



Discovering Healthy Choices

Module 1:
Introduction to Nutrition,
Agriculture, and Gardening

UNIVERSITY OF CALIFORNIA
Agriculture and Natural Resources

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Table of Contents

| | |
|---|-----------|
| Acknowledgments | 2 |
| Facilitator Tips: How to Get the Most from This Curriculum | 4 |
| Educational Standards Supported | 9 |
| Module 1: Introduction to Nutrition , Agriculture, and Gardening | 15 |
| Photo, Graphic, and Illustration Credits..... | 33 |
| References | 33 |

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Adapted from *Nutrition to Grow On*

This curriculum is an adaptation of *Nutrition to Grow On*, a garden-enhanced nutrition curriculum for upper elementary school children. Authors: Jennifer Morris and Sheri Zidenberg-Cherr, Department of Nutrition, University of California, Davis in collaboration with the California Department of Education and Mary Shaw, Solano County Master Gardener, University of California Cooperative Extension.

Results from Research

This curriculum was tested as part of the Shaping Healthy Choices Program research project during the 2012–2013 school year. Fourth grade youth participating in the Shaping Healthy Choices Program increased knowledge about nutrition and consumption of vegetables, and the rates of obesity were reduced from 56% to 38% (Scherr et al. 2014). In a subsequent study the Discovering Healthy Choices curriculum was implemented by fourth-grade teachers as part of the Shaping Healthy Choices Program in the 2013–2014 school year. Participating youth improved their knowledge about nutrition, critical thinking skills, and ability to identify vegetables (Linnell et al. 2016). Additionally, there was a significant reduction in average body mass percentile-for-age. The Shaping Healthy Choices Program was then piloted through the University of California CalFresh SNAP-Ed program and University of California Cooperative Extension and positive outcomes were observed, though they varied among implementation sites (Bergman et al. 2018). The research team attributed the variation to differences in fidelity to the curriculum, with the highest fidelity corresponding to the greatest improvements in outcomes.

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Facilitator Tips: How to Get the Most from This Curriculum

Teaching and Learning Strategies

All activities in the *Discovering Healthy Choices* curriculum were designed using experiential learning and inquiry. Experiential learning is grounded in the idea that experience is essential to learning and understanding. Specifically, experiential learning involves a recurring sequence of three distinct steps: 1) an experience (“Procedure/ Experiencing”) that involves learner exploration; 2) a period of discussion and reflection (“Sharing, Processing, and Generalizing”), where learners share their reactions and observations, process their experience, and make generalizations to real-life examples; and 3) an opportunity to apply (“Apply”) new knowledge and skills in an authentic manner, which helps learners deepen and broaden their understanding (it helps learning last!).

Inquiry is a teaching and learning strategy whereby learners are engaged in activities that require the observation and manipulation of objects and ideas in order to construct knowledge and develop skills. Inquiry is grounded in experience, focuses on the use and development of critical thinking skills, and targets the learning and application of specific content knowledge. Furthermore, inquiry starts with a question, and effective questioning strategies are critical when facilitating inquiry-based learning. Open-ended questions or prompts (e.g., “Explain what you know about...”; or “Discuss your understanding of...”) promote learner inquiry and are considered more effective than closed-ended questions or prompts (e.g., “Name the parts of...”; or “What is the name of...?”).

The inquiry-based activities in the *Discovering Healthy Choices* curriculum were designed using the 5-step Experiential Learning Cycle by Pfeiffer and Jones (1983): Experience, Sharing, Processing, Generalizing, and Application. It is recommended that adequate time be allotted for youth learners to proceed through each step in order for learning to be maximized.

Behavior Change Strategies

As part of *Discovering Healthy Choices*, learners will discover nutrition concepts through hands-on and garden-based nutrition activities. Garden-based activities allow youth to enhance nutrition knowledge, preferences for vegetables, and consumption of fruits and vegetables, and also gives them an opportunity to explore agriculture and the environment while improving life skills, self-esteem, social skills, and behavior (Heim et al. 2009; Jaenke et al. 2012; Lineberger and Zajicek 2002; Linnell et al. 2016; McAleese and Rankin 2007; Morgan et al. 2010; Morris and Zidenberg-Cherr 2002; Parmer et al. 2009; Robinson-O’Brien et al. 2009; Scherr et al. 2014).

The *Discovering Healthy Choices* curriculum activities were designed using the Social Cognitive Theory as a framework (Glanz and Viswanath 2008). The structure and content of the activities address Social Cognitive Theory domains of behavioral capability, self-efficacy, and reciprocal determinism. A detailed description of how the behavior change strategies were applied is available elsewhere (Linnell et al. 2016).

Target Audience

Discovering Healthy Choices was developed for youth in upper elementary school (grades 4–6) and to be used in formal and non-formal educational settings. Curriculum activities support educational standards for grades K–12 and may be adapted for use in other grade levels.

Facilitator Tips: How to Get the Most from This Curriculum (cont.)

Organization of the Learning Environment: Creating Environments Where Learning Happens

The activities in the *Discovering Healthy Choices* curriculum were designed to be facilitated in a small group-learning environment. Learners construct understanding through inquiry using observations, the manipulation of objects and ideas, and personal reflection. However, learning is a social endeavor where dialogue and reflection with others are critical elements. Therefore, creating physical and social environments where learners can carry out inquiry will help learners organize their thoughts and develop an understanding of the content and processes being emphasized in specific curriculum activities.

Organization of the Curriculum

The modules are sequenced so that foundational concepts are discovered first and then built upon with more advanced concepts as they continue through the modules.

Each module consists of one hands-on activity, one application activity in the instructional garden, and multiple take-home application activities. When learners apply their new knowledge and skills in authentic situations, this is when they are able to develop deeper understanding of the subject matter. At this point, youth have already completed the hands-on activities that have introduced new concepts and skills. The application activities provide the youth with the opportunity to take what they have learned and apply it to independent, real-world situations in the instructional garden, at home, or in the classroom. This application of knowledge is a critical step of the learning process.

Curriculum Activity Layout

- **Activity Title**
The activity title introduces the facilitator to the topic that will be addressed during the activity.
- **Background Information**
This introductory section provides facilitators with a brief overview of the subject matter and provides examples that help to explain the importance of the topic.

Facilitator Tip: The background information is not meant to be shared with the youth prior to the activity. Rather, it is intended to support facilitators by providing factual information that may help ground and inform group discussions.
- **Life Skills**
Life skills are abilities that help youth become productive, contributing members of society. The activities are designed to provide youth with the opportunity to practice particular life skills that are utilized in everyday life. The life skills targeted are listed for each activity (Norman and Jordan n.d.).
- **Subject Links**
This describes other subject areas that are connected to the module.**Education Standards Supported**

This curriculum supports Common Core State Standards, Next Generation Science Standards, and California Nutrition Education Competencies. Specific details for standards addressed for each grade level is described in the “Education Standards Supported” section on page 9.
- **Time Required**
Each module includes an estimate of the time needed to complete the activities. The actual time required for the activities will vary based on level of learner interest, size of the group, age of the group members, and the setting in which the activities take place.

Facilitator Tips: How to Get the Most from This Curriculum (cont.)

