing one's own food such as the consumption of more fresh fruits and veggies. One can control the kind of pesticides and fertilizers that reach the food and have the ability to decide when to gather them, in comparison to some store-bought veggies that need to be picked early, vegetables that ripen in the garden have more nutrients (Godman, 2012).

Many people believe that producing their own fruits and vegetables is an unnecessary source of worry when they can just go to the grocery store and purchase them. Not all of this is true. A simple but life-changing solution to many health, environmental, and financial issues is growing vegetables in a home garden. There are several advantages of having a vegetable garden. The flavor of a bland tomato from the grocery store cannot be compared to tomatoes that have just been plucked from the garden. The problem is that a significant portion of the produce sold in grocery shops in America was grown and shipped from abroad. As a result, the food's quality deteriorates the longer it is stored and sold (Blackwood, 2022).

Some of the benefits of having a vegetable garden are the following:

- Having a vegetable garden will lead to better control on what vegetables are served in every meal. There is freedom in selecting the fertilizer that is used, and whether organic or slow-release fertilizers are preferred.
- Compared to vegetables grown in hydroponics or other unnatural growing mediums, veggies from your home gardens with cultivated soil are significantly more flavorful. Older adults often remark that fruits and vegetables do not taste as good as they used to. Food that is grown and imported for grocery stores gradually starts to lose moisture and nutrients. Home garden soil, which is rich in

beneficial minerals, allows harvesting of vegetables that are rich in nutrient and flavor, and taste much better. Additionally, it is easier to track the freshness of a vegetable when one is aware when it was harvested.

- Yards will be given life, color, and beauty by a home garden of organic fruits and veggies. Huge, vibrant bell peppers, crisp cucumbers, ribbed pumpkins, and ripe tomatoes all serve as warm invitations to visitors and pollinators alike. Beans, squash, eggplants, and some fruit trees are examples of plants that produce lovely blossoms to enhance pollination. They can also cause a splash on lawns. The insects that these blooms draw will probably pollinate other plants as well, accelerating the growth of the entire garden.
- Growing organic veggies at a small portion of their retail cost is a success. Currently, the cost of a pack of seeds and plants is almost equal to the cost of one fruit or vegetable at the grocery store. There is far more gain in having a garden and have enough produce to share, sell, and preserve for a while. It is far better than having to go shopping for groceries every weekend and be shocked by the price.
- Gardening may keep you busy on the weekends when you just want to unwind and get away from work. It is a fantastic way to get the most out of the beautiful outdoors while exercising and breathing in some fresh air. Participating in gardening helps to strengthen the immune system as well as the cardiovascular system, which includes the heart, blood, and blood vessels. Stress is reduced and physical strength and flexibility are increased by moving around and caring for various plants. Consider it a form of exercise that does not involve any strenuous exercises or expensive gym equipment. There is walking, bending over, stretching, and lifting. Regular visits to the garden will increase vitality while lowering levels of anxiety and despair (Blackwood, 2022).

#### Lesson 4: Knowing the Plants

Students will be able to learn about the plants that are common in their surroundings as well as in the community, particularly vegetables and fruits. Students will be able to know their names, the benefits gained from eating them, their nutrients, and their impact on our bodies and well-being. Students will also gain knowledge on how to plant and nurture different species, the planting dates, and the required environment of some of the common plants that can be grown in the community.

Why is it important to learn more about the local plants or plants that are native to a particular location? Gaining knowledge about the local plants will give a solid sense of what can grow and what cannot in a specific area. This saves money and prevents a person from investing in seeds, plants, or trees that will probably wither away soon after it was planted. It is necessary to study as much as we can about the plants that thrive in a particular location, as opposed to the ones that barely struggle with the local climate (Tech, 2019).

#### Lesson 5: Harvesting and Eating

Students will learn when and how to properly harvest, especially the plants that they have around and in their garden, as well as learn how to store and preserve their harvest. They will also discover and learn how to prepare some dishes with their plants.

Knowing when to harvest is essential because doing so at the right time will help to avoid crop losses. When it is time to harvest, it is critical to select the best technique to increase production and reduce losses. Many

farmers struggle with managing and harvesting their crops. They must be aware of the precise harvesting time because it has an impact on the crops' quality, durability, transportation, and storage. The success or failure of a farmer's business may depend on how well he can handle and harvest his fruits. Field animals, plant diseases, insect pests, and specific climatic conditions can also result in losses. A timely harvest ensures market value and optimum crop quality. A higher percentage of unripe or immature/ premature fruits will result from harvesting too early or too late, which will diminish production (Folnovic, 2021).

