Good Enjoying the pleasures of healthy and delicious food For Grades K-5

Slow Food USA’s School Garden Curriculum

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Education for Slow Food...

...is about **pleasure**, a light and convivial occasion to feel good and enjoy ourselves.

...teaches the values of **slowness** and **respect** for our own and other people’s rhythms.

...is learning by doing, because **hands-on** experience increases and strengthens educational outcomes.

...values the **diversity** of cultures, knowledge, skills and opinions.

...recognizes everyone’s needs, and stimulates the interests and motivations of each **individual**.

...approaches topics in their complexity, favoring a **multi-disciplinary** approach.

...means taking time to **understand**, **internalize** and **elaborate** one’s own vision.

...**encourages participation** by facilitating dialogue, self-expression, cooperation, listening and mutual acceptance.

...is a **personal journey** that involves cognitive, experiential and emotional dimensions.

...is nourished by its own **context**, giving value to memory, knowledge and local cultures.

...**facilitates exchange** among local networks, reinforcing the sense of community.

...**develops self-awareness** of everyone’s own role and actions.

...stimulates **curiosity** and trains **intuition** and **critical thinking**.

...**promotes change**, generating new and more responsible thoughts and behaviors.
Welcome to Slow Food USA’s Good, Clean and Fair school garden curriculum. In this Introduction you will find everything you need to begin gardening and cooking lessons with young learners the Slow Food way. We envision a progression of activities that moves from the personal to the social and from the local to the global.

What is Slow Food?

In 1986, Italian journalist Carlo Petrini recognized that a proposed McDonald’s restaurant in Piazza di Spagna near the Spanish Steps in Rome represented a threat to the Italian food culture of trattorias and osterias. Armed with bowls of pasta, Petrini rallied his friends to take a stand against the industrialization of food, and the social and culinary costs of homogenized eating. With this protest, Slow Food was born.

Slow Food is an idea, a way of living and a way of eating. It is a global, grassroots movement with thousands of members around the world that links the pleasure of food with a commitment to community and the environment. Slow Food seeks to create a dramatic and lasting change in the food system. We reconnect Americans with the people, traditions, plants, animals, fertile soils and waters that produce our food. We seek to inspire a transformation in food policy, production practices and market forces to equity, sustainability and pleasure in the food we eat.

Today, Slow Food has over 150,000 members and is active in more than 150 countries. In the USA, Slow Food is headquartered in Brooklyn, NY and there are more than 150 chapters and 2,000 food communities across the country.

The Purpose of Slow Food School Garden Curriculum

The concept of “conviviality” is at the heart of the Slow Food movement: taking pleasure in the processes of cooking, eating, and sharing meals with others. Education is an important step in gaining the appreciation for conviviality and the pleasure of sharing good food. Therefore, Slow Food School garden curriculum must include the following elements:

1. Activities and instruction regarding growing food
2. Activities that center around cooking and eating
3. Promoting the enthusiastic enjoyment of good, clean and fair food for all.
Slow Food provides a unique contribution to school gardens. By engaging learners on experiential and emotional levels, our garden programs provide a meaningful context for multidisciplinary education. Our holistic approach allows the learner to understand the network of relationships between humans and the natural environment from a personal point of view.

School gardens are used for many other purposes, including STEM education, nutrition, food production, sensory learning and social connections. These are all praiseworthy efforts to link learners and the school community to the natural environment. A Slow Food school garden may include some or all of these activities, but its primary purpose is to fulfill the Slow Food mission; a Slow Food school garden links the pleasure of good food with a commitment to fairness in the community and a healthy environment. The curriculum is the place where the Slow Food mission is expressed in gardening and cooking activities.

The curriculum is divided into three parts, Good, Clean and Fair. Together they provide a full range of activities centered around the garden; from tasting activities, to cooking with garden produce, to sustainable gardening, to studying food systems, and activities that promote access to affordable fresh food. Please see the following chart to select lessons appropriate for specific age groups.

These activity guides assume that you already have a school garden, or an outdoor space. If you need help starting a garden, check out the Slow Food USA’s School Garden Guide at http://gardens.slowfoodusa.org

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<th>Fair</th>
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<td>Gardening for Sustainability</td>
<td>Producing Food with Respect for Economic and Social Justice</td>
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### Elementary School
- Sensory Education
- Simple Cooking Techniques
- Healthy Soils
- Wise Water Use
- Lifecycles of Plants and Insects
- Community Justice: Youth Farmers Markets and Sharing with Food Pantries

### Middle School
- Food and Culture including recipes from around the world
- Plants and Culture
- Local and National Food Systems

### High School
- Advanced Cooking Techniques
- Sharing with Community
- Garden Design and Sustainable Agriculture
- Global Food Systems and Human Rights
How to Use the Lessons

We have combined observation-based lessons with skill-based lessons in a progression designed to increase learners’ enthusiasm and knowledge of cooking and gardening. Adult leaders can be teachers, garden leaders, after school staff, interns or parents. They do not need to be cooking and gardening experts, but classes will be more successful if the leaders have experience with leading groups of young learners. Often lessons can be more powerful if leaders are learning along with the students. We provide you with the background information you need to lead a class. Additional resources are provided at the end of each section.

Although the lessons are meant to enhance learning with a school garden, many observation lessons as well as cooking lessons do not need a formal school garden. However access to some type of outside landscape is desirable.

Lessons are meant to be adaptable to the widest variety of conditions. They may be taught as single experiences, or as part of an ongoing in school or after school program. Many powerful cooking classes can be accomplished with simple tools and without the use of heat.

Good, Clean and Fair in the Academic Curriculum

The process-driven lessons contained in these volumes move through four stages of knowledge. The four fundamental skills of observation, research, experimentation and reflection promote learners who are creative, flexible and can engage in critical thinking.

OBSERVATION

Developing the ability to truly see what is happening in the environment is the fundamental skill to understanding. Both gardening and cooking rely on observation to develop judgment. Intuition starts with observation. Learners can derive a shallow understanding of life cycles from lectures and reading books, but a deeper understanding starts with observing the small details of life at an intimate scale. Teachers and garden leaders can use the journal page “What did you see today?” (pages 42 and 123) to encourage reliable, detailed habits of observation every time they engage in garden related activities.

RESEARCH

Observation naturally leads to questions. These questions are powerful learning tools for further research and knowledge integration. Questions that come from the learners’ own interest and first hand observation are more likely to ensure engagement in the learning process. There are many small mysteries in the garden that can be investigated by research. For example, why tomato leaves are curled or black? What insect created holes in cabbage leaves? Once learners
investigate these questions through research, they are often driven back to observation to confirm what they have learned. Research can also lead to experimentation or activity. For example, once a learner discovers that cabbage loopers may be the cause of damage, they can experiment with different methods of controlling the infestation.

EXPERIMENTATION OR ACTION
Observation and research provide the backdrop for a learner’s desire to intervene in the environment. The teacher or garden leader can guide this intervention into the shape of an experiment. Experiments rely on skills developed over time. Just as a chemistry experiment relies on the skill to manage heat, test tubes and measuring, so a recipe relies on skills such as chopping, stirring and seasoning. Use the “What did you do today?” journal worksheet (pages 41 and 122) to record all actions while gardening or cooking. Have the learners focus on the process and the results of their actions.

REFLECTION
Reflection integrates observation, research and the results of experimentation into a synthesis producing knowledge. Make sure to leave time after every lesson for reflection about what has happened. This will allow the learner to take his experience and put it into context, allowing him to remember it in a deeper way. Reflection will lead to new questions and deeper engagement, providing the framework to develop critical thinking.
Good, Clean and Fair and Academic Standards

The Slow Food USA curriculum is compatible with many Common Core and Next Generation Science Standards (NGSS). School garden and cooking activities are most likely to work with standards in the following subject areas.

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<tr>
<th>LANGUAGE ARTS</th>
<th>SCIENCE</th>
<th>MATHEMATICS</th>
<th>HEALTH AND WELLNESS</th>
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<tr>
<td>Promotes precise use of vocabulary. Use the “What did you see today?” worksheet (pages 42 and 123) to learn new nouns and adjectives and “What did you do today?” journal worksheet (pages 41 and 122) to learn new verbs.</td>
<td>Promotes observation skills and note taking</td>
<td>Encourages experiential knowledge of lifecycles and connections between animals and plants</td>
<td>Expands food preferences for fresh fruits and vegetables</td>
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<tr>
<td>Teaches how to describe sensory experiences precisely, to separate out opinions, likes and dislikes</td>
<td>Promotes use of drawing for explanation</td>
<td>Teaches botany and taxonomy of plants, insects, arachnids and birds</td>
<td>Promotes discovery of connections between environmental and human health</td>
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<td>Can be used to teach various writing forms including instructions, descriptions, stories and poetry.</td>
<td>Encourages experiential knowledge of lifecycles and connections between animals and plants</td>
<td>Teaches measurement via plant growth, garden areas and planting rows</td>
<td>Promotes intuitive understanding of healthy cooking process</td>
</tr>
<tr>
<td>Promotes research skills by using seed packets and websites to decode informational texts</td>
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How to Cook with Young Learners

If you take the time to set up your classroom environment for cooking classes, you will be able to minimize anxiety and risk. Planning out the flow of the class, the placement of the learners, and having supplies ready will ensure that your classes are successful and enjoyable to both teachers and learners.

Set Up

Procure the use of a sink for washing dishes.

The cooking area (if using heat) should be separate from the food preparation area and from the children, near an electrical outlet in the cafeteria.

Remove all papers, backpacks and books from surfaces.

Surfaces should be sanitized.

Divide learners into groups no larger than 8, with one adult per group.

Produce should be prewashed and placed in bowls.

Have a bowl or tray for scraps to put in the compost at the end of class.

Wait until AFTER you have talked about knife safety to pass out any knives.

Every learner who will be cutting should have his or her own cutting board.

Make sure learners wash their hands before sitting down.

Every class should start with a safety refresher and kitchen rules.

Show learners where to put their scraps.

Briefly explain what you are going to make. Then explain only the first step in detail.

Before transitioning to a new task, make sure all learners are quiet and paying attention.

Class Introduction

Ingredients for a Successful Cooking Class

1. Design activities to be hands-on as much as possible.
2. Every child should have something to do, which means that recipes should be simple to cook, but labor intensive.
3. Focus on one primary learning goal, with a few sub-goals that are less important.
4. De-emphasize reading instructions and measuring, unless that is your primary goal.
5. For picky eaters, encourage “tasting” or “experimenting” as opposed to “eating.” Do more taste classes.
6. Give the learners an opportunity to be in control of the final flavor.
7. Give the learners opportunities to choose ingredients.
Safety in the Cooking Classroom

Before cooking in the classroom or cafeteria, talk about rules and special behaviors when using tools and heat. Engage learners in a discussion about what rules would be best to promote respect for the teacher, cooking process, safety and for each other. Cooking activities are popular with parents and volunteers. Ask them for help so that they can facilitate groups of learners, ideally no more than eight in a group.

The following simple rules are examples that you may wish to consider. These simple guidelines will minimize risk of food-born illnesses. These rules will help you to avoid cross contamination, keep food at safe temperatures and promote healthy habits. We recommend that you do not cut raw meat or seafood products with the young learners in order to minimize food safety concerns.

- Before the cooking class, learners must wash their hands with soap and water for at least 20 seconds.
- Wipe down all counter and table surfaces with a disinfectant.
- Do not let food sit at room temperature for more than one hour before class.
- Do not bring cooked food to the class.
- Cook all ingredients during or just before the cooking class.
- Do not bring leftovers home.

If you would like to add meat to your dishes, you can try the following techniques. Used slices of ham, chicken or turkey cut into cubes for flavor in stir-fries, wraps and soups. Use a small amount of sausage for flavor in soups or stews. If you would like to use boneless chicken breast or pork, poach it gently while the learners are chopping the rest of the ingredients. Let it cool, and then cut the fully cooked meat before adding it to the dish.
How to Garden with Young Learners

If you set up your garden for learners to visit and use, you will be able to minimize anxiety and risk outdoors. Planning out the flow of the class, the placement of the learners, and having supplies ready will ensure that your classes are successful and enjoyable to everyone involved.

Teachers and garden leaders can set the tone by introducing the garden as an outdoor classroom, with the same rules and behaviors as an indoor classroom. Discussing rules and expected behavior before going outdoors will result in a more productive and focused garden experience. If possible, reserve a part of your garden or a space near your garden for the class to gather as a group. You can read about more tips for garden design in the Slow Food School Garden Guide, http://gardens.slowfoodusa.org. Garden-based activities are popular with parents and volunteers. Ask them for help so that they can facilitate groups of learners, especially with the instructions. For more techniques about managing learners in an outdoor setting, refer to Life Lab’s brief guide: http://www.lifelab.org/wp-content/uploads/2003/04/OutdoorClassroomManagement2.pdf.

Have any necessary tools and supplies ready before going outside.

Make sure there are clear path areas around the beds.

Divide the class into small enough groups so that each child has space around a plot to do the activity.

Connect any hoses or watering needed before the class.

Make sure learners visit the restroom and wash their hands before going outside.

Every class should start with a safety refresher and garden rules.

Give any background information in the classroom, while the entire group is paying attention.

Give any specific directions outside, where learners can see and understand what they are doing.

Keep instructions brief and to the point. Give one instruction at a time.

Before transitioning to a new task, make sure all learners are quiet and paying attention.

1. Design activities to be hands-on as much as possible.
2. Every child should have something to do, which means that you have enough garden space for all to participate.
3. Focus on one primary learning goal, with a few sub-goals that are less important
4. Encourage knowledge retention through journal writing.
   Always leave time for observation and reflection.
5. Encourage learners to make decisions and record outcomes.
Safety in the Garden

Before going outside, talk about rules and behavior when learning outside. Engage learners in a discussion about what rules would be best to promote respect of the living plants and animals in the garden as well as each other. The following simple rules are examples that you may wish to consider.

General Outdoor Safety:
- Encourage garden activities in the morning, before it is hot.
- Bring water to the garden for learners to drink.
- Make sure all participants are wearing sunscreen.
- Remove all puncture vine (goat head) or other thorny weeds before learners use the garden.
- Keep first aid kit with Band Aids and antiseptic on hand.

