DEVELOPMENT AND EVALUATION OF A NUTRITION AND GARDENING 
EDUCATION CURRICULUM FOR PARENTS OF ELEMENTARY SCHOOL CHILDREN 
IN VAN NUYS, CALIFORNIA 

A graduate project submitted in partial fulfillment of the requirements

For the degree of Master of Science in

Family and Consumer Sciences 

By 

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Date

California State University, Northridge
DEDICATION

This graduate program is dedicated to:

My mother, Eliazar Viveros, for being an inspiration and the most amazing single mother in the world. I will be forever grateful for her sacrifices and commitment to ensuring we had food on the table, that we were clothed, and with a roof over our heads. Words can’t express how lucky I am to have a mother who has always worked hard to provide the best possible life and who has encouraged me in my studies.

My favorite sister, Concepcion Juarez, for always being my rock, sunshine, protector and knowing how to cheer me up.

My dear friends, Elizabeth and Ken Vaccaro, for being my biggest academic and emotional supporters, stress reducers and understanding me the best this last year.

My dear friend and favorite high school teacher, Richard Duran, for always believing in me, planting seeds throughout the years, and for making that initial visit with the academic counselor at Oxnard College with me.

My wonderful mentor, Dr. Lisagor, for her unconditional support, guidance and love. It is always a joy to collaborate and spend time with someone who radiates such positivity, warmth and excitement for life. I am eternally grateful for the wonderful opportunities she provided me, as they have been key to my success and professional growth.
My marvelous committee chair, Dr. Fajardo-Lira, for her endless support and encouragement in my studies. I am very thankful for her devotion in my learning and success and also her approachable, calm and warm nature.

My amazing friend, Nathan Lopez, for being super helpful, kind and positive.
ACKNOWLEDGMENT

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To Dr. Terri Lisagor, for her continuous support and encouragement during this project.

To Professor Ritamarie Little, amazing and constructive feedback and guidance in this project.
TABLE OF CONTENTS

Signature Page ii
Dedication iii
Acknowledgment v
Tables viii
Figures ix
Abstract x

CHAPTER I-INTRODUCTION
Statement of the Problem 1
Purpose 2
Hypotheses 2
Assumptions 2
Limitations 3
Definitions 3

CHAPTER II-REVIEW OF LITERATURE
Prevalence 5
Causes 6
Anti-obesity efforts 9

CHAPTER III-METHODOLOGY
Curriculum Development 15
Curriculum Delivery 16
Data Collection 20
Subjects 20

CHAPTER IV-RESULTS
Summative and Formative 22

CHAPTER V-DISCUSSION
Recommendation for further research 30
Limitations 30
Implications 31
Conclusion 31

REFERENCES 33

APPENDIX 37
Appendix A: Lesson: MyPlate 37
Appendix B: Lesson: Food Labels 39
Appendix C: Lesson: Importance of Breakfast 42
Appendix D: Lesson: Introduction to Woolly Pockets 44
Appendix E: Lesson: Herbs 45
Appendix F: Lesson: Salsas 47
Appendix G: Lesson: Calcium Don’t Forget Your Greens 48
Appendix H: Lesson: Antioxidant 50
Appendix I: Lesson: Setting up your First Garden 52
Appendix J: Lesson: Seeds & Composting 53
Appendix K: Evaluation Gault Week 1 English & Spanish 55
Appendix L: Evaluation Gault Week 2 English & Spanish 57
Appendix M: Evaluation Gault Week 3 English & Spanish 59
Appendix N: Evaluation Gault Week 4 English & Spanish 61
Appendix O: Fruit Yogurt Smoothie 63
Appendix P: Spinach Salad Recipe English & Spanish 64
Appendix Q: Food Labels Claim 65
Appendix R: Elementary School Gardening Project English & Spanish 66
Appendix S: Growing Carrots English & Spanish 67
Appendix T: Growing Zucchini English & Spanish 68
Appendix U: Salsas & your Health English & Spanish 70
Appendix V: Calcium Don’t Forget your Greens 74
Appendix W: Antioxidant Benefits 76
Appendix X: Setting up your First Garden 77
Appendix Y: Seeds & Composting English & Spanish 80
TABLES

Table 1: *Nutrition lessons for Cohasset & Anatola Elementary*  
Table 2: *Gardening Lessons for Cohasset & Anatola*  
Table 3: *Nutrition lessons for Gault & Anatola*  
Table 4: *Gardening lessons for Gault & Anatola*  
Table 5: *Cohasset: Usefulness of topics*  
Table 6: *Cohasset: Reported dietary changes*  
Table 7: *Gault: Parental interest in nutrition topic & gardening experience*  
Table 8: *Gault: Parental interest in gardening topics*  
Table 9: *Gault: Parental program feedback*  
Table 10: *Gault: Usefulness of topics*  
Table 11: *Gault: Reported dietary changes*  
Table 12: *Week 4 parent comments about program*
FIGURES

Figure 1: Bronfenbrenner’s Human Ecological Model 11
Figure 2: Human Ecological Model of Childhood Obesity 12
ABSTRACT

DEVELOPMENT AND EVALUATION OF A NUTRITION AND GARDENING EDUCATION CURRICULUM FOR PARENTS OF ELEMENTARY SCHOOL CHILDREN IN VAN NUYS, CALIFORNIA

By

Silvia Juarez Viveros

Master of Science

Family and Consumer Sciences

Childhood obesity rates are on the rise globally, nationally, and in California. Researchers have examined the impact nutrition and gardening education can have on reducing childhood obesity rates. The project presented was a four-week nutrition and gardening curriculum for parents that was implemented in three elementary schools (Cohasset, Gault, Anatola) in Van Nuys, CA. A total of 8 lessons (4 nutrition and 4 gardening) were taught at each school. The lessons were provided in Spanish to the parents at the Parent Center of the schools once a week. This project assessed parental interest in the nutrition and gardening curriculum, usefulness of topics, measured dietary changes and obtained information about preparation of healthy recipes introduced by the program via formative and summative surveys. Six out of 8 topics, and 9 out of 12 topics were useful to ≥ 50% of parents at Cohasset and Gault, respectively. More than 70% of parents at Gault found all nutrition and gardening topics interesting. Also, more than 50% of parents in Cohasset adopted a few healthier habits such as paying attention to portion sizes, consuming less salt, sugar, and fat, as a result of their
participation in the program. More than 50% of parents adopted many healthier habits as a result of the programs at Gault. By the third lesson, 90% of parents at Gault reported that they had prepared at least one of the recipes presented in this program. Anatola parents were not surveyed due to lack of consistent participation. Although results were favorable, a next step to help solidify findings would be to implement and evaluate this program at another low-income community.
CHAPTER I
INTRODUCTION

In the past thirty years, the occurrence of childhood obesity doubled in children and quadrupled in adolescents (CDC Obesity Facts, 2014). Obesity in early childhood predisposes them to obesity in adulthood and weight-related conditions. Short-term consequences of obesity include increased risk for pre-diabetes, sleeping difficulties, and joint and bone problems. Long-term consequences include increased risk for Type 2 Diabetes, stroke, and different types of cancer (CDC Obesity Facts, 2014). Moreover, the CDC estimated that 365,000 individuals die every year from obesity and that life expectancy is projected to decline by 2050 as a result of childhood obesity (Haidar & Cosman, 2011). Obesity is a costly disease; in 2001, an estimated 123 billion dollars were spent on healthcare related to obesity (Haidar & Cosman, 2011).

Obesity is a preventable disease and parents, schools, and healthcare professionals such as nutrition experts can all work together to reduce this epidemic. Specifically, hands on learning environments in schools, including nutrition and gardening based curricula for parents and children, have been shown to promote healthy eating habits, such as an increase in fruit and vegetable consumption. Castro, Samuel, & Harman (2013) found that children consumed 2 and 4.9 extra servings of fruits and vegetables per week, respectively, after parents and children participated in a nutrition and gardening based program. This research supports the justification for implementing nutrition in gardening education and signifies the purpose of my project.

Statement of the problem

Childhood obesity rates continue to climb on both the global and local scale. In 2011, the World Health Organization (WHO) reported that at least 155 million children worldwide were overweight or obese, and of these 42 million were under age 5 (Haidar & Cosman, 2011). Obesity and overweight are particularly evident in low-income communities, and is higher
among Hispanic children than non-Hispanic children (CDC Obesity facts). In 2009, the Pediatric Nutrition Surveillance System reported that 1 out of 7 low-income 2-4 years olds were obese in the United States. Van Nuys, a city in Los Angeles County, has one of the highest rates of obesity, with 29% of children being obese (Los Angeles County Department of Public Health [LACDPH], 2008). There are several factors that contribute to these obesity, including lack of access to healthy foods, low socioeconomic status, and unsafe neighborhoods.

**Purpose**

To evaluate parental survey responses to a 4-week gardening and nutrition curriculum at three low income elementary schools in a Latino community of Van Nuys, CA, this thesis examined the effect of the program on parents’ interest in nutrition and gardening, and in planting their own garden. It also evaluated parental feedback on the preparation of healthy recipes provided by program and this study assessed qualitative dietary changes as a result of participation in the program.

**Hypotheses**

Based on the review of literature in Chapter 2, the following research hypotheses were developed.

As a result of attending nutrition and gardening lessons:

1. Children of parents attending nutrition and gardening lessons will increase their consumption of fruits and vegetables.

2. Parents will acquire basic gardening skills and be able to engage in gardening activities at home.

3. Parents will prepare at least one healthy recipe provided by program.

**Assumptions**
Assumptions of this study are:

1. Participants will answer surveys truthfully
2. Participants will not report what they think researchers want to hear and
3. Participants will attend all sessions.
4. Participants will be able to understand lessons presented in Spanish.

Limitations

The thesis will add to the understanding of parental interest of a gardening based nutrition education program in a low-income community however certain limitations still exist.

1. The results have low external validity due to the small sample size and its lack of diversity (mainly Latino participants) and
2. The accuracy of responses is uncertain due to parents wanting to please researchers.
3. The program was designed specifically for the parents of the Van Nuys community and may not applicable to other populations

Definitions

- **Body Mass Index (BMI)** - value that is calculated with a person’s height and weight to obtain an indirect measure of body fat and assess risk for health problems (Centers for Disease Control and Prevention, 2012).

- **Hypertension** - condition in which there is a high blood pressure pushing against the walls of the arteries in the body and this can lead to heart attack and strokes (American Heart Association, 2012).

- **Type 2 Diabetes** - condition in which body cannot utilize or loses the ability to produce the hormone insulin effectively and this causes a buildup of sugar in the blood (American Heart Association 2012).
• **Obesity** - BMI greater than 95\textsuperscript{th} percentile for age and sex (Mahan & Escott-Stump, 2008).

• **Overweight** - BMI greater than 85\textsuperscript{th} percentile for age and sex (Mahan & Escott-Stump, 2008).
CHAPTER II
REVIEW OF LITERATURE
The purpose of this chapter is to provide an overview on the childhood obesity epidemic. It will address its prevalence globally, nationally, statewide, and in Los Angeles County. This literature review will also provide information on the contributing factors and anti-obesity efforts such as nutrition and gardening based programs.

Prevalence of Childhood Obesity

Childhood obesity rates are on the rise worldwide, nationally, and locally. In 2011, the World Health Organization (WHO) reported that at least 155 million children worldwide were overweight or obese and of these, 42 million were under the age of 5 years old (Haidar & Cosman, 2011). Of these, roughly 35 million were living in developing countries (Kourkourikos, Lavdaniti, & Avramika, 2013). Obesity rates are climbing in developing countries such as Egypt, Algeria, Peru, South Africa and Jamaica (Sinha & Kling, 2009). This rise has been attributed to the adoption of Western habits such as over-consumption of calories and being physically inactive. Regions where obesity rates are at high risk for escalating are the Middle East, Pacific Island, Southeast Asia, and China. (Haidar & Cosman, 2011).

United States

According to the Centers for Disease Control and Prevention (CDC), in United States, 12.5 million children ages 2-19 years old are obese. Alarmingly, obesity rates have grown the most in the United States when compared with other countries. For instance, the rate in the U.S. is three times higher than it was thirty years ago. It tripled for children 2-to-5 and 12-to-19 years of age, and quadrupled for those 6-to-11 years of age (Daniels, Jacobson, McCrindle, Eckel & McHugh Sanner, 2009). Higher obesity prevalence has been noted among Hispanic boys and girls. They are more likely to be obese than non-Hispanic white boys and girls (CDC Obesity
facts, 2012). Furthermore, according to the Pediatric Nutrition Surveillance System (2009), 1-out of 7 low-income children ages 2-4 years old were obese in 2009.

**California & Los Angeles County**

In California, Latino, African Americans, and American Indians have the highest obesity rates compared to Asians and Whites (Babey, Wolstein, Diamant, Bloom, & Goldstein, 2012). Furthermore, 1 in 9 children and 1 in 3 adolescents in California were obese in 2009 (Silverstone & Teatum, 2011). In 2007, 40% of children in Los Angeles County were overweight or obese. Those who lived in inner cities such as East and South Los Angeles had a higher prevalence of obesity, with about 50% of children were overweight or obese in these areas (Kipke et al., 2007). Furthermore, 29% of children in city of Van Nuys were obese, which is amongst the highest in LA County (LACDPH, 2008).

**Causes of Childhood Obesity**

**Lack of Access to Healthy Foods**

Lack of availability and accessibility of healthy foods are contributing factors in childhood obesity. In one study, the weight and 4-day food intake of 11,669 children ages 9-10 years were recorded and analyzed. Researchers classified food outlets found in the neighborhoods of these children based on healthfulness of foods sold. For instance, they classified supermarkets and fruit and vegetable stores as Body Mass Index (BMI) healthy, fast food restaurants and BMI-unhealthy, and non-fast-food restaurants as BMI-intermediate. They found that children who lived in neighborhoods with a greater number of BMI-unhealthy establishments weighed more and also tended to consume more carbonated and other sugary drinks than those that lived in neighborhoods with more BMI-healthy food establishments (Jennings et al., 2011). In another study, researchers examined the impact of living near different
food outlets (e.g. green grocers, supermarkets, convenience stores, and fast food restaurants) had on intake of fruits in vegetables in children 5-6 and 10-12 years. They found that when children lived further away from fast food restaurants, they were more likely to consume fruits and vegetables. In addition, they also observed that living within 800 meters of a fast food restaurant decreased the likelihood that a child would eat more than 2 servings of fruit per day by 38%, when compared to children who did not have that food outlet near their home. Similarly, they found children living within 800 meters of convenience stores were also 25% less likely to consume more than 3 servings of vegetables per day when compared to children who did not have that food outlet near their home (Timperio et al., 2008). Lastly, another study involving adolescents examined the impact of having fast food restaurants near schools on BMI and dietary choices. Researchers found that when these children attended a school within half a mile of fast food restaurants, they had higher risk for being overweight and obese. They were also more likely to consume fewer fruits and vegetables and more soda (Davis & Carpenter, 2010). Thus, unhealthy food environments contribute to escalating obesity rates.