## Lesson 6: Visit a Local Farm

Students will visit a local farm and see first-hand how agriculture is done on a larger scale. They can learn more about farms, including agriculture, animals, plants, the facilities, the equipment they use, and much more. Students will be able to explore and learn more about plants and their environment in person. They will also learn how the farm started, the main reason why it was built or its purpose, their source of funding, how they maintained the farm, their challenges and struggles in the operation, how food is produced, the benefits of the farm, what are the end products, who are their clients, where the income goes, and most especially what the students need to know about starting a garden at home. Students will also learn more about the role of a farmer, how important they are in every people's existence.

The students' visit is far beyond the time they spend at the farm, they also bring their new knowledge and experiences to their homes and schools, where parents and teachers see good and long-lasting effects on the student's behavior, academic performance, and self-esteem (Benefits, 2021).

## Teaching Strategies

- Lesson 1: Relearn Writing Traits, Styles, and Process
  - The Six Plus One traits of writing, writing styles, and writing process will be discussed through a slide presentation. Sample written materials regarding the application of the writing concepts will also be presented and discussed for them to easily recall and understand the Six Plus One traits of writing, writing styles, and writing process.
  - Students will be encouraged to actively participate in the learning process during a class discussion to keep them engaged and focused on the lesson.
  - Additional teaching strategies shall incorporate interactive notetaking in order for students to keep a record of the lesson or save the information that was learned in class for the purpose of subsequent reference and reflection.
  - Cooperative Learning – students will be grouped to participate and compete in a game related to the lesson.
  - Formative assessments shall also be given to monitor student learning to provide ongoing feedback that can be used to improve teaching and students' learning such as a quiz to assess each student's understanding of the current lesson.
  - Homework will also be given to the students to provide an opportunity to extend their learning outside the classroom or review the current lesson.
- Lesson 2: Apache's Traditional Food Sources
  - Discuss the Apache's traditional food sources through a slide presentation. Students are encouraged to actively participate in the learning process by asking questions or by sharing ideas during the

presentation keeping them engaged and focus on the lesson. Discussions will also include the use of pictures and video presentations. These activities will increase students' knowledge and retention of their history and culture, particularly about Apache's traditional food sources.

- Additional teaching strategies shall incorporate interactive notetaking in order for students to keep a record of the lesson or save the information that was learned in class for the purpose of subsequent reference and reflection.
  - Students will also watch the documentary entitled "Gather," which is about Native American efforts for food sovereignty. Students will be encouraged to ask questions during a discussion that takes place after the film viewing.
  - We will also invite some elders in the community to discuss in class their lifestyle, especially how they produce their food during their time.
  - Cooperative Learning – students will be working as a group to accomplish a class activity such as Think-pair-share.
  - Formative assessments shall also be given to monitor student learning to provide ongoing feedback that can be used to improve teaching and students' learning such as writing a reflection paper and a research paper, presentation of research in class, and interviews in order to assess each student's understanding of the activities or lesson.
  - Homework will also be given to the students to provide an opportunity to extend their learning outside the classroom or review the current lesson.
- Lesson 3: Starting a Vegetable Garden
    - Discuss the importance of having a garden and how to start a vegetable garden through a slide presentation. Students are encouraged to actively participate in the learning process by asking questions or by sharing ideas during the presentation keeping them engaged and focus on the lesson.
    - Discussions will also include the use of pictures and video presentations. These activities will increase students' knowledge and retention, particularly about starting a vegetable garden and the benefits of having one.
    - Additional teaching strategies shall incorporate interactive notetaking in order for students to keep a record of the lesson or save the information that was learned in class for the purpose of subsequent reference and reflection.
    - Students will also watch the documentary entitled "Inhabitants," a feature-length documentary that follows five Native American tribes as they rebuild their traditional land management techniques throughout deserts, beaches, forests, and plains. Students will be encouraged to ask questions during a discussion that takes place after the film viewing.
    - Project-based Learning – The students will be put into pairs. Each team will select a native food plant to grow from seed. Each group will prepare a document with all the details about the vegetable plant they have selected that will contain the daily or weekly observations of the plant's growth and development. Each group will also go over everything they did to care for their plant, including any difficulties they encountered. Each group will showcase the results of their project and their experiences at the conclusion of the school year in order to enlighten and assist the audience or the students in beginning their vegetable garden. After each group's presentation, the audience is invited to pose questions. The documentation of their projects will also be submitted and graded as part of their project.
  - Lesson 4: Knowing the Plants
    - Discuss and present vegetables and fruits that are common or can be grown in the community, as well as through a slide or video presentation, pictures with information, and an actual sample of the plants.