Tool safety:
- No running in the garden.
- No children under aged 10 will be allowed to use long handled tools (shovels, hoes, rakes).
- Children will be encouraged to use their hands (as opposed to tools) as much as possible when gardening.
- Children will be provided with gardening gloves if exposed to thorns or other dangerous plant material.
- Closed-toe shoes must be worn at all times, no flip flops.
- All participants will be instructed as to proper handling of tools, including no running and carry tools face downward at their side.
- Children must be supervised when gardening.
- Participants who do not follow safety rules will not engage in gardening.

Food safety issues outdoors:
- No use of chemical fertilizers or pesticides in the vegetable garden.
- No use of raw manure as fertilizer.
- Soil testing will be done each year for lead (as part of science education).
- All produce will be washed before being eaten.
- All participants will wash hands, using proper hand washing techniques, after being in the garden.
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Welcome to Slow Food USA's school garden curriculum promoting Good food for learners aged 6-12. We believe that education regarding good food encourages healthy food choices for all learners. Good incorporates knowledge of how the quality of food is affected by its freshness, cultural factors, preparation, cooking, and consumption. Activities in this manual use a wide variety of fruits and vegetables that learners can grow in a school garden, or purchase from a favorite source. These lessons will provide a background for young learners to develop their own intuitive sense of food and cooking, as well as promote enthusiasm for eating fresh fruits and vegetables.

All beginning cooks, including young learners, must understand the fundamentals of cooking. We believe that the fundamentals of taste, appreciation of ingredients and cooking skills are necessary before a novice cook starts using recipes. Once learners have internalized how to manipulate flavors and use basic skills, they will be enthusiastic cooks.

Our approach evolved from the struggles we see every day around food and cooking. It is common knowledge that people worldwide are beginning to prefer fast food choices. These food choices, in combination with a lessening of physical activity are leading to an epidemic of obesity. Let’s examine what people are choosing when they choose these foods, and why they are so attractive.

Fast foods have many appealing qualities. They are often high in salt, fat and sugar, substances that tend to provide comfort in an anxious world. Foods like doughnuts, pancakes, French fries and potatoes offer predictability and comfort as well as convenience in a complicated world. Learning to cook in this environment adds just another type of stress and anxiety.

In order to design an alternative to fast food, we need a cuisine that is equally pleasurable, comforting and attractive. In addition, we need a cuisine that contains components that fast food is lacking, such as accessibility to fresh and local ingredients, sense of accomplishment and achievement in creating delicious food and menus that represent current popular trends in eating. What if you could learn to cook from a young age, taking advantage of what you have on hand in a way that calms and enlivens as opposed to promotes stress? What if the delicious food you created was also a source of pride and joy as you shared it with family and friends? What if cooking lessened the worry and fear of modern life? Isn’t that something we would all like to do?
The key to creating pleasure and joy in cooking is to reduce the barriers of fear and anxiety by focusing on the processes of discovery, experimentation and taste. This first module in this manual for young learners is designed to do just that.

The section of lessons, Sensory Education, opens up the world of flavor and lets the learner be in control of the final product. These are the first steps in being able to describe the flavor of food, which leads to the appreciation of fresh fruits and vegetables.

The second section of lessons, Kitchen Skills, gives learners an understanding of how raw ingredients become common foods. By using knife skills, cooking techniques, and simple food processing skills, learners will understand how a kernel of corn becomes a tortilla.

All of the lessons can be done in a school setting with minimal equipment. We recommend that learners be divided into groups of eight, with one adult in charge of each station.

Whether the class leader is a novice cook or an experienced one, we hope you all enjoy discovering the pleasures of cooking and eating together.
## Tips for Lesson Planning

All activities have a simple guide at the top of the page to help with lesson planning. The information includes:

- Estimated length of the activity, not including preparation time or transition time.
- Grade level(s) most appropriate from K-5
- Location of the activity (indoors or outdoors)
- Activity type
- Suggested optimal season for the activity

Use the following key as a guide to the Info bar.

### KEY

<table>
<thead>
<tr>
<th>TIME REQUIRED</th>
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<tr>
<td>15 minutes</td>
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<tr>
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<tr>
<td>45 minutes</td>
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<table>
<thead>
<tr>
<th>ACTIVITY TYPE</th>
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<tbody>
<tr>
<td>Gardening     refers to an activity that has a gardening purpose.</td>
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<tr>
<td>Concept Exploration refers to an activity whose purpose is to examine, draw, discuss or experiment with a concept related to the garden or food.</td>
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<tr>
<td>Sensory Exploration refers to a food activity whose purpose is to experience the sensory qualities of a food. It does not require assembly or heat, but may require some cutting or preparation.</td>
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<tr>
<td>Basic Cooking refers to a food activity that is simple to prepare, and requires heat.</td>
</tr>
<tr>
<td>Intermediate Cooking refers to a food activity that requires more complex preparation, heat, and is appropriate for ages 10 and up.</td>
</tr>
<tr>
<td>Food Preparation refers to a food activity that requires assembly, cutting and some simple equipment but no heat.</td>
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<td>Fall</td>
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<td>Winter</td>
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CHAPTER 1: Sensory Education
Sensory education, including the sense of taste, forms the core of the Slow Food USA curriculum. If you do not have the resources or time for a full cooking class, introduce learners to foods through tasting. You can address most of the learners’ misconceptions about trying new ingredients and new dishes with raw tasting exercises and simple recipe creation. These activities will be your most powerful tools for expanding food preferences and increasing enjoyment of healthy, fresh fruits and vegetables.

The following lessons provide a way for each learner to experience all five senses, in increasing complexity, through food and cooking. One purpose of the Sensory Education section is to allow learners to refine their observation skills by isolating and describing how they experience food through their sense of taste, smell, vision, touch and hearing. In order to provide an environment where learners can pay attention to what their senses are telling them, the educator must break through certain preconceptions. After all, they have been eating food for their entire lives and they think they know all about it. In fact, most of them might not have ever truly tasted their food.

Here are a few things that students may not know about food:

- They cannot tell how food tastes by how it looks.
- They might like something today that they did not like yesterday.
- Food ingredients do not always taste the same. Ingredients will taste differently depending upon the seasoning, cooking technique and combination of other ingredients.
- It is possible to like a dish (spaghetti sauce), even though a person “hates” one of the ingredients (onions).
- It is possible to change almost any ingredient or food into something you like.
- A specific ingredient will taste differently depending upon how it is cooked. Fresh, steamed asparagus tastes much sweeter than canned, boiled asparagus.

When infants are born, they are provided with all of their food. As they grow, their only choices regarding food are to say “yes” or “no.” Food becomes another area of struggle over power and control between parents and children. Sensory education programs are the first step to empowering children to take charge of their food. It allows them to experiment with new flavors without fear of pressure or ridicule. It gives them the tools to adjust simple flavors until they create something they like. One stumbling block to nutrition education is food neophobia, or the fear of trying new foods. Tasting can help eliminate that fear and change one’s attitude from dread to anticipation.
Put yourself in the learner’s shoes. Your parents give you food that they insist you eat. You look at it and it seems suspicious. If you have understanding parents, they might say, “it’s ok, just try it.” So you nibble on the very edge and say, “I tried it, I hate it.” You only have two choices as a young eater, you can either accept what is given to you or reject it. When learners are exposed to the following tasting activities in school, it becomes more of a science experiment or a fun game. The goal is to figure out what kinds of things they like and what kinds of things they don’t like and how to change them so that they become more appealing.

**ACTIVITY PROGRESSION**

The first activity, “Identifying the Five Basic Tastes,” provides the foundation for the rest of the section. Many learners have a difficult time recognizing some flavors, especially sour and bitter. This first activity allows learners to realize that they can distinguish between different flavors by isolating them.

The next section, “Tasting Exercises,” introduces learners to complex flavors, smells, and textures as they exist in their natural state. Over time, learners will become more aware of their senses while eating and begin to distinguish flavor characteristics that they prefer. They will develop new vocabulary skills in order to be able to more accurately describe their sensations when eating. This section concludes with the activity “Progressive Tasting,” which allows learners to change the flavor of a produce item by adding sugar, salt and lemon. Manipulating flavors is the first stage in learning how to cook.

The third section, “Developing Personal Food Preferences,” introduces a series of exercises in which learners combine flavors, textures and aromas to make delicious dishes. Developing flavor profiles, even in the raw form, provides them with the opportunity to refine their cooking skills.

Our real world approach to sensory education offers a unique experience for learners to master the complexity of tasting and cooking, while enhancing their ability to describe and distinguish the various elements of a dish.
**Objective**
Learners will be able to identify, compare, contrast and describe the five basic tastes.

**Background**
This activity helps participants to distinguish the five basic tastes (sweet, salty, bitter, sour and umami, or savory), differentiating them from the other senses, particularly smell. Smell is always a factor in taste perception, to the point that the term “flavor” is often used to describe aromas (i.e. hazelnut flavor, coffee flavor, etc.).

With the youngest ages, concentrate on recognizing the different tastes, and connect them to commonly eaten foods. If the learners cannot write, label the foods with a drawing/diagram and combine their verbal observations on a large sheet of paper.

For those aged 10 and up, compare different individual taste sensitivities and link them to individual food habits, thus establishing relationships between preferences and individual sensitivity. For example, those who prefer salty flavors may enjoy chips but dislike cake. Or those who are sensitive to bitter may dislike kale.

**Materials**
**For each station:**
- Juice from 1/2 lemon (sour)
- 1/2 teaspoon salt (salty)
- 1 teaspoon sugar (sweet)
- 1 tablespoon green or white tea concentrate (bitter)*
- 1/4 teaspoon Accent (umami)
- Five 1/2 liter bottles distilled water
- Pitcher tap water
- Medium sized bowl
- Small cup for each student (Dixie)
- Sharpie
- Paper and pencils
- Flip chart easel or blank poster for recording the results

**Five Tastes Worksheet** (pg. 30) for each student

*Make the tea concentrate by boiling 4 bags of green or white tea in one cup of water for 10 minutes.

**Preparation**
Prepare enough stations so that there are 6-8 learners in each group.

Number each of the five bottles on a table from 1-5. Add the prepared flavor (lemon, salt, sugar, tea extract, Accent) to each bottle. Screw the cap onto the bottle and shake until well mixed. Record which flavor is in each numbered bottle in a place where others can’t see it.

Each station should have one empty bowl, one pitcher of plain water, the five flavored water bottles and one small cup for each participant.

Make sure everyone has washed his/her hands.
Activity
Pour a spoonful of bottle number one in each learner’s cup. Have each person taste it. Have each learner match the number of the bottle next to the name of the taste on the worksheet.

After the learners have tried the liquid, ask them to think of foods that taste similar. Have each person make a list of the similar tasting foods under the name of the flavor on the worksheet.

After each taste, have the learners pour the excess liquid into the bowl. Add a few tablespoons of tap water to their cups to rinse and dump into the bowl.

Pour the next flavor and repeat the process until everyone has tried each of the five flavors.

Discussion
Gather back together into one large group. Name some common foods such as olives, pickles, pretzels, bananas and ask learners what flavors are in those foods.

Discuss the following questions:
• Did anyone have a strong reaction to the bitter (tea) flavor? What was it like?
• Did anyone find it hard to distinguish between salty and sweet? Why?
• Which flavors were favorites?

Further Exploration
Try these additional experiments after the taste test:

Banning Bitter—The least favorite flavor, bitter, is often associated with highly nutritious foods such as greens, herbs and vegetables. Have learners try to lessen the bitter liquid by adding other flavored liquids to it. Which flavor works best to lessen bitter?

Flavor Balance—Mix all the flavors together to create a balanced flavor. What does it remind you of? Does it taste good?

This test was adapted from the Slow Food International food and sensory curriculum, To the Origins of Taste at http://www.slowfood.com/education/pagine/eng/pagina.lasso?-id_pg=25.
Poetry of the Senses

Objective
Learners will be able to describe herbs using their senses and create a poem.

Materials
Assortment of herbs, enough for each learner
1 blindfold for every two learners
Garden journals
Pencils

Preparation
Make sure each learner has his own pencil and garden journal.
Divide the group into pairs. Students will take turns being the scribe and the sensor in this exercise.

Activity
1. The first student ties the blindfold over her eyes. Her partner gives her a sprig of herbs.
2. The blindfolded student answers the following prompts while the scribe writes down the answers:
   - Use words to describe the scent of the plant.
   - Feel the plant with your fingers. Use words to describe the texture.
   - Taste a piece of the plant. Use words to describe the flavor.
   - What does the plant remind you of?
3. After the first learner has finished the questions, repeat the exercise with a different plant and the second learner.
4. Use the description words to write a poem.

Discussion
Share the poems with the class and ask the learners, “What do you know about the herb that you didn’t before the lesson?”

From the Garden
Harvest any strongly scented herbs including sage, rosemary, lemon balm, and scented geraniums. Harvest entire sprig instead of individual leaves.
Cucumber Tasting

Objective
Learners will be able to describe how cucumbers grow, how to harvest them, what they taste like and list some distinctions between varieties.

Background
If possible, choose a wide variety of cucumbers so the learners can experience types they may have never seen. Many varieties are not available in stores, so use cucumbers from your garden or a local farmers market. Suggested varieties are: Japanese, Armenian English, lemon, pickling, garden and white. For more details about growing and harvesting cucumbers, see the Cucumber Worksheet, page 31.

Materials

For each station:
- Variety of cucumbers
- Plate for each student
- Bowl or platter for each variety of cucumber
- Sheet of paper for each variety
- Marker
- Tasting Worksheet for each student (pg. 40)
- Cucumber Worksheet for each student, printed double sided (pg. 31)
- Pencils
- Colored pencils

Young learners or short on time
— Cut vegetables prior to the tasting. Place each variety in a labeled plastic bag. Make sure to save one whole cucumber of each kind to show them.

Older learners or more time available
— Have them prepare vegetables into bite-sized shapes.

Prepare enough stations so that there are 6-8 learners in each group.

Make sure all of the desktops and/or counters are cleared of materials, cleaned and sanitized.

Make sure everyone has washed his/her hands. Make sure each table has one container of each type of cucumber. Label each sample.

Have the learners write in the name of the variety they taste.

After they taste a sample, have them indicate their response on the Tasting Worksheet.

Activity
For each type of sample, ask these four questions:

- How “cucumber-y” does it taste? Strong or weak?
- Is the cucumber crispy or soft?
- Is the skin thin or thick?
- Do the seeds have flavor? How would you describe their texture?
Discussion

Gather back together into one group. Discuss the results of the taste test.