- **Learning Objectives: Concepts and Vocabulary**
Facilitators are provided with a list of defined concepts and vocabulary that is meant to be discovered by the youth during their exploration and completion of the activities. The list should not be provided to the youth at the beginning of the activity. At the end of each activity, the facilitators should ensure that the appropriate terms and concepts have been discovered by or introduced to the youth.
- **Suggested Groupings**
Suggestions are provided for the group size designed for each activity. The suggested groupings are meant to help facilitate quality learning among the youth. Some activities are designed for youth to work in either small groups, large groups, or individually.
- **Materials Needed**
A list of the materials needed to complete the activities is provided for the facilitator. The list describes the materials to be used. Most materials are provided (these are marked with an *); however, other materials will need to be obtained prior to activity implementation.
- **Getting Ready**
This list describes what needs to be done by the facilitator to prepare for the activity, how many of each of the materials to prepare, and what tasks need to be completed prior to the beginning of the activity.
- **Opening Questions/Prompts**
Questions or prompts presented at the beginning of each activity are meant to draw the youth into the topic being addressed in the activity. Responses to the questions will provide the facilitator with an understanding of what the youth already know about the topic. Facilitators should encourage the youth to record their answers to these introductory questions on the provided flip chart paper, as this is an important part of the learning process. This is the point when the activity begins with the youth. Opening Questions/Prompts should be asked as they are written. Open-ended questioning is a key element of inquiry-based learning.
- **Procedure (Experiencing)**
This is the part of the curriculum when the youth experience and complete the activity itself. It is highly recommended that facilitators read the procedure in its entirety before implementing with the youth so that the activity flows smoothly. It is important for youth to record their observations, ideas, and other thoughts during the procedure on the flip chart paper provided, as this is an important part of the learning process.
- **Facilitator Tips**
These are suggestions and additional information for the facilitator.
- **Sharing, Processing, and Generalizing**
Following the procedure, there is a period of reflection, during which time the youth come back together as one group and share their observations with each other. This phase provides youth an opportunity to communicate their findings, listen to what others discovered, consider the various thought processes, and learn from each other. It helps to solidify what the youth have learned throughout the course of the activity. This phase also contains prompts that allow the youth to engage in thinking about how they went about solving a problem. This is called meta-cognition, which is considered a key element in developing a deeper understanding.
- **Concept and Term Discovery/Introduction**
At this point of the activity, most of the concepts will have most likely already been discovered by the youth. Many concepts will have already been defined by now as well. However, some concepts may have been missed or poorly understood and need to be clarified; additionally, technical terms may need to be introduced to the youth. Ensure that all terms/concepts have been discovered or introduced to the youth. Additionally, make certain that any misconceptions have been addressed.

Facilitator Tips: How to Get the Most from This Curriculum (cont.)

Starting an Instructional Garden

- **Books and Downloadable Resources**

Gardens for Learning: A Guide for Creating and Sustaining Your School Garden. Available at the California School Garden Network website, <http://www.csgn.org>.

Getting Started: A Guide for Creating School Gardens as Outdoor Classrooms. Available at the Center for Eco Literacy website, <http://www.ecoliteracy.org/downloads/getting-started>.

Sunset Western Garden Book (9th ed). 2012. New York, NY: Time Home Entertainment.

- **School Garden Grant Opportunities**

California Fertilizer Foundation awards grants of \$1,200 to California K–12 school garden programs. Awards include educational materials. Applications reviewed in January and June. The grant application is available at the California Fertilizer Foundation website, <http://www.calfertilizer.org>.

KidsGardening offers a variety of grant programs with awards of up to \$500. Information about grants is available at the KidsGardening website, <https://kidsgardening.org>.

Western Growers Foundation offers grants and start-up supplies for school gardens in California and Arizona. Information and grant applications are available at the Western Growers Foundation website, <http://www.wga.com>.

Extension Opportunities Beyond the Learning Setting

Discovering Healthy Choices was developed as part of the Shaping Healthy Choices Program. The Shaping Healthy Choices Program is a multicomponent approach to improving children's food choices. Other components of this program include a curriculum for cooking demonstrations, *Cooking Up Healthy Choices*, and family newsletters called *Team Up for Families*.

Cooking Up Healthy Choices is directly linked to *Discovering Healthy Choices*. It was developed to offer more opportunities for youth to apply the concepts they have learned through the participation in five cooking demonstrations.

The *Team Up for Families* newsletters include messages about what the youth are learning in the *Discovering Healthy Choices* curriculum, in addition to positive nutrition-related parenting practices. Each of the eight newsletters is designed to link to each of the eight modules in *Discovering Healthy Choices*.

Food Safety and Other Considerations

The *Discovering Healthy Choices* curriculum includes activities where food is prepared for consumption and for handling. When preparing foods, it is important to follow food safety guidelines published by the Food and Drug Administration at their website, <http://www.fda.gov/Food/FoodborneIllnessContaminants/BuyStoreServeSafeFood/ucm255180.htm>. It is also important to be aware of youths' food allergies and alter recipes accordingly.

Facilitator Tips: How to Get the Most from This Curriculum (cont.)

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Educational Standards Supported

Next Generation Science Standards Supported

| | Modules | K | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|------------------------|---|---|---|---|---|---|---|---|---|---|----|----|----|
| Life Science Progression | | | | | | | | | | | | | | |
| LS1.A Structure and function | 2, 3 | | | | | | | | | | | | | |
| LS1.C Organization for matter and energy flow in organisms | 2, 3, 5 | | | | | | | | | | | | | |
| LS2.A Interdependent relationships in ecosystems | 2, 3, 7 | | | | | | | | | | | | | |
| LS2.B Cycles of matter and energy transfer in ecosystems | 2, 3, 7 | | | | | | | | | | | | | |
| LS4.D Biodiversity and humans | 2, 3, 7 | | | | | | | | | | | | | |
| Science and Engineering Practices | | | | | | | | | | | | | | |
| 1. Asking questions and defining problems | 1, 2, 3, 4, 5, 6, 7, 8 | | | | | | | | | | | | | |
| 3. Planning and carrying out investigations | 2, 3, 4, 5, 7 | | | | | | | | | | | | | |
| 4. Analyzing and interpreting data | 2, 3, 4, 5, 7, 8 | | | | | | | | | | | | | |
| 5. Using mathematics and computational thinking | 2, 4, 6 | | | | | | | | | | | | | |
| 6. Constructing explanations and designing solutions | 2, 3, 4, 8 | | | | | | | | | | | | | |
| 7. Engaging in argument from evidence | 1, 2, 3, 4, 7 | | | | | | | | | | | | | |
| 8. Obtaining, evaluating, and communicating information | 1, 2, 3, 4, 5, 6, 7, 8 | | | | | | | | | | | | | |
| Crosscutting Concepts | | | | | | | | | | | | | | |
| 1. Patterns | 2, 3, 4, 5, 7, 8 | | | | | | | | | | | | | |
| 3. Scale, Proportion, and Quantity | 2, 3, 4, 6, 8 | | | | | | | | | | | | | |

- Standard is not applicable for grade level

• Supports standard for grade level

• Can be adapted to support standard for grade level

Educational Standards Supported (continued)