Students are encouraged to actively participate in the learning process by asking questions or by sharing ideas during the presentation keeping them engaged and focus on the lesson.

- Additional teaching strategies shall incorporate interactive notetaking in order for students to keep a record of the lesson or save the information that was learned in class for the purpose of subsequent reference and reflection.
- Research Project - Pairs will be formed from the class. Each group will look around the campus or the neighborhood to collect plant samples and take pictures of three different kinds of plants. Each group will research their three chosen plants and prepare a paper that includes all of the details on the three plants that they choose. Each group will also do a presentation for the class, present their research, and talk about their experiences. After the presentation, the audience is invited to ask questions. As part of their project, the documentation of their work will also be turned in and graded.
- Lesson 5: Harvesting and Eating
  - Discuss how to harvest some of the common fruits and vegetables that can be grown in the community and what dishes they can make through slide and video presentations, and pictures with information. Students are encouraged to actively participate in the learning process by asking questions or by sharing ideas during the presentation keeping them engaged and focus on the lesson.
  - Additional teaching strategies shall incorporate interactive notetaking in order for students to keep a record of the lesson or save the information that was learned in class for the purpose of subsequent reference and reflection.
  - Group Activity - During the lesson, small groups will be created. A local plant will be the main component of the dish that each group will prepare. It is also recommended that each group can introduce their unique cuisine or dish that they have developed or invented. The dish's name, ingredients, and the recipe will all be written down by each team. Additionally, each team will present a live or filmed demonstration of how they prepared their dish. The health benefits of the dish prepared will also be discussed. The finished product will be made or brought to class so that students will have the chance to taste it. Documentation on their dish will also be submitted by each group. Non-group members will write comments on the final product after sampling.
- Lesson 6: Visit a Local Farm
  - Students will visit a local farm. Students will explore the farm while a farm manager tours and discuss with the students everything they need to know about the farm.
  - Students will be encouraged to actively participate in the learning process by asking questions to the farm manager or any of the farm personnel who are available for questioning.
  - Additional teaching strategies shall incorporate interactive notetaking in order for students to keep a record of all information they can acquire from the farm visit or to save the information that was gained for the purpose of subsequent reference and reflection.

## **Classroom Activities**

- Lesson 1: Relearn Writing Traits, Styles, and Process
  - The class will be divided into two pairs per group. The teacher will conduct a game using flashcards. Each group will use portable whiteboards to answer what is being asked on the flashcard. Whichever team answers the most questions will earn extra points in class.
  - Each student will be given a homework, they will write a paper about the food that their family usually eat on a regular basis, what kind of dish, and so on, applying the writing concepts that they have learned.

They will also write their thoughts and feelings about it whether they think it is healthy or not. They shall also discuss what writing traits, styles, and process that were applied in the writing.