**There are several possibilities for discussion:**

- Make a chart of the varieties tasted. Have everyone vote on which variety is the most crispy, the strongest cucumber flavor and the thinnest skin.
- Brainstorm a list of all of the words you can use to describe cucumbers.
- Brainstorm a list of all of the ways you can eat cucumbers.
- Why would a cucumber have thick or thin skin? What help will it give the fruit while it is growing?
- Read and share *Cucumber Soup* by Vickie Lee Krudwig. See the Recommended Children's Books on page 29.

From the Garden

Harvest a range of cucumbers including Persian, Japanese, lemon, Armenian, gherkins, pickling and market. You can also compare garden grown with supermarket cucumbers.
Objective  Learners experience the different families of salad greens, describe which ones are their favorites and list their properties.

Background  There are four major families of plants that we use for salad. The first is lettuce, which is usually crispy and mild tasting, with a milky sap in the middle of the leaf. The second is the bitter chicory family including endive, frisée, chicory and radicchio. The third is the cabbage family, which includes arugula, mizuna and various cabbages. The last is the beet family, which also includes spinach and chard. One minor salad green family is the nasturtium, which also includes watercress.

This exercise is a good way to explore the importance of plant families. Be sure to provide examples of each type of green, so learners can compare them to one another and discover similarities within families. Typically if they like one member of a family, they will enjoy the others.

Materials  For each station:
 Variety of greens (try to get two from each family)
 Plate for each student
 Bowl or platter for each variety of green
 Large platter or sheet pan
 Sheet of paper for each variety
 Marker
 Salad Green Sheet for each student (pg. 33)
 Lettuce Worksheet for each student (pg. 34)
 Pencils
 Colored pencils

Preparation  Young learners or short on time—Wash all of the salad greens ahead of time. Sort into different bowls according to variety.

Older learners or more time available—Have them harvest the greens and thoroughly wash them. Sort into different bowls according to variety.

Prepare enough stations so that there are 6-8 learners in each group.
 Make sure all of the desktops and/or counters are cleared of materials, cleaned and sanitized.
 Make sure each table has one container of each type of green.
 Label each sample.
 Make sure everyone has washed his/her hands.

Pass out plates and copies of the Salad Green Sheet to learners.
Activity

Have the learners try each type of green.

- On the large platter, have them group together types of greens that taste similar.
- Write down the greens that are in each group. Do they belong to the same family?
- Organize the greens from bitter to sweet. Did plants from the same families end up next to each other?

Discussion

Gather back together into one group. Discuss the results of the taste test.

There are several possibilities for discussion:

- Make a chart of the varieties tasted. Have everyone vote on which variety is the most bitter. Which is the most cabbage-y? The most sweet?
- Make a chart of each plant family: Lettuce, Chicory, Cabbage, Beet and Nasturtium. Brainstorm words that describe the greens from each family.
- Notice the different colors of the leaves. Ask learners to point out the lightest and the darkest? Which ones have been exposed to more light? Which ones would you grow in your garden?
- Notice the difference in thickness and crunch in the leaves. Which leaves have the most water? Which would grow better in your garden?

Further Exploration

Use the leftover greens to make a salad.
Follow the instructions on page 18 to create your own salad dressing.

From the Garden

Harvest a wide variety of greens and lettuce. Use scissors to trim greens in order to encourage a second harvest.
**Objective**
Learners will be able to describe how tomatoes grow, how to harvest them, what they taste like and distinctions between common varieties.

**Background**
If possible, choose a wide variety of tomatoes so the learners can experience types they may have never seen. Many varieties are not available in stores, so use tomatoes from your garden or a local farmers market. Suggested varieties are: Yellow Pear, Sungold, Zebra, Roma, Brandywine, Sweet 100s, Black Krim, Silvery Fir Tree. For more details about growing and harvesting tomatoes, see the *Tomato Worksheet* on page 36.

**Materials**
For each station:
- 4-6 varieties of tomatoes
- Plate for each student
- Bowl or platter for each variety of tomato
- Sheet of paper for each variety
- Marker
- *Tasting Worksheet* for each student (pg. 40)
- *Tomato Worksheet* for each student (pg. 36)
- Pencils
- Colored pencils

**Preparation**
*Young learners or short on time*—Cut tomatoes prior to the tasting. Place each variety in a labeled plastic bag. Make sure to save one whole tomato of each kind to show them.

*Older learners or more time available*—Have them prepare tomatoes into appropriate shapes.

Prepare enough stations so that there are 6-8 learners in each group.
- Make sure all of the desktops and/or counters are cleared of materials, cleaned and sanitized.
- Make sure each table has one container of each type of tomato.
- Label each sample.
- Make sure everyone has washed his/her hands.
- Pass out plates and copies of the *Tasting Worksheet* (page 40).

Have the learners write in the name of the variety they are tasting.
After they taste a sample, have them indicate their response on the tasting sheet.

**Activity**
*For each type of sample, ask these four questions:*
- What color and shape is it?
- Is it sweet or sour?
- Does the number of seeds change in each type of tomato? Which do you prefer?
- If you don’t like tomatoes, what words can you use to describe why you don’t like them?
Discussion
Gather back together into one group. Discuss the results of the taste test.

There are several possibilities for discussion:

- Refer to a large map of the world. Using the Tomato Worksheet, mark the origin of the tomato. Brainstorm about dishes from different parts of the world that use tomatoes: Tomato sauce in Italy, ketchup in the US, stewed tomatoes in England, etc. Label all of the countries that use tomatoes.
- Brainstorm the ways you can eat tomatoes.
- Read and share I Will Not Ever Eat a Tomato by Lauren Child. See the Recommended Children’s Books on page 29.

Further Exploration
Use the leftover tomatoes to make a salsa following the instructions on page 23.

From the Garden
Harvest a wide variety of tomatoes including Cherry, Grape, Plum, Zebra, Krim, Brandywine and Yellow. Compare garden grown tomatoes to supermarket tomatoes.
Learners will be able to describe the identifying characteristics of apple varieties and compare and contrast their uses.

A wide variety of apples are available year round at most markets. Locally grown apples, as well as less common varieties may be available in the fall at your local farmers market. Apples provide a great opportunity to incorporate global trade and food miles into the discussion for this lesson. Take note of where your apples come from, especially in the summer months. Apples from the United States are picked in the fall, and often stored year round. Suggested varieties for the Rocky Mountain region are: Jonathan, Jonagold, Fuji, Braeburn, Macintosh, Honeycrisp. For more details, see the Apple Worksheet on page 38.

In general, crispy sweet apples are eaten raw, while more tart/soft apples are used in cooking. Often sweet apples do not retain their apple flavor when cooked.

**Objective**

**Background**

**Materials**

For each station:
- Variety of apples
- Plate for each student
- Bowl or platter for each variety of apple
- Sheet of paper for each variety
- Marker
- Tasting Worksheet (pg. 40) for each student
- Apple Worksheet (pg. 38) for each student
- Pencils
- Colored pencils

Cut the apples just before the exercise so they will not get brown. 

*Note*: avoid preparing them with lemon juice as it will change the flavor.

Make sure all of the desktops and/or counters are cleared of materials, cleaned and sanitized. Make sure each table has one container of each type of apple. Label each sample. Make sure everyone has washed his/her hands.

Pass out plates and copies of the Tasting Worksheet (page 40).

**Activity**

Have the learners write in the name of the variety they are tasting. After they taste a sample, have them indicate their response on the Tasting Worksheet.

**For each type sample, ask these questions:**
- How “apple” does it taste? Strong or weak?
- Is it crispy or soft?
- Is it sweet or sour?

Describe the color and shape.
Discussion

Gather back together into one group. Discuss the results of the taste test.

There are several possibilities for discussion:

• Make a chart of the varieties you tasted. Have everyone vote on which variety is the most crispy, has the strongest apple flavor, the sweetest, and tastes the most sour.

• Brainstorm session all of the ways you can eat apples. Can you think of any dishes that are not served as a dessert?

• Read and share one of the apple books from the Recommended Children's Books on page 29: *Apple Picking Time* by Michele B. Slawson or *Apples* by Gail Gibbons.
**Objective**
Learners will be able to manipulate the taste of a basic ingredient, describe their preferences and the role of flavor in their preferences.

**Background**
A central skill in learning how to cook and enjoy healthy foods is to know how to manipulate the flavor of any dish. Learners will add flavors to any of the previous lessons (cucumbers, salad greens, tomatoes, or apples) in order to discover how different tastes go together, balance each other, and work together. They will also learn how to change a food they may not like into one they may prefer.

**Materials**
For each station:
- Wedge of lime or lemon for each student
- Small bowl with 2 tablespoons salt
- Small bowl with 2 tablespoons sugar
- Plate per student
- Large bowl with sample sizes of a single produce item
- Journals
- Pencils

Prepare enough stations so that there are 6-8 students in each group.
Make sure all of the desktops and/or counters are cleared of materials, cleaned and sanitized.
Give each person a plate.
Each table should have wedges of lemons or limes, a bowl of salt, a bowl of sugar and the bowl of produce samples.
Make sure everyone has washed his/her hands.

**Activity**
- **Plain**: Give each learner one sample. Have them taste it, describe the flavor and record it in their journal.
- **Acid**: Give each learner another sample as well as a lemon or lime wedge. Ask them to squeeze a few drops on the food. Have them taste it and see if they like it more or less. How does the flavor change? Record the results in a journal.
- **Salt**: Repeat the process with the salt.
- **Sweet**: Repeat the process with the sugar.
- **Combination**: Now have them add a combination of the three ingredients. They should add a little of each until it reaches a flavor combination that they like. They should record the results of their inquiry in their journals.
Discussion

Gather back together into one group. Discuss the following questions:

- Which individual flavor was your favorite? Are there foods that you like that have a similar taste? Which combinations of flavors did you like the best?
- How did the food change when you added different elements of taste?
- What is the most surprising thing you learned about flavors today?
INTRODUCTION

After experiencing the differences between individual flavors, learners progress to combining flavors and ingredients in order to produce a dish. This is one of the most basic cooking skills. In this series, learners practice blending flavors by making simple, no heat dishes, allowing them to have control over their food. Food preference exercises demonstrate the purpose of an ingredient in a recipe, another important skill for budding cooks. Learners will start to understand the purpose of a specific ingredient and what it brings to the whole dish. This is hard for beginning cooks to understand. For example, instead of thinking of a tomato as just a tomato, an experienced cook would consider it to be a red, juicy ingredient with both sweet and tart attributes.

Food preference exercises are usually everyone’s favorites. Learners work together in groups to produce new dishes without recipes. They enjoy the friendly competition between groups and love sharing their creations with their teachers and their friends.

Tips for cooking without recipes:

- Limit the size of the container for the experiments to ensure that learners will not make too much of the dish you are making.
- Make sure that you have the learners’ full attention while you are giving them instructions. They need to understand to goals of the lesson before they begin.
- Allow everyone to decide how to combine ingredients.
- Encourage collaboration and talking as long as everyone is focused.
- The results are better if the learners can describe their reasons for incorporating each ingredient. It is important for them to consider what it contributes to the dish.
- Don’t focus on what flavor is too strong in the dish. Instead, try to figure out what is missing. Help them correct flavoring mistakes by asking questions like: What stands out in this dish? Which flavors are missing?
- Use the Socratic method when teaching these classes. Pose provocative questions as opposed to intervening actively in the decision making process.
Create a Salad Dressing

Objective
Learners will be able to make a simple vinaigrette dressing for a green salad, balancing sweet, salty, sour and bitter flavors.

Background
Salad dressings are a great way to learn how to balance flavors. Green salads include four of the five basic flavors: sweet, sour, salty and bitter. The main flavors in dressings are salty and sour. In addition, dressings need fat to help coat the leaves, but also to calm the salty/sour combination. Sweetness, which can come in the form of fruit or sugar, also calms the sour and salty. Fats have the same effect as sugars. Cooks can lower fats by using sour ingredients that are more complex and mild, for example orange and rice wine vinegar instead of distilled white vinegar. In contrast, low fat commercial salad dressings include lots of sugar in order to calm the flavor of the inexpensive harsh vinegars because they have to compensate for the lack of fat.

Greens provide bitterness in a salad. Most people do not prefer bitter flavors, even though they are associated with healthy foods like kale and spinach. Learners will enjoy these healthy foods after they learn to make a dressing they like.

To make salad dressing, everyone will select core ingredients from each of the four taste categories, following the dressing equation. They will adjust their recipe to match their flavor preferences. Use the dressings with a variety of salad green types. See the Salad Green Tasting (page 9) for suggestions. At the end, have everyone compare dressings to see which each person prefers.

Materials
For each station:
- Cup or 1/2 pint jar to mix the dressing
- 4 cutting boards
- 4 paring knives
- Tasting spoons
- Fork to stir dressing
- Salad plates for each learner
- 1 fork for each learner
- 1 large bowl of salad greens, washed
- Selection of items from the Create a Salad Dressing list, page 20

Preparation
Young learners or short on time —Prepare dressing ingredients ahead of time and divide into the number of groups.

Older learners or more time available —Have them prepare dressing ingredients at each table.

Make sure all of the desktops and/or counters are cleared of materials, cleaned and sanitized. Wash, cut and spin dry the salad greens. Divide the greens into bowls so that each group has one bowl. Make sure everyone has washed his/her hands.
Divide the class into groups of no more than 8 learners.

This activity works best if the dressings between groups taste differently. Give each group a unique set of ingredients.

*Note: the most sanitary way for learners to try the dressing is to use a master spoon. The master spoon stays in with the dressing and is used to pour a sample into each learner’s tasting spoon. Each learner should have his/her own tasting spoon that is used throughout the exercise.

**Eating and Evaluation**

Bring all of the bowls of salad to the front of the class. Have the learners line up with their plates. Let them try salad from each group.

**Ask the following questions:**

- What are the strengths are weaknesses of each salad?
- Which flavors do you like the best?
- How do you think each should be improved?
- What surprised you about making your salad dressing?

Notice that each learner has different preferences. Discuss the variations in preferences, and how taste differs from person to person.

**From the Garden**

If time allows, harvest a wide selection of salad greens, as well as fresh leafy herbs like mint, basil, cilantro, dill, and chives. You can also add fresh garlic, onions and/or shallots.
Create a Salad Dressing

Use the following equation and table to create your own salad dressing. Make sure you have at least one ingredient from each column to create your dressing.