Common Core State Standards in English Language Arts Supported

| | Modules | K | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|------------------------|---|---|---|---|---|---|---|---|---|---|----|----|----|
| Reading Standards for Literature | | | | | | | | | | | | | | |
| Key Ideas and Details | 1 | • | • | • | • | • | • | • | • | • | • | • | • | • |
| Craft and Structure | 1, 2, 3, 4, 5, 6, 7, 8 | • | • | • | • | • | • | • | • | • | • | • | • | • |
| Range of Reading and Level of Text Complexity | 1, 2, 3, 4, 5, 6, 7, 8 | • | • | • | • | • | • | • | • | • | • | • | • | • |
| Reading Standards for Informational Text | | | | | | | | | | | | | | |
| Key Ideas and Details | 1, 2, 3, 5 | • | • | • | • | • | • | • | • | • | • | • | • | • |
| Craft and Structure | 1, 2, 3, 5, 6 | • | • | • | • | • | • | • | • | • | • | • | • | • |
| Integration of Knowledge and Ideas | 1, 3, 7 | • | • | • | • | • | • | • | • | • | • | • | • | • |
| Range of Reading and Level of Text Complexity | 1, 2, 3, 4, 5, 6, 7, 8 | • | • | • | • | • | • | • | • | • | • | • | • | • |
| Reading Standards: Foundational Skills | | | | | | | | | | | | | | |
| Print Concepts | 1, 2, 3, 4, 5, 6, 7, 8 | • | • | - | - | - | - | - | - | - | - | - | - | - |
| Phonological Awareness | 1, 2, 3, 4, 5, 6, 7, 8 | • | • | - | - | - | - | - | - | - | - | - | - | - |
| Phonics and Work Recognition | 1, 2, 3, 4, 5, 6, 7, 8 | • | • | • | • | • | • | • | • | • | • | • | • | • |
| Fluency | 1, 2, 3, 4, 5, 6, 7, 8 | • | • | • | • | • | • | • | • | • | • | • | • | • |
| Writing Standards | | | | | | | | | | | | | | |
| Text Types and Purposes | 1, 2, 3, 4, 5, 6, 7, 8 | | | | • | • | • | • | • | • | • | • | • | • |
| Production and Distribution of Writing | 1 | | | | • | • | • | • | • | • | • | • | • | • |
| Research to Build and Present Knowledge | 1, 2, 3, 4, 5, 6, 7, 8 | • | • | • | • | • | • | • | • | • | • | • | • | • |
| Range of Writing | 1, 2, 3, 4, 5, 6, 7, 8 | - | - | - | • | • | • | • | • | • | • | • | • | • |
| Speaking and Listening Standards | | | | | | | | | | | | | | |
| Comprehension and Collaboration | 1, 2, 3, 4, 5, 6, 7, 8 | • | • | • | • | • | • | • | • | • | • | • | • | • |
| Presentation of Knowledge and Ideas | 1, 2, 3, 4, 5, 6, 7, 8 | • | • | • | • | • | • | • | • | • | • | • | • | • |
| Language Standards | | | | | | | | | | | | | | |
| Conventions of Standard English | 1, 2, 3, 4, 5, 6, 7, 8 | • | • | • | • | • | • | • | • | • | • | • | • | • |
| Knowledge of Language | 1, 2, 3, 4, 5, 6, 7, 8 | - | - | • | • | • | • | • | • | • | • | • | • | • |
| Vocabulary Acquisition and Use | 1, 2, 3, 4, 5, 6, 7, 8 | • | • | • | • | • | • | • | • | • | • | • | • | • |

- Standard is not applicable for grade level

• Supports standard for grade level

• Can be adapted to support standard for grade level

Educational Standards Supported (continued)

Common Core State Standards Supported in Literacy in History/Social Studies, Science, and Technical Subjects 6-12

| | Modules | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|--|------------------------|---|---|---|---|----|----|----|
| Reading Standards for Literacy in History/Social Studies | | | | | | | | |
| Integration of Knowledge and Ideas | 1, 2, 4 | • | • | • | • | • | | |
| Reading Standards for Literacy in Science and Technical Subjects | | | | | | | | |
| Key Ideas and Details | 2, 3, 4 | • | • | • | • | • | • | • |
| Integration of Knowledge and Ideas | 2, 3, 4 | • | • | • | • | • | • | • |
| Range of Reading and Level of Text Complexity | 2, 3, 4, 5, 6, 7, 8 | • | • | • | • | • | • | • |
| Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects | | | | | | | | |
| Text Types and Purposes | 1, 2, 3, 4, 5, 6, 7, 8 | • | • | • | • | • | • | • |
| Production and Distribution of Writing | 1, 2, 3, 4, 5, 6, 7, 8 | • | • | • | • | • | • | • |
| Research to Build and Present Knowledge | 1, 2, 3, 4, 5, 6, 7, 8 | • | • | • | • | • | • | • |
| Range of Writing | 1, 2, 3, 4, 5, 6, 7, 8 | • | • | • | • | • | • | • |

- Standard is not applicable for grade level

- Supports standard for grade level
- Can be adapted to support standard for grade level

Educational Standards Supported (continued)

Common Core State Standards in Mathematics

| | Modules | K | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---------------------------------------|---------------|---|---|---|---|---|---|---|---|---|---|----|----|----|
| Counting and Cardinality | 2, 4, 5, 6 | • | - | - | - | - | - | - | - | - | - | - | - | - |
| Operations and Algebraic Thinking | 2, 3, 4, 5, 6 | • | • | • | • | • | - | - | - | - | - | - | - | - |
| Number and Operations in Base Ten | 2, 4, 5, 6 | | | | • | | • | - | | | - | - | - | - |
| Number and Operations - Fractions | 4, 5, 6, 7 | - | - | - | • | • | • | - | | | - | - | - | - |
| Measurement and Data | 2, 3, 4, 5, 6 | • | • | • | • | • | • | - | | | - | - | - | - |
| Geometry | 2, 3, 4, 5 | • | • | | | | • | - | | | - | - | - | - |
| Ratios and Proportional Relationships | 2 | - | - | - | - | - | - | • | | | - | - | - | - |
| The Number System | 4, 5, 6 | - | - | - | - | - | - | • | | | - | - | - | - |
| Statistics and Probability | 2 | - | - | - | - | - | - | • | | | - | - | - | - |
| Number and Quantity | | | | | | | | | | | | | | |
| Quantities | 2 | - | - | - | - | - | - | - | - | - | • | • | • | • |

- Standard is not applicable for grade level

• Supports standard for grade level

• Can be adapted to support standard for grade level

Education Standards Supported (continued)

Nutrition Education Competencies Supported

| | Modules | K | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|--|------------|---|---|---|---|---|---|---|---|---|---|----|----|----|
| 1. Overarching Nutrition Competency: Essential Nutrition Concepts - All youth will know the relationships among nutrition, physiology, and health. | | | | | | | | | | | | | | |
| 1a. Know the six nutrient groups and the functions. | 3, 5 | • | • | • | • | • | • | • | • | • | • | • | • | • |
| 1b. Know nutrition and health guidelines. | 4, 5, 6, 8 | • | • | • | • | • | • | • | • | • | • | • | • | • |
| 1c. Know factors affecting energy balance. | 2, 5, 6 | • | • | • | • | • | • | • | • | • | • | • | • | • |
| 1d. Describe how nutritional needs vary throughout the life cycle. | 5 | • | • | • | • | • | • | • | • | • | • | • | • | • |
| 1e. Identify the physiological processes in digestion, absorption, and metabolism of nutrients. | 3, 5 | • | • | • | • | • | • | • | • | • | • | • | • | • |
| 1f. Explain the influence of nutrition and physical activity on health. | 2, 3, 5, 8 | • | • | • | • | • | • | • | • | • | • | • | • | • |
| 1g. Know principles of handling (growing, harvesting, transporting, processing, storing, and preparing) foods for optimal food quality and safety. | 8 | • | • | • | • | • | • | • | • | • | • | • | • | • |
| 1h. Consider the interactions among nutrition science, ecosystems, agriculture, and social systems that affect health, including local, national, and global perspectives. | 1, 2, 3 | • | • | • | • | • | • | • | • | • | • | • | • | • |
| 2. Overarching Nutrition Competency: Analyzing Nutrition Influences | | | | | | | | | | | | | | |
| All youth will demonstrate the ability to analyze internal and external factors influencing food choices and health outcomes. | 7 | • | • | • | • | • | • | • | • | • | • | • | • | • |