- In relation to the lesson, a fill in the blank and true or false type of quiz shall be given in relation to the current lesson.
  - Additional activities shall incorporate interactive notetaking in order for students to keep a record of the lesson or save the information that was gained in class for the purpose of subsequent reference and reflection.
- Lesson 2: Apache's Traditional Food Sources
    - Each student will write a reflection paper between 100-200 words about the documentary that they had watched entitled "Gather." The students will discuss some of their thoughts and feelings about the documentary film. They can also include questions or any arguments that they have about the film. In relation to the documentary, a fill-in-the-blank and true or false type of quiz shall also be given.
    - Students will be grouped in pairs. Each group will conduct qualitative research about the Apache's traditional sources of food, especially in the community where they belong. They will conduct an interview with the old folks or the elders in the community on how they produced their food during the early times, what main plant crops they had, what their struggles and challenges in planting, how they harvest, where they store their harvest and food, what dishes they make out of their plant crops, and everything worth sharing to the class. Each group will also come up with a title for their research. The students will create a presentation and discuss it in front of the class. They can include pictures and videos if they can. The audience is encouraged to ask questions after the presentation.
    - An elder from the community will also be invited to speak in front of the class to talk about their way of life particularly about their sources of food during their times. Through this, the class will have a better understanding of their culture, customs, values, and heritage. The students are encouraged to ask questions after the talk. The students will also write a reflection paper between 100-200 words about their thoughts and the things that they have learned from the talk.
    - Additional activities shall incorporate interactive notetaking in order for students to keep a record of the lesson or save the information that was learned in class for the purpose of subsequent reference and reflection.
  - Lesson 3: Starting a Vegetable Garden
    - Each student will write a reflection paper between 100-200 words about the documentary that they had watched entitled "Inhabitants." The students will discuss some of their thoughts and feelings about the documentary film. They can also include questions or any arguments that they have about the film. In relation to the documentary, a fill-in-the-blank and true or false type of quiz shall also be given.
    - The class will be divided and grouped into pairs. Each group will choose a native vegetable plant to plant and nurture. Each group will write a paper that includes all the information about their chosen vegetable plant. They will also include daily or weekly detailed observations about the development and growth of the plant. Moreover, each group will also discuss everything that they did to nurture their plant, as well as their challenges and struggles in the process. At the end of the school year, each group will present the outcome of their project as well as share their experiences in order to provide information that will inform and help the audience or the students in starting their vegetable garden. The audience is also encouraged to ask questions after each group's presentation.
    - Additional activities shall incorporate interactive notetaking in order for students to keep a record of the lesson or save the information that was learned in class for the purpose of subsequent reference and reflection.

- Lesson 4: Knowing the Plants
  - The class will be grouped in pairs. Each group will explore the campus or the within the community to get plant samples and take a picture of three varying plants. Each group will conduct research and write a paper about their three chosen plants, it will include all information about the three plants that they picked or chose. Each group will also create a presentation and present their research as well as share their experiences in front of the class. The audience is also encouraged to ask questions after the presentation. The documentation of their projects will also be submitted and graded as part of their project. Each group will also give a short quiz worth five points at the end of their presentation. All scores will be recorded.
  - Additional activities shall incorporate interactive notetaking in order for students to keep a record of the lesson or save the information that was learned in class for the purpose of subsequent reference and reflection.
- Lesson 5: Harvesting and Eating
  - The class will be divided into small groups. Each group will prepare a dish that has a native plant as the main ingredient. They are also encouraged to introduce their unique dish or recipe that they have developed or created. Each group will write the name of the dish, its ingredients, and the recipe. Each group will also demonstrate how they prepared their dish through a video or in person. They will also discuss what nutrients or health benefits that can be gained from the dish prepared. A finished product will be brought to the class for food tasting. Each group will also submit documentation about their dish. Non-group members will write comments about the finished product after tasting.
  - Additional activities shall incorporate interactive notetaking in order for students to keep a record of the lesson or save the information that was learned in class for the purpose of subsequent reference and reflection.
- Lesson 6: Visiting a Farm
  - The students will go to a nearby farm. Students will tour the farm and learn everything they need to know from the farm manager as they explore it. Students are encouraged to ask questions of the farm manager or any other staff members who are available to them in order to actively engage in the learning process.
  - Individual Assignment - Each student will write their observations and what they have learned from the farm visit. They will discuss in their paper what interested them the most and why, what were their feelings during the visit, what are their comments about the farm and the personnel, and after the visit if they were inspired to start their garden at home. If yes or no, what inspired or motivated them and what not.
  - Additional activities shall incorporate interactive notetaking in order for students to keep a record of the lesson or save the information that was learned in class for the purpose of subsequent reference and reflection.

## **Student Assessment Plan**

- Lesson 1: Relearn Writing Traits, Styles, and Process
  - Through a writing homework, their writing skills and knowledge about the writing traits, styles, and process will be assessed. A rubric will be discussed with students beforehand so that they can understand the given requirements or expectations from the assignment.