Salad Dressing = **Sour** + **Salty** + **Sweet** + **Fat**

<table>
<thead>
<tr>
<th>Sour</th>
<th>Salty</th>
<th>Sweet</th>
<th>Fat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rice vinegar</td>
<td>Salt</td>
<td>Olives</td>
<td>Olive oil</td>
</tr>
<tr>
<td>Cider vinegar</td>
<td>Olives</td>
<td>Rice (preferably brined)</td>
<td>Canola oil</td>
</tr>
<tr>
<td>Balsamic vinegar</td>
<td>Cheese (aged, hard)</td>
<td>Raisins</td>
<td>Mayonnaise</td>
</tr>
<tr>
<td>Lemon</td>
<td>Soy sauce</td>
<td>Sugar</td>
<td>Avocado</td>
</tr>
<tr>
<td>Lime</td>
<td>Anchovies</td>
<td>Honey</td>
<td>Buttermilk</td>
</tr>
<tr>
<td>Buttermilk</td>
<td></td>
<td>Pears, apples</td>
<td>Sour cream</td>
</tr>
<tr>
<td>Yogurt</td>
<td></td>
<td>Berries</td>
<td>Nuts*</td>
</tr>
<tr>
<td>Tamarind</td>
<td></td>
<td>Orange</td>
<td></td>
</tr>
<tr>
<td>Mustard</td>
<td></td>
<td>Fennel</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tomatoes</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>(just a little)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raisins</td>
</tr>
<tr>
<td>Sugar</td>
</tr>
<tr>
<td>Honey</td>
</tr>
<tr>
<td>Pears, apples</td>
</tr>
<tr>
<td>Berries</td>
</tr>
<tr>
<td>Orange</td>
</tr>
<tr>
<td>Fennel</td>
</tr>
<tr>
<td>Tomatoes (sweet/sour)</td>
</tr>
</tbody>
</table>

**Method**

Cut up any fruit or vegetables into small pieces (1/4”).

Start by adding the sour ingredients to the dressing container.

Then, slowly (1/4 teaspoon at a time) add salt until it tastes more than just sour.

Next add sweet ingredients in small quantities until the salad dressing flavor is toned down and less intense.

Last, add the fat until your dressing is thicker, helping it to stick to the salad greens. Taste it one last time and adjust the seasonings if necessary.

Toss the salad greens with just enough salad dressing to coat the leaves.

*Nuts are a common and serious allergen. Make sure no learners in your class have nut allergies before you include these ingredients.*
Create a Yogurt Parfait

Objective
Learners will be able to use whole foods instead of sugar to make a sweet yogurt snack.

Background
Often commercial brands of yogurt contain 25 or more grams of sugar, almost 5 teaspoons in 6 ounces! This makes plain yogurt a better choice, but often people do not like it because it is too sour. By making this yogurt parfait, participants will learn how to change a flavor they don’t like into one they do by using whole foods instead of sugary ingredients. Use lowfat as opposed to nonfat plain yogurt, as the nonfat can often taste bitter. Look for yogurt with live cultures.

Materials
For each station:
- 2 cups lowfat plain yogurt
- 1 cup whole grains
- 2 cups fresh fruit (mixed)
- 1/4 cup dried fruit
- 1/2 cup nuts or seeds
- Flavorings (see chart)

Young learners or short on time—Prepare additional ingredients ahead of time and divide into the number of groups.

Older learners or more time available—Have them prepare additional ingredients at each table.

Preparation
Make sure all of the desktops and/or counters are cleared of materials, cleaned and sanitized.
Rinse the fruit. Make sure everyone has washed his/her hands.
Divide the class into groups of no more than 8 learners.
Use the equation on the following page to have each group create their own recipe.

Eating and Evaluation
Have the learners taste the plain yogurt without the toppings. Do they like it? After everyone has tried the yogurt with the toppings, ask them: How has the flavor changed?
Use the USDA's http://www.choosemyplate.gov/ to see which categories of foods the yogurt parfait belongs to. How many food groups are included in this one dish?

Exploring Further
Bring in a few different kinds of fruit flavored yogurts. Show learners how to read the labels. How much sugar is in each type? Note that 4 grams of sugar is equal to one teaspoon.
How much whole fruit? Look up you ingredients on https://www.supertracker.usda.gov/foodapedia.aspx to compare sugar content with commercial brands. Compare flavored yogurt to your yogurt recipe. Which one is a better food choice?

From the Garden
Add mint to your parfaits or edible flowers like calendula, Johnny jump-ups or marigold petals. This is a great recipe for fresh berries like strawberries, raspberries, blackberries, grapes or tree fruit.

Objective

Background

Materials

Preparation

Eating and Evaluation

Exploring Further

From the Garden
Create a Yogurt Parfait

Use the Yogurt Parfait equation and chart to help create a healthy snack. Use the optional flavorings to help give the yogurt more of a sweet taste without adding sugar.

Parfait =

Yogurt + Whole Grains + Nuts*/Seeds + Fruit + Flavoring

Yogurt
Lowfat plain yogurt with live cultures

Whole Grains
- Granola
- Whole grain breakfast cereal
- Cooked wheat or rye berries

Nuts*/Seeds
- Almonds
- Sunflower seeds
- Pumpkin seeds
- Coconut flakes, unsweetened

Fruit
- Mangoes
- Strawberries
- Bananas
- Berries
- Apples
- Raisins
- Dried cranberries

Flavoring
- Mint
- Cinnamon
- Vanilla or lemon extract
- Edible flower petals, such as violets and pansies

Method

*Nuts are a common and serious allergen. Make sure no learners in your class have nut allergies before you include these ingredients.

Cut all of the fresh fruit into bite-sized pieces

Put each ingredient in a separate bowl with a serving spoon.

Line up the choices at each table, starting with the yogurt. Give each learner a cup.

Learners choose what to put in their parfaits, alternating between yogurt, grains, nuts, fruit and flavorings.
Create a Salsa

Objective
Learners will be able to make their own salsa, balancing sweet, salty, sour and bitter flavors.

Background
Salsas are a great way to learn about balancing complex flavors. They contain all of the four basic flavors (sweet, sour, salty and bitter). The main flavors in salsas are salty and sour. Temper the intense combination of sour and salty by adding sweet ingredients such as fruit. Add bitter red chiles or pungent garlic and ginger to deepen the flavor.

Materials
For each station:
1 medium sized mixing bowl
1 bowl with the produce for salsa
1 mixing spoon
1 bowl of tortilla chips to eat salsa
8 cutting boards
8 paring knives
1 master spoon and tasting spoons for each learner
Small plate for each learner
Selection of items from the Create a Salsa list on page 25.

Preparation
Young learners or short on time — Prepare additional ingredients ahead of time and divide into the number of groups.

Older learners or more time available — Have them prepare additional ingredients at each table.

Wash the ingredients.
Make sure all of the desktops and/or counters are cleared of materials, cleaned and sanitized.
Make sure everyone has washed his/her hands.
Divide the class into groups of no more than 8 learners.

Activity
Use the equation on the following page to have each group create their own recipe.
This activity works best if the salsas between groups taste differently. Give each group a unique set of ingredients. For example, give the first group tomatoes, the second pineapple and the third tomatillos. Then make sure that every group has spicy peppers, lemons, limes and salt along with any other ingredients on the list.

*Note: The most sanitary way for learners to try the salsa is to use a master spoon. The master spoon stays with the salsa, and is used to pour a sample into each learner’s
tasting spoon. Each learner should have his/her own tasting spoon that they use throughout the exercise. Bring all of the bowls of salsa to the front of the class. Have everyone taste each salsa.

**Eating and Evaluation**

Ask the following questions:

- What are the strengths and weaknesses of each salsa?
- Which flavors do you like the best?
- How do you think each should be improved?
- What surprised you about making your salsa?

Notice that each learner has different preferences. Discuss the variations in preferences, and how taste differs from person to person.

**From the Garden**

Make the salsa in the fall using garden produce including mint, cilantro, basil, tomatoes, tomatillos, chiles, carrots, onions and garlic.
Create a Salsa

Use the Salsa equation and chart to create a delicious fresh salsa. Choose a variety of ingredients from each category. If you like, you can structure the activity as a friendly competition between groups. After the salsas are made, use tortilla chips to sample them.

**Salsa = Salty + Sour + Sweet + Bitter/Pungent**

<table>
<thead>
<tr>
<th>Salty</th>
<th>Sour</th>
<th>Sweet</th>
<th>Bitter/Pungent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salt</td>
<td>Rice vinegar</td>
<td>Coconut</td>
<td>Dried chilies or chili powder</td>
</tr>
<tr>
<td>Salted pumpkin seeds</td>
<td>Cider vinegar</td>
<td>Mango</td>
<td>Fresh spicy chile (jalapeño or Fresno)</td>
</tr>
<tr>
<td>Salted sunflower seeds</td>
<td>Lemon</td>
<td>Tomato</td>
<td>Cilantro</td>
</tr>
<tr>
<td>Olives</td>
<td>Lime</td>
<td>Orange</td>
<td>Garlic</td>
</tr>
<tr>
<td></td>
<td>Tamarind*</td>
<td>Papaya</td>
<td>Ginger</td>
</tr>
<tr>
<td></td>
<td>Tomatillo</td>
<td>Pineapple</td>
<td>Cactus leaves or nopales</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Red/yellow pepper</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Onion</td>
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<td></td>
<td></td>
<td>Mint</td>
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</tbody>
</table>

**Method**

Cut all fruits, vegetables and flavorings into small pieces that will fit on a tortilla chip.

Mix together ingredients from the sweet, sour, salty and bitter/pungent flavor list to make a salsa. If the salsa tastes flat, it likely needs more salt. Remember to add the salt a small amount (about 1/4 teaspoon) at a time.

Taste the salsa with tortilla chips.

*Tamarind pulp can be found in Asian or Indian grocery stores as well as some natural food stores.*
Create a Pasta with Pesto

**Objective**
Learners will be able to make their own pesto pasta salad, balancing strong flavors.

**Background**
Use this activity if you wish to create a savory dish without the sour flavors of the dressing and salsas. Each group will make their own herb based pesto and use it with pasta and vegetables to make a pasta salad.

The word pesto means “to pound or to grind into a paste.” The traditional Italian dish from Genoa is made from basil, Parmesan cheese, olive oil and garlic. The traditional Italian version can be found in Section 2 on page 88. The technique can be broadened to use almost any herb combination. Other cultures use similar ground pastes to flavor dishes, such as Thai curry paste, Spanish romesco sauce, and Mexican mole sauce. The primary flavors of a pesto are salty and bitter, from the herbs. Using hard, grated cheese, garlic and nuts provide the savory (umami) flavor.

**Materials**
For each station:
- 1 large mortar and pestle
- Bowls for pesto ingredients
- 4 paring knives
- 4 cutting boards
- 1 mixing bowl for pasta
- 1 serving spoon
- 1 small plate for each learner
- 1 fork for each learner

Selection of items from the **Create a Pasta with Pesto** list on page 28

**Preparation**

*Young learners or short on time* — Prepare additional ingredients ahead of time and divide into the number of groups.

*Older learners or more time available* — Have them prepare additional ingredients at each table.

Wash the ingredients.
Make sure all of the desktops and/or counters are cleared of materials, cleaned and sanitized.
Make sure everyone has washed his/her hands.
Divide the class into groups of no more than 8 learners.

Place the mortar and pestle on the table with a thick towel underneath to minimize noise.
This activity works best if the pesto made in each group tastes differently. Give each group a unique set of pesto ingredients. Each group can share the same vegetables.

Use the equation on the following page to have each group create their own recipe.

*Note:* The most sanitary way for learners to try the pesto is to use a master spoon. The master spoon stays with the pesto, and is used to pour a sample into each learner’s tasting spoon.
Each learner should have his/her own tasting spoon that they use throughout the exercise.

Bring all of the bowls of pasta to the front of the class. Have the learners line up with their plates. Let them try pasta from each group.

**Eating and Evaluation**

**Ask the following questions:**
- What are the strengths and weaknesses of each pasta salad?
- Which flavors do you like the best?
- How do you think each should be improved?
- What surprised you about making your pesto?

Notice that each learner has different preferences. Discuss the variations in preferences, and how taste differs from person to person.

**From the Garden**

Almost any garden vegetable will taste good in a pasta salad, including tomatoes, chiles, cucumbers, celery, onions, and fennel. The following vegetables taste better blanched (boiled for 1 minute and then chilled) to reduce bitterness: broccoli, peas, cauliflower, fava beans, and corn.
Create a Pasta with Pesto

Use the pesto equation and chart to create a delicious fresh pesto. Choose a variety of ingredients from each category. If you like, you can structure the activity as a friendly competition between groups. After the pestos are made, make separate pasta salads to sample them.

**Pesto = Flavorings + Salty + Herbs + Fats**

<table>
<thead>
<tr>
<th>Flavorings</th>
<th>Salty</th>
<th>Herbs</th>
<th>Fats</th>
</tr>
</thead>
<tbody>
<tr>
<td>Garlic</td>
<td>Salt</td>
<td>Basil</td>
<td>Olive oil</td>
</tr>
<tr>
<td>Shallots</td>
<td>Anchovies</td>
<td>Parsley</td>
<td>Walnut oil*</td>
</tr>
<tr>
<td>Ginger</td>
<td>Capers, brined</td>
<td>Rosemary (go easy)</td>
<td>Pine nuts*</td>
</tr>
<tr>
<td>Lemon juice and peel</td>
<td>Olives</td>
<td>Thyme</td>
<td>Sesame oil</td>
</tr>
<tr>
<td>Sundried tomatoes</td>
<td>Hard cheese</td>
<td>Oregano</td>
<td>Pumpkin seeds</td>
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<tr>
<td></td>
<td>(Manchego,</td>
<td>Sorrel</td>
<td>Pistachios*</td>
</tr>
<tr>
<td></td>
<td>Parmesan, Asiago,</td>
<td>Sage</td>
<td>Almonds*</td>
</tr>
<tr>
<td></td>
<td>or Peccorino)</td>
<td>Cilantro</td>
<td>Walnuts*</td>
</tr>
</tbody>
</table>

**Pasta = Pasta + Pesto + Vegetables**

<table>
<thead>
<tr>
<th>Pasta</th>
<th>Use pesto made in class</th>
<th>(raw)</th>
<th>(blanched)</th>
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<tbody>
<tr>
<td>Corkscrew</td>
<td></td>
<td>Tomato</td>
<td>Broccoli</td>
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<tr>
<td>Bowties</td>
<td></td>
<td>Onion</td>
<td>Beans</td>
</tr>
<tr>
<td>Penne</td>
<td></td>
<td>Sweet pepper</td>
<td>Cauliflower</td>
</tr>
<tr>
<td>Couscous</td>
<td>(does not need heat,</td>
<td>Celery</td>
<td>Peas</td>
</tr>
<tr>
<td></td>
<td>soak in equal amounts</td>
<td>Fennel</td>
<td>Fava beans</td>
</tr>
<tr>
<td></td>
<td>of couscous to warm</td>
<td>Carrot</td>
<td></td>
</tr>
<tr>
<td></td>
<td>water for 20 minutes)</td>
<td>Cucumber</td>
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</table>

**Method**

Select the ingredients to create your pesto.