- Standard is not applicable for grade level

• Supports standard for grade level

• Can be adapted to support standard for grade level

Educational Standards Supported (continued)

Nutrition Education Competencies Supported (continued)

| | Modules | K | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|--|---------------|---|---|---|---|---|---|---|---|---|---|----|----|----|
| 3. Overarching Nutrition Competency: Accessing Valid Nutrition Information | | | | | | | | | | | | | | |
| All youth will demonstrate the ability to access and analyze nutrition information, products, and services to analyze the accuracy and validity of nutrition claims. | 2, 5, 6, 7 | • | • | • | • | • | • | • | • | • | • | • | • | • |
| 4. Overarching Nutrition Competency: Interpersonal Communication about Nutrition | | | | | | | | | | | | | | |
| All youth will demonstrate the ability to use interpersonal communication skills to optimize food choices and health outcomes. | 7 | | | | | | • | | | | | | | |
| 5. Overarching Nutrition Competency: Decision Making for Nutrition Choices | | | | | | | | | | | | | | |
| All youth will demonstrate the ability to use decision-making skills to optimize food choices and health outcomes. | 2, 3, 5, 6, 8 | • | • | • | • | • | • | • | • | • | • | • | • | • |
| 6. Overarching Nutrition Competency: Goal Setting for Nutrition | | | | | | | | | | | | | | |
| All youth will demonstrate the ability to use goal-setting skills to enhance nutrition and health. | 2, 3, 5, 6, 8 | | • | • | • | • | • | • | • | • | • | • | • | • |
| 7. Overarching Nutrition Competency: Practicing Nutrition-Enhancing Behaviors | | | | | | | | | | | | | | |
| All youth will demonstrate the ability to practice nutrition-related behaviors that reduce risk and promote health. | 2, 3, 5, 6, 8 | • | • | • | • | • | • | • | • | • | • | • | • | • |
| 8. Overarching Nutrition Competency: Nutrition Promotion | | | | | | | | | | | | | | |
| All youth will demonstrate the ability to promote and support a sustainable, nutritious food supply and healthy lifestyles for families and communities. | 1, 2, 3, 5, 8 | • | • | • | • | • | • | • | • | • | • | • | • | • |

-Standard is not applicable for grade level

- Supports standard for grade level
- Can be adapted to support standard for grade level

Module 1: Introduction to Nutrition, Agriculture, and Gardening

Background Information

The food that we eat supplies us with **nutrients** we need to grow and stay healthy. People in different countries eat different foods, but with the same goal of meeting their nutrient needs. When taking a closer look at agriculture in countries around the world, we find a wide variety of foods grown for consumption.

Agriculture is the science and art of using land to grow fruits and vegetables and raise livestock. The types of fruits and vegetables **cultivated** in each country depend on environmental factors like the **geography** and **climate** of the region. Many fruits and vegetables grow well in a **temperate** climate where the weather is mild and there are not extreme variations in temperature. In countries that have **arid** regions where there is not much rainfall, growing fruits and vegetables can be difficult without the artificial application of water through **irrigation**.

Agriculture can occur on large scales like large farms that require a lot of land. Agriculture can also take

place on a smaller scale using smaller plots of land like small farms, community gardens, school gardens, or home gardens.

In addition to the variation of fruits and vegetables between countries and **cultures**, there are also differences in the foods that are prepared. The uniqueness of different **cultural foods** is due to many influences. This includes things like the types of **native** plants and animals available for food, the religious practices of the people, and their exposure to other cultures. For example, during the **Age of Exploration** (15th to 17th centuries) many cultural foods around the world were influenced by explorers. These explorers, like the Spanish, Dutch, and English, brought fruits, vegetables, and cultural foods from their native countries on their voyages and introduced them to the countries they visited.

Concepts and Vocabulary

- **Age of Exploration:** a period of time from the early 15th century through the 17th century when European explorers traveled the world by sea in search of new trading partners, goods, and trade routes.
- **Arid:** a type of climate that is dry and does not receive much rainfall.
- **Agriculture:** science and art of using the land to raise crops and livestock.
- **Climate:** a description of the rainfall, temperature changes, and weather of a region.
- **Cultivate:** to prepare and use land for growing crops.
- **Culture:** the beliefs and practices of groups of people.
- **Cultural foods:** food that is prepared by a specific cultural group.
- **Geography:** the features of the land, including mountains, vegetation, and water sources.
- **Irrigation:** providing water to land that is used for agriculture.
- **Livestock:** animals raised in an agricultural setting that are used for food and other products like wool and leather.
- **Native:** something that is original to a specific place or region.
- **Nutrients:** substances our bodies need to grow and stay healthy.
- **Temperate:** a type of climate that does not have extreme variations in temperature.
- **Tropical:** a type of climate that is mostly warm temperatures with a lot of rainfall.

Life Skills

Accepting Differences, Communication, Contribution to Group Effort, Cooperation, Decision Making, Learning to Learn, Planning and Organizing, Sharing, Teamwork, Wise Use of Resources, Working and Giving

Subject Links

Language Arts, Nutrition

Educational Standards Supported

Discovering Healthy Choices curriculum supports Next Generation Science Standards, Common Core State Standards, and California Nutrition Education Competencies. For specific details on standards and grade levels, please see page 9.

Activity 1.1: Classroom Activity

Getting Ready

- Make copies of the *Nutrition and Agriculture Around the World* handouts (Appendix 1A); one country for each group.
- Organize the class into small groups of 3 to 4 youth.
- Provide each group with one sheet of flip chart paper and markers to answer opening questions.

Opening Questions/Prompts

Ask the youth to respond to each question/prompt below by recording them on the flip chart paper provided and sharing their ideas verbally.

- Explain what you know about where our food comes from.
- Explain what you know about how fruits and vegetables are grown.
- Explain what you know about the different foods grown and eaten by different cultures.

Facilitator Tip: Encourage youth from different cultural backgrounds to talk about what they know about their own culture.

Time Required

60 to 75 minutes

Suggested Groupings

Small groups of 3 to 4 youth

Materials Needed

(*Materials provided in curriculum)

- Flip chart paper
- Markers or writing utensils
- Craft supplies for art projects, which may include: poster paper, construction paper, scissors, tape, glue, etc.
- **Nutrition and Agriculture Around the World* handouts: United States, Australia, Chile, France, China, Kenya, Mexico, India, and Iraq (Appendix 1A)

1.1

Procedure (Experiencing)

1. Provide each group with a *Nutrition and Agriculture Around the World* handout. Each group should have a different country.
2. Allow the youth time to read about the agricultural and food-related practices of the people in the country they were assigned.
3. Ask each group to organize and prepare an art project about the things they learned about the country they were assigned.

Facilitator Tip: Youth may create any type of artwork: short story, poem, song, or a drawing, painting, diorama, collage, etc.

Facilitator Tip: To help the youth start this process, have them think about the following: common plants and animals, unique crops grown, climate, agricultural practices, cultural foods eaten, and other unique or interesting information.

Sharing, Processing, and Generalizing

1. Have the youth share their art projects. Ask them to describe how the different elements of their art projects convey information about agriculture and food in the part of the world they investigated.
2. Follow the lines of thinking developed through the youths' thoughts, observations, and questions as they share the differences and similarities of the agriculture and foods from the various countries. If necessary, ask more targeted questions/prompts.
 - Explain how you went about developing your art project to reflect the information you learned about the country you investigated.
 - Discuss the similarities and differences relative to agriculture in the countries represented in this activity.
 - Describe similarities and differences related to cultural foods discussed in this activity.