**Low Socioeconomic Status**

Research has shown that low-income individuals often purchase foods with a high caloric content but low nutritional value because they are more affordable (Cortex, Millian-Ferro, Schneider, Vega, Caballero, 2013). Between 1990-2007, prices for fast food decreased. In 1997-2003, the prices for produce increased by 17% (Cawley, 2010). Studies have shown that the BMI of low socioeconomic children is affected by reductions of fast food prices and that this increases their likelihood of becoming obese (Cawley, 2010). One national study found that low-income communities had 1.3 times more fast-food restaurants than higher socioeconomic area codes. Another study (Larson, Story & Nelson, 2009) based in South Los Angeles examined the menus
of 659 fast food restaurants in low- and high-income communities. They found that 42% of restaurants in high-income communities provided a minimum of five healthy menu options, while only 36% of restaurants in low-income neighborhoods did. In addition, 40% of fast food restaurants in high-income communities utilized healthier cooking methods such as baking for their food items, while only 27% of restaurant low-income communities did (Larson, Story & Nelson, 2009).

**Lack of Physical Activity**

In the United States, 47% of children engage in sedentary activities such as TV viewing, playing videos games, and using computers on daily basis (Sisson et al., 2009). Consumption of these products is classified as screen time. The American Academy of Pediatrics (AAP) recommends no more than 2 hours of screen time for children per day. In a 2009 study, researchers examined hours spent in screen time of a sample of children ages 2-15 years, using data from the National Health and Nutrition Examination Survey (2001-06) (Sisson et al., 2009). They looked at differences between sex, ethnicity, age, and BMI. They found that boys spent more time watching TV, using computers, and had higher overall screen time than girls. Among ethnic groups, African Americans, Mexican Americans, and European Americans had highest amount of time spent watching TV, computer and overall screen time. Furthermore, older children (12-15 years) spent more time on these activities than the younger children (2-11 years). In addition, obese children had a higher record of screen time than children with a normal and overweight classification (Sisson et al., 2009). Similarly, another study conducted in Cyprus, analyzed Greek national data and found that that children who watch TV for four or more hours were 3 times more likely to be overweight or obese (i.e. risk BMI, body fat of ≥ 30%; waist circumference of greater than 75%) (Lazarou & Soteriades, 2009).
Safety of neighborhood

Researchers examined data from the National Survey of Children’s Health (2007) and found that U.S. Children (N=44,101) living in unsafe neighborhoods were 60% more likely to be obese and 41% more likely to be overweight than children living in safe neighborhoods (Singh, Siapush, & Kogan, 2010). One longitudinal study including 5,886 children between the ages of 5-20 years examined the effect of parents’ perceived neighborhood safety and BMI of their children. Data for this study was collected from 1994-2000. Researchers found that the parents’ negative perception of safety of the neighborhood negatively impacted the weight of children, and this correlated with a higher BMI. This study suggested that parents are likely to keep children indoors when they have a negative perception about their neighborhood which in turn can lead to increased sedentary behaviors such as TV viewing. The increase in BMI was observed in children over 11 years old (Cecil-Karb & Grogan-Kaylor, 2009).

Efforts to Combat the Obesity Epidemic

Nutrition-Gardening Education Programs

In the past few years, a few nutrition and gardening based programs have been created and implemented in an effort to prevent childhood obesity rates from escalating. Between 2008-2010, Castro, Samuel, & Harman (2013) implemented a community garden approach to help families increase access to fruits and vegetables. This intervention included gardening, cooking and nutrition classes for parents and children. Part of the program included having potluck meetings to encourage parents to discuss gardening topics/issues and share healthy recipes with one another. Researchers found that overweight children improved their BMI and weight classification and those who were at normal weight maintained their BMI in a normal range. Parents also reported an increase in amount of produce available at home and a higher
consumption of this produce. For example, parents increased availability of fruits and vegetable by 146%. Specifically, there was an 28% increase in fruit consumption by children and 33% increase in vegetables, which were significant results. Researchers concluded that community gardens could play in instrumental role in reducing childhood obesity (Castro, Samuel, & Harman, 2013).

Davis, Ventura, Cook, Gyllenhammer, & Gatto (2011) examined whether an afterschool 12-week nutrition, gardening, and cooking program would increase consumption of fruits and vegetables and reduces the risk of obesity in elementary aged children (n= 4th and 5th grade Latino students). One half of the students and their parents received nutrition, gardening, cooking education in weekly 90-minute sessions; the control group did not. After intervention, there was a 22% increase in fiber intake in the experimental group and a 12% decrease in intake among the control group. Additionally, there was a 5% decrease in blood pressure in the experimental group and a 3% drop for the control group (Davis et al., 2011).

Prelip, Thai, Erausquin, & Slusser (2011) examined whether a nutrition program targeted at low-income parents of young children would impact their nutrition knowledge and behaviors and affect their children’s intake of fruits and vegetables. Parent centers in Los Angeles Unified School District (LAUSD) were designated as either a control or an intervention group. For five weeks, the intervention groups participated in a 90-minute nutrition education class that was presented once per week. Both groups were given a pre- and post-test. Surveys assessed knowledge, attitudes, eating habits, dietary behaviors, and home environment. Pre- and post-test scores for parents in the intervention group were 52.5% and 75.9%, respectively. Pre- and post-test scores for the control group were 56.1% and 58%, respectively. In addition, parents in the
intervention group reported an increase in fruit and vegetable consumption, and purchased less unhealthy foods such as chips and soda for their home.

Educating the child and the parents is crucial in reducing childhood obesity rates because parents are the role models for their children. Gross, Davenport, & Braun (2010) examined the impact the family plays in fruit and vegetable consumption for low-income children in fifth and sixth grade. Nine low-income schoolchildren and their parents were individually asked to answer an age-appropriate survey that assessed their attitudes/behaviors and intake of fruits and vegetables. Student questionnaires included categories such as consumption of fruits and vegetables, home engagement (i.e. meal planning), food preferences, and peer and school environment. Parent surveys focused on parent modeling of fruit and vegetable consumption. Eighty-six percent of the children surveyed felt their parents expected them to eat more fruits and vegetables. Children who felt parental support and whose parents consumed fruits and vegetables had a higher daily average consumption. Parent modeling is a very important predictor in children consumption of fruit and vegetables (Gross, Davenport, & Braun, 2010).

Human Ecological Theory

In addressing the previously described multifactorial issues involved in the development or prevention of childhood obesity, it may be helpful to look from the perspective of the Human Ecological Theory (HET) (Bronfenbrenner, 1979). HET is based on the assumption that individuals are mutually dependent with their surroundings. They can be affected directly or indirectly by the different systems: microsystem, mesosystem, exosystem, macrosystem, and chronosystem.

Figure 1- Bronfenbrenner’s Human Ecological Model
The microsystem includes family, friends, peers, and teachers, all of who can play a major role in the development of childhood obesity. As an example, children learn what foods to eat and other eating behaviors from family, friends, peers, and teachers. Encouraging the parents to teach their children the basic gardening skills they learned in the program fits within the microsystem because children learn important skills from their parents. At the Mesosystem level, two systems become interconnected or linked; one has an influence on another. Providing parental education and reminding the parents that they are role models for their children falls within the mesosystem of this model; obtaining verbal and written feedback about the lessons does, as well. The Exosystem represents external factors that influence or impact the individual. E.g. neighborhood safety could affect whether a child is able to play safely outdoors. Bronfenbrenner also identifies the macrosystem, where society’s views influence individuals; and the chronosystem, in which a person’s character or environment can change or stay the same through the course of time.

Figure 2-Human Ecological Model of Childhood Obesity
In 2001, Davison and Birch created a contextual model, based on the HET, to describe factors that contribute to childhood obesity: in the microsystem section of their model, they identify child behaviors such as physical activity, sedentary behavior, dietary intake, as well as genetic predisposition, as risk factors. Within the mesosystem, Davison and Birch identify parenting styles and family influences (e.g. family TV viewing, parent monitoring of child viewing, parent food preferences and intake, types of food available at home and child feeding practices). Lastly, within the exosystem, the authors list community, demography and societal characteristics impacting obesity rates such as socioeconomic status, neighborhood safety, school education problems, and access to convenience and fast food restaurants.

Programs such as this project’s nutrition and gardening education curriculum for parents of elementary school children have the potential for helping to reduce and prevent childhood obesity. Research shows that when parents participate in such programs their nutrition knowledge is improved, which helps them make better dietary choices for their family. This is
evidenced by their efforts to increase availability of produce at home and reducing consumption of calorie dense foods like soda. As a result, their children ate more fruits and vegetables and were able to improve their weight status.
CHAPTER III

METHODOLOGY

Overview of the Project

The project consisted of a four-week nutrition and gardening curriculum for parents that was implemented in three elementary schools (Cohasset, Anatola, and Gault) in Van Nuys, California. A total of 8 lessons (4 nutrition and 4 gardening) were taught at each school. The lessons were provided in Spanish to the parents at the Parent Center of the schools once a week.

Curriculum Development

Parental nutrition lessons were based on topics taught to children attending Cohasset, Anatola and Gault elementary schools: MyPlate, label reading, healthy choices, healthy cooking and exercise. As these lessons were implemented and qualitative observations were obtained, modifications to lessons were made to better suit/engage the audience. Gardening lessons were created based on topics deemed necessary to acquire basic gardening skills. The gardening lessons also tried to connect topics from the nutrition classes. For instance, when calcium was discussed in the nutrition classes, then the focus for the gardening lesson was calcium and dark leafy green vegetables. They were also designed to address cultural competencies and this was achieved by obtaining verbal feedback from parent participants. For example, the parents expressed an interest in learning about herbs and salsa, which are ingredients they often use in their cooking. A lesson was developed to include these topics. Making the lessons culturally appealing was a strategy to engage the parents further. The lessons are included in Appendices A-J of this project. Each nutrition lesson was structured with the following format: Title, Objectives, Lesson Content, Materials, Summary Closure, and Student Assessment. Each
A gardening lesson was structured with the following format: Title, Objective, Gardening level, Materials and Procedures.

**Curriculum Delivery**

Three graduate nutrition students delivered the nutrition curriculum and two students delivered the gardening curriculum in English and Spanish. A total of 8 lessons (4 nutrition and 4 gardening) were presented on a biweekly basis during a four-month period at the Parent Center of each school (Cohasset, Anatola, Gault). Each class session lasted 45 minutes and the instructional days began with the nutrition component and was followed by gardening each time.

The following tables provide an overview of the lessons taught for the nutrition and gardening component at each elementary school.

**Table 1**
*Nutrition lessons for Cohasset & Anatola Elementary (Jan 2012–May 2012)*

<table>
<thead>
<tr>
<th>Week</th>
<th>Lesson</th>
<th>Overview</th>
<th>Teaching Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>MyPlate</td>
<td>Each food group was discussed with food models.</td>
<td>Myplate&lt;br&gt;Strawberries&lt;br&gt;Pomegranate Juice&lt;br&gt;Paper plates&lt;br&gt;Paper cups&lt;br&gt;Food models&lt;br&gt;Food photos&lt;br&gt;Muscle &amp; Fat Models&lt;br&gt;Test tubes of fat&lt;br&gt;Healthy foods for each food group&lt;br&gt;Unhealthy foods for each food group</td>
</tr>
<tr>
<td>2</td>
<td>Fruits and Veggies &amp; how to read a nutrition food label</td>
<td>Focused on ways to include fruits and veggies into daily meals, how to read a nutrition food label and interpret nutrition claims.</td>
<td>Food labels&lt;br&gt;Food label handouts&lt;br&gt;Paper cups&lt;br&gt;Food models&lt;br&gt;Muscle and fat models&lt;br&gt;Vegetables for snacking</td>
</tr>
<tr>
<td>3</td>
<td>Importance of Breakfast and</td>
<td>Focused on importance of breakfast and presented ideas to avoid skipping</td>
<td>Paper cups&lt;br&gt;Smoothie ingredients</td>
</tr>
</tbody>
</table>
Calcium breakfast and described calcium-containing foods other than dairy group.

Yogurt
Fruits
Blender
Muscle model
Fat model
Food models
MyPlate

Culmination lesson Northridge Hospital Medical Center staff provided a nutrition lesson along with cooking demonstration and Zumba session (via instructional videos)