First, put the garlic and 1/2 teaspoon salt in the mortar and pestle, as well as any nuts. Pound the ingredients up and down with the pestle until you have a thick paste.

Gradually add herbs and until you have a thick, smooth paste.

Stir in olive oil until the pesto becomes more like a thick sauce.

Chop up the vegetables and other ingredients.

While you are making the pesto, boil the noodles, drain and rinse them. If you want to cook any of the vegetables, add them to the boiling water one minute before draining the noodles.

Mix together the pesto, pasta, and chopped vegetables. Adjust salt to taste.

*Nuts are a common and serious allergen. Make sure no learners in your class have nut allergies before you include these ingredients.*
Teacher Resources

FOR CHILDREN

Anansi and the Talking Melon by Eric A. Kimmel
Apple Picking Time by Michele B. Slawson
Apples to Oregon: Being the (Slightly) True Narrative of How a Brave Pioneer Father Brought Apples, Peaches, Pears, Plums, Grapes, and Cherries (and Children) Across the Plains by Deborah Hopkinson (Author), and Nancy Carpenter (Illustrator)
Apples by Gail Gibbons
Cucumber Soup by Vickie Lee Krudwig
I Will Not Ever Eat a Tomato by Lauren Child
Mr. Putter & Tabby Pick the Pears by Cynthia Rylant (Author), and Arthur Howard ( Illustrator)
No More Vegetables! by Nicole Rubel
Strega Nona's Harvest by Tomie De Paola
Tops and Bottoms by Janet Stevens
The Vegetables We Eat by Gail Gibbons

FOR ADULTS

The Flavor Bible: The Essential Guide to Culinary Creativity, Based on the Wisdom of America’s Most Imaginative Chefs by Karen Page and Andrew Dornenburg
Field to Plate Food Education and Education Roadmaps by Amanda Archibald
http://www.fieldtoplate.com/roadmaps.php
To the Origins of Taste by Slow Food
http://www.slowfood.com/education/pagine/eng/pagina.lasso?id_pg=25
## Five Tastes Worksheet

<table>
<thead>
<tr>
<th>Salty Bottle #</th>
<th>Sweet Bottle #</th>
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<thead>
<tr>
<th>Sour Bottle #</th>
<th>Bitter Bottle #</th>
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<table>
<thead>
<tr>
<th>Umami Bottle #</th>
<th>Experiment Results</th>
</tr>
</thead>
<tbody>
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</tbody>
</table>
Cucumber

*Cucumis sativus*

Japanese cucumbers
Garden cucumbers
Cucumber blossom
Cucumber seeds
Cucumber

Cucumis sativus

<table>
<thead>
<tr>
<th>Part of Plant</th>
<th>Fruit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plant Family</td>
<td>Cucumber/Cucurbitaceae</td>
</tr>
<tr>
<td>Languages</td>
<td>Spanish pepino</td>
</tr>
<tr>
<td>Origin</td>
<td>India</td>
</tr>
<tr>
<td>Planting</td>
<td>Plant directly in ground after all danger of frost has passed. Cucumbers can be planted in bowls, or in trenches. Sow seed 1/2” deep, about 8-12” apart. Try Armenian, lemon, white and Japanese for more diversity.</td>
</tr>
<tr>
<td>Cultivation Tips</td>
<td>Easy to grow and not fussy about soil. They can be trained to grow up a trellis. Bushmaster and Spacemaker are good varieties for containers. Minimize overhead watering.</td>
</tr>
<tr>
<td>Harvest</td>
<td>Ready for harvest 50-70 days after germination, depending on the variety.</td>
</tr>
<tr>
<td>History</td>
<td>One of the oldest vegetables, cucumbers have been cultivated for over 4000 years. Cucumbers were first grown in India and were used in ancient Persia, Greece and Rome. They were introduced to Haiti by Christopher Columbus.</td>
</tr>
<tr>
<td>Uses</td>
<td>Primarily used raw or pickled, in cold soups or salads. Compatible flavorings include fresh herbs like dill, mint, parsley and cilantro. Commonly paired with yogurt.</td>
</tr>
</tbody>
</table>
Families of Greens

- Dandelion
- Chicory
- Lettuce
- Cabbage
- Beet
- Nasturtium
- Radicchio
- Treviso
- Belgian Endive
- Frisée
- Chicory Endive
- Lactuca Sativa
- Chard
- Kale
- Arugula
- Spinach
- Watercress

Types of Greens:

- Loose Leaf
- Red Loose Leaf
- Red Butter
- Romaine
- Freckles
- Russian Kale
- Curly Kale
- Lacinato Kale
- Swiss Chard
- Red Chard
- Beet Greens
**Lettuce**

*Lactuca sativa*

ILLUSTRATIONS: Barbara Feige

Bibb Lettuce  
Oak Leaf Lettuce  
Freckle Lettuce  
Romaine Lettuce
**Lettuce**

*Lattuca sativa*

**Part of Plant**
Leaves

**Plant Family**
Sunflower/Compositae

**Languages**
Spanish *lechuga*    Italian *lattuga*    French *laitue*

**Origin**
Middle East/Egypt

**Planting**
Lettuce likes sandy, rich soil. Direct sow outside in mid to late April. Broadcast seeds and thin to 4-6” apart.

**Cultivation Tips**
Plant lettuce every 6 weeks for a continuous harvest. Loose leaf varieties can be cut 2-3 times before they bolt (go to seed). For late summer crops, cover with shade fabric or plant in part sun locations. Does not like heat. As soon as the plant bolts, pull it unless you are saving the seeds.

**Harvest**
Every 6-8 weeks

**History**
Ancient Egyptians enjoyed lettuce. Romans loved it, even cooked. The word *lettuce* comes from the Latin word for milk, because of the milky substance in the leaves.

**Uses**
Used primarily in salads, although it is sometimes cooked in soups and egg dishes. Chinese varieties are always cooked.
Tomato
*Lycopersicon esculentum*

- Cherry Tomatoes
- Pear Tomatoes
- Brandywine Tomato
- Tomato seeds
**Tomato**
*Lycopersicon esculentum*

<table>
<thead>
<tr>
<th>Part of Plant</th>
<th>Fruit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plant Family</td>
<td>Nightshade/Solanaceae</td>
</tr>
<tr>
<td>Languages</td>
<td>Spanish <em>tomate</em></td>
</tr>
<tr>
<td>Origin</td>
<td>Mexico</td>
</tr>
<tr>
<td>Planting</td>
<td>Start seeds inside using warming mat, 10-12 weeks before last frost date. As they grow, transplant them into larger pots. Bury the plant when transplanting so that you only have 2 sets of leaves showing. The root system will be stronger. Transplant outside after all danger of frost has passed, burying the stems if the plant is leggy or scraggly.</td>
</tr>
<tr>
<td>Cultivation Tips</td>
<td>Best varieties for Colorado include cherry tomatoes, small salad tomatoes and plum tomatoes. Try interesting heirloom varieties as opposed to hybrids, and you will be able to save the seeds. Tomatoes thrive on well composted soil, but not high in nitrogen. Minimize overhead watering. Support plants by tying to a sturdy trellis, create a tripod from 8’ bamboo poles, or a round cage made from 10 gauge concrete reinforcing wire. Prune suckers and low branches.</td>
</tr>
<tr>
<td>Harvest</td>
<td>Early varieties are ready for harvest in 55-60 days from germination. Late varieties can take 90 days until harvest.</td>
</tr>
<tr>
<td>History</td>
<td>Wild cherry tomatoes from the Andes region were the ancestors of the cultivated Mexican tomato. Both were described by early Spanish conquerors as being used in salsas. Tomatoes first traveled to Spain and then Italy, in the late 16th century. An early Italian cookbook from 1692 describes the first known Italian tomato sauce.</td>
</tr>
<tr>
<td>Uses</td>
<td>Use cooked tomatoes in sauces, to add an acidic and slightly sweet flavor. Use them fresh in pasta and bean salads to help create a sauce. Roast them, halved, in a 275° oven until soft and caramelized.</td>
</tr>
</tbody>
</table>
Apple

*Malus pumila*

![Illustration of apple tree and related elements]

- Apple blossom
- Apple section
- Apple varieties
- Apple seeds
Apple

Malus pumila

**Part of Plant**  Fruit

**Plant Family**  Rose/Rosaceae

**Languages**  Spanish *manzana*  Italian *mela*  French *pomme*

**Origin**  Caucasus (West Asia)

**Planting**  Plant trees in spring before it is hot. Planting hole should be even with the bottom of the trunk; don’t plant deeply. Plant two cultivars that bloom at the same time for best pollination. Try Jonagold, Honeycrisp, Harlan, Jonathan, Yellow and Red Delicious.

**Cultivation Tips**  Mulch around trees and water in the winter, during warm spells. Apples often bear fruit every other year.

**Harvest**  August-mid September

**History**  The apple is one of the first cultivated fruits. The first written mention of apples is in Homer’s *Odyssey*. A few varieties known to ancient Romans are still grown today. There are 7,000-8,000 named varieties. Only a small fraction of this diversity is grown commercially and available in a typical grocery store.

**Uses**  Sweet and mild, apples are easy to add to many foods such as tarts, sauces, stews, and pork roasts. Cooking varieties keep their flavor and texture better when heated. Eating varieties are prized for texture and sweetness.
# Tasting Worksheet

Name of food you are tasting

<table>
<thead>
<tr>
<th>Type</th>
<th>Yuck!</th>
<th>Not good</th>
<th>OK</th>
<th>Like</th>
<th>Yum!</th>
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<tr>
<th>Type</th>
<th>Yuck!</th>
<th>Not good</th>
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<th>Like</th>
<th>Yum!</th>
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What did you do today?  First... Second... Third...

Favorite Verbs

________________________  _________________________  _________________________
________________________  _________________________  _________________________

Name _____________________ Date _____________________ Location _____________________
**What do you see today?**  I notice... I wonder... That reminds me of...

**Favorite Nouns**

__________________________________________  ____________________________________________  ____________________________________________

__________________________________________  ____________________________________________  ____________________________________________

Name ___________________________  Date ___________________________  Location ___________________________
CHAPTER 2: Kitchen Skills & Tools

Kitchen Skills & Tools

Slow Food USA
After learners have mastered combining flavors to create appealing dishes, they must learn basic kitchen skills. Kitchen skills are physical actions that must be practiced to realize a sense of confidence and accomplishment. Children of all ages can learn skills appropriate to their developmental stage and body capabilities that will allow them to participate in food preparation. For example, a six year old might not be able to handle a sharp knife, but she can use her hands to tear up ingredients, or a butter knife to cut soft ingredients. These series of lessons will help learners aged 6-12 to develop lifelong skills so that they are comfortable and confident in the kitchen. Combined with their ability to properly flavor their cooking and knowledge of ingredients through gardening, they will become intuitive and joyful cooks.

The second objective of this section is to introduce learners to simple food processing. People have been using simple kitchen tools for thousands of years in order to expand their diet from foods found in nature to favorite dishes like noodles, tortillas, bread and sauces. Without these tools, wheat would be just a grass seed, soy beans would give us stomach aches and corn would not have become an international staple. With simple tools such as rolling pins, we can make noodles, tortillas and flatbreads from grains. We can combine flavors with a mortar and pestle to make traditional sauces like pesto, mole and Romesco. These tools allow humans to:

- Make food more digestible.
- Combine flavors in complex and satisfying ways.
- Allow food to be stored for a longer period of time.
- Make foods more nutrient dense.

Introducing learners to the mechanics of simple tools and food processing allows them to experience the basic innovation at the heart of human eating. Learners will also experience how simple machines work in the real world and what effect they have on everyday life.

Allow class time for the learners to take apart the machines in order to see how they work. Have them draw the cooking steps and machine parts so they can begin to understand simple technologies and their affect on what we eat.
This section contains the following chapters:

**KNIVES, PEELERS AND GRATERS**
These important tools make big ingredients small. Learn how to choose which tool will work best for each recipe and how to safely use knives with learners of all ages.

**FROM RAW TO COOKED**
Learn basic cooking techniques in a school environment. Understand what different cooking techniques like blanching, braising and stir frying do to the texture and flavor of foods.

**FROM GRAIN TO FLOUR**
These multidisciplinary lessons include food chemistry, grinding flours and making simple baked goods. Explore the world of grains and seeds through recipe experiments for biscuits and pancakes. Use the information provided to show the difference between gluten and non-gluten containing flours, as well as the difference between baking soda and baking powder.

**FROM CORN TO MASA**
Discover the importance of corn in the Americas. Learn about the wide variety of dishes made from dried corn flour and masa. Use a molino to grind fresh masa, make tortillas, pupusas and tamales.

**MORTAR AND PESTLE**
Mortars and pestles are one of the most widespread, ancient cooking tools dating back several thousand years. Use them to make nutritious sauces using whole foods. Learners of all ages love using this tool.

**ROLLING PINS**
Every major world cuisine uses some type of rolling pin to create noodles, simple breads and pastries. Use these activities to demonstrate how mastery occurs with repetition. Give plenty of time for learners to try making the dishes more than once, so they can experience their improvement.