Concept and Term Discovery/Introduction

Make sure that youth understand the importance of **agriculture** and **cultivation** of crops so we get the **nutrients** we need. Youth should also understand that there are **cultural** differences around the world that influence the foods eaten from country to country. Additionally, make sure that key vocabulary terms are either discovered by the youth or introduced to them: **nutrients, agriculture, cultivate, livestock, geography, climate, irrigation, temperate, arid, tropical, native, culture, and cultural foods.**

Activity 1.2: Classroom Concept Application

Getting Ready

1. Make copies of the *Cultural Traditions Around the World* handout (Appendix 1B), enough for each youth.

Procedure (Experiencing)

1. Provide the youth with the *Cultural Traditions Around the World* handout.
2. Building upon the previous activity, ask the youth to further investigate the cultural traditions of the country they were assigned and the foods that are important to those traditions. As they research the country, have them think about the holidays and festivals that are important in the country and their associated foods. Explore those foods, and explain why they are important to these traditions. For example, Thanksgiving is a cultural tradition in the United States, and we typically eat certain foods on that holiday. Ask the youth to record their findings on the Cultural Traditions and Food handout.

Facilitator Tip: The youth may research this in the library or on the internet. Some suggested websites for further research include

- Food in Every Country website, <http://www.foodbycountry.com>.
- Whats4Eats: International Recipes and Cooking around the World website, <http://www.whats4eats.com>

Sharing, Processing, and Generalizing

1. Have the youth share their findings on the cultural traditions of each country. Follow the lines of thinking developed through general thoughts, observations, and questions raised by the youth as they share and compare their thoughts and ideas regarding the differences and similarities of the cultural traditions and foods associated with them in different countries.

Time Required

30 to 60 minutes

Facilitator Tip: This can be done during classroom time, or as a homework assignment.

Materials Needed

(*Materials provided in curriculum)

- **Cultural Traditions Around the World* (Appendix 1B)

Activity 1.3: Garden Concept Application

Getting Ready

- Make copies of the *Growing Vegetables from Around the World* handout (Appendix 1C), enough for each group.
- Organize the class into small groups of 3 to 4 youth.

Facilitator Tip: These can be the same groups that were formed in Module 1, Activity 1. By doing so, the youth may continue developing teamwork skills with the same group members.

- Provide each group with a sheet of flip chart paper and markers to answer opening questions.

Time Required

15 to 20 minutes

Suggested Groupings

Small groups of 3 to 4 youth

Materials Needed

- Flip chart paper
- Markers or writing utensils
- **Growing Vegetables from Around the World* (Appendix 1C)

Opening Questions/Prompts

Ask the youth to respond to each question below by recording them on the flip chart paper provided and sharing their ideas verbally.

- Explain what you know about the different vegetables grown around the world.
- Explain what you know about the different vegetables grown in California.

Procedure (Experiencing)

1. Provide the *Growing Vegetables from Around the World* handout to each group.
2. Ask the youth to identify and record the vegetables from the country they investigated, and then choose one vegetable they would like to grow.

Facilitator Tip: Some or all of the vegetables selected by the youth can be used to plant a cultural garden. The planting of these vegetables is included in Activity 2 of Module 2: Getting Physically Active.

Sharing, Processing, and Generalizing

1. Have the youth share which plant they decided to grow. Follow the lines of thinking developed through general thoughts, observations, and questions raised by the youth as they explain why they chose the plant they did.

Activity 1.4: Home Concept Application

Getting Ready

1. Make copies of the *Recipes Around the World* handout (Appendix 1D), one for each youth.

Time Required

10 to 20 minutes

Materials Needed

(*Materials provided in curriculum)

- **Recipes Around the World* (Appendix 1D)

Procedure (Experiencing)

1. Provide a copy of the *Recipes Around the World* handout to each youth.
2. Have the youth find a recipe from the country they investigated and prepare it with their family. Ask them to record their observations from their experience of making and eating the dish a on the *Recipes Around the World* handout.

Sharing, Processing, and Generalizing

1. Have the youth share their experience. Follow the lines of thinking developed through general thoughts, observations, and questions raised by the youth as they share and compare their thoughts and ideas regarding the observations they made while making and eating the cultural dish.

APPENDIX 1A: United States of America

The United States of America is located in North America. The United States has many different climate zones. The northwest region gets a lot of rain; the west is temperate, meaning there are not extreme temperature changes; and the southwest has deserts and is arid, meaning there is not much rain. The central United States has warm summers and moderately cold winters; the northeast gets a lot of snow in the winter and typically has moderate summer temperatures; and the southeast has a subtropical climate where it is humid and is not usually very cold in the winter.

The diverse climates allow for many different crops to be grown. Native Americans were mostly hunter-gatherers. Dietary staples include beans, squash, and corn. The Iroquois, a Native American tribe, called these three crops the “the three sisters” because they grow well together.

When Europeans settled in the United States they brought with them agricultural practices. Today, different regions of the United States are known for producing crops like corn, wheat, soybeans, tomatoes, potatoes, grapes, oranges, apples, lettuce, and beets. Livestock is also very important to U.S. agriculture. Main types of livestock raised in the United States

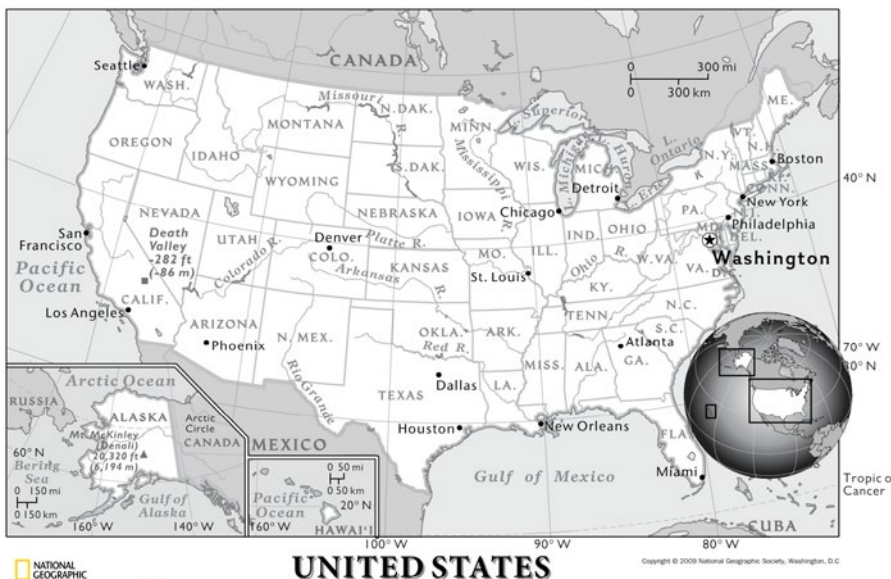


include cattle for dairy products and beef, chickens for eggs and poultry, and pigs for pork.

Agriculture in the United States used to rely on small, family-run farms, but today there are many large farms that grow and sell crops around the world. The use of new technology has made the United States one of the most efficient countries for producing crops and distributing them worldwide.

The state of California has a temperate climate and fertile land, perfect for growing a variety of crops. More than half of the nation’s fruit, nuts, and vegetables are grown in California. Some of the major crops grown in California include asparagus, artichokes, spinach, kale, lettuce, tomatoes, pumpkins, onions, grapes, kiwi, almonds, walnuts, garlic, peaches, nectarines, melons, and cherries.

Because the United States is so large, there are many different regional foods. Some examples include the Northeast: clam chowder (a stew of clams, potatoes and cream); the South: hushpuppies (fried cornmeal dough); the Southwest: chili con carne (a stew of beans, meat, chiles and spices); the West: sourdough bread (a sour-tasting white bread); Hawaii: poi (cooked taro root); Alaska: king crab.