What recipe?
Zumba DVDs

<table>
<thead>
<tr>
<th>Week</th>
<th>Lesson</th>
<th>Overview</th>
<th>Teaching materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Herbs, Gardening &amp; Nutrition</td>
<td>Focused on Mexican herbs, their uses, gardening and nutrition provided. Recipes were provided.</td>
<td>“Herbs, Gardening, and Nutrition” flier Cilantro plant</td>
</tr>
<tr>
<td>2</td>
<td>Salsas</td>
<td>Provided history and uses of chiles and their nutritional value. Recipes were provided.</td>
<td>“Salsas and Your Health” flier Salsa ingredients from recipe of choice Chilies, herbs, and tomatoes from container gardening</td>
</tr>
<tr>
<td>3</td>
<td>Calcium: Don’t Forget your Greens</td>
<td>Provided information on leafy greens and nutrients they provide. Kale was featured in this lesson.</td>
<td>Calcium flyer Kale salad demonstration Ingredients Quinoa Strawberries Kale Feta Almonds Lemon juice Olive oil Salt Ground pepper</td>
</tr>
<tr>
<td>4</td>
<td>Antioxidants</td>
<td>Provided information on importance/benefits of antioxidants and food sources. Recipes were provided.</td>
<td>“Antioxidant Benefits” flier Fruit Salad Demo</td>
</tr>
<tr>
<td>Week</td>
<td>Lesson</td>
<td>Overview</td>
<td>Teaching Materials</td>
</tr>
<tr>
<td>------</td>
<td>---------------------------------------------</td>
<td>---------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------</td>
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<tr>
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<td>MyPlate</td>
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</tr>
<tr>
<td>2</td>
<td>Fruits and Veggies how to read a nutrition food label</td>
<td>Focused on ways to include fruits and veggies into daily meals, how to read a nutrition food label and interpret nutrition claims.</td>
<td>Food labels&lt;br&gt;Food label handouts&lt;br&gt;Paper cups&lt;br&gt;Food models&lt;br&gt;Muscle and fat models&lt;br&gt;Vegetables for snacking</td>
</tr>
<tr>
<td>3</td>
<td>Importance of Breakfast and Calcium</td>
<td>Focused on importance of breakfast and presented ideas to avoid skipping breakfast and described calcium-containing foods other than dairy group.</td>
<td>Paper cups&lt;br&gt;Smoothie ingredients&lt;br&gt;Yogurt&lt;br&gt;Fruits&lt;br&gt;Blender&lt;br&gt;Muscle model&lt;br&gt;Fat model&lt;br&gt;Food models&lt;br&gt;MyPlate</td>
</tr>
<tr>
<td>4</td>
<td>Culmination</td>
<td>Northridge Hospital Medical Center</td>
<td></td>
</tr>
<tr>
<td>Week</td>
<td>Lesson/s</td>
<td>Overview</td>
<td>Teaching Materials</td>
</tr>
<tr>
<td>------</td>
<td>-----------------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>1</td>
<td>Herbs and Nutrition</td>
<td>Described the Woolly pocket gardens, and how children will be involved with gardening.</td>
<td>Image of Woolly Pockets</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Focused on Mexican herbs, their uses, gardening tips, and their nutritional value. Recipes using herbs were provided.</td>
<td>Basil Plants</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Herbs &amp; Nutrition Handout</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Recipe</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Demonstration:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Mandarin Orange,</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Cilantro, and</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Avocado Salsa</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Recipe</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Avocado</td>
</tr>
<tr>
<td>2</td>
<td>Setting Up Your First Garden</td>
<td>Focused on how to select location, containers, soil and nutrients to setup a garden.</td>
<td>Images containers for garden</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Jalapeno and bell pepper seeds</td>
</tr>
<tr>
<td>3</td>
<td>Seed and Composting</td>
<td>Focused on how to dry seeds and what materials can be composted to be used for gardening.</td>
<td>Tomatoes (Roma and tomatoes on vine)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Small gardening containers and plates</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Potting soil mix</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Small gardening shovel</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Sandwich bags</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Pumpkin seeds</td>
</tr>
<tr>
<td>4</td>
<td>Antioxidants</td>
<td>Provided information on importance/benefits of antioxidants and food sources. Recipes were provided.</td>
<td>Demonstration:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Fruit salad</td>
</tr>
</tbody>
</table>
Data collection

Formative surveys consisting of five questions were administered weekly and at the end of the gardening lesson. The surveys assessed parents’ interest in nutrition and gardening and in planting their own garden. A summative survey consisted of five questions and was administered during the fourth week. It assessed the usefulness of topics, measured dietary changes; as well as evaluated parental feedback on the preparation of healthy recipes provided by the program. Only the parents that attended both classes were surveyed. Parents were instructed to answer the surveys honestly and independently on all surveys. They were asked to circle their responses for the formative surveys and on the summative survey they were instructed to circle topics they found most useful and put an asterisk on the least useful ones. The sample questionnaires are included in Appendices K-N.

Subjects

Participants were recruited from the Parent Center of each elementary school (Cohasset, Anatola, Gault). The participants were Spanish-speaking parents of children (grades 1 to 5) who attended these elementary schools. The participants were mostly female and were older than 18 years. The number of participants varied by school. Cohasset had the largest participation for the nutrition classes with 25-30 parents at each lesson. Anatola had 7-15 parents and Gault had 15-25 parents per lesson. The gardening classes had 15-20 parents, 5-9 parents, and 9-12 parents at Cohasset, Anatola, Gault, respectively. The total numbers for nutrition class participants were 30 and for gardening class participants were 25. The number of participants at each lesson was influenced by collaboration between Parent Center Coordinators, school principal, and CSUN. For instance, the parent center coordinator and principal at one school were very proactive and
provided great enthusiasm and outreach for the program. As a result, that school had a consistent amount of participation and the lessons were received with the most excitement.
CHAPTER IV

RESULTS

Summative and formative

Chapter IV presents results of the surveys collected on the following topics: parental interest, usefulness and application of knowledge gained from the nutrition and gardening program at home.

Surveys at Anatola were not distributed due to inconsistent parent participation. At Cohasset, 6 out of 8 topics presented were found to be useful by $\geq 50\%$ of parent participants (Table 5). Also, more than 50% of parents in Cohasset adopted healthier habits such as paying attention to portion sizes, consuming less salt, sugar, and fat, as a result of their participation in the program (Table 6). In Gault, $\geq 70\%$ of parents thought the lessons in nutrition and gardening were interesting (Table 7 & 8). Nine of twelve topics presented between both classes were found to be useful by $\geq 50\%$ of parent participants (Table 10). Greater than or equal to 50% of parent participants at Gault adopted healthier habits because of the program (Table 11). By the second and third week of instruction, 8 out of 10 and 10 out of 11 parents at Gault reported that they had prepared at least one of the recipes presented in this program, respectively. Parents tried the Mandarin Cilantro and Spinach Salad recipes the most at home. Survey results also showed that 73% parents did more gardening after participating in the program and 100% parents at all schools stated they felt prepared to garden because of this program.

The following section includes the results of the surveys collected at each school in Table format.

Table 5

*Cohasset: Usefulness of topics, n=10*

<table>
<thead>
<tr>
<th>Topics</th>
<th>Most Useful (%)</th>
<th>Least Useful (%)</th>
<th>Unanswered (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MyPlate</td>
<td>50</td>
<td>10</td>
<td>40</td>
</tr>
</tbody>
</table>


Table 6
*Cohasset: Reported dietary changes, n=10*

<table>
<thead>
<tr>
<th>Did you make any changes to your diet or eating habits due to this program?</th>
<th>Yes (%)</th>
<th>No (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incorporated fruits in diet</td>
<td>30</td>
<td>70</td>
</tr>
<tr>
<td>Incorporated whole grains in diet</td>
<td>60</td>
<td>40</td>
</tr>
<tr>
<td>Pay attention to portion sizes</td>
<td>80</td>
<td>20</td>
</tr>
<tr>
<td>Incorporated herbs in diet</td>
<td>60</td>
<td>40</td>
</tr>
<tr>
<td>Incorporated calcium in diet</td>
<td>40</td>
<td>60</td>
</tr>
<tr>
<td>Read food labels</td>
<td>80</td>
<td>20</td>
</tr>
<tr>
<td>Incorporated vegetables in diet</td>
<td>60</td>
<td>40</td>
</tr>
<tr>
<td>Consume less salt</td>
<td>80</td>
<td>20</td>
</tr>
<tr>
<td>Consume less sugar</td>
<td>80</td>
<td>20</td>
</tr>
<tr>
<td>Consume less fats</td>
<td>80</td>
<td>20</td>
</tr>
</tbody>
</table>

Table 7
*Gault: Parental interest in nutrition topic and gardening experience*

<table>
<thead>
<tr>
<th>MyPlate, n=14</th>
<th>Fruits &amp; Veggies, how to read food label, n=10</th>
<th>Calcium, n=11</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 1</td>
<td>Week 2</td>
<td>Week 3</td>
</tr>
<tr>
<td>Did you find</td>
<td>Yes (%)</td>
<td>No (%)</td>
</tr>
<tr>
<td></td>
<td>100</td>
<td>0</td>
</tr>
</tbody>
</table>
today’s topic presented during nutrition class interesting?

<p>| | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Have you ever gardened/planted something before?</td>
<td>86</td>
<td>14</td>
<td>70</td>
<td>30</td>
<td>NA</td>
</tr>
</tbody>
</table>

Table 8
*Gault: Parental interest in gardening topics*

<table>
<thead>
<tr>
<th></th>
<th>Wolly Pockets &amp; Herbs, n=14</th>
<th>How to Setup Garden n=10</th>
<th>How to Plant Seeds, n=11</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Week 1</td>
<td>Week 2</td>
<td>Week 3</td>
</tr>
<tr>
<td>Did you find today’s topic presented during nutrition class interesting?</td>
<td>Yes (%)</td>
<td>No (%)</td>
<td>Yes (%)</td>
</tr>
<tr>
<td></td>
<td>100</td>
<td>0</td>
<td>100</td>
</tr>
</tbody>
</table>

Table 9
*Gault: Parental program feedback*

<table>
<thead>
<tr>
<th>What kinds of topics in nutrition or gardening interest you?</th>
<th>Week 1</th>
<th>Week 2</th>
<th>Week 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Any and general</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Appropriate way to plant veggies and nutrition and benefits of veggies and fruits</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Whatever possible. Both topics are important</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Whatever topics you would like. Any topic in general.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Planting seasons for vegetables and how to water them</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anything that will help educate me and be able to put in to practice with my family.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Any topic is</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I’d like to learn anything you have to share. I’d like to know which oil is better without caring about brands</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anything you can teach us is good</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All topics are interesting</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All are important</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cholesterol</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Antioxidants</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Both classes are interesting</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Comments:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td></td>
</tr>
</tbody>
</table>
| • Thank you for everything. The classes are good. Bring more.  
• The class was good and interesting  
• The classes are very interesting and it’s important to teach our children how to eat better with appropriate portions.  
• Thank you for taking the time to share your knowledge and putting it into practice with us (the parents). What we learned, we will share it at home and put into practice with regards to nutrition.  
• I would like to know more about how to take care of plants and how to prepare soil so they grow but everything is interesting.  
• All sessions are good and they educate us on how to improve our wellbeing. Congratulations!  
• Very good presentation. Come more often. Congratulations!  
• Very interesting. You invite us to take care of our health, eat healthy and be positive. | • We thank you for sharing information on these topics that are of high interest. We learn a lot.  
• Class is good because almost always you don’t know how far to into soil you should plant seeds. | • Everything you present is good  
• I really like the classes. They are very interesting and informative  
• Thank you for sharing these classes and I hope you bring more in the future. Thank you for everything. |
• Today’s topic was very interesting and I learned a lot about nutrition.

Table 10  
*Gault: Summative Topic Usefulness, n=11*

<table>
<thead>
<tr>
<th>Topics</th>
<th>Most useful (%)</th>
<th>Least Useful (%)</th>
<th>Unanswered (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MyPlate</td>
<td>82</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>Fruits and Veggies</td>
<td>82</td>
<td>0</td>
<td>18</td>
</tr>
<tr>
<td>How to Read a Food Label</td>
<td>82</td>
<td>0</td>
<td>18</td>
</tr>
<tr>
<td>Importance of Breakfast</td>
<td>73</td>
<td>0</td>
<td>27</td>
</tr>
<tr>
<td>Calcium</td>
<td>82</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>Wolly Pockets</td>
<td>36</td>
<td>18</td>
<td>45</td>
</tr>
<tr>
<td>Herbs</td>
<td>73</td>
<td>0</td>
<td>27</td>
</tr>
<tr>
<td>How to Setup Garden</td>
<td>73</td>
<td>0</td>
<td>27</td>
</tr>
<tr>
<td>How to Plant Seeds</td>
<td>91</td>
<td>0</td>
<td>9</td>
</tr>
<tr>
<td>How to Dry Seeds</td>
<td>36</td>
<td>9</td>
<td>6</td>
</tr>
<tr>
<td>How to Compost</td>
<td>45</td>
<td>9</td>
<td>45</td>
</tr>
<tr>
<td>Antioxidants</td>
<td>91</td>
<td>0</td>
<td>9</td>
</tr>
</tbody>
</table>

Table 11  
*Gault: Reported dietary changes, n=11*

<table>
<thead>
<tr>
<th>Did you make any changes to your diet or eating habits due to this program?</th>
<th>Yes (%)</th>
<th>No (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incorporate fruits in diet</td>
<td>64</td>
<td>36</td>
</tr>
<tr>
<td>Incorporate whole grains in diet</td>
<td>73</td>
<td>27</td>
</tr>
<tr>
<td>Pay attention to portion sizes</td>
<td>64</td>
<td>36</td>
</tr>
<tr>
<td>Incorporated herbs in diet</td>
<td>73</td>
<td>27</td>
</tr>
<tr>
<td>Incorporate calcium in diet</td>
<td>55</td>
<td>45</td>
</tr>
<tr>
<td>Read food labels</td>
<td>73</td>
<td>27</td>
</tr>
<tr>
<td>Incorporate vegetables in diet</td>
<td>55</td>
<td>45</td>
</tr>
<tr>
<td></td>
<td>Gault</td>
<td>Cohasset</td>
</tr>
<tr>
<td>------------------------</td>
<td>------------------------</td>
<td>-----------------------------------------------</td>
</tr>
<tr>
<td>Consume less salt</td>
<td>82</td>
<td>18</td>
</tr>
<tr>
<td>Consume less sugar</td>
<td>73</td>
<td>27</td>
</tr>
<tr>
<td>Consume less fats</td>
<td>64</td>
<td>36</td>
</tr>
</tbody>
</table>

**Table 12**  
*Week 4 parent comments about program*

<table>
<thead>
<tr>
<th>Gault</th>
<th>Cohasset</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thank you! Thank you! Thank you!</td>
<td>It’s a great program. Thank you for your time and dedication.</td>
</tr>
</tbody>
</table>
| Thank you! I like it and I put all topics into practice at home.  
The classes are great. We would like for you to bring more classes.  
Bring more classes.  
The classes are very useful and what I’m learning I’m sharing with my family and friends.  
All topic are very interesting and we how you bring us more topics. | I learned that it’s important to pay more attention to eating habits of family. |
CHAPTER V
DISCUSSION

The purpose of this project was to evaluate the effect of a nutrition and gardening curriculum that was implemented at three elementary schools (Cohasset, Anatola, and Gault) in Van Nuys, California. Specifically, I examined the effect of the program on parents’ interest in nutrition and gardening and in planting their own garden; usefulness of topics, measuring dietary changes; as well as evaluating parental feedback on the preparation of healthy recipes provided by program. The project began at Cohasset Elementary school and then was expanded to Anatola and Gault Elementary schools over the two year period. This curriculum was presented to children and parents at the Parent Center of these schools. I assessed the parents’ interest in the curriculum by developing formative and summative surveys. The formative survey assessed interest in the nutrition and gardening topics presented each week and invited parents to give feedback on topics of interest. The summative survey was administered on the fourth week of instruction. This survey inquired about topics presented and whether they were useful, whether parents adopted healthy habits because of the program and whether this program prepared them for gardening. Research has shown that the implementation of a nutrition and gardening program for children and parents had positive results in their dietary behavior, BMI and overall health. For instance, research conducted by Castro, Samuel, & Harman (2013) shows that many children consumed 2 and 4.9 extra serving of fruits and vegetables per week, respectively, after they received nutrition and gardening education. In addition, these children improved or maintained their BMI. Another study done by Davis, Ventura, Cook, Gyllenhammer, & Gatto (2011) also found children increased their fiber consumption by 22%, had decreased in blood pressure levels (5%), and that overweight children decreased their BMI. The study conducted by Prelip, Thai,
Erausquin & Slusser (2011) also supports that parents increased the availability of produce at home and that many purchased less energy dense foods like soda and chips after receiving nutrition education. These research findings are in line with some of the responses provided by parents at Cohasset, Anatola, and Gault elementary schools. For instance, 30-80% of parents at Cohasset and ≥ 50% of parent participants at Gault adopted healthier habits because of the program. Another supportive illustration, Cohasset parents reported reading food labels, consuming less fats, salt and sugar because of this program. Gault parents reported using herbs in cooking, paying more attention to portion sizes, reading food labels and consuming less fat, salt and sugar. This confirms that they understand the importance of nutrition in health and negative effects it can have on the weight and overall health for them and their children. In response to the program, one parent wrote “Thank you! I like it [the program] and I put all topics into practice at home. The classes are great. We would like for you to bring more classes.” This confirms again that providing the opportunity for parents to gain knowledge in nutrition and gardening allowed for them to make healthier food decisions for themselves and their children.