- A quiz will be given to help them remember content that was covered, and to help students assess what they have learned particularly about the writing traits, styles, and process.
- A rubric will also be used and presented to the students to grade their notebooks.
- Lesson 2: Apache's Traditional Food Sources
  - A reflection paper will be required to assess their thoughts and feelings about the documentary film. A rubric will be discussed with students beforehand so that they can understand the given requirements or expectations from the reflection paper. A quiz will also be given to assess how much they recall from documentary film.
  - A rubric will be discussed with students beforehand to understand the given requirements or expectations from the qualitative research particularly on the content, presentation, and documentation. The presenters and audience will also be graded based on their participation during the question and answer portion of the activity.
  - A rubric will also be used and presented to the students to grade their notebooks.
- Lesson 3: Starting a Vegetable Garden
  - A reflection paper will be required to assess their thoughts and feelings about the documentary film entitled "Inhabitants." A rubric will be discussed with students beforehand so that they can understand the given requirements or expectations from the reflection paper. A quiz will also be given to assess how much they recall from documentary film.
  - A rubric will be discussed with students beforehand to understand the given requirements or expectations from the project, particularly on the documentation, presentation of the project, and the outcome of the project. The presenters and audience will also be graded based on their participation during the question and answer portion of the activity.
  - A rubric will also be used and presented to the students to grade their notebooks.
- Lesson 4: Knowing the Plants
  - A rubric will be discussed with students beforehand to understand the given requirements or expectations from the research activity, particularly on the documentation, content, and presentation of the research project. The presenters and audience will also be graded based on their participation during the question and answer portion of the activity.
  - A quiz that will be given by each group will also be recorded to assess the audience's understanding and recall each group's research project presentation.
  - A rubric will also be used and presented to the students to grade their notebooks.
- Lesson 5: Harvesting and Eating
  - A rubric will be discussed with students beforehand to understand the given requirements or expectations from the dish preparation activity, particularly on the documentation, content, demonstration of the dish preparation, and end product. The presenters and audience will also be graded based on their participation during the question and answer portion of the activity, as well as the audience's written comments.
  - A rubric will also be used and presented to the students to grade their notebooks.
- Lesson 6: Visiting a Farm
  - A rubric will be discussed with students beforehand to understand the given requirements or expectations from the farm visit, particularly on the content of their paper participation during the question and answer portion of the activity, as well as the audience's written comments.
  - A rubric will also be used and presented to the students to grade their notebooks.

## **Alignment with Standards**

This curriculum unit will address the following Arizona English Language Arts Standards:

- 7.W.1 Write arguments to support claims with clear reasons and relevant evidence.
- 7.W.2 Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content.
- 7.W.3 Write narratives to develop real or imagined experiences or events using effective technique, relevant descriptive details, and well-structured event sequences.
- 7.W.4 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
- 7.W.8 Gather relevant information from multiple print and digital sources, using search terms effectively; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and following a standard format for citation.

### Resources:

- Arizona's English language arts standards 7th grade.* (n.d.). Retrieved August 11, 2022, from <https://www.azed.gov/sites/default/files/2016/12/7th%20Grade%20ELA%202016%20Final.pdf?id=585aa968aadebe12481b844b>
- Benefits of a farm visit.* Farms For City Children. (2021, March 12). Retrieved November 16, 2022, from <https://farmsforcitychildren.org/benefits-of-a-farm-visit/>
- Berkelaar, D. (2011, October 2). *The importance of Indigenous Food Plants.* ECHOcommunity. Retrieved November 16, 2022, from <https://www.echocommunity.org/en/resources/a118dadf-50d6-492c-a19f-948a23c93e83>
- Bhat, S. (n.d.). *Importance of Traditional Food System* . ResearchGate. Retrieved November 16, 2022, from [https://www.researchgate.net/publication/313368586\\_IMPORTANCE\\_OF\\_TRADITIONAL\\_FOOD\\_SYSTEM](https://www.researchgate.net/publication/313368586_IMPORTANCE_OF_TRADITIONAL_FOOD_SYSTEM)
- Blackwood, M. (2022, April 15). *Benefits of growing a vegetable garden.* Healthier Steps. Retrieved November 9, 2022, from <https://healthiersteps.com/benefits-of-growing-a-vegetable-garden/>
- Cibecue, Arizona population 2022.* Cibecue, Arizona Population 2022 (Demographics, Maps, Graphs). (n.d.). Retrieved August 17, 2022, from <https://worldpopulationreview.com/us-cities/cibecue-az-population>
- Cibecue community.* – About Us – Dishchii'bikoh Community School. (n.d.). Retrieved June 13, 2022, from [https://www.dishchiibikoh.org/apps/pages/index.jsp?uREC\\_ID=277405&type=d&pREC\\_ID=617962](https://www.dishchiibikoh.org/apps/pages/index.jsp?uREC_ID=277405&type=d&pREC_ID=617962)
- Csi-Admin. (2022, March 15). *The basics of different writing styles.* Computer Systems Institute. Retrieved November 9, 2022, from <https://www.csinow.edu/blog/basics-different-writing-styles/>
- Demographic Analysis of the White Mountain Apache Tribe Using 2010 Census and 2010 American Community Survey Estimates,* 2010.
- Dishchii'bikoh Community School (2022 ranking): Cibecue, AZ.* Public School Review. (n.d.). Retrieved August 17, 2022, from <https://www.publicschoolreview.com/dishchii-bikoh-community-school-profile>