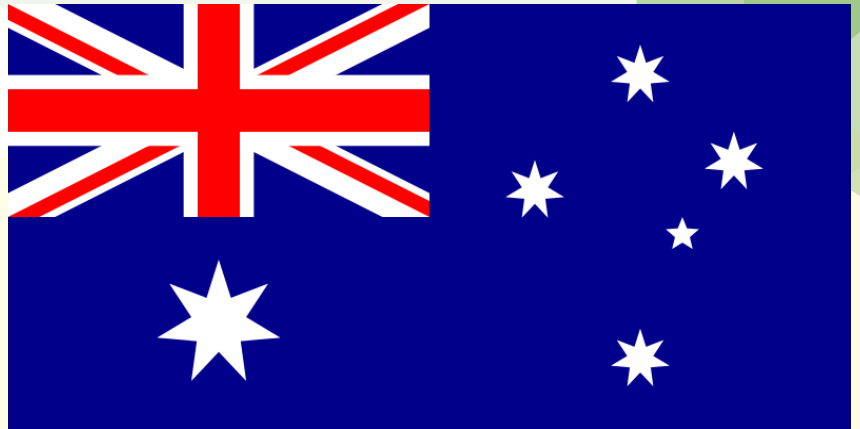
APPENDIX 1A: Australia

Australia is a continent that is bordered by the Indian Ocean to the west and the Pacific Ocean to the east. The country has many different climate regions, but most of it is desert and grasslands where there is little rainfall. There are tropical areas in the north that get a lot of rain. In the southwest and southeast the climate is temperate, meaning that there are not extreme changes in temperature. These temperate areas are ideal for agriculture.

The native people of Australia are called Aborigines. They were hunter-gatherers and ate foods that were native to Australia, including plants like yams, onions, and quandong (a fruit similar to a peach), and meats like kangaroo, wombat, emu, duck, lizards, and grubs.

In the late 1700s, the British arrived in Australia and brought agricultural practices and crops from around the world. The agriculture in Australia was also later influenced by settlers from Asia and Europe.

The most commonly grown crops in Australia are wheat, oats, rice, beans, peas, soybeans, potatoes, carrots, tomatoes, beets, peas, corn, cucumbers, and olives. Fruits grown include grapes, apples, oranges, strawberries, guavas, blackberries, and currants. Of these foods found in Australia, some also are grown in California, including tomatoes, beets, peas, corns, cucumbers, olives, apples, and blackberries.



Sheep and cattle are important parts of Australian agriculture. Sheep are used mostly for wool, dairy products, and meat (lamb). Cattle are also used for dairy products and beef. Other livestock raised in Australia for meat are chickens, pigs, goats, and game animals like emu, wombat, and kangaroo. Australia also has a large fishing industry that relies on farmed fish. Fisheries in Australia raise seafood like tuna, abalone, prawns (similar to shrimp), and lobster.

Traditional dishes prepared by Australian people include: crab soup, grilled prawns, fried barramundi (a tropical fish), roast lamb with rosemary and mint, hamburgers topped with fried eggs and slices of beets, vegetables that have been stir-fried or boiled, and stewed fruit.



APPENDIX 1A: Chile

Chile is located on the west coast of southern South America. It is a long narrow country that borders the Pacific Ocean, Peru, Bolivia, and Argentina. Geographical features of Chile include the Andes mountains in the east, and the Atacama desert in the north, which is the driest place on earth. There are many different climates in Chile. For this reason, the crops that are grown vary from region to region.

In the high deserts of northern Chile, the climate is not suitable for growing many food crops, but there are flower growers and herders of llama and alpaca that are used mostly for their fur coats. In southern Chile, where there are forests, the climate and land do not support agriculture. However, there are many pasturelands that support livestock like cattle and pigs.

Central Chile is a long valley with a temperate climate, which means that the temperatures do not reach extremes. This climate makes the central valley ideal for agriculture and, in many ways, is similar to the Central Valley of California. The crops grown in Chile include wheat, corn, rice, onions, oats, peaches, garlic, beans, apples, grapes, and pears.

Of the foods grown in Chile, several are also grown in California, including onions, peaches, garlic, beans,



olives, apples, grapes, and pears.

Traditional foods grown by the native people of Chile were corn, potatoes, beans, tomatoes, squash (chayote, acorn squash, and summer squash), and chiles. When Spanish explorers arrived in South America in the 1500s, they introduced the people of Chile to olives, rice, wheat, cattle for beef, and pigs for pork.

The major staples of the Chilean diet are beef, fish, beans, corn, squash, and potatoes. Traditional dishes prepared in Chile include *porotos ranados* (beans, squash, and corn), *chupe de mariscos* (stew with mussels, scallops, abalone, and oysters), *cancho a la chilena* (stew with pork, vegetables, and chiles), and *empanadas* (pastry stuffed with seafood or beef, olives, raisins, and onions).

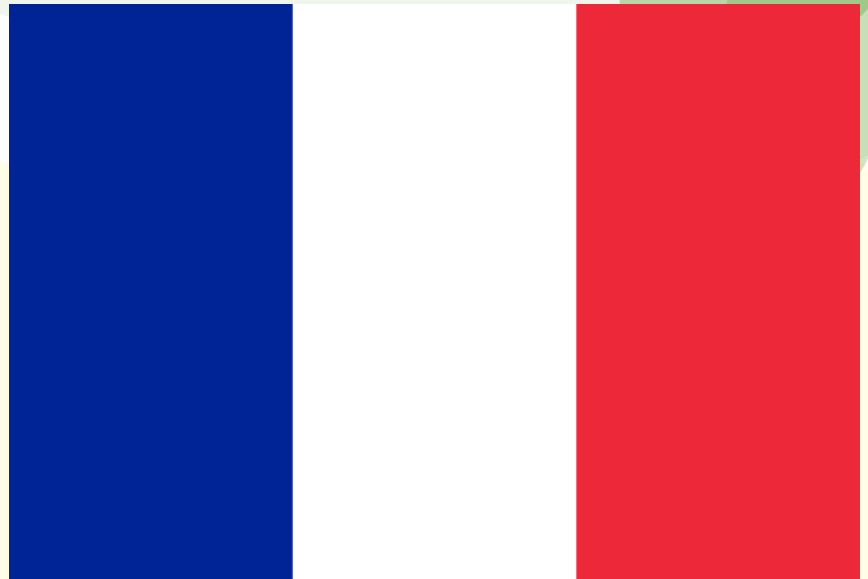


APPENDIX 1A: France

France is in Western Europe and neighbored by Spain, Germany, Switzerland, Luxembourg, Belgium, and Italy. Monaco, an independent city state, is located in the south of France. Geographically, France is made up of plains with mountainous areas in the southwest, east, and central regions. Most of France is temperate, which means that the weather is typically moderate and there are not long periods of extremely high or low temperatures. This climate makes many areas of France ideal for farming.

Foods that are grown in France include wheat, barley, white beans, lentils, split peas, potatoes, tomatoes, lettuce, cauliflower, green beans, leeks, spinach, onions, cucumbers, and radishes. Fruits include grapes and apples. Livestock raised for meat are cattle, chickens, pigs, lambs, ducks, and goats.

Across France, the types of soil and amounts of rainfall vary, so each region has its own unique agricultural products. The region called Normandy, located in the northwest, is known for apples and dairy cattle that produce cheese. Touraine, located in the west, is known for growing many different fruits and vegetables. Provence, a region in the southeast, produces Mediterranean crops like tomatoes, eggplant, garlic, and olives. France is well known for its food, and because of this, France is the largest exporter of foods in Europe.