**FOOD MILLS AND STRAINERS**
Food mills and strainers make sauces smooth without flour, separate seeds from pulp and improve the texture of foods. Use them to make tomato sauce, apple sauce and chile based sauces.
BACKGROUND
Food preparation starts with changing the size and shape of raw ingredients, thereby changing their texture. Learners of all ages can participate in this fundamental skill by using a wide range of appropriate tools. Hands are the simplest and safest tools to tear up lettuce and other leafy vegetables. Even this simple activity requires good technique. For example it takes young learners a while to learn how to tear lettuce gently without crushing it. Once learners understand the role of texture and technique in cooking, they will be able to make foods that look beautiful and taste delicious. When selecting a tool you need to take the following into account:

TECHNIQUE
What is the proper technique for using this tool? How can learners use the tool in a safe and appropriate manner?

TEXTURE
Should the pieces be small and meld together, or should they be large and separate? Are they going to be raw or cooked? Which tool will best provide that texture given the age and abilities of the learners?

SAFETY
Follow these tips for handling sharp tools
1. Use the chart on the next page to select the appropriate tool.
2. Use cutting boards with a wet paper towel underneath to prevent slipping. When using a grater, make sure that it is resting on a cutting board. When using a peeler, make sure that the vegetable or fruit is resting on a cutting board.
3. If you are using a paring or chef’s knife, make sure it is sharp. A sharp knife is safer than a dull one because it requires less pressure in cutting. If sharp, the knife will not slip as easily, and your hand will not tire as quickly.
4. Use a sawing motion, not a pushing motion to slice. Learners will not have to press as hard, will have more control, and have more even pieces.
5. It is difficult to cut large, hard items with a paring knife (sweet potatoes, large onions, squash), so when working with young learners it is best to have an adult cut these into quarters or strips and allow the young learners to make the final cuts.
6. In some cases, a large knife is actually easier and safer than a paring knife, such as when chopping or mincing.
7. Do not place sharp knives or tools inside the sink. It is best to wash them separately.
### Which Tool Is Best?

<table>
<thead>
<tr>
<th>TOOL</th>
<th>ACTIVITY</th>
<th>AGES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hands</td>
<td>Tearing lettuce &amp; herbs, breaking green beans</td>
<td>3 and up</td>
</tr>
<tr>
<td>Graters</td>
<td>Shredding hard vegetables for salads and fillings</td>
<td>7 and up</td>
</tr>
<tr>
<td>Peelers</td>
<td>Shredding for soups and salads</td>
<td>6 and up</td>
</tr>
<tr>
<td>Serrated Peelers</td>
<td>Peeling apples, tomatoes, peaches and knobby veggies</td>
<td>8 and up</td>
</tr>
<tr>
<td>Scissors</td>
<td>Cutting herbs and greens</td>
<td>5 and up</td>
</tr>
<tr>
<td>Butter Knives</td>
<td>Cutting strips of soft and precooked vegetables</td>
<td>5 and up</td>
</tr>
<tr>
<td>Lettuce Knives</td>
<td>Chopping full-sized soft and precooked vegetables</td>
<td>6 and up</td>
</tr>
<tr>
<td>Serrated Knives</td>
<td>Cutting tomatoes and soft fruit, strips of hard and soft vegetables</td>
<td>7 and up</td>
</tr>
<tr>
<td>Paring Knives</td>
<td>Cutting strips of hard veggies and full-sized soft vegetables</td>
<td>7 and up</td>
</tr>
<tr>
<td>6”–8” Chef Knives</td>
<td>Mincing</td>
<td>8 and up</td>
</tr>
<tr>
<td>8”–10” Chef Knives</td>
<td>Chopping full-sized vegetables</td>
<td>12 and up</td>
</tr>
<tr>
<td>Two-handed Mezzaluna</td>
<td>Mincing herbs and garlic</td>
<td>8 and up</td>
</tr>
</tbody>
</table>
Exploring Texture

Objective

Learners will be able to choose a kitchen cutting tool that fits their needs.

Allowing learners to experiment with tools and choose the textures they like will encourage them to create their own dishes with precision. When choosing tools and ingredients, make sure to match them appropriately with learners’ ages.

Materials

For each table:

- Assortment of tools from page 47, depending on learners’ ages
- Assortment of fruits and vegetables (greens, carrots, beets, zucchini, peppers, apples, herbs)
- 1 cutting board per child
- 1 lemon
- Salt shaker
- Olive oil
- 3 medium sized bowls

Preparation

Young learners—Choose soft vegetables, greens and cooked vegetables, lettuce, green onions, beans, zucchini, cooked potatoes or sweet potatoes.

Older learners—Choose a wide variety of vegetables. Halve hard vegetables like sweet potatoes so they are flat.

- Make sure all of the desktops and/or counters are cleared of materials, cleaned, and sanitized.
- Wash fruits and vegetables. Place them in the center of the table.
- Make sure there is one adult helper per table.
- Each person should have a tool on a cutting board.
- Place the mixing bowls in the middle of the table.

Activity

1. Discuss safety rules with the learners. Make sure they are not touching the tools while you go over the safety rules.
2. Talk about one tool at a time. Everyone should take turns experimenting with the tool before moving on to the next.
3. Start with the graters and peelers before moving onto the knives.
4. Learners should use proper technique with all knives, even the butter and lettuce knives. Use the illustration on the left to demonstrate the proper way to hold the knife and ingredients.
5. When cutting, use a sawing motion with minimal effort, as opposed to pressing too vigorously.
6. If learners are not listening to instructions, stop the lesson and wait until they are calm.
7. As you prepare the ingredients, divide them into the three bowls according to size.
8. Add just enough oil to coat the ingredients and then sprinkle over lemon juice and salt to taste.
9. Taste each bowl of ingredients.

Discussion

Discuss the effect of texture on the ingredients. Do the different sizes of vegetables taste different? How do they absorb the flavorings? What kinds of food would be best for each size?
Vegetable Soup

Objective
Learners will be able to cut many types of vegetables into small pieces and make them into a simple soup.

Background
Make vegetable soup when you want to introduce learners to knife skills. Choose as wide a variety of vegetables as possible so that they can have practice cutting different sizes and shapes. Add canned beans for protein and fresh herbs for flavor.

Materials

For each table:
- 8 cutting boards
- 4 knives
- 4 peelers
- Large platter of vegetables
- Large bowl for chopped vegetables
- Medium sized bowl for greens and herbs
- Bowl for scraps for composting

For the soup:
- 2 large 5 qt pots
- 2 induction burners
- 1 ladle
- Bowls and spoons for students

Preparation
- Make sure all of the desktops and/or counters are cleared of materials, cleaned, and sanitized.
- Wash all of the vegetables.
- Make sure everyone has washed his/her hands.
- For easier cutting, boil large vegetables like potatoes, turnips or sweet potatoes ahead of time and leave them whole.
- Review the recipe so learners know what to do. Do not have learners read the recipe while cooking.

Set Up
1. Each table should have the same variety of vegetables. Place the vegetables on one platter and place the herbs and greens in a bowl.
2. Divide the learners so that they are in groups no larger than 8, with one adult per table.
3. For large, hard to cut vegetables, cut them in half or in quarters unless the learners are older than age 10.
4. Make sure that each learner has a chopping board and they are spaced apart from one another.
5. Pass out the knives when the learners are quiet and paying attention to the instructor.
6. The instructor should demonstrate how to cut each type of vegetable one at a time. Wait until learners are finished before demonstrating a new type.

Eating & Evaluation
Ladle a small amount of soup into each bowl so that it will cool off more quickly. Let everyone taste the soup and add salt and herbs to their liking.

Read the book Stone Soup by Heather Forest. Compare your soup to the one in the book.

From the Garden
Any vegetables appropriate for stew will work: zucchini, potatoes, peppers, eggplant (especially small varietals), winter squash, peas and green beans.
Recipe

Vegetable Soup

**Ingredients**

- 5 lbs mixed vegetables
- 2 onions
- 4 cloves garlic
- 1 lb Swiss chard, cabbage or other greens
- 1/2 cup mixed fresh herbs (parsley, chives, basil)
- 2 tablespoons mixed fresh rosemary, sage or thyme
- 8 cups water or chicken broth
- 1-2 teaspoons salt

**Method**

Cut all of the vegetables into small dice, starting with the ones that will take the longest to cook (those that are firmer).

As soon as the firm vegetables have been cut, place them in a pot with the water or chicken broth and bring to a simmer.

Meanwhile, cut up the greens by rolling each one into a cigar shape and slicing into ribbons. Tear the herbs into small pieces. Chop the onions and garlic.

Add the remaining vegetables along with the herbs to the pot and let it simmer for 10-15 minutes. Add more liquid if needed and salt to taste.

**Variations:** If you have time, while the soup is simmering, make some orecchiette on page 99 and add them to the soup to make vegetable noodle soup. You can also add canned white beans or chickpeas for a heartier soup.

Try puréeing the vegetables a bit with an immersion blender if the vegetable pieces are too large to fit on a spoon.
Taking an ingredient from the raw to the cooked state transforms the texture and flavors of food. We cook with heat for many reasons: to make food safe to eat, to reduce strong bitter flavors, to meld flavors, to make food more digestible and more delicious. Throughout the world, humans have created and developed cooking techniques suited to their environment and culture. In China, where cooking fuel was scarce, they used the quick cooking wok to maximize short bursts of heat. In Europe communal wood fueled ovens were the places where villagers brought their bread to be baked.

The typical school environment does not have a kitchen or stove for students to use and yet the creative gardener and cook can create plenty of delicious foods for all to share. We recommend using an induction burner as a heat source. All of the recipes and activities in this book can be made with the induction burner and either a frying pan, flat-bottom wok or pot. For more information about specific safety guidelines, cooking equipment and supplies, please see Appendix B, pages 141-145 in the Slow Food USA's School Garden Guide. (http://gardens.slowfoodusa.org/resources~#school-garden-guide)

Cooking techniques that work well with induction burners include blanching, boiling, simmering, steaming, sautéing, pan frying, braising, stir frying, and skillet baking. This chapter explores cooking techniques we think are most useful: blanching, braising and stir frying. You will find examples of other techniques throughout the Slow Food USA school garden curriculum.

The recipes are designed so that you can add any in-season school garden produce you have available. Encourage the learners to taste the dishes and determine adjustments to the amount of salt and other seasoning.

Use the following chart to explore cooking terms with learners. We do not recommend deep fat frying in a school environment both for health and safety concerns. We recommend using less than 1/4” of oil on the bottom of the skillet or wok for pan fry or stir fry dishes.
## Cooking Techniques

<table>
<thead>
<tr>
<th>TECHNIQUE</th>
<th>DESCRIPTION</th>
<th>REASON</th>
<th>USES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bake</td>
<td>Cook in an oven</td>
<td>Dry heat makes a crispy outside and soft inside</td>
<td>Cookies, Cakes, Roasts, Pan roasted vegetables</td>
</tr>
<tr>
<td>Blanch</td>
<td>Cook for 1-2 minutes in boiling water, then chill in bowl of ice water</td>
<td>Removes peels, keeps produce crisp</td>
<td>Peeling tomatoes, peaches, nuts. Vegetables for salads, greens</td>
</tr>
<tr>
<td>Boil</td>
<td>Cook in boiling water</td>
<td>Wet heat makes food soft</td>
<td>Pasta, rice, starchy vegetables</td>
</tr>
<tr>
<td>Braise</td>
<td>First sauté, then simmer on low heat in a small amount of liquid for a long time</td>
<td>Concentrates flavor for stews</td>
<td>Stews, pot roast, chili, Chinese hot pot, artichokes, greens</td>
</tr>
<tr>
<td>Broil</td>
<td>Cook under high heat, usually 500°F or 550°F in oven</td>
<td>Browns quickly</td>
<td>Fish, toast, thin slices of chicken or beef, peppers</td>
</tr>
<tr>
<td>Grill</td>
<td>Cook over open grill either electric or charcoal</td>
<td>Adds smoky flavor and chewy/crispy texture</td>
<td>Steak, eggplant, mushrooms, zucchini, chicken</td>
</tr>
<tr>
<td>Pan Fry</td>
<td>Cook in a skillet in a small amount (1/4 inch) of fat on medium high heat</td>
<td>Browns and crisps the outside while keeping the inside moist</td>
<td>Cutlets, fritters, patties, vegetable or meat slices, usually large flat pieces</td>
</tr>
<tr>
<td>Poach</td>
<td>Steam in simmering water or other liquid</td>
<td>Adds flavor and moisture good for foods with little fat</td>
<td>Chicken, fish, shellfish, eggs</td>
</tr>
<tr>
<td>Sauté</td>
<td>Stir with oil in a pan and cook on medium-high</td>
<td>Adds flavor and reduces water, usually followed by a second technique</td>
<td>Sauces, soups, mushrooms, greens, onions, usually chopped or diced ingredients</td>
</tr>
<tr>
<td>Sear</td>
<td>Cook in a skillet on high heat sometimes with a small amount of fat (2-3 tablespoons)</td>
<td>Creates a dark brown crust on the outside, the inside is not cooked</td>
<td>Steaks, fish, used to peel peppers</td>
</tr>
<tr>
<td>Simmer</td>
<td>Cook with the burner on low, just barely bubbling</td>
<td>Makes food softer and more tender</td>
<td>Broth, soups</td>
</tr>
<tr>
<td>Steam</td>
<td>Cook over hot steam, not immersed in water</td>
<td>Retains color and flavor, very fast</td>
<td>Vegetables</td>
</tr>
<tr>
<td>Steep</td>
<td>Soak in hot liquid</td>
<td>Soften and bring out flavor</td>
<td>Dehydrated fruits or vegetables</td>
</tr>
<tr>
<td>Stir Fry</td>
<td>Like sauté, but over higher heat for a shorter time</td>
<td>Crispy, fresh flavors</td>
<td>Combinations of meat, tofu or vegetables</td>
</tr>
</tbody>
</table>
### Objective
Learners will be able to explain the difference between raw and cooked foods as well as give reasons for why we cook foods.

### Background
The cooking technique “blanch” comes from the French word “to whiten.” This technique involves boiling for a brief period of time, followed by immersion in a bath of iced or cold water. The ingredients are then drained. Blanching keeps vegetables crisp, makes them sweeter, keeps the colors bright and softens fibrous vegetables. It is also used to loosen the skins of tomatoes, peaches and nuts thereby making them easy to peel.

Pick three varieties of vegetables to compare raw and cooked ingredients if you have young learners. For older learners, pick more varieties and include those that are not usually cooked (lettuce, for example).