- Dishchii'bikoh Community School District.* (2022) | Cibecue, AZ. (n.d.). Retrieved August 17, 2022, from <https://www.publicschoolreview.com/arizona/dishchii-bikoh-community-school-district/5900145-school-district>
- Folnović, T. (2021, November 17). *Prevent crop loss with Propper Harvest Management.* AGRIVI. Retrieved November 16, 2022, from <https://www.agrivi.com/blog/prevent-crop-loss-with-propper-harvest-management/>
- Godman, H. (2012, June 30). *Backyard gardening: Grow your own food, improve your health.* Harvard Health. Retrieved November 16, 2022, from <https://www.health.harvard.edu/blog/backyard-gardening-grow-your-own-food-improve-your-health-201206294984#:~:text=It%20helps%20you%20eat%20more,that%20must%20be%20picked%20early.>
- Implementing the writing process.* Implementing the Writing Process | Read Write Think. (n.d.). Retrieved November 9, 2022, from <https://www.readwritethink.org/professional-development/strategy-guides/implementing-writing-process#:~:text=Studies%20show%20that%20students%20who,writing%20skills%20to%20all%20subjects.>
- McDowell, S. (2011, April 5). *Traditional Foods of the Apache people.* eHow. Retrieved November 9, 2022, from [https://www.ehow.com/info\\_8171670\\_traditional-foods-apache-people.html](https://www.ehow.com/info_8171670_traditional-foods-apache-people.html)
- McGill. (2011, September 29). *Benefits of traditional foods.* Centre for Indigenous Peoples' Nutrition and Environment. Retrieved November 16, 2022, from <https://www.mcgill.ca/cine/research/food/benefits>
- Scalise, S., & Cronkite News, The Arizona Republic. (2016, September 20). *Apache County had worst 'food insecurity' in U.S.* Arizona Republic. Retrieved August 30, 2022, from <https://www.azcentral.com/story/news/local/arizona/2016/09/20/apache-county-had-worst-food-insecurity-us/90703126/>
- Qoura, A. A., & Zahran, F. A. (2018). The effect of the 6+1 trait writing model on ESP University students critical thinking and writing achievement. *English Language Teaching, 11*(9), 68. <https://doi.org/10.5539/elt.v11n9p68>
- Tech (2019, October 29). *The importance of learning about plants that are native to your area.* The Rich Lawn Company. Retrieved November 16, 2022, from <https://www.therichlawncompany.com/the-importance-of-learning-about-plants-that-are-native-to-your-area/>
- The importance of traditional and ethnic food.* The Momentum. (n.d.). Retrieved November 16, 2022, from <https://www.themomentum.com/articles/the-importance-of-traditional-and-ethnic-food#:~:text=Documenting%20this%20type%20of%20cuisine,societal%20bonding%2C%20and%20the%20economy.>
- What is it like in Cibecue? – About Us – Dishchii'bikoh Community School.* (n.d.). Retrieved June 13, 2022, from [https://www.dishchiibikoh.org/apps/pages/index.jsp?uREC\\_ID=277405&type=d&pREC\\_ID=617967](https://www.dishchiibikoh.org/apps/pages/index.jsp?uREC_ID=277405&type=d&pREC_ID=617967)

Materials for Classroom Use

Department of Agriculture. (n.d.). *Vegetables*. MyPlate. Retrieved June 21, 2022, from <https://www.myplate.gov/eat-healthy/vegetables>

*General information*. – About Us – Dishchii’bikoh Community School. (n.d.). Retrieved June 13, 2022, from [https://www.dishchiibikoh.org/apps/pages/index.jsp?uREC\\_ID=277405&type=d&pREC\\_ID=617960](https://www.dishchiibikoh.org/apps/pages/index.jsp?uREC_ID=277405&type=d&pREC_ID=617960)

Godman, H. (2012, June 30). *Backyard gardening: Grow your own food, improve your health*. Harvard Health. Retrieved June 21, 2022, from <https://www.health.harvard.edu/blog/backyard-gardening-grow-your-own-food-improve-your-health-201206294984#:~:text=It%20helps%20you%20eat%20more,that%20must%20be%20picked%20early>

Guce, M. (2018, December 4). *What are the benefits of growing a vegetable garden?* ECOgardener. Retrieved June 21, 2022, from <https://ecogardener.com/blogs/news/what-are-the-benefits-of-growing-a-vegetable-garden>

Kirven, K. (2021, May 2). *How the white mountain apache are reclaiming their food ways*. ArcGIS StoryMaps. Retrieved June 22, 2022, from <https://storymaps.arcgis.com/stories/7426aae332de409ca86110e3f162cb35>

*Language & culture*. – About Us – Dishchii’bikoh Community School. (n.d.). Retrieved June 13, 2022, from [https://www.dishchiibikoh.org/apps/pages/index.jsp?uREC\\_ID=277405&type=d&pREC\\_ID=617963](https://www.dishchiibikoh.org/apps/pages/index.jsp?uREC_ID=277405&type=d&pREC_ID=617963)

*Mission & Philosophy*. – About Us – Dishchii’bikoh Community School. (n.d.). Retrieved June 13, 2022, from [https://www.dishchiibikoh.org/apps/pages/index.jsp?uREC\\_ID=277405&type=d&pREC\\_ID=617959](https://www.dishchiibikoh.org/apps/pages/index.jsp?uREC_ID=277405&type=d&pREC_ID=617959)

ML Slattery, e. a. (2010). Associations among body mass index, waist circumference, and health indicators in American Indian and Alaska Native Adults. *American Journal of Health Promotion*, 246-254. This article details the health challenges that Native Americans can face.

*Ndée Bikiyaa, the Peoples' Farm*. Facebook. (n.d.). Retrieved June 22, 2022, from <https://www.facebook.com/ndeebikiyaathepeoplesfarm/>

*Planting calendar for Whiteriver, AZ*. Almanac.com. (n.d.). Retrieved June 22, 2022, from <https://www.almanac.com/gardening/planting-calendar/AZ/Whiteriver>

San Carlos Apache College. (2020, December 4). *Traditional Apache Foods (nest'an)*. YouTube. Retrieved June 22, 2022, from [https://www.youtube.com/watch?v=jArEa\\_mXtYQ](https://www.youtube.com/watch?v=jArEa_mXtYQ)

Schaefer, E. (n.d.). *American Indian Film Gallery: Apache cooking*. American Indian Film Gallery: Cultures of Apache tribes and Hopi tribes. Retrieved June 21, 2022, from <https://scalar.usc.edu/works/american-indian-film-archive/apache-cooking>

*School profile*. – About Us – Dishchii’bikoh Community School. (n.d.). Retrieved June 13, 2022, from [https://www.dishchiibikoh.org/apps/pages/index.jsp?uREC\\_ID=277405&type=d&pREC\\_ID=617941](https://www.dishchiibikoh.org/apps/pages/index.jsp?uREC_ID=277405&type=d&pREC_ID=617941)

*6 + 1 traits of writing - geneva 304*. (n.d.). Retrieved June 21, 2022, from <https://www.geneva304.org/Downloads/six%20traits2.pdf>

*Summer Gardening in Arizona*. Growing In The Garden. (2022, May 8). Retrieved June 21, 2022, from <https://growinginthegarden.com/summer-gardening-in-arizona/>

*Vegetables A-Z*. Vegetables. (n.d.). Retrieved June 21, 2022, from <https://www.vegetables.co.nz/vegetables-a-z/>

*Vegetable gardening in Arizona*. Growing In The Garden. (2021, December 22). Retrieved June 21, 2022, from <https://growinginthegarden.com/vegetable-gardening-in-arizona/#:~:text=Use%20the%20best%20type%20of%20soil%20to%20plant%20vegetables%20in%20Arizona&text=For%20the%20best%20chance%20of,to%20begin%20gardening%20right%20away.>

*What should I eat?* The Nutrition Source. (2019, September 24). Retrieved June 21, 2022, from <https://www.hsph.harvard.edu/nutritionsource/what-should-you-eat/>

*When to plant vegetables: The garden planting calendar*. Garden.org. (n.d.). Retrieved June 22, 2022, from <https://garden.org/apps/calendar/?q=Whiteriver%2C%2BAZ>