Many of the foods grown in France are also grown in California, including tomatoes, beans, lettuce, cauliflower, spinach, radishes, olives, garlic, grapes, and apples.

Bread is a major staple in France. The baguette (a long thin loaf of white bread made from wheat with a crisp crust) originally came from Paris, the capital city of France, but has spread to other parts of the country and throughout the world. Another staple food in France is dairy, often eaten as cheese and yogurt. A soft cheese called Camembert is considered the “national cheese” of France. Brie is another well-known cheese from France.

Other foods commonly eaten in France include salads with oil and vinegar, crepes (small thin pancakes), cassoulet (a casserole with beans, sausage, and pork, duck, or goose), onion soup, and quiche (eggs and cream in a pie crust, often with other ingredients like bacon, onion, and cheese).

APPENDIX 1A: China

China is a very large country in eastern Asia and there are many different regions that have different climates. Most of the land is either mountains or desert, and only about one-tenth of the country can be farmed. In eastern China, the land is one of the best places for farming because of the access to water through river systems. Much of the farming in China is still done using traditional methods, such as using large animals like water buffalo and oxen to help with plowing and harvesting crops.

Rice is a main food eaten by Chinese people. Other traditional foods grown in China include cabbage, bean sprouts, soybeans, green onions (scallions), ginger, green beans, and daikon radishes. Common fruits are apples, pears, and citrus fruits. Tea is an important drink in China. Plants that have the leaves used for making tea are grown all over China on farms that are built on the sides of mountains.

Several foods that are found in China are also grown in California. These crops include cabbage, green onions, green beans, apples, pears, and citrus fruits like oranges and mandarins.

The most common livestock in China are pigs for pork, and chickens and ducks for poultry. Nomadic farmers also raise sheep, goats, and camels. These farmers constantly move across the countryside to feed their animals. Fishing is also a large aspect of



China's food production, accounting for one-third of all the fish eaten around the world.

China is a major exporter of vegetable crops to other countries around the world. The main agricultural products they sell are rice, tea, wheat, potatoes, peanuts, barley, cotton, pork, and fish. In addition to agricultural crops, flower gardens are very important in Chinese culture. Chinese people consider these gardens very important for the health of the mind, body, and spirit.

People in China eat tofu, a protein-rich food that is made from soy beans. Because China is so large, there are many different types of traditional foods in different regions. In the Canton province, simple stir-fries and rice are commonly eaten, but in the Szechuan (Se-chu-an) province, the dishes are

known for being spicy and having a lot of chilies, garlic, and leeks. An important idea in Chinese cooking is balance. It is important that the flavors, textures, and colors in every meal are well balanced.



APPENDIX 1A: Kenya

Kenya is located in eastern Africa and borders Sudan, Ethiopia, Somalia, Tanzania, and Uganda. The northern part of Kenya is arid, meaning the climate does not get much rainfall. In the west there are mountains and fertile land that are good for agriculture. The southeastern border of Kenya has coastlines on the Indian Ocean that allow for access to fishing. Because of the climate, only one-tenth of the land in Kenya is used for agriculture.

The native people of Kenya are mostly nomadic, meaning that they move from one area to another to gather food and herd animals. Cattle are used mainly for dairy; they do not typically use cattle for meat. Other native people rely on a diet of gathered foods including grains like millet and sorghum, bananas, and various greens.

When explorers from Europe arrived in the 1400s, they introduced agricultural practices and brought with them many of the crops that are now grown in Kenya. Because most of the land in Kenya is not ideal for growing crops, a common agricultural practice, called field rotation, is used. This is where farmers use only some fields each year to grow crops, and then rotate the crops between fields. This gives each field a chance to rest and regain nutrients that will allow the



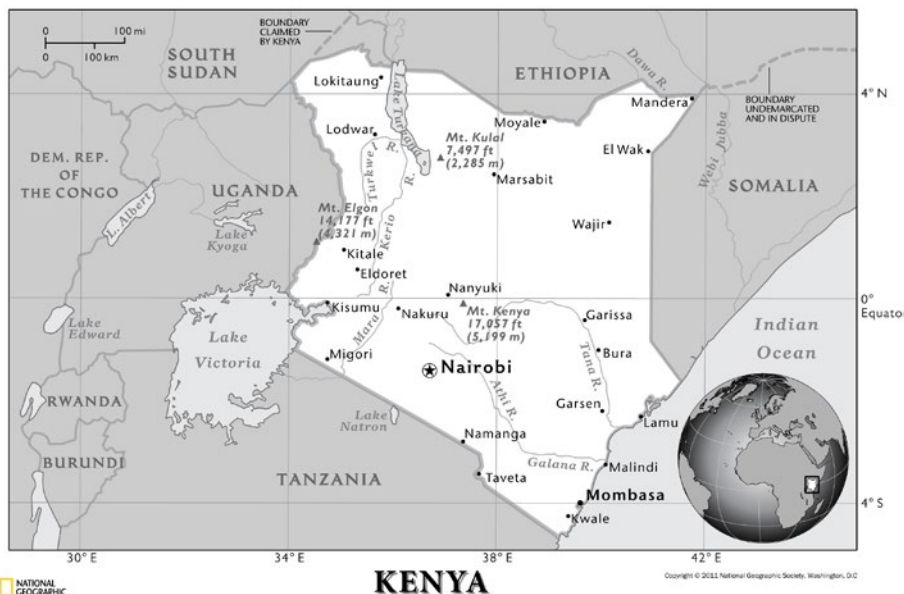
next rotation of crops to grow better.

Vegetable crops grown in Kenya are potatoes, peanuts, cowpeas, beans, lentils, green bananas, dark leafy greens (kale, amaranth), cassava, yams, sweet potatoes, tomatoes, onions, okra, and eggplant. Fruits include bananas, coconuts, pineapples, mangoes, and strawberries. Kenya is also known for growing tea leaves and coffee beans.

Of the foods grown in Kenya, there are several that are also grown in California, including potatoes, tomatoes, onions, eggplant, and strawberries.

Starchy foods are an important part of the Kenyan diet. Seafood is typically dried and salted to preserve it.

The most common staple food in Kenya is ugali (a very thick cornmeal or millet porridge). Other common foods include *sukuma wiki* (a stew of leftover meat and vegetables), *irio* (a dish of mashed beans, corn, and potato or cassava), peanut soup, fish cooked with coconut milk, meat that has been roasted or grilled, and green bananas boiled in banana leaves.



APPENDIX 1A: Mexico

Mexico is a country in North America located south of the United States. It is the eighth largest country in the world, but only a small part of the country is used for farming. The climate in most of Mexico is warm year-round, but there are some places in central Mexico where it snows. In northern Mexico the land is forests and grasslands, and in central Mexico there are mountain ranges. In the southern parts of the country the climate is tropical and there are jungles and a lot of rainfall. There are two very large deserts in Mexico where many types of cactus are found.

The native people of Mexico cultivated many different vegetables, but the major staples of their diet were corn, chilies, beans, and squash (for example, chayote, acorn squash, and summer squash). Corn grown in Mexico is primarily used for making tortillas. Cactus is also a food commonly eaten in Mexico. The stem parts of the cactus are called *nopales* and the cactus fruits are called prickly pears or *tuna*.

In the early 1500's, Spanish explorers like Hernán Cortés arrived in Mexico. The explorers brought with them many foods from Spain, including rice, wheat, olives, onion, garlic, cinnamon, and livestock, like cattle, pigs, goats, and sheep.