### Materials
For a class of 24
- 4 medium sized bowls
- 1 cutting board for each learner
- 1 knife for each learner
- 5 pounds of assorted vegetables to blanch

### Preparation
- Make sure all of the desktops and/or counters are cleared of materials, cleaned, and sanitized.
- Wash the vegetables.
- Make sure everyone has washed his/her hands.
- Divide the class into groups of no more than 8 learners.
- Start the large pot of water boiling so that it will be ready.

### Activity
1. Have learners cut up all the vegetables into bite-sized pieces.
2. Split each vegetable into two piles.
3. Blanch one pile of each kind of vegetable, placing it first in the boiling water and then in the ice water. Use the spider skimmer to remove them from the water and place each type (drained) into a separate bowl for tasting.
4. Line up each variety with the cooked and the raw next to each other.
5. Have the learners pick one of each type of vegetable and try them.
6. Use the Tasting Sheet on page 40 to compare the raw and blanched vegetables.

### Discussion
Ask the following questions:
- What does the blanching do to the ingredients?
- How do the textures, flavors and colors of each vegetable compare before and after being blanched?
- Which do you like better?
- Do all of the vegetables taste better cooked?
- Which way would you cook each vegetable?
Blanching: Mixed Vegetable Salad

**Objective**
Learners will understand the use of blanching in cooking and be able to create a simple salad.

**Background**
Blanched vegetables are often used in France and Italy to make salads. In France, these are called “salades composées” (salad compozay). They last much longer than salads made with lettuce, sometimes served as lunch with a slice of bread and cheese or meat.

**Materials**
*For a class of 24:*
- Induction cooktop
- Large pot of water
- Slotted spoon or spider skimmer
- 1 large bowl of cold water or ice water
- 1 large mixing bowl for the salad
- 1 medium bowl at each table to collect vegetables
- 1 mixing spoon
- 1 jar with lid for salad dressing
- 1 cutting board for each learner
- 1 knife for each learner
- Forks and plates for each learner

**Preparation**
- Make sure all of the desktops and/or counters are cleared of materials, cleaned and sanitized.
- Make sure everyone has washed his/her hands.
- Review the recipe so learners know what to do. Do not have learners read the recipe while cooking.
- Start the large pot of water boiling at the beginning of class so that it will be ready.

**Set Up**
1. Each table should have a pile of rinsed vegetables to peel and cut.
2. Each table should have an empty bowl to collect the prepared vegetables.

**Eating & Evaluation**
What are some of the different textures that are in the salad?
What are other ingredients that you can add?
Have the learners fill out the activity journal sheet on page 121 and describe the dish they have cooked.
Recipe  Mixed Vegetable Salad

Ingredients
2 lbs mixed vegetables to blanch (choose from broccoli, green beans, peas, kohlrabi, cauliflower, asparagus, spinach, swiss chard, kale, or bean sprouts)
4 green onions
1 15 oz. can garbanzo beans, drained
8 cherry tomatoes cut in half or 1 red bell pepper, chopped
1/4 cup parsley or mint, chopped

For the dressing:
1/4 cup red wine vinegar or lemon
1/2 cup olive oil
1 tablespoon honey
1/2 - 1 teaspoon salt
2 cloves minced garlic
1 tablespoon capers (optional)

Method
Prepare the vegetables so that they are in bite-sized pieces. If you are using carrots or other root vegetables, peel them first. If you are using greens like kale or collard greens, remove the stems.

Slice the green onions. Chop the herbs. If using tomatoes, cut them into bite-sized pieces. If using the peppers, cut them into dice. Mince the garlic.

Place the vinegar, olive oil, honey, salt, garlic and capers into a jar with a tight fitting lid and shake.

Place all of the vegetables, the herbs and the garbanzo beans into a large bowl. Pour the dressing over the vegetables and toss together.
**Stir Fry: Black Beans with Rice Noodles**

**Objective**
Learners will understand the use of stir fry and be able to describe the stir fry technique.

**Background**
Stir Fry is a Chinese cooking technique that involves cooking in a small amount of oil over high heat while stirring or tossing the ingredients. Usually the recipe calls for the wok to be heated first, then oil added along with flavorings such as ginger, garlic and chiles. Then the vegetables are added and cooked. Typically a cornstarch-thickened sauce is added which is simmered until thick. The dish is often garnished with green onions, toasted sesame oil or herbs. Common flavorings are five spice powder, fermented black beans, chili bean sauce, hoisin sauce and oyster sauce. Fermented black beans are preserved black soy beans used as a Chinese flavoring. You can also substitute a spoonful of black bean sauce.

Stir fry can be a challenging recipe for learners because all of the ingredients must be prepared before cooking and then the cooking must be done very quickly. Softer vegetables like zucchini and eggplant are easier to cut into matchsticks. Hard vegetables like carrots are more difficult and should be reserved for those with more experience.

If you would like some tips about cutting matchsticks, you can watch this video: https://www.youtube.com/watch?v=6OOkNdwyuKA

**Materials**
For a class of 24:
- Induction cooktop
- Flat-bottomed wok
- Tongs
- 1 large bowl of warm water for the rice noodles
- 1 medium bowl at each table to collect vegetables
- 1 medium bowl for the sauce
- 1 small bowl for the garnish
- 1 mixing spoon
- 1 cutting board for each learner
- 1 knife for each learner
- Forks and plates for each learner

**Preparation**
- Make sure all of the desktops and/or counters are cleared of materials, cleaned and sanitized.
- Make sure everyone has washed his/her hands.
- Review the recipe so learners know what to do. Do not have learners read the recipe while cooking.

**Eating & Evaluation**
What are some of the different textures that are in the stir fry?
What are other ingredients that you can add?
Have the learners fill out the activity journal page and describe the dish they have cooked.
Recipe Black Beans with Rice Noodles

**Ingredients**
1 package rice noodles  
2 inch piece of ginger, peeled  
4-6 cloves of garlic  
3 pounds vegetables (Choose from zucchini, eggplant, mushrooms, asparagus, broccoli, Brussels sprouts, bok choy, peppers and greens)  
3 tablespoons canola oil or sesame oil (not toasted)  

**For the sauce:**  
1 tablespoon cornstarch  
3 tablespoons soy sauce  
2 tablespoons honey  
1 tablespoon black bean sauce or  
1 tablespoon fermented black beans  
1 cup water  

**For the garnish:**  
1 bunch green onions  
1 bunch cilantro or mint  
2 tablespoons roasted sesame oil  

**Method**
Soak the rice noodles in a bowl of warm water until they are soft, about 15 minutes.

Cut the ginger and garlic into thin slices. Place them in a bowl together.  
Cut all of the vegetables into matchsticks and place them into a bowl.  
Slice the green onions and chop the cilantro or mint and place them in a bowl.

Mix together the ingredients for the sauce.

Heat the wok on high and add the oil. Reduce the heat to medium high and add the garlic and ginger. Stir it a few times and add all of the vegetables. Turn up the heat to high. Toss the vegetables continuously with the tongs for 2-3 minutes until they begin to wilt. If they scorch, add 1/4 cup water.

Add the sauce and the rice noodles. Cover the wok with a tight fitting lid and simmer on medium high until the sauce is bubbling and the noodles soften, about 2 minutes.

 Stir with the tongs.

Pour the stir fry onto a platter and garnish with the green onions, herbs and sesame oil.
Braising: Moroccan Vegetable Tagine

Objective
Learners will understand the use of braising and be able to describe the braising technique.

Background
Braising involves cooking meat or vegetables in fat until browned, followed by cooking in a small amount of liquid. The ingredients are cooked over low heat, covered, until everything is tender. Braised dishes are among the most popular foods of the world: Green Chile, Moroccan Tagine, Coq Au Vin, Boeuf Bourguignon, Chinese Hot Pot, and Lamb Stew. Poor people around the world use braising to make tough meat tender, extend expensive protein with less expensive vegetables and to add deep savory flavors. Braising can also turn tough vegetables like artichoke hearts, celery, leeks and fennel into smooth and savory treats. Braised dishes are often used as a flavoring to eat with starches like polenta, rice, millet, potatoes and pasta.

Materials
For a class of 24:
Induction cook top
Large pot with lid
Wooden spoon or mixing spoon
1 large bowl for each group of 8 learners
1 cutting board for each learner
1 knife for each learner
Forks and plates for each learner

Preparation
- Make sure all of the desktops and/or counters are cleared of materials, cleaned and sanitized.
- Make sure everyone has washed his/her hands.
- Review the recipe so learners know what to do. Do not have learners read the recipe while cooking.

Set Up
1. Divide the learners into groups of 8.
2. Each table should have a large bowl for the cut vegetables, knives and cutting boards for each learner and a pile of vegetables to cut.

Eating & Evaluation
Use the book Starting From Scratch: What You Should Know about Food and Cooking by Sarah Elton (Author), Jeff Kulak (Illustrator) to help explain cooking techniques. Have the learners describe their favorite dishes and let their classmates guess which cooking techniques are used to create them.
Recipe

Moroccan Vegetable Tagine

Ingredients

- 4 lbs mixed vegetables (eggplant, carrots, zucchini, winter squash, potatoes, green beans, kohlrabi, turnips, or parsnips)
- 2 onions
- 5 cloves garlic
- 2” piece of ginger
- 3 tablespoons olive oil
- 2 15 oz. cans garbanzo beans, drained
- 1/2 cup raisins or currants
- 2 cups water or chicken stock
- 1 tablespoon cumin
- 1 tablespoon coriander
- 1 tablespoon sweet paprika
- 1 teaspoon cinnamon
- 1 teaspoon turmeric
- 1 28-ounce can crushed tomatoes*
- salt
- cayenne pepper (optional)

For the couscous:
- 3 cups whole wheat couscous
- 3 cups hot water
- 2 tablespoons olive oil

Method

Peel any carrots, turnips, potatoes or parsnips. Cut up the vegetables into large pieces, about 1” cubes.

Peel the garlic and ginger. Chop it roughly. Dice the onions.

Heat the 4 tablespoons olive oil in a large pot, add the onions, garlic and ginger. Stir for 5 minutes and then add the remaining vegetables.

Add the tomatoes, garbanzo beans, raisins or currants, 2 cups of water, cumin, coriander, paprika, cinnamon, turmeric, and 1 teaspoon salt. Cover tightly and let simmer for 15 minutes, until the vegetables are soft.

Meanwhile, place the couscous in a large bowl and cover with the hot water and olive oil. Let it sit for 10 minutes until the water is absorbed and fluff with a fork.

Add the tomatoes to the vegetables once they are tender. The vegetables will cook more quickly without the tomatoes. Adjust the salt and cayenne pepper to taste.

Spoon the vegetable tagine over the couscous.
# Think Like a Chef

**Objective** Learners will demonstrate their understanding of basic cooking by combining ingredients, flavors and cooking technique cards to create a dish of their own.

**Background** Chefs invent dishes by combining flavors with cooking techniques and fresh ingredients. They think of ingredients and flavors just as artists think of paint. Cooking techniques are similar to the tools that artists use to create their work. Learners can begin to understand the process of designing a recipe by using the recipe cards to describe their creations without cooking them. A following lesson could have the learners cooking the dishes they describe at home with their parents and reporting back to the class.

**Materials** For each table of 8 learners:
- 1 set of cooking cards
- Colored pencils
- Activity Journal Worksheet

**Preparation** Divide the learners into groups of 4-6 and explain the activity

**Activity**
1. Give each group a set of the following cards.
2. Have the learners pick one cooking technique, 3 flavors and at least 3 ingredients.
3. They must combine their cards to create a dish. Have them describe their dish, name it and draw a picture of what it would look like using the Activity Journal Worksheet.
Think Like a Chef Activity Cards

- Salt
- Basil
- Lemon
- Mint
- Pepper
- Cilantro
- Garlic
- Cinnamon
<table>
<thead>
<tr>
<th>FLAVOR</th>
<th>Maple Syrup</th>
<th>Sesame</th>
<th>Oregano</th>
<th>Cumin</th>
<th>Ancho Chile</th>
<th>Vinegar</th>
<th>Orange</th>
<th>Olives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flavor</td>
<td>Honey</td>
<td>Parsley</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INGREDIENT</td>
<td>INGREDIENT</td>
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<td></td>
</tr>
<tr>
<td>Zucchinis</td>
<td>Raspberries</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Onions</td>
<td>Green Beans</td>
<td></td>
<td></td>
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INTRODUCTION

Grinding flour from seeds and grains provides learners with a hands-on experience transforming a hard inedible seed into recognizable food.

These lessons can be used to:

- Introduce learners to the food system and how products get to the grocery shelf.
- Add an activity to enrich a class about a particular culture or country.
- As a hands-on chemistry class, especially when studying acid and base.
- Incorporate garden produce in kid-friendly recipes.
- Introduce learners to making, understanding and appreciating baked goods (especially the role of gluten in flours).

Many of these exercises use a molino flour grinder. A molino is a traditional hand grinder for making masa, the dough that creates tamales and corn tortillas, from dried whole corn. You can find a molino in most Latino or international markets. You can also order it online. Look for sources in the Supplies Appendix, page 112.

You can also use the molino to grind coarse dry flours. You can use any seed or grain. To make the flour finer, tighten the nuts that hold the grinding disk onto the machine.

SETTING UP YOUR FLOUR GRINDER

Working the grinder can exert a lot of force on the machine. Therefore it must be securely attached to a table in your classroom. For a more portable setup, mount the grinder permanently to a 1/2” thick piece of masonite or plywood. Then clamp the plywood on three sides tightly with “C” clamps. Monitor the grinder and connections while it is being used to make sure it doesn’t become loose.
## Grinding Flour

### Objective
Learners will be able to grind different types of grains and seeds and compare and contrast the gluten content of the resulting flours.

### Materials
- Molino flour grinder
- Assortment of whole grains*
- Pen or Pencil
- Paper to label grains
- Shallow container to collect flour
- 1 small bowl for each type of grain
- 1 small paper cup for each grain
- 2 cups water
- 2 forks

*Suggested grains are: wheat (hard and soft), rye, barley, rice, quinoa, oats, buckwheat

### Preparation
- Make sure all of the desktops and/or counters are cleared of materials, cleaned, and sanitized.
- Review the Types of Flours chart on page 70 to know which flours contain gluten and which do not.
- Place each grain in a separate bowl.
- Using the World of Starches chart on page 69, label each bowl with the name of the seed or grain and the country of origin.
- Set up the grinder.
- Place a container under the grinder to catch the flour.

### Activity
1. Grind each grain one at a time. If you have learners who are gluten free, grind the non gluten flours first. As you grind each flour, put it back in its original bowl. Make sure to grind all of one grain before adding another so that they are not mixed together.
2. Have the learners take turns grinding the flour. If you have a large group, the others can complete the World of Starches Worksheet on page 113, or the Which Starch? Worksheet on page 114 Use the charts on page 70 to help with the answers.
3. After the flour is ground, you will make a sample ball of dough for each type of flour in order to test the gluten. Add a few spoonfuls of one type of flour to a paper cup. Mix in water, a teaspoon at a time, until you have a ball of dough. Pass the balls of dough around one at a time.
4. If the flour has gluten, the ball of flour will be stretchy, bouncy, stick together and a bit springy. If the flour has no gluten, it will just break apart when you pull on it. Have the learners guess which balls of dough (types of flour) have gluten and which do not. Check the results on page 70 using the Types of Flour chart.
5. Follow this activity with either the Griddle Biscuits on page 73 or the Pancakes on page 74.
World of Starches

Amaranth — Latin America
Arrowroot — Asia
Barley — Middle East
Buckwheat — Central Asia
Chestnut — Europe
Chickpeas — Middle East
Common Millet — Central Asia
Corn — Latin America
Durum wheat — Middle East
Emmer — Middle East
Farro — Europe
Gram Beans — India
Kamut — Middle East
Lentils — Middle East
Mesquite — North America
Oats — Europe
Pearl Millet — Africa
Potatoes — South America
Quinoa — South America
Rice — Asia
Rye — Europe
Sorghum — Africa
Soy Beans — Asia
Spelt — Middle East
Sweet Potato — South America
Tapioca — South America
Taro — Asia
Yam — Africa
Yucca — South America
Wheat — Middle East
Wild Rice — North America
### Types of Flours

<table>
<thead>
<tr>
<th>Non-Gluten Flours</th>
<th>Gluten Flours</th>
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<tbody>
<tr>
<td>Amaranth*</td>
<td>Barley—low in gluten*</td>
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<tr>
<td>Arrowroot**</td>
<td>Rye—low in gluten*</td>
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<tr>
<td>Buckwheat*</td>
<td>Wheat—</td>
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<tr>
<td>Chestnut‡</td>
<td>• WINTER WHEAT—high in gluten.</td>
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<tr>
<td>Chick peas+</td>
<td>• SPRING WHEAT—less gluten than winter wheat, used for pastry.</td>
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<tr>
<td>Corn*</td>
<td>• DURUM—also known as semolina, used for pasta.</td>
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<tr>
<td>Gram (Lentil from India)+</td>
<td>• FARRO—ancient variety of wheat from Italy, used whole in salads and soups.</td>
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<tr>
<td>Millet*</td>
<td>• EMMER—relative of Farro.</td>
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<tr>
<td>Oats*</td>
<td>• KAMUT—large grained ancient wheat from Egypt.</td>
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<td>Potato**</td>
<td>• SPELT—ancient variety of wheat, higher in gluten than farro or kamut.</td>
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<td>Quinoa*</td>
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<td>Soy+</td>
<td>* Grains ‡Legumes † Nuts **Tubers</td>
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<td>Rice*</td>
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<td>Mesquite+</td>
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<td>Tapioca**</td>
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### What Does It Do?

#### Leaveners

**Baking soda**—Alkaline substance that helps bread or cakes rise. Needs acid to activate. Use buttermilk, sour cream, yogurt, lemon juice or vinegar in doughs that are leavened with baking soda.

**Baking powder**—Mixture of alkaline soda and tartaric or other acid; activated by water. It does not need added acid to make bread or cakes rise.

**Eggs**—Used as a binder and conditioner as well as leavener. Whipped egg whites lighten soufflés, cakes, pancakes, muffins.

**Baker’s yeast**—Fungus which feeds on starch and sugar, transforming it to acid and producing carbon dioxide which makes bread rise.

**Natural Yeast**—Sourdoughs are made from airborne, naturally occurring yeasts. Other sources are fruit containing natural yeasts, such as grapes.

#### Fat/Liquid

- Fats tenderize the dough. However, too much fat makes the dough heavy. Fat coats the gluten and makes it difficult to rise.
- If you use a lower fat liquid like water or buttermilk, add solid fat like butter or lard.
- If you use heavy cream, crème fraîche or sour cream, do not add additional solid fat.
- Acceptable types of fat include lard, butter, non-hydrogenated vegetable shortening, bacon fat or oil.

#### Sweeteners

- Sweeteners tenderize and moisten the dough. If there is too much sugar, the middle will be overly moist and gooey.
- Sweeteners include fruit, white sugar, brown sugar, honey, maple syrup, agave, barley malt, and molasses.
Exploring Acid & Alkaline

Objective
Learners will be able to choose between baking powder and baking soda in a recipe.

Background
Both baking soda and baking powder add air bubbles to baked goods that help to make them fluffy and light. Baking soda is made from an alkaline substance, bicarbonate of soda. It cannot form bubbles on its own without the addition of an acidic substance. Cooks often add lemon juice, buttermilk or vinegar to create this reaction. If the correct amount of acid is not added, the baked good can end up tasting metallic and soapy. Baking powder already has the acid mixed in. When you add liquid or water, the bubbling reaction occurs. A common experiment involves mixing baking soda and vinegar together to create a “volcano.” This activity shows the learners how to use a similar reaction in cooking.

Materials
- Baking soda
- Baking powder
- 2 clear measuring cups or glasses
- 1 pitcher of water
- 1/4 cup vinegar

Preparation
• Put 1 tablespoon baking powder in one of the cups and 1 tablespoon of baking soda in the other.
• Have the vinegar and water available.

Activity
1. Pour water into both cups. Which one is bubbling? If it bubbles with water, is it the baking soda or baking powder?
2. Now add vinegar to the baking soda cup. What happens? Which cup has bigger bubbles? Which cup has a reaction that lasts longer? Why might there be recipes that have both baking powder and soda?

Further Exploration
You can make your own baking powder and test the properties of the different acids by adding cream of tartar or ascorbic acid to baking soda. How much acid works the best?
Griddle Biscuits

Objective
Learners will be able to create a biscuit recipe demonstrating their understanding of basic baking principles.

Background
The difference between biscuits and bread is that biscuits are tender and flaky as opposed to the chewy texture of bread. Pastries, biscuits, scones, crumpets, pancakes, muffins and cakes all share the same characteristic. There needs to be enough gluten to hold the dough together, but not so much that it turns into a chewy cracker or tough sponge. Most recipes recommend using a low gluten pastry flour for biscuits, but a healthier option is a combination of whole wheat flour, unbleached white flour and any type of non gluten flour. Use the What Does It Do? Chart on page 70 to explain the role of each ingredient.

Think of this activity as an investigation as opposed to a recipe. It doesn’t matter much if the dough is more or less wet, your biscuits will come out differently but edible.

Materials
Induction cook top
1 medium sized bowl for each type of biscuit
Cast iron or other heavy frying pan with lid and/or foil to cover
1 fork per biscuit type
1 metal spatula

Preparation
• Make sure all of the desktops and/or counters are cleared of materials, cleaned, and sanitized.
• Have everyone wash their hands
• Divide the class into groups of 6-8 learners
• First review the recipe so learners know what to do. Do not have learners read the recipe while cooking.

Set-Up
Let each group choose their combination of flours, as long as they have 1/2 gluten free and 1/2 gluten flours.

Have the learners write down which flours they used

Eating & Evaluation
Ask the following questions:
• Which biscuits do you like the best?
• Which biscuits have the most gluten (the chewiest) and which have the least (crumby)?
Griddle Biscuits

**Ingredients**

- 2-3 cups unbleached or whole wheat flour
- 1/2 to 1 cup non or low gluten flour
- 1-2 teaspoons baking soda (needs acid to work) or baking powder
- 1/2 – 1 teaspoon salt
- 2 tablespoons – 1/3 cup butter, lard, or other solid fat
- Egg (optional, makes the biscuit fluffier but more muffin like)
- 2-4 tablespoons sugar, honey, maple syrup or other sweetener, optional
- Buttermilk or thin yogurt or kefir—enough to make a thick, slightly sticky dough

**Method**

If you have done the flour grinding activity, use a mixture of the flours you have made. Put all of the dry ingredients into the mixing bowl: the flour, salt, sugar and leavener. You can also add dry spices or citrus peel. If you are using butter, make sure it is cold. Cut it into small pieces and toss it into the flour mixture. Squeeze the butter pieces with your fingers until they are thin flakes. The butter melts during baking and will make the biscuits flaky. Too much butter will keep the biscuits from rising and make them heavy.

Stir in the liquid until the dough is thick but sticky. If you make the dough a little wet, the extra steam that is created during baking will make them rise taller. You can add currants, dried fruit or nuts at this stage. DO NOT stir much, just enough to get the dough into a ball, about 10 strokes.

Toss a handful of flour onto the plate. Scoop up ball of dough and plop it onto the floured plate. Turn it over and gently pat it flat. With floured hands, place the biscuit in a lightly buttered frying pan. Make each biscuit the same way, about the size of a golf ball.

Make all the biscuits the same way, allowing them to just touch in the pan. Cover the pan with a tight lid and cook on medium heat for 15-20 minutes. You can tell they are cooked by looking at the dough in between the biscuits. It should not be doughy, but should be opaque and firm. They may get some light color.

If you don’t like biscuits with a crisp top, brush them with melted butter or milk and sugar before you put them in the pan.

**From the Garden**

Pick herbs and make a compound butter to spread on the biscuits.

Make a seasonal jam or applesauce (page 109) to eat with the biscuits.
Pancakes

Objective
Learners will be able to create a pancake recipe using principles of baking ingredients.

Background
Learning the family relationship between different baked goods makes it easier to recover from mistakes. Ingredients for pancakes are similar to those for biscuits, except they have more liquid and less fat. Muffins and quick breads are simply pancakes with additional sugar. All of these types of baked goods should be tender as opposed to chewy.

Making pancakes shows learners the effect of gluten. More gluten makes chewy, tough pancakes, too little gluten makes them fall apart. Use buttermilk or other fermented milk product to ensure that the pancakes will be tender. The slight acidity helps break down long, tough strands of gluten.

Materials
1 medium sized bowl for each type of pancake
1 whisk for each type of pancake
1 liquid measuring cup per pancake
Spoons
1 metal spatula per frying pan

Preparation
• Do the flour grinding activity first, or select a range of flours
• Make sure all of the desktops and/or counters are cleared of materials, cleaned, and sanitized.
• Have everyone wash their hands
• Divide the class into groups of 6-8 learners
• First review the recipe so learners know what to do. Do not have learners read the recipe while cooking.

Set-Up
Let each group choose their combination of flours, as long as they have 1/2 gluten free and 1/2 gluten flours.

Have the learners write down which flours they used.

Eating & Evaluation
Ask the following questions:
• Which pancakes do they like the best?
• Which flours are their favorites?

Make applesauce to eat with the pancakes, as on page 109.
Recipe  Pancakes

**Ingredients**

- 2-3 cups wheat flour
- 1/2 to 1 cup non or low gluten flour
- 1-2 teaspoons baking soda (needs acid to activate) or baking powder
- 1/2 teaspoon salt for every 2 cups flour
- 2-4 tablespoons sugar, honey, maple syrup or other sweetener, optional
- 1 egg for every 1-2 cups of flour
- 1 teaspoon vanilla or other flavoring for every 2 cups flour
- Buttermilk or thin yogurt or kefir—enough to make a pourable batter
- Maple syrup, applesauce, or jam for topping
- Butter, for cooking

**Method**

If you have done the flour grinding activity, use a mixture of the flours you have made.

Mix together all of the dry ingredients in a medium-sized bowl: the flours, salt, sugar, and baking soda or powder.

Beat an egg or two with some of the liquid. Add vanilla or other flavoring.

Heat the griddle or flat skillet to medium high heat. Once you start cooking the pancakes, you will have to adjust the heat to make sure they do not burn.

Use a whisk to stir the egg and liquid mixture into the dry ingredients. Add more liquid until you have a consistency anywhere between soft frosting and heavy cream. The texture will be more like a muffin if the batter is thick.

Grease the griddle or pan with a little butter. Spoon small amounts of batter onto the pan so that you can make more pancakes at a time.

They are ready to flip when the edges are dry and there are bubbles on the top that don’t close up. Put the thin metal spatula all the way under the pancake, lift it up and then turn it all at once. Do not smash the pancake down with the spatula.

Let them cook on the second side for about a minute. Serve immediately with real maple syrup or warm applesauce, as on page 109.

**From the Garden**

Instead of sugar and vanilla, make savory pancakes by adding herbs or grated vegetables. Use sour cream or Greek yogurt as a garnish.
Objective

Learners will be able to explain what polenta is, where it comes from and how to cook it.

Background

Romans ate a version of polenta made from barley, lentils or chestnut flour two thousand years ago. It has been a staple of northern Italian peasant diets ever since. After corn was introduced to Italy in the late 15th century, polenta replaced the earlier grains because the plant is so productive. A bright yellow-orange variety called ottolive (eight rows) creates the traditional Piemontese dish. Delicious with any sauce, you can also use it as a wheat-free substitute in lasagna and other pasta dishes.

Poor Italians who relied on polenta for their primary source of calories developed pellagra (“ugly skin”), a disease produced by vitamin B deficiency. Unlike nixtamal (see From Corn to Masa, page 78), which is changed to provide bioavailable B vitamins, polenta’s niacin is unavailable to humans.

Materials

- Induction cook top
- 1 large sauce pan
- 1 pitcher for water
- Wooden spoon for stirring
- Flour grinder or molino
- Shallow bowl for collecting polenta
- Shallow plates for separating corn

Preparation

- Make sure all of the desktops and/or counters are cleared of materials, cleaned, and sanitized.
- Set up the grinder. Place a container under it to catch the flour.
- Make sure everyone has washed his/her hands.
- Review the recipe so learners know what to do.
- Do not have learners read the recipe while cooking.

Set-Up

Bring a pot of water to a boil. The polenta will cook more quickly if you place it in hot water. Have the learners line up to take turns grinding the corn.

Eating & Evaluation

Polenta takes a little while to cook. While you are waiting, read these books about corn to the class. Read From Kernel to Corn