According to the Human Ecological Theory (HET), an individual, such as the child, is influenced by many systems. Those within the microsystem (e.g. parents) tend to have a very high influence on an individual’s behavior (Birch & Davidson, 2001). Parent modeling and parental encouragement of healthy eating behaviors plays an important role in preventing obesity. When children see their parents eat healthy foods or are encouraged to eat them, they are more likely to choose and eat healthy foods themselves. Research by Gross, Davenport, & Braun (2010) supports that children who felt parental support and whose parents consumed fruits and vegetables had a higher daily average consumption of fruits and vegetables themselves. One parent in this project expressed “The classes are very useful and what I’m learning I’m sharing
with my family and friends.” Thus, educating the child and the parent is crucial in reducing childhood obesity rates because parents are the role models for their children.

**Recommendations for further research**

This project focuses on assessing parental interest/response to the nutrition and gardening education program. Since the gardening component of the project had a low parent participation, one recommendation would be to also offer a small incentive to all those who attend all classes at the final week of instruction like they did for the nutrition component. Perhaps another way to motivate parents to attend could also be to create some competition among them with a Jeopardy-like game. The game could also serve as informal way to assess knowledge gained by the parents. Finally, providing the educators with a portable stove would be a way to further entice parents to attend because I observed how much they really enjoyed the cooking demonstrations provided by Northridge Hospital. Aside from my observations, one Parent Center Coordinator mentioned that parents expressed great interest in these food demonstrations. One final recommendation is to implement the curricula in other low–income neighborhoods and assessing parental interest

**Limitations**

One limitation of this project was the parent participation. Each week brought a different number of parent participants for both nutrition and gardening lessons. Many times parents would attend the nutrition class taught before the gardening lesson and then leave right after, stating they had to work or needed to leave. Thus, significantly fewer parents that stayed for the gardening lesson. During the second semester, lack of outreach to parents hindered attendance of lessons. In retrospect, it would be better to offer gardening lessons at 8 AM on another day instead of following the nutrition class. This way, the parents have time for the lesson and they
are not required to remain in class for long periods of time, which is something they are not used to. Another limitation was that parent participants would converse while completing surveys and at times this may have influenced their responses. Further limitations include survey clarity and lack of specificity. For instance, in the summative survey questions 1 and 2 asked the parent to circle the most useful topics and put an asterisk next to the least useful topics. Although instructed verbally to follow those instructions, it may be possible that the parents may not have grasped the information. As far as the specificity of the survey, question 5 asking about topics they wish to learn about and comments section on formative surveys, was very much open to interpretation.

**Implications**

This project is likely to have powerful and long-lasting effects on the lives of the parents and their children. Having targeted nutrition and gardening education to the parents in addition to children will hopefully boost consumption of healthier foods such as fruits, vegetables, whole grain, low-fat dairy products, and lean proteins. The parents and children specifically acquired the basic skill and have the tools for growing their own produce so that they can share with their families. In addition, they will have learned about new foods and were provided with recipes for new foods. The goal of this project was to address childhood obesity through nutrition and gardening education. Taking this preventative approach has the potential to help reduce the incidence of childhood obesity, as children will grow up surrounded by messages about healthy living. Thus, when parents and children come together at home, they will be more likely to make healthy food choices. Healthier food choices will lead to healthier bodies and minds and more functional adults later in life, thereby benefiting society as a whole.

**Conclusion**
Childhood obesity affects many individuals, families and communities all over the world. There are numerous causes for this epidemic. One significant contributor is lack of education and accessibility to healthy foods among low-income families. Providing the essential nutrition and gardening education to such low-income communities is a powerful step in reducing obesity rates not only in Van Nuys, California but also in all areas of the world.
REFERENCES


APPENDIX A

Initial Lesson Plan Session 1: MyPlate

Initial Parent Participation Lesson Plan: Session 1: MyPlate

**Learning Objectives:**

1. Students will be able to identify the different food groups on the MyPlate.

2. Students will be able to identify food items per each food group.

**Behavior Change Objective:** Students will increase their intake of fruits and vegetables by adding fruits and vegetables to half of their plates at least lunch and dinner four times per week.

<table>
<thead>
<tr>
<th>METHODS</th>
<th>LESSON CONTENT</th>
<th>MATERIALS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anticipatory Set: 2 minute</td>
<td>• Introduce instructor.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Introduce the topics of the each nutrition lecture.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Introduce the topic of the first lecture: MyPlate</td>
<td></td>
</tr>
<tr>
<td>Learning Activities: 16</td>
<td>• Explain the different parts/food groups on the MyPlate.</td>
<td>• Paper printouts of MyPlate.</td>
</tr>
<tr>
<td>minutes</td>
<td>• Explain what each color represents.</td>
<td>• Paper and laminated pieces of different foods.</td>
</tr>
<tr>
<td></td>
<td>• Explain how much of each food group should be on MyPlate.</td>
<td>• Magnetic board with MyPlate.</td>
</tr>
<tr>
<td></td>
<td>• List the food items that belong to each group.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Students will use the MyPlate coloring sheet to identify each food group.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• They will color it while instructor is explaining MyPlate.</td>
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</tr>
<tr>
<td></td>
<td>• The instructor will then distribute food images to every child.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• The instructor will pick one child at a time to come up to the board and name</td>
<td></td>
</tr>
<tr>
<td></td>
<td>what food image they got (child will then hold</td>
<td></td>
</tr>
</tbody>
</table>
up image so the rest of the children can see).

• Child will then tell us where this image goes on the food plate and stick it to the appropriate section.
• Ask children (one at a time) to place a food item on the MyPlate (magnetic board).

<table>
<thead>
<tr>
<th>Summary Closure: 1 minute</th>
</tr>
</thead>
<tbody>
<tr>
<td>• The instructor will summarize important topics of the lecture:</td>
</tr>
<tr>
<td>- Half of MyPlate should be fruits and vegetables.</td>
</tr>
<tr>
<td>- Eat a variety of fruits and vegetables every day.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Student Assessment: 1 minute</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ask students to tell something new about MyPlate that they learned in today’s lecture. At least 3/4 of the class should be able to answer.</td>
</tr>
</tbody>
</table>
APPENDIX B

Initial Lesson Plan Parent Participation Class: Food Labels

Lesson Plan Parent Participation: Session 2: Food Labels

Lesson Plan: Session 2: Food Labels

Learning Objectives:

1. Parents will be able to describe the different components of the food label.
2. Parents will be able to recognize what serving sizes, servings per container, nutrients, vitamins, and mineral content, ingredient list.
3. Parents will be able to identify how much of their daily recommended intake a serving of a food will provide.
4. Parents will be able to explain if the nutrient content and claims of a product is low, moderate, or high per serving.

Behavior Change Objective: Parents will be able to reduce their intake of foods high in sodium, fat, and sugars by evaluating the nutrient content displayed on food labels for lunch and dinner three times per week.

<table>
<thead>
<tr>
<th>METHODS</th>
<th>LESSON CONTENT</th>
<th>MATERIALS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anticipatory Set: 4 minute</td>
<td>Introduce instructor</td>
<td>• Food labels</td>
</tr>
<tr>
<td></td>
<td>• Introduce the nutrition education program for children and parents.</td>
<td>• Food packages</td>
</tr>
<tr>
<td></td>
<td>• The instructor will provide a sign in sheet or parents to sign in.</td>
<td>• Strawberries</td>
</tr>
<tr>
<td></td>
<td>• Explain rules of the program.</td>
<td>• Pomegranate Juice</td>
</tr>
<tr>
<td>Learning Activities: 38 minutes</td>
<td>• Ask parents a series of questions: Do you love your child? Do you care for their health?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Pass out handouts: Food label claims handout and empty containers of food to exercise reading food labels</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Go over the different components of the food label</td>
<td>• Paper plates</td>
</tr>
</tbody>
</table>
- Present visual serving size for each food group.
- State how many servings are contained in the entire food package
- Go over 10 tips to a great plate (Balance, Variety, Moderation, & Exercise).
- Explain importance of parents as role models for children.
- Have parents give real food examples that would be considered more nutritious alternative than the food package they were given in the activity.
- Allow parents to choose between unhealthy and healthy versions of each packaged food (fruit roll ups vs. fresh fruit, grilled fish vs. Hot dogs, brown rice vs. white rice, whole milk vs. 1%, etc).
- Divide parents into groups, having them come share what nutrient was considered too high or lacking in the serving amount of the packaged food item.
- Reward parents with strawberries and pomegranate juice – and they can eat their cups of real food! (whole grain crackers, string cheese, canned beans and peanuts, the strawberries, and carrots.)

<table>
<thead>
<tr>
<th>Summary Closure: 1 minute</th>
<th>Paper cups</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instructor will provide a summary of relevant topics.</td>
<td>Healthy foods for each food group</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Student Assessment: 1</th>
<th>Paper cups</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ask parents what is one thing they have learned today.</td>
<td>Healthy foods for each food group</td>
</tr>
<tr>
<td>Ask parents what is one thing they can start</td>
<td>Unhealthy foods for each food group</td>
</tr>
<tr>
<td>minute</td>
<td>doing this week.</td>
</tr>
</tbody>
</table>
APPENDIX C

Initial Lesson Plan Parent Participation Class: Importance of Breakfast

Lesson Plan Parent Participation: Session 3: Importance of Breakfast

Lesson Plan: Session 3: Importance of Breakfast

Learning Objectives:

1. Parents will be able to describe healthy food choices for breakfast

2. Parents will be able to recognize benefits of consuming breakfast and their children ability to increase learning in school.

3. Parents will be able to identify ways of incorporating fruits and vegetables into breakfast items.

4. Parents will be able to create quick and easy breakfast items

5. Parents will be able to identify serving sizes for fruits and vegetables.

Behavior Change Objective: Parents will increase intake of fruits and vegetables (for parents and their children) by eating at least three to five portions per day, at least four days per week.

<table>
<thead>
<tr>
<th>METHODS</th>
<th>LESSON CONTENT</th>
<th>MATERIALS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anticipatory Set</td>
<td>• Introduce instructor</td>
<td></td>
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<tr>
<td>4 minute</td>
<td>• Introduce the nutrition education program for children and parents.</td>
<td></td>
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<tr>
<td></td>
<td>• The instructor will provide a sign in sheet or parents to sign in.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Explain rules of the program.</td>
<td></td>
</tr>
<tr>
<td>Learning</td>
<td>• Ask parents a series of questions: Do you love your child? Do you care for their</td>
<td>• Handout: Top reasons your</td>
</tr>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Activities: 38 minutes</td>
<td>health?</td>
<td></td>
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<tr>
<td>------------------------</td>
<td>--------</td>
<td></td>
</tr>
<tr>
<td>• Pass out handouts: Top reasons why your children should consume breakfast</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Go over the benefits of consuming breakfast</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Present visual serving size for each food group.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• State how many servings for each food group</td>
<td></td>
<td></td>
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<tr>
<td>• Explain importance of parents as role models for children.</td>
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<tr>
<td>• Have parents place real food examples in the appropriate food group in the paper plates.</td>
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<td></td>
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<tr>
<td>• Allow parents to choose between unhealthy and healthy versions of each food group (fruit roll ups vs. fresh fruit, grilled fish vs. Hot dogs, brown rice vs. white rice, whole milk vs. 1%, etc).</td>
<td></td>
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<tr>
<td>• Divide parents into groups, having them come up with 10 healthy tips they could do at home with their children.</td>
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</tr>
<tr>
<td>• Reward parents with strawberries and pomegranate juice – and they can eat their cups of real food! (whole grain crackers, string cheese, canned beans and peanuts, the strawberries, and carrots.)</td>
<td></td>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>child should consume breakfast</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Handout: Ways to add fruits and vegetables to breakfast</td>
</tr>
<tr>
<td>• Strawberries</td>
</tr>
<tr>
<td>• Pomegranate Juice</td>
</tr>
<tr>
<td>• Paper plates</td>
</tr>
<tr>
<td>• Paper cups</td>
</tr>
<tr>
<td>• Food models</td>
</tr>
<tr>
<td>• Food photos</td>
</tr>
<tr>
<td>• Muscle &amp; Fat models</td>
</tr>
<tr>
<td>• Healthy foods for each food group</td>
</tr>
<tr>
<td>• Unhealthy foods for each food group</td>
</tr>
</tbody>
</table>

| Summary Closure: 1 minute | Instructor will provide a summary of relevant topics. |

<table>
<thead>
<tr>
<th>Student Assessment: 1 minute</th>
<th>Ask parents what is one thing they have learned today.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ask parents what is one thing they can start doing this week.</td>
</tr>
</tbody>
</table>
APPENDIX D

Introduction to Woolly Pockets Lesson Plan

Objectives:
- Parents will learn about Woolly Pockets.
- Parents will learn about the Marilyn Magaram Center and the housing and urban development grant or any organization leading a nutrition or garden program.
- Parents will learn about the curriculum being covered by their children.
- Parents will learn how they can stay involved with their children.

Gardening level:
- Beginner gardener – little to no knowledge about gardening.

Materials:
- Introduction to Gardening Project Flier
- Growing Zucchini Flier
- Growing Carrots Flier
- Woollypocket.com website
- Starter plants, usually herbs for the first lesson

Procedures:
- Using the Introduction to Gardening Project Flier explain how the Woolly Pockets work and their purpose.
- Using the Woollypocket.com website, share photographs and successful projects through the use of Woolly Pockets.
- Using the flier, discuss the involvement of the Marilyn Magaram center and the Department of Housing and Urban Development grant or the organization leading the nutrition or gardening program.
- Introduce future lesson topics and dates of the lessons.
- Using the Growing Zucchini and Carrots flier give examples of how to start growing vegetables.
- Bring Parents outdoors to the location of the Woolly Pockets to explain gardening activities of children.
- Break into a question period where parents can ask questions and give feedback.
- Give parents starters so they can begin to experiment with growing herbs.
Lesson Plan: Herbs

Objectives:

- Parents will learn about Mexican traditional herbs.
- Parents will learn how to plant various cultural herbs.
- Parents will learn the nutrients associated with each individual herb.
- Parents will learn uses of traditional herbs.
- Parents will learn how to make a dish using one or a few of the traditional herbs.
- Parents will revisit herb gardening.
- Parents will plant herbs from seeds.

Gardening level:

- Beginner gardener – little to no knowledge about gardening.

Materials:

- “Herbs, Gardening, and Nutrition” flier
- A choice of one of the herbs from the flier and a different herb than the herb given in the first lesson
- Pots
- Soil
- Shovel
- Water
- Gloves
- Ingredients to a recipe of choice from the flier or another resource

Procedures:

- Begin the lesson by referring to the introduction lesson from the first week.
- Ask class how their herb is doing and to share experiences of their container garden.
- Pass our “Herbs, Gardening, and Nutrition” flier.
- Ask class to share how they use herbs in their current cooking.
- Go over traditional herbs, uses, planting instructions, and nutrients associated with each herb.
- Talk about the functions of the nutrients. (These can be found in any nutrition text book).
- Talk about the use of herbs versus salt in avoiding hypertension.
- Pass out herb planting materials. By this point the class should be able to plant on their own. Provide little instruction to assess participant’s knowledge of planting from a seed or starter.
- Take our ingredients from the recipe of your choice and demonstrate the preparation of the recipe.
- Pass out a portion of the recipe to class for tasting.
- Encourage class in the use of herbs instead of salt.
- Encourage class in the use of all from container gardening.
APPENDIX F

Lesson Plan: Salsas

Objectives:
- Parents will learn about the nutrients contained in the ingredients of salsa.
- Parents will learn the many uses of salsas.
- Parents will learn how to harvest and utilize vegetables from previous lessons.
- Parents will learn how to make salsa and Pico de Gallo.
- Parents will learn how to encourage children to help them make salsa or Pico de Gallo at home.

Gardening level:
- Beginner gardener – little to no knowledge about gardening.

Materials:
- “Salsas and Your Health” flier
- Salsa ingredients from recipe of choice
- Pico de Gallo ingredients from recipe of choice
- Chilies, herbs, and tomatoes from container gardening
- Vegetable coloring sheets or matching game (any vegetable coloring sheet or pictures from the internet)

Procedures:
- Pass our “Salsas and Your Health” flier
- Begin the lesson by asking class if they make salsas or Pico de Gallo
- Ask class to share their favorite recipes and uses
- Ask class which dishes they use salsas in to flavor dishes.
- Identify ingredients in a salsa with class.
- Discuss the nutrients in the ingredients of a salsa.
- Discuss the health benefits associated with the ingredients in a salsa.
- Take out ingredients from the recipe of your choice and demonstrate the preparation of the recipe.
- Pass out a portion of the recipe to class for tasting.
- Encourage class to have children help in the preparation of salsas and Pico de Gallo.
- Encourage class to increase consumption of the healthy foods already in their diet.
- Pass out coloring sheets for parents to take home to their children for them to talk about vegetables and encourage their children to increase vegetable consumption
APPENDIX G

Lesson: Calcium, Don’t Forget Your Greens

Objectives:
- Parents will learn about the functions of calcium.
- Parents will learn about the food sources of calcium, specifically green vegetables.
- Parents will learn about the amounts of calcium in various green vegetables.
- Parents will learn about calcium requirements.
- Parents will learn about kale.
- Parents will learn how to plant kale.
- Parents will learn how to utilize kale in a dish.

Gardening level:
- Beginner gardener – little to no knowledge about gardening.

Materials:
- “Calcium: Don’t Forget about Your Greens” flier
- Kale Seeds
- Soil
- Pots
- Gloves
- Water
- Ingredients for a kale dish of your choice
- Greens coloring sheet or game (Any from the internet)

Procedures:
- Pass our “Calcium: Don’t Forget about Your Greens” flier
- Begin the lesson by asking class if they can list calcium sources
- Introduce green vegetables as a food source of calcium
- Introduce kale a food source high in calcium
- Discuss how green contain more calcium than milk
- Discuss other benefits of greens such as fiber, vitamin C, Beta-carotene, and phytochemicals.
- Pass out kale planting materials. By this point the class should be able to plant on their own. Provide little instruction to assess participant’s knowledge of planting from a seed or starter.
- Discuss and show video of planting, care, and harvesting of kale.
- Take out ingredients from the recipe of your choice and demonstrate the preparation of the recipe.
- Pass out a portion of the recipe to class for tasting.
- Encourage class to have children help in the preparation of a kale salad.
- Encourage class to increase consumption of greens high in calcium.
- Pass out coloring sheets or games for parents to take home to their children for them to talk about vegetables and encourage their children to increase vegetable consumption.
Lesson: Antioxidants

Objectives:
- Parents will learn about antioxidants.
- Parents will learn the function of antioxidants.
- Parents will learn about foods high in antioxidants.
- Parents will learn how to make a recipe with foods high in antioxidants.
- Parent will plant strawberries which are high in antioxidants.
- Parents will learn how to talk to their children about fruits and vegetables.

Gardening level:
- Beginner gardener – little to no knowledge about gardening.

Materials:
- “Antioxidant Benefits” flier
- Strawberry starters or seeds
- Strawberry Shortcake coloring sheet (found on the internet)
- Fruits and vegetables coloring sheet (found on the internet)
- Pots
- Soil
- Shovel
- Water
- Gloves
- Ingredients to a recipe of choice from the flier or another resource.

Procedures:
- Pass our “Antioxidants and Benefits” flier
- Begin the lesson by introducing antioxidants, what they are, and what they do.
- Ask class if they are familiar with the word or if they are learning something new.
- Talk about food sources that are high in antioxidants.
- Ask class if they consume any of these foods in their home. Ask class which foods they consume the most in their homes.
- Pass out strawberry gardening materials. Be sure to pass any left-over materials for participants to take home for their children or spouses.
- While class is planting strawberries talk about the antioxidants in strawberries and how to use strawberries in a recipe for them and their children.
- Provide care instructions for growing strawberries indoors or outdoors.
- Take out ingredients from the recipe of your choice and demonstrate the preparation of the recipe.
- Pass out a portion of the recipe to class for tasting.
- Encourage class to increase the consumption of food sources high in antioxidants to benefit their health.
APPENDIX I

Lesson: Setting Up your First Garden

Objectives:
- Parents will learn about the best locations to set up a garden.
- Parents will learn about the importance of sunlight and water.
- Parents will learn about container gardening.
- Parents will learn about containers available for apartment gardening.
- Parents will learn about soil and soil treatments.
- Parents will learn how to feed the soil and how the soil will feed the plants.

Gardening level:
- Beginner gardener – little to no knowledge about gardening.

Materials:
- Garden Set-up flier.
- Pictures of garden locations.
- Examples of containers such as: milk cartons, baskets, buckets, gardening pots, pockets, and bags.
- Examples of healthy soil from any local gardening store. This could be different brands of soil or soils with different textures.
- Examples of soil treatments from any local gardening store. This could be store bought fertilizers and compost.

Procedure:
- Using, pictures of indoor and outdoor locations of where gardens thrive, introduce most suitable locations where plants can thrive. Briefly talk about the benefit of sunlight and water.
- Pass around examples of containers that can be used indoors and outdoors. Inform participants about cost and access to different types of containers. Ask them if there is a nearby shop that sells the items they will need to maintain a garden.
- Evaluate different types of soils to identify which soils are healthy and which need more nutrients. Parents will be allowed to view different types of soil.
- Introduce the idea of feeding soil nutrients so that soil will feed the plants on its own.
- Briefly explain the concept of composting which will lead into next lesson.
APPENDIX J

Lesson: Seeds and Composting

Objectives:
- Parents will learn about seeds and nutrients.
- Parents will learn how to save seeds from foods purchased.
- Parents will learn how to separate the seeds of a tomato.
- Parents will learn how to dry seeds after retrieval from food source.
- Parents will learn how to store seeds after they have been dried.
- Parents will learn about composting materials.
- Parents will learn how to take out starter plants from casing.
- Parents will learn how to plant Chilies from starter plants.

Gardening level:
- Beginner gardener – little to no knowledge about gardening.

Materials:
- Seeds and Composting flier
- Tomatoes
- Cups and spoons
- Re-sealable plastic bags
- Paper towels
- A seed snack (example: pumpkin seeds)
- Example of materials gathered for composting. (example: compost bucket or container, with fruit and vegetable scraps, coffee grounds, etc.)
- Chili plants (starters)
- Soil
- Pots
- Shovel
- Water

Procedures:
- Begin by referring to the Garden Set-up flier from the previous lesson. Ask if they have chosen a location for their garden or container garden. Ask which types of containers they have decided to use.
- Introduce the topic of seeds by sharing seeds and nutrition. A brief fact on a great snack for them and their children that is healthful. Pass out seeds for parents to snack on while the lesson proceeds.
- Pass out the tomatoes, cups, spoons, and two re-sealable bags.
- Follow the steps on how to remove seeds from a tomato with a spoon and place the seeds in a cup.
- Allow parents to take home the seedless tomato in the plastic re-sealable bag. Cover the seeds in the cup with the second re-sealable bag and instruct parents to take home and let the seeds separate after adding water.
- Instruct parents on how to dry seeds and store seeds until future use.
- Begin part two of the lesson, which is on composting materials.
- Explain the difference between “brown” and “green” materials.
- Display items from home that can be used in compost.
- Explain which food items cannot be used in compost.
- Introduce the topic for the following lesson which will be on fertilizer and composting.
- Pass out chili plants.
- Show the class how to take out plants from plastic casing.
- Demonstrate how to extend root system before potting the plant.
- Demonstrate how deep to plant a starter. Root system should be entirely covered and the base of the plant where the stem meets the soil on that started should also be covered.
- Water the plant and have participants take the plant home to add to their first container garden.
APPENDIX K

Evaluation - Gault Week 1 (Formative)

1. Did you find today’s topic on “MyPlate” presented during the nutrition class interesting?
   YES        NO

2. Did you find today’s topic on the “Wolly Pockets” and “herbs” presented during the gardening class interesting?
   YES        NO

3. Have you ever done any gardening?
   YES        NO

4. What kinds of topics in nutrition or gardening interest you?

Comments:
APPENDIX K

Evaluación-Gault Semana 1

1. ¿Se le hizo el tema de “Mi plato” presentado durante la clase de nutrición interesante?
   Sí  No

2. ¿Se le hizo el tema de “bolsillos de Woolly” y “hierbas” presentada durante la clase de jardinería interesante?
   Sí  No

3. ¿Alguna vez a cultivado o plantado algo?
   Sí  No

4. ¿Cuáles temas de nutrición o jardinería le interesan?

Comentarios:
APPENDIX L

Evaluation- Gault Week 2 (Formative)

1. Did you find today’s topic on “fruits and vegetables” and “how to read a food label” presented during the nutrition class interesting?
   YES  NO

2. Did you find today’s topic on the “how to set up you garden” and “how to plant a seed” presented during the gardening class interesting?
   YES  NO

3. Have you done more gardening since you participated in these lessons?
   YES  NO

4. Have you tried making a recipe provided by this program at home?
   YES  NO
   Circle the recipe/s that you have tried:
   
   Mandarin Orange, Cilantro, and Avocado Salsa
   Clean Sweep Drink
   Parsley Potatoes

5. What kinds of topics in nutrition or gardening interest you?

Comments:
APPENDIX L

Evaluación-Gault Semana 2

1. ¿Se le hizo el tema de “frutas y verduras” y “como leer una etiqueta de nutrición” presentado durante la clase de nutrición interesante?
   Sí  No

2. ¿Se le hizo el tema de “como establecer su jardín” y “como plantar semillas” presentada durante la clase de jardinería interesante?
   Sí  No

3. ¿Alguna vez a cultivado o plantado algo?
   Sí  No

4. ¿Ha intentado alguna receta presentada por este programa?
   Sí  No
   Circule la receta/s que ha intentado:
   
   **Naranja Mandarina, el cilantro y salsa de aguacate**

   **Bebida de clean sweep**

   **Papas de perejil**

5. ¿Cuales temas de nutrición o jardinería le interesan?

   Comentarios:
APPENDIX M

Evaluation- Gault Week 3 (Formative)

1. Did you find today’s topic on “importance of eating breakfast” and “calcium” presented during the nutrition class interesting?
   YES       NO

2. Did you find today’s topic on the “seeds and composting” presented during the gardening class interesting?
   YES       NO

3. Have you done more gardening since you participated in these lessons?
   YES       NO

4. Have you tried making a recipe provided by this program at home?
   YES       NO
   Circle the recipe/s that you have tried:
   Spinach salad-week 2
   Mandarin Orange, Cilantro, and Avocado Salsa-week1
   Clean Sweep Drink- week1
   Parsley Potatoes- week1

5. What kinds of topics in nutrition or gardening interest you?

Comments:
APPENDIX M

Evaluación-Gault Semana 3

1. ¿Se le hizo el tema de “la importancia de desayunar” y “calcio” presentado durante la clase de nutrición interesante?
   Sí  No

2. ¿Se le hizo el tema de “las semillas y el compostaje” presentada durante la clase de jardinería interesante?
   Sí  No

3. ¿Ha hacho mas actividades de jardinería como plantar después de haber participado en estas clases?
   Sí  No

4. ¿Ha intentado alguna receta presentada por este programa?
   Sí  No

   Circule la receta/s que ha intentado:

   *Ensalada de espinacas-semana 2*

   *Naranja Mandarina, el cilantro y salsa de aguacate-semana 1*

   *Bebida de clean sweep-semana 1*

   *Papas de perejil-semana 1*

5. ¿Cuales temas de nutrición o jardinería le interesan?

Comentarios:
APPENDIX N

Summative Evaluation - Gault (Week 4)

1. Which nutrition topic was most and least useful? (circle most useful topic; put asterisk next to least useful topic)

   Week 1: MyPlate
   Week 2: Fruits and vegetables how to read a food label
   Week 3: importance of breakfast calcium

2. Which gardening topic was most and least useful? (circle most useful topic; put asterisk next to least useful topic)

   Week 1: Wolly Pockets herbs
   Week 2: how to setup garden how to plant seeds
   Week 3: how to dry seeds composting
   Week 4: antioxidants

3. Did you make any changes to your diet or eating habits because of this nutrition program?

   incorporate fruits in diet incorporate vegetables in diet
   incorporate whole grains in diet consume less salt
   pay attention to portion sizes eat breakfast
   incorporate herbs in diet consume less sugar
   incorporate calcium in diet consume less fat
   read nutrition food labels

4. Do you feel prepared to garden because of this gardening program?

   YES  NO

Comments:
APPENDIX N

Evaluación-Gault (Semana 4)

1. ¿Cuál tema de nutrición le fue más útil y menos útil? (circule tema más útil; ponga un estrella al menos útil)

*Semana 1:* Mi Plato

*Semana 2:* frutas y verduras como leer una etiqueta de nutrición

*Semana 3:* la importancia de desayunar calcio

2. ¿Cuál tema de jardinería fue más útil y menos útil? (circule tema más útil; ponga un estrella junto al menos útil)

*Semana 1:* bolsillos de Woolly hierbas

*Semana 2:* como establecer su jardín como plantar semillas

*Semana 3:* como secar semillas compostaje

*Semana 4:* Antioxidantes

3. ¿Hizo algún cambio/s a su dieta o hábitos alimenticios debido a este programa de nutrición?

incorporé frutas en mi dieta incorporé verduras en mi dieta
incorporé granos (integrales) en mi dieta consumo menos sal
pongo atención a las porciones desayuno
incorporé hierbas en mi dieta consumo menos azúcar
incorporé el calcio en mi dieta consumos menos grasas
leo etiquetas de nutrición

4. ¿Se siente preparado/o para practicar la jardinería debido a este programa de jardinería?

SI NO

Comentarios:
APPENDIX O

Fruit and Yogurt Smoothie Recipe

1 quart (4 cups) container low or non-fat strawberry (or any berry) flavored yogurt

10 oz frozen berries (strawberry if using strawberry yogurt; blueberries if using blueberry yogurt). Keep frozen till you add them to the blender.

10 baby carrots

1/4 c apple juice

These would be put into blender till smooth.

Make 3 full recipes, bring 2-oz paper cups and just put a little bit into each cup. Should serve close to 75 or 100.
Spinach Salad Recipe in Spanish and English

Ensalada de espinaca con naranjas, arándanos, chabacanos, y nueces.

Ingredientes:
1 bolsa (10 onzas) de espinaca
2 naranjas peladas y picadas
Tomates cherry
Nueces picadas (opcional)
Chabacanos deshidratados picados
Queso mozzarella
Vinagreta de vino tinto con aceite de oliva

Direcciones
Lave y seque la espinaca y colóquela en un sarten grande. Agregue las naranjas, los tomates, las nueces (opcional), los arándanos y los chabacanos. Mezclarlo con la vinagreta. Añada un poco de queso mozzarella rayado en la ensalada.

Spinach Salad with Oranges, Walnuts, Cranberries & Apricots

A nutritious lunch filled with lots of vegetables and fruits

Ingredients
1 bag (10 ounces) baby spinach
2 oranges, peeled, and chopped
Grape tomatoes 1 pint
Chopped walnuts 1/3 cup
Dried cranberries 1/3 cup
Chopped dried apricots 1/3 cup
Crumbled feta cheese 1/2 cup
Red wine & olive oil vinaigrette

Directions
Wash and dry baby spinach and set aside in a large bowl. Add oranges, tomatoes, walnuts, cranberries, and apricots. Toss with vinaigrette. Sprinkle tossed salad with feta cheese.
### Food Labels Claim Handout

<table>
<thead>
<tr>
<th>Nutrient Claim</th>
<th>means…</th>
</tr>
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<tbody>
<tr>
<td>Calorie free</td>
<td>less than 5 calories per serving</td>
</tr>
<tr>
<td>Low calorie</td>
<td>40 calories or less per serving</td>
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<tr>
<td>Fat free</td>
<td>Less than 0.5 grams of fat per serving</td>
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<tr>
<td>Low fat</td>
<td>3 grams or less of total fat</td>
</tr>
<tr>
<td>Low saturated fat</td>
<td>1 gram or less saturated fat per serving</td>
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<tr>
<td>Saturated fat free</td>
<td>Less than 0.5 g of saturated fat Per serving and the amount of trans fatty acids does not exceed 1% of the total fat</td>
</tr>
<tr>
<td>Reduced fat</td>
<td>At least 25% less fat than the regular version</td>
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<tr>
<td>Less fat</td>
<td></td>
</tr>
<tr>
<td>Sugar free</td>
<td>Less than 0.5 g of sugar per serving</td>
</tr>
<tr>
<td>Reduced sugar</td>
<td>At least 25% less sugar per serving than the regular version</td>
</tr>
<tr>
<td>High fiber</td>
<td>5g or more fiber per serving</td>
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<tr>
<td>Good source of fiber</td>
<td>2.5 g to 4.9 g of fiber per serving</td>
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<tr>
<td>Cholesterol free</td>
<td>Less than 2 mg per serving</td>
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<td>Low cholesterol</td>
<td>20 mg or less per serving</td>
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<tr>
<td>Reduced cholesterol</td>
<td>At least 25% less cholesterol per serving than the regular version</td>
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<tr>
<td>Less cholesterol</td>
<td></td>
</tr>
<tr>
<td>Sodium free; Salt free</td>
<td>Less than 5 mg of sodium per serving</td>
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<tr>
<td>Low sodium</td>
<td>140 mg of sodium or less</td>
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<tr>
<td>Reduced sodium</td>
<td>At least 25% less sodium per serving than the regular version</td>
</tr>
<tr>
<td>Less sodium</td>
<td></td>
</tr>
<tr>
<td>Good Source of… Contains…Provides…</td>
<td>these terms mean that one serving of a food contains 10-19% of the Daily Value</td>
</tr>
<tr>
<td>Excellent Source of… High in…Rich in…</td>
<td>these terms mean that one serving of a food contains 20% or more of the Daily Value</td>
</tr>
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</table>

**Lean**
Meat, poultry, seafood and game meat with less than 10 g fat, 4 g saturated fat, and 95 mg cholesterol per serving.

**Extra lean**
Meat, poultry, seafood and game meat with less than 5 g fat, 2 g saturated fat, and 95 mg cholesterol per serving.

**Lite or Light**
This can mean two things. The product can have 50% less fat than the higher fat version or the product contains 1/3 fewer calories. For example Dreyer’s vanilla ice cream contains 150 calories per ½ cup serving and 10 grams of fat. The Dreyer’s light ice cream contains 100 calories per ½ cup serving and 3.5 grams of fat.
The term “light” can also refer to the texture and color as long as the label explains it. For example, “light brown sugar” or “light olive oil.”

**Reduced in…** This claim means that the product contains at least 25% less of a nutrient than the regular version. For example, Nabisco’s Original Oreo cookies contain 160 calories and 7 grams of fat per serving. The reduced fat version contains 150 calories and 4.5 grams of fat. Other words for “reduced in” include “lower in” and “fewer.”
Elementary School Gardening Project

BY MIRENA MENDEZ

Woolly Pocket Gardens

What are Woolly Pockets?
Woolly Pockets are flexible, breathable gardening containers. The style we chose was designed to be hung on walls or fences of your school for vertical gardening. You can use Woolly Pockets both indoors and out.

Who makes Woolly Pockets?
The Woolly Pocket Garden Company provides the pockets for the garden at your school. They are a family owned and operated company based in Los Angeles and Phoenix.

How are CSUN and the Marilyn Magaram Center Involved?
The Marilyn Magaram Center services that are specific to food science, nutrition, and dietetics. The Marilyn Magaram center donated funds for your school to have an education based garden.

You and Your Children

What wil your Children be learning?
Your children will be learning how to garden from planting a seed to watching the growth of their plants throughout the year. They will learn how easy it is to grow their own food and care for a garden. Through this process, they will be educated about produce and the consumption of different fruits and vegetables. Overall this project will focus on increasing fruits and vegetables in your child’s diet.

How can you get involved?
You can get involved through creating your own garden at home, encouraging more fruits and vegetables at home, involving your children in food preparation, and coming to parent events. These events will be held throughout the year and a calendar will be sent out with more information.

Parent Questions?
Please contact
Mirena Mendez
Mirena.mendez.688
@my.csun.edu
Escuela Primera
Proyecto de Jardinería
POR MIRENA MENDEZ

El Jardín de Woolly Pockets

¿Qué son los bolsillos Woolly? Los bolsillos Woolly son contenedores de jardines flexibles y transpirables. El estilo que escogimos está diseñado para ser colgado en las paredes o vallas de su escuela. Usted puede usar los bolsillos Woolly tanto en interiores como en exteriores.

¿Quién hace los bolsillos Woolly? La compañía de jardines de bolsillos Woolly ofrece los contenedores para el jardín de su escuela. La compañía es una empresa familiar que opera con sede en Los Ángeles y Phoenix.

¿Cómo participan La Universidad Estatal de California, Northridge y el Centro Marilyn Magaram? El centro Marilyn Magaram está ubicado en las Universidades Estatales de California, Northridge y el Centro Marilyn Magaram. ¿Quiénes son los participantes en el proyecto? Profesores: Joyce Gilbert, PhD, RD Director Ejecutivo del centro Marilyn Magram Ritamari Little, MS, RD Director Asociado del centro Marilyn Magram Teri Lisagor, EdD, MS, RD Educador: Mirena Mendez, BS

Un bolsillo Woolly.

Ustedes y Sus Hijos

¿Qué van a aprender sus hijos? Sus hijos aprenderán como plantar una semilla y ver cómo crecen sus plantas en el transcurso del año. Ellos aprenderán lo fácil que es cultivar sus propios alimentos y el cuidado de su jardín. Van aprender que fácil es cultivar su propio jardín. A través de este proceso van a ser educados acerca de la producción y el consumo de diferentes frutas y verduras. En general, este proyecto se centrará en aumentar las frutas y verduras en la dieta de su hijo.

¿Cómo usted puede participar? Usted puede participar creando su propio jardín en casa, fomentando el consumo de más frutas y verduras, involucrando a sus hijos en la preparación de alimentos, y yendo a los eventos para padres. Estos eventos se llevarán a cabo durante todo el año y un calendario con información será enviado a casa.

¿Preguntas de los Padres? Por favor póngase en contacto con Mirena Mendez Mirena.mendez888
Growing Carrots Indoors
California State University, Northridge
By Mirena Mendez

Materials
Carrot Seeds
Spray Bottle
Rich Soil
Sand
Large Container

Carrots are one of the most common vegetables grown indoors and easy to grow and maintain in small spaces. All you need are a few materials and sunlight. Materials can be found at any home and garden store. Follow these six simple steps and be on your way to having your own carrot garden!

1. Gather the materials listed.
2. Place large container in a sunny area of your home. Carrots need 6-8 hours of sunlight a day.
3. Make a mixture of 1/2 rich soil and 1/2 sand. Place in container.
4. Put seeds in soil about 2” apart from one another and cover gently with soil.
5. Fill spray bottle with water. Spray covered seeds with water. Keep spray bottle to continue watering your carrots. You do not need to water them heavily. Water only when soil is dry again. Carrots do not like a lot of water.
6. Keep watering your carrots and make sure they get plenty of sunlight. Harvest according to instructions on package.

Enjoy! Information provided by: ehow.com

Nutrition Fact: Carrots are a source of many vitamins, especially vitamin A. They help promote healthy skin, eyesight, bones, and hair.

Cultivo de Zanahorias en Interiores
La Universidad Estatal de California, Northridge

Materiales
Semillas de Zanahorias
Pulverizador
Suelo fértil
Arena
Gran contenedor

Las zanahorias son una de las verduras más comunes para cultivar dentro de casa, es fácil de cultivar en espacios pequeños. Lo único que se necesita son unos pocos materiales y a la luz solar. Estos materiales pueden ser encontrados en cualquier tienda de el hogar y el jardín. Siga estos seis pasos sencillos y de esta manera usted tenderá su propio jardín de zanahorias!

1. Recoge los materiales enumerados
2. Ubica el contenedor en una zona soleada de su hogar. Las zanahorias necesitan 6-8 horas de sol al día.
3. Haga una mezcla de 1/2 suelo fértil y 1/2 arena. Coloque esta mezcla en el contenedor.
4. Ponga las semillas en el suelo separados 2” uno de otro y cubre las suavemente con la tierra.
5. Llene el pulverizador con agua. Pulvericé las semillas con agua. Mantenga el pulverizador para continuar regando. Usted no necesita regar fuertemente. Solamente necesita regar otra vez cuando el suelo está seco. No sobre riegue la planta de zanahoria.
6. Sigue regando sus zanahorias. Asegúrese de que tengan suficiente luz solar. Cosecha de acuerdo con las instrucciones del paquete. ¡Disfruta! Información proporcionada por: ehow.com

La nutrición hecho: Las Zanahorias son una fuente de muchas de las vitaminas, en particular de vitamina A. Contribuyen a promover piel sana, la vista, los huesos, y el cabello.
Growing Zucchini Indoors
California State University, Northridge
By Mirena Mendez

Zucchini is a summer squash that grows best in full sun and warm conditions. Most houses are kept warm enough all year to grow zucchini inside. A temperature range of 60 to 80 degrees is suitable, but 65 to 75 is ideal. All you need are a few materials and sunlight. Materials can be found at any home and garden store. Follow these five simple steps and be on your way to growing your own squash!

1. Gather the materials listed.
2. Place large container in a sunny area of your home. Zucchini need 6-8 hours of sunlight a day.
3. Place seeds or starter in a container over a 12 inch tall and two feet across hill.
4. Fill spray bottle with water. Spray covered seeds with water. Keep spray bottle to continue watering your carrots. You do not need to water them heavily.
5. Keep watering your zucchini and make sure they get plenty of sunlight. If needed move to larger container. They may be harvested in 63 days. Enjoy!

Nutrition Fact: Zucchini is a good source of vitamin A and fiber. Fiber helps to lower cholesterol.

Cultivo de Calabaza en Interiores
La Universidad Estatal de California, Northridge

La calabaza crece mejor en el verano con pleno sol y temperaturas cálidas. La mayoría de las casas son suficientemente cálidas todo el año para cultivar calabaza adentro. Una amplia gama de temperaturas de 60 a 80 grados es adecuado, pero 65 a 75 es ideal. Todo lo que se necesita son unos pocos materiales y la luz solar. Estos materiales pueden ser encontrados en cualquier tienda para el hogar y el jardín. Sigas estos cinco pasos simples y de esta manera usted tendrá su propia calabaza!

1. Recoge los materiales enumerados
2. Ubica el contenedor en una zona soleada de su hogar. La calabaza necesita 6-8 horas de sol al día.
3. Siembre las semillas o planta pequeña en un contenedor sobre un montículo de 12 pulgadas del alto y dos pies de lado a lado
5. Sigas regando su calabaza. Asegúrese de que tengan suficiente luz solar. Es necesario mover la calabaza a un contenedor más grande. Puede ser cosechada en 63 días. Disfruta!

La nutrición hecho: La calabaza es una fuente de muchas de las vitaminas, en particular de vitamina A y fibra. La fibra ayuda bajar el colesterol.
Salsa with Green Tomatoes (tomatillos)

Ingredients:
1 Qt water
12 whole green tomatoes (tomatillos)
7 medium cloves garlic, whole
4-8 chile serranos
3 Tbsp white onion, coarsely chopped, salt to taste.
3/4 cup cilantro leaves, with a bit of stem.
For the Garnish
1/4 cup white onion, chopped
1/4 cup cilantro, chopped.

Directions:
Boil tomatillos, 4 garlic cloves, 4 or more chiles and onion. Cook over medium heat for 20 minutes and remove from heat. Drain and reserve cooking water. Cool. Meanwhile, puree 3 garlic cloves in a molcajete or food processor, adding salt to taste. Add cilantro and blend. Add tomatillo mixture. Add a little cooking water and blend. The sauce should have a slightly thick consistency. Correct seasoning. To serve, pour green sauce into a molcajete and garnish with onion and cilantro.

Pico de Gallo

Servings: Makes 2 1/4 cups

Ingredients:
1 green bell pepper, diced
1/2 pound fresh diced tomatoes
1/3 cup chopped fresh cilantro
1/4 cup finely chopped white onion
2 jalapeno chilies, finely chopped
2 tablespoons fresh lime juice
1/4 teaspoon salt

Directions
Combine all ingredients in a small bowl. Cover and refrigerate until chilled, 30 minutes.

Quick facts about chile:
*Domesticated in Ecuador more than 6000 years ago
*Cultivated in Central and South Americas
* Chile is used in dishes from countries such as Mexico, India, Thailand, Portugal, Spain, Philippines, China, Indonesia, Korea and Japan.

Uses:
*Condiment
*Pain relief
*Antiseptic
*Helps with cholera symptoms
*To get rid of bed bugs

Health benefits of chile:
*Contains capsaicin, chemical that gives euphoric (extreme excitement and happiness) feeling
*Capsaicin creams helps with reduce pain of arthritis and diabetic neuropathy
*Reduce LDL cholesterol levels, which are the bad kind
*Improve blood flow to heart
*May protect against cancer
Salsa Ranchera

**Ingredients:**
2 tomatoes
1/2 white onion
2 garlic cloves
1 tablespoon of oil
serrano chiles, to taste
oregano, to taste
lime juice
salt

**Directions:**
Submerge the tomatoes in boiling water for a few seconds. Peel them, dice them and put them in what will be your salsa bowl. Chop up the onion, chili, and garlic and mix with the tomato. Add the oil and the lime juice and sprinkle with oregano.

Habanero Salsa

**Ingredients**
2 grilled habaneros
1 grilled onion
1 grilled garlic clove
olive oil
A little bit of cilantro
Salt and black pepper, to taste

**Directions:** blend ingredients and season with salt, black pepper and cilantro.

---

How can salsas help you lose weight?

*Use salsas instead of mayonnaise, ketchup, salad dressings, and barbecue sauce. Salsa have far less calories and they are very flavorful!!

*Eating chillies helps increase your energy expenditure.

Did you know...

Chillies have twice as much Vitamin C than citrus foods like oranges, lemons, kumquats, and grapefruit.

Chillies retain 70% of the Vitamin C when cooked.

Chillies are a great decongestant!

---

<table>
<thead>
<tr>
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<th><strong>Nutrients</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Chillies</td>
<td>Vitamin C, vitamin A, Iron, fiber</td>
</tr>
<tr>
<td>Tomatoes</td>
<td>Vitamin A, Vitamin C, Magnesium, Phosphorus, Potassium, fiber</td>
</tr>
<tr>
<td>Green tomatoes</td>
<td>Potassium, Phosphorus, Vitamin C, Vitamin A, Magnesium, Calcium,</td>
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<tr>
<td>Onion</td>
<td>Potassium, Magnesium, Phosphorus, Vitamin C, Calcium, Folate and fiber</td>
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<tr>
<td>Cilantro</td>
<td>Vitamin K, fiber</td>
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<tr>
<td>Garlic</td>
<td>Potassium, Phosphorus, Calcium, fiber</td>
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<tr>
<td>Olive oil</td>
<td>Monounsaturated fats, polyunsaturated fats</td>
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<tr>
<td>Black pepper</td>
<td>Potassium, Calcium, Vit A</td>
</tr>
</tbody>
</table>
Salsas y su salud

Por Silvia Juarez Viveros Editado por Elina Cano

APPENDIX U

Salsa con tomatillos

Ingredientes:
1 Quarto de galón de agua
12 tomatillos enteros
7 ojos de ajos medianos
4-8 chile serranos
3 cucharadas de cebolla blanca, picada
Sal a gusto
3/4 taza de cilantro
Para el adorno
1/4 taza cebolla blanca, picada
1/4 taza de cilantro, picado.

Direcciones:
Herve los tomatillos, con 4 ojos de ajo, 4 o mas chiles y cebolla. Cocine estos ingredientes sobr euna llama mediana por 20 minutos. Vacie los ingredientes y permita que se enfrién pero reserve un poco de agua. Al mismo tiempo, muela 3 ojos de ajo en una licuadora o molcajete. Añada sal a gusto. Incorpore el cilantro y muela. Incorpore la mezcla de tomillo Añade un poco de la agua que reservó y licue. La salsa debe tener un consistencia espesa. Adorne con cebolla y cilantro.

Pico de Gallo

Porción: Produce 2 3/4 tazas

Ingredientes:
1 chile de campana verde, cortados en cubos
1/2 libra de tomates cortados en cubos
1/3 taza de cilantro picado
1/4 taza de cebolla blanca picada
2 jalapeños, picados
2 cucharadas de jugo de limón
1/4 cucharadita de sal

Direcciones:
Combina todos los ingredientes en un tazón chico. Cubre el tazón y aguárdalo en el refrigerador, por 30 minutos.

Datos de chile:
*Fueron domesticados en Ecuador más de 6000 años
*Fueron cultivados en América Central y Sur
*El chile ha sido incorporado en los platillos de muchos países como México, India, Tailandia, Portugal, España, Filipinas, China, Indonesia, Corea y Japón.

Usos:
*Condimento
*Para el alivio de dolor
*Antiséptico
*Quitá síntomas de cólera
*Eliminar los chinches

Beneficios para la salud:
* Contiene capsaína, un químico que produce un sensación de euforia (excitación y alegría)
* Las cremas que contiene capsaiín reducen el dolor asociado con el artritis
* Reduce el colesterol malo (LDL)
* Mejora el flujo de sangre al corazón
* Puede proteger contra el cáncer

Mas recetas en la pagina siguiente
Salsas y su salud

Salsa Ranchera

Ingredientes:
- 2 tomates
- 1/2 cebolla
- 2 ajos
- 1 cucharada de aceite
- Chiles Serrano, a gusto
- Orégano, al gusto
- Jugo de limón
- Sal

Direcciones: Sumérja los tomates en agua hirviendo por algunos segundos. Pele los tomates, córtelos en cuadritos, y ponga los en un tazón. Pique la cebolla, chile, y ajo y mézclelos con el tomate. Añade el ajo con jugo de limón y espolvoree con orégano.

Salsa Habanero

Ingredientes
- 2 chiles asados
- 1 cebolla asada
- 1 ajo asado
- aceite de oliva
- Un poco de cebolla
- Sal y pimienta, al gusto

Direcciones: licue los ingredientes y sazone con sal, pimienta y cilantro.

¿Cómo pueden las salsas ayudar a reducir su peso?
*Use salsas en vez de mayonesa, ketchup, aderezos, y salsa de barbacoa. Las salsas contienen MENOS calorías y tienen mucho sabor.

*Los chiles aumentan las calorías que usted quema.

Sabia usted que...

Los chiles contienen el doble de la vitamina C que las comidas cítricas como las naranjas, limones, mísperos, y las toronjas.

Los chiles retienen 70% de la vitamina C aunque sean cocinados.

Los chiles son un buen descongestionante!
Calcium: Don’t Forget your Greens

What are they?

Featured: Kale

Did you know kale is...

* Cold weather crop that tastes best after it has been touched by frost
* Can be grown during any season in most climates
* Can tolerate temperatures 20 degrees Fahrenheit but will turn bitters and become tough at 80 degrees Fahrenheit or higher

1. Pot or container must be 6 square inches
2. Plant seeds at the center of the pot ½ inch deep and 3 inches apart. Make sure that in winter months that the kale sits in full sunlight. Seeds will germinate in cool soil, but they spout best when the soil temperature is around 70 degrees. The temperatures must be at least 40 degrees.
3. Keep kale watered because it likes moist soil. Keeping the soil moist will also help keep the leaves sweet and crisp.
4. Fertilize and compost to help keep your kale producing. Make sure to pick off wilting leaves.
5. Kale is usually ready for harvest 70-95 days from seed. You can begin to cut off kale when the plant is about 8-10 inches high. If you decide to harvest the entire plant, cut it down to 2 inches above the soil and the plant will sprout new leaves in 1 to 2 weeks.

Why should I eat them?

Provide the following:
* Calcium - needed for bone health
Daily Requirement:
Adults:
1,000 mg (19-50 yrs)
1,200 mg (51 yrs+)
* Fiber - needed for digestion, control of blood glucose and cholesterol levels
* Vitamin C - antioxidant that can help prevent cancer
* Beta-carotene - vision, bone health
* Phytochemicals - prevent cancer & heart disease

<table>
<thead>
<tr>
<th>Vegetable/herb, raw</th>
<th>Calcium content</th>
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<tr>
<td>Kale, 100 grams</td>
<td>135 mg</td>
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<tr>
<td>Asparagus, 1 cup</td>
<td>32 mg</td>
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<tr>
<td>Artichoke, medium</td>
<td>56 mg</td>
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<tr>
<td>Broccoli, 1 cup</td>
<td>43 mg</td>
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<tr>
<td>Cabbage, 1 cup</td>
<td>36 mg</td>
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<tr>
<td>Celery, 1 cup</td>
<td>40 mg</td>
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<td>Green peas, 1 cup</td>
<td>37 mg</td>
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<td>Leek onion, 1 cup</td>
<td>53 mg</td>
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<td>Lettuce, 1 cup</td>
<td>13 mg</td>
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<tr>
<td>Parsley, 1 cup</td>
<td>83 mg</td>
</tr>
</tbody>
</table>

Kale, blueberry and quinoa salad

Serves 4 to 6 as a side

Ingredients:
2 cups cooked quinoa, cooled
1 cup fresh blueberries
1 1/2 cup shredded kale
3/4 cup crumbled feta
1/2 cup sliced almonds
3 tablespoons fresh lemon juice
3 tablespoons olive oil
Salt and fresh ground pepper

Directions: In a large bowl, combine quinoa, blueberries, kale, feta, and almonds. Mix until well combined. Add olive oil and lemon juice and toss to fully coat.
APPENDIX V

Calcio: No se te olviden las verduras verdes

¿Qué son las verduras?

Verdura presentada: Col

1. Maceta o contenedor de 6 pulgadas cuadradas
2. Plante las semillas en el centro de la maceta a ½ pulgadas de hondo y 3 pulgadas aparte. Asegúrese que el col reciba luz del sol durante los meses de invierno. Las semillas germinaran en la tierra fresca pero retóñan cuando la temperatura llega a 70 grados. La temperatura tiene que estar por lo menos a 40 grados.
3. Mantenga el col regado porque le gusta la tierra húmeda y haciendo esto también mantendrá las hojas frescas.
4. Use fertilizante y abonos para asegurarse que el col siga cosechando y quite las hojas marchitas.
5. El col está listo para cosechar a 70-95 días de ser plantadas. Se puede cortar cuando la planta esta a 8-10 pulgadas de altura. Si decide cosechar la planta entera, córtela a 2 pulgas arriba de la tierra y el col retoñará en 1 a 2 semanas.

¿Sabía usted que el col...

* Es un cultivo del invierno que sabe mejor después que ha sido expuesto al lo helado
* Puede crecer durante cualquiera temporada en cualquier clima
* Toleramen tras de 10-20 grados Fahrenheit pero se amarga y endurece a los 80 grados Fahrenheit o más alto

Por qué es bueno consumirlas?

Oferen estos nutrientes:
1. Calcio- esencial para la salud de sus huesos
2. Calcio- esencial para la salud de sus huesos
3. Fibra- ayuda con la digestión,
4. Regimen de niveles de azúcar
5. Vitamina C- antioxidante que puede prevenir el cáncer
6. Beta-caroteno- ayuda con la visión y salud de los huesos
7. fitoquímicos- prevención del cáncer y enfermedad del corazón

<table>
<thead>
<tr>
<th>Verdura/hierba, cruda</th>
<th>Nivel de calcio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Col, 100 gramos</td>
<td>135 mg</td>
</tr>
<tr>
<td>Espárrago, 1 taza</td>
<td>32 mg</td>
</tr>
<tr>
<td>Alcachofa, mediana</td>
<td>56 mg</td>
</tr>
<tr>
<td>Brócoli, 1 taza</td>
<td>43 mg</td>
</tr>
<tr>
<td>Repollo, 1 taza</td>
<td>36 mg</td>
</tr>
<tr>
<td>Apio 1 taza</td>
<td>40 mg</td>
</tr>
<tr>
<td>Chicharron, 1 taza</td>
<td>37 mg</td>
</tr>
<tr>
<td>Ají porro, 1 taza</td>
<td>53 mg</td>
</tr>
<tr>
<td>Lechuga, 1 taza</td>
<td>13 mg</td>
</tr>
<tr>
<td>Perejil, 1 taza</td>
<td>83 mg</td>
</tr>
</tbody>
</table>

Ensalada de col, mora, y quinoa

De 4 a 6 porciones

Ingredientes:
1. 2 tazas de quinoa cocinadas, y endiada
2. 1 taza de moras
3. 1/2 tazas de col en tiras
4. 3/4 taza de queso feta desmorañado
5. 1/2 taza de almendras rebanadas
6. 3 cucharadas de jugo de limón
7. 3 cucharadas de aceite de oliva
8. Sal y pimienta

Preparación: combine la quinoa, moras, col, feta, y almendras. Mezcle estos ingredientes. Añada el aceite de oliva y jugo de limón y mezcle otra vez.
APPENDIX W

Antioxidant Benefits

By Mirena Mendez and Silvia Viveros Juarez

INCREASE ANTIOXIDANTS BY INCREASING FRUITS AND VEGETABLES

Help Protect Your Healthy Cell from Damage

<table>
<thead>
<tr>
<th>FRUITS</th>
<th>VEGETABLES</th>
<th>OTHER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Here are some great fruit examples:</td>
<td>Here are some great vegetable examples:</td>
<td>Here are some examples of other great foods:</td>
</tr>
<tr>
<td>Citrus Fruits</td>
<td>Kale</td>
<td>Corn oil</td>
</tr>
<tr>
<td>Apricots</td>
<td>Spinach</td>
<td>Safflower oil</td>
</tr>
<tr>
<td>Mangoes</td>
<td>Brussels Sprouts</td>
<td>Mixed nuts</td>
</tr>
<tr>
<td>Watermelon</td>
<td>Alfalfa Sprouts</td>
<td>Brazil nuts (Se)</td>
</tr>
<tr>
<td>Papaya</td>
<td>Broccoli</td>
<td>Meats (Se)</td>
</tr>
<tr>
<td>Blueberries</td>
<td>Beets</td>
<td>Tuna (Bo)</td>
</tr>
<tr>
<td>Blackberries</td>
<td>Red bell peppers</td>
<td>Dairy (A)</td>
</tr>
<tr>
<td>Strawberries</td>
<td>Onions</td>
<td>Fish (A)</td>
</tr>
<tr>
<td>Raspberries</td>
<td>Egg plant</td>
<td>Liver (A)</td>
</tr>
<tr>
<td>Plums</td>
<td>Carrots</td>
<td>Sunflower seeds (E)</td>
</tr>
<tr>
<td>Red Grapes</td>
<td>Tomatoes (cooking)</td>
<td>Rice (Se)</td>
</tr>
<tr>
<td></td>
<td>Squash (cooking)</td>
<td>Egg yolks (A)</td>
</tr>
</tbody>
</table>

Recipe: Fruit Salad
2 cups of diced apples
1 cup of sliced banana
1 cup sliced strawberries
1 cup of chopped walnuts
1 cup of vanilla yogurt
3/4 teaspoon of cinnamon
Instructions: Mix in all ingredients. Sprinkle with cinnamon.

Recipe: Avocado Salad
2 avocados
1 chopped onion*
1 bell pepper chopped*
1 tomato chopped*
1/4 cilantro
1/2 lime juice
Salt & pepper to taste
Instructions: Combine all ingredients and season.

Recipe: Almond Apple Salad
4 tart green apples chopped
1/4 cup almonds*
1/4 cup of cranberries
1/4 cup dried cherries*
1 (8 ounce) container of vanilla yogurt
Instructions: mix all ingredients together.

Normal body functions such as breathing or physical activity produce free radicals that attack healthy cells. Antioxidants help to protect your cells from damage by these free radicals. That is why it is important to intake foods that contain vitamin C, vitamin E, and carotenoids which include beta-carotene, lycopene and lutein. Another nutrient that helps to fight antioxidants is selenium. Learn about which fruits and vegetables will help you fight off disease and stay healthy!

Gardening Tips for Growing Strawberries Indoors

1. Visit your garden supply store and purchase high quality soil, a large container, plant fertilizer, and strawberry seeds. Red Alpine strawberries grow best indoors.

2. Fill your container 3/4 full. Make many finger holes in the dirt. Add a few seeds to each hole and cover with soil. Cover with soil.

3. Add Fertilizer diluted to 1/2 strength.

4. Set container in sunny window or enclosed porch. Fertilize every 10 days.

5. Plants will bloom with white flowers and fruit in a few months. They will keep producing for 3 years. The berries will be small but sweet.
APPENDIX W

Los Antioxidantes y sus Beneficios

Por Mirena Mendez Silvia Juarez Vivieros

Funciones normales del cuerpo como la respiración y la actividad física producen radicales libres que dañan a las células sanas del cuerpo. Los antioxidantes protegen a tus células contra este daño y por eso es importante consumir comidas que contienen vitamina C, vitamina E, y carotenoides que incluyen la beta-carotenos, el licopeno, y luteína. Otro nutriente que combate los radicales libres es el selenio. Aprende sobre cuales frutas y vegetales pueden ayudarte a prevenir enfermedades y manténgase saludable.

<table>
<thead>
<tr>
<th>FRUTAS</th>
<th>VEGETALES</th>
<th>OTRO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Las Siguenes son buenas opciones:</td>
<td>Las Siguenes son buenas opciones:</td>
<td>Las Siguenes son buenas opciones:</td>
</tr>
<tr>
<td>• Frutas Citricas</td>
<td>• Col</td>
<td>• Aceite de maíz</td>
</tr>
<tr>
<td>• Chabacanos</td>
<td>• Espinacas</td>
<td>• Aceite de alazor</td>
</tr>
<tr>
<td>• Mangos</td>
<td>• Repollitos de Bruselas</td>
<td>• Nueces mezclados</td>
</tr>
<tr>
<td>• Sandía</td>
<td>• Alfalfa</td>
<td>• Nueces brasileñas (Se)</td>
</tr>
<tr>
<td>• Papaya</td>
<td>• Brocoli</td>
<td>• Carnes (Se)</td>
</tr>
<tr>
<td>• Moras azules</td>
<td>• Betabel</td>
<td>• Atún (Se)</td>
</tr>
<tr>
<td>• Moras negras</td>
<td>• Chiles campana rojo</td>
<td>• Productos lacteos (A)</td>
</tr>
<tr>
<td>• Fresas</td>
<td>• Cebollas</td>
<td>• Pescado (A)</td>
</tr>
<tr>
<td>• Frambuesas</td>
<td>• Berenjena</td>
<td>• Hígado (A)</td>
</tr>
<tr>
<td>• Ciruelas</td>
<td>• Zanahoria</td>
<td>• Semillas de girasol (E)</td>
</tr>
<tr>
<td>• Uvas Rojosas</td>
<td>• Tomates (cocinar)</td>
<td>• Arroz (Se)</td>
</tr>
<tr>
<td></td>
<td>• Calabacitas (cocinar)</td>
<td>• Lemas de huevo (A)</td>
</tr>
</tbody>
</table>

Receta: Ensalada de Fruta
2 tazas de manzanas en cuadritos
1 taza de plátano rebanado
1 taza de fresas rebanadas
1 taza de nueces
1 taza de yogur de vainilla
3/4 cucharadita de canela

Instrucciones: Mezcla todos los ingredientes.

Receta: Ensalada de aguacate
2 aguacates
1 cebolla picada
1 chile de campana picado
1 tomate picado
1/4 taza de limón
Sal y pimienta a gusto

Instrucciones: Mezcla todos los ingredientes.

Receta: Ensalada de almendras y manzana
4 manzanas verdes picadas
1/4 taza de almendras
1/4 taza de arándanos
1/4 taza de cerezas secas
1 (8 onzas) contenedor de yogur de vainilla

Instrucciones: Mezcla todos los ingredientes.

Instrucciones para crecer fresas en el interior de su hogar
1. Visite su tienda de jardinería y compre tierra de alta calidad, un envase grande, fertilizante para plantas, y semillas de fresas. Fresas de lo alpinos rojos crecen mejor en los interiores.
2. Llene ¼ del espacio del envase. Haga hoyos con sus dedos en la tierra. Añade pocas semilla a cada hoy y cúbralo con tierra.
3. Añade fertilizante diluido a ¼ de fuerza o poder
4. Ponga el envase en una ventana que recibe mucho sol o porche y fertilice cada 10 días.
5. Las plantas florecerán con flores blancas dentro de pocos meses y producirán por 3 años. La fresas serán pequeñas pero dulce.
Setting up your First Garden

Special points of interest:
- Location of your garden.
- Containers for your garden.
- Soil for your garden.
- Nutrients for your garden.

Location and Containers for your Indoor or Outdoor Garden

**Locations**
Gardens can be set up anywhere that receives enough sunlight. Most vegetables will need at least 5 hours of direct sunlight but grown best with 8-10 hours. You can also provide reflective materials around the plant such as aluminum foil and white surfaces to increase light exposure. Outdoor locations include:
- Door steps
- Balconies
- Patios
- Walls

Indoor locations include:
- Window sills
- Kitchen counters
- Back doors

**Containers**
You can plant in any type of container as long as it has holes in the bottom or a way to drain from the bottom. Here are some ideas:
- 1 Gallon buckets
- 1 Gallon milk jug
- 2 Liter soda bottle
- Garden pots
- Soil bags
- Baskets

Containers for vegetable gardening must be:
- Large enough to support plants
- Hold soil without spilling
- Have adequate drainage
- Never have held products that would be toxic to plants or people.

**Supplies:**
- Sunny Location
- Potting Container
- Soil
- Soil Nutrients
- Water
- Small Garden Shovel
- Gloves (Optional)

**Soil and Soil Nutrients**

**Soil**
A light weight potting mix is required. The soil must be porous in order to support plant growth because roots require air and water. Packaged soil is good for container gardening and is most convenient. If a lot of packaged soil is needed this may become expensive. In this case, try mixing your own soil. A quick recipe for a container mix is:

1. 1 part compost
2. 1 part garden soil
3. 1 part coarse sand or a mix of vermiculite and perlite.

These ingredients can be purchased at the nearest garden center.

**Soil Nutrients**
Soil needs nutrients to be able to feed the plants. The best way to get these nutrients is by making homemade compost. If you don’t have any on hand the next best thing is bagged products. Once you have the nutrients for your soil you can blend in the compost with the soil or place a layer on top of the soil. The next lesson will address making your own composting or learning which products you can purchased in stores.
Configura de Su Primer Jardín

Puntos De Interés:
- Ubicación de su jardín.
- Los contenedores para su jardín.
- Suelo de su jardín.
- Los nutrientes para su jardín.

Ubicación y Contenedores para Su Jardín Interior o Exterior

Ubicaciones
Los Jardines pueden ser configurados en cualquier lugar que reciba suficiente luz solar. La mayoría de los vegetales necesitarán por lo menos 5 horas de luz solar directa pero crecerán mejor con 8 a 10 horas. También puede proporcionar material reflector alrededor de la planta como una hoja de aluminio o un superfi cie blanca para aumentar la exposición a la luz. Espacios exteriores incluyen:
- Escalones
- Balcones
- Patios
- Paredes
Espacios interiores incluyen:
- Repisas de ventanas

Contenedores
Usted puede plantar en cualquier tipo de contenedor, solo que tenga agujeros en la parte inferior o una manera de drenar desde la parte inferior. Aquí están algunas ideas:
- Un cubo de un galón.
- Una jarra de un galón.
- Una botella de 2 litros.
- Macetas
- Bolsas de suelo
- Canastas

Estos contenedores pueden ser realizados por muchos materiales como:
- Arcilla
- Madera
- Plástico
- Metal
- Tela

Los contenedores para un jardín deben de:
- Ser suficientemente grandes para apoyar las plantas
- Mantenga la tierra sin desmenuzar
- Tener un drenaje adecuado
- No use un contenedor que haya sido usado con productos tóxicos

Provisiones:
- Ubicación Soleada
- Una Maceta
- Suelo
- Nutrientes del Suelo
- Agua
- Una pala chicha
- Guantes (Opcional)

El Suelo y los Nutrientes del Suelo

Suelo
Un peso muy ligero de la tierra es necesario. La tierra debe ser porosa con el fin de apoyar crecimiento de las plantas porque las raíces requieren aire y agua. La tierra empaquetada es bueno para una jardinería de contenedores y es la más conveniente. Si un lote de empaquetado del suelo es necesario esto puede ser caro. En este caso, trata de mezclar su propio suelo. Una receta rápida es:
1. Una parte de abono
2. Una parte de tierra de jardinería
3. Una parte de arena gruesa o una mezcla de vermiculita y perlita.

Nutrientes del Suelo
Suelo necesita nutrientes para poder alimentar las plantas. La mejor manera de obtener estos nutrientes es a través de abono. Si no tiene todo a mano, la mejor solución son productos embolsados. Una vez que tenga los nutrientes para su tierra usted puede mezclar el abono con la tierra o ponerlo encima de la tierra. La siguiente lección se ocupará de su propio aprendizaje del compostaje o productos que usted puede comprar en las tiendas.
Seeds and Composting
Las Semillas y El Compostaje

By/Por Mirena Mendez Edited by/editado por Elma Cano
California State University, Northridge

Lesson 2
Lección 2

How to Save Your Own Seeds
Cómo Guardar Sus Propias Semillas

English
Saving your seeds is easy and inexpensive. Follow the steps below:

1. Wash the seeds under cool water. Seeds are ripe when the vegetable is ripe.
2. If the seeds do not detach easily, remove both the flesh and seeds of the vegetable. Soak in water for 2 days until the seeds have separated.
3. Transfer the seeds to a dry location. Let them dry for 14-20 days. Do not use extreme heat. The seeds are dry when they no longer stick to each other.
4. Your seeds will be ready to plant. For storage, transfer seeds to a dry, airtight container. Moisture can rot the seeds.

Español
Guardando sus semillas es fácil y barato. Siga los pasos a continuación:

1. Lavé las semillas en agua fría. Las semillas están maduras cuando el vegetal está maduro.
2. Si las semillas no se despegan fácilmente, elimina la carne y las Remoje las semillas de la verdura. En agua durante dos días hasta que las semillas han separado.
3. Transfiere las semillas a un lugar seco. Déjelas secar durante 14-20 días. No use calor extremo. Las semillas están secas cuando ya no se pegan una a la otra.
4. Ya secas, sus semillas estarán listas para plantar. Para el almacenamiento, transfiere la semillas a un contenedor seco y hermético. La humedad pudre las semillas.

What to Use in Your Compost
Lo que Usar En Su Compostaje

English
Compost helps to feed your soil which is important for the growth of your plants. There are many materials that you can use for composting. These materials are divided into green materials and brown materials. You need both to make good compost.

Brown materials include:
- Dry leaves and grass
- Woody stalks of plants
- Paper and wood products
- Dryer lint
- Straw

Green materials include:
- Kitchen scraps such as vegetables, egg shells, and fruit.
- Coffee grinds
- Fresh green leaves and grass
- Composted manure

Español
El compostaje ayuda a alimentar la tierra que es importante para el crecimiento de las plantas. Existen muchos materiales que pueden utilizarse para el compostaje. Estos materiales se dividen en materiales verdes y materiales marrón. Usted necesita los dos para hacer buen compostaje.

Materiales Marrones incluyen:
- Hojas y zacate seco
- Los tallos de las plantas leñosas.
- Productos de papel y leña
- Paja

Materiales verdes incluyen:
- Sobras de la cocina como verduras, cascaras de huevo y frutas.
- Café molido Hojas frescas de color verde y zacate
- Abono