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In addition to the native staples of corn, beans, and squash, other common vegetable crops grown in Mexico include potatoes, tomatoes, chocolate (made from cacao), avocados, chiles, jicama, onion, radishes, lettuce, and garlic. Fruits grown in Mexico include oranges, apples, strawberries, pomegranates, bananas, pineapple, papaya, coconuts, and mango. Today, Mexico exports many fruits and vegetables to countries around the world.

Many of the crops grown in Mexico are also grown in California, including potatoes, tomatoes, avocados, chiles, onion, radishes, lettuce, garlic, oranges, pomegranates, and apples.

Mexican cooking is known for using many herbs and spices like chilies, chipotle, oregano, cilantro, epazote (an herb), cinnamon, and cocoa. Some examples of traditional foods include *tamales* (a dough made from corn that is filled with meat and cooked in corn husks or banana leaves); *pozole* (a stew made with meat, corn, chiles, and beans); *chorizo* (pork sausage); *sopa seca* (a casserole made with stale rice or tortillas); and *mole* (a sauce made with chilies, garlic, spices and sometimes chocolate).

APPENDIX 1A: India

India is in South Asia and is bordered by Pakistan, China, Nepal, and Bangladesh. It has the second largest population with 1.2 billion people, and is the seventh largest country in the world.

This very large country has a variety of different regions and climates. In the northwest the Thar desert is an arid region; this type of climate is dry and has little rainfall. In the north are the world's tallest mountains, the Himalayas where there is snow during the winter. The rest of the country has a mostly tropical climate, where it is warm most of the year and there is a lot of rainfall in the monsoon season from June to September. The Ganges Plain in central India is a fertile region where crops grow very well.

The major agricultural crops grown in India are rice, wheat, corn, potatoes, eggplant, cauliflower, kohlrabi, okra, tomatoes, green beans, carrots, spinach, cucumbers, radishes, chickpeas (garbanzo beans), lentils, coconut, cotton, and tea. Fruits grown in India include bananas, mangoes, coconut, oranges, lemons, limes, pineapple, tamarind, jackfruit, and guavas.

Many of the crops grown in India are also grown in California, including potatoes, tomatoes, okra,

radishes, spinach, cucumbers, and green beans.

Dishes from India are known for using many herbs and spices like ginger, saffron, mint, tamarind, coriander, cumin, turmeric, cardamom, nutmeg, cloves, and red pepper.

One of the oldest civilizations lived in the Indus Valley in India, dating back to at least 3,000 BCE. Over several thousands of years, foods in the region have been influenced by many different types of people including Arabs, Turkish, Dutch, Portuguese, and British. Many people in India are vegetarians, which are people who do not eat meat. Some examples of traditional foods include *curry*

(a spicy stew with chicken, seafood, or vegetables), *chutney* (pickled fruits and vegetables used as a condiment), *pakora* (deep-fried vegetables), *cachumber* (salad with cucumbers, onions, and tomatoes), *dal* (a puree of lentils), *paneer* (a soft cheese), and *naan* (bread cooked in a tandoor, a special type of oven).



APPENDIX 1A: Iraq

Iraq is in the Middle East and is bordered by Syria, Turkey, Iran, Kuwait, Saudi Arabia, and Jordan. It has mostly plains, but there is a central valley where there are two major rivers, the Tigris and Euphrates.

The climate of Iraq is mostly arid, where there is mostly warm weather and little rainfall. In this type of climate it is difficult to grow crops without an intervention like irrigation.

The major agricultural crops grown in Iraq are wheat, tomatoes, barley, rice, dates, and cotton, and the livestock that is raised include chickens, sheep, goats, and cattle. Some of the agricultural crops grown in Iraq are also grown in California, including tomatoes, rice, and cotton.

Iraq is where the civilizations of Mesopotamia lived thousands of years ago. The people from Mesopotamia relied on grains like wheat and barley. These grains are still an important part of the Iraqi diet. Many other cultures influenced what Iraqi people eat today, including foods that originated in Turkey and Persia.

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In Iraq, dairy is typically consumed in the form of yogurt or feta cheese. Commonly eaten fruits and vegetables include chickpeas (garbanzo beans), fava beans, lentils, tomatoes, potatoes, onions, eggplant, green peppers, olives, celery, green onions, parsley, pickles, dates, figs, grapes, lemons, limes, apricots, and raisins. Herbs and spices used in Iraqi cooking are onions, garlic, chives, lemon juice, parsley, tarragon, marjoram, mint, dill, saffron, cinnamon, nutmeg, cloves, cardamom, turmeric, and coriander.

Some examples of traditional foods in Iraq are *harrisa* (a meat stew with wheat), *kashki* (a porridge of meat, dried limes, cumin, and turmeric or tomato juice), *tharid* (a casserole with layers of meat and flatbread), and *uruq* (meat cut small and mixed with bread dough, green onions, and celery leaves, and baked like bread).



APPENDIX 1B: Cultural Traditions Around the World

Find out about cultural traditions, like holidays and festivals, in the country you were assigned to investigate, and then answer the questions below. Here are some internet resources where you can find information.

- Food in Every Country website, <http://www.foodbycountry.com>.
- Whats4Eats: International Recipes and Cooking around the World website, <http://www.whats4eats.com>.

What is the name of the country you are investigating?

Describe cultural traditions in this country and the important foods that are associated with these traditions.

APPENDIX 1C: Growing Vegetables from Around the World

| | Cool season crop | Warm season crop |
|-----------|--|--|
| Australia | beets, carrots, peas, potatoes, strawberries, parsley | black beans, corn, cucumbers, soybeans, tomatoes, onions |
| Chile | potatoes, parsley, cilantro | black beans, corn, tomatoes, winter squash, summer squash |
| China | broccoli, cabbage, leeks, daikon radishes | eggplant, garlic, green beans, soybeans, taro root |
| France | fennel, mint, parsley, basil, kohlrabi, lettuce, onions, potatoes, radishes, spinach, swiss chard | eggplant, tomatoes |
| India | carrots, kohlrabi, potatoes, radishes, mint, cilantro | black-eyed peas (cowpeas), chickpeas (garbanzo beans), cucumbers, eggplant, okra |
| Iraq | green onions, potatoes, parsley | chickpeas (garbanzo beans), eggplant, onions, tomatoes |
| Kenya | kale, strawberries, potatoes, amaranth | black-eyed peas (cowpeas), eggplant, okra, onions, sweet potatoes, tomatoes |
| Mexico | strawberries, parsley, lettuce, potatoes, cilantro | corn, chiles (peppers), onions, tomatoes, summer squash, winter squash |
| USA | strawberries, mint, parsley, basil, beets, broccoli, cabbage, carrots, kohlrabi, leeks, lettuce, okra, potatoes, radishes, spinach, swiss chard, cilantro, mint, parsley, kale | black beans, black-eyed peas (cowpeas), corn, cucumbers, eggplant, garlic, onions, chiles (pepper), soybeans, sweet potatoes, taro root, tomatoes, winter squash |

APPENDIX 1D: Recipes Around the World

Find a recipe from the country you were assigned to investigate, then answer the questions below. Here are some internet resources where you can find recipes from other countries.

- Food in Every Country website, <http://www.foodbycountry.com>
- Whats4Eats: International Recipes and Cooking around the World website, <http://www.whats4eats.com>
- All Recipes World Cuisine Recipes website, <http://allrecipes.com/recipes/86/world-cuisine>
- Easy Kids Recipes website, <http://www.easy-kids-recipes.com/international-recipes.html>
- Epicurious Around the World in 80 Dishes website, <http://video.epicurious.com/series/around-the-world-in-80-dishes>

What is the name of the country you are investigating?

What is the name of the recipe?

Explain what you observed about this food when you prepared and ate it.

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- Plant—<https://www.flickr.com/photos/aresauburnphotos/2508019220>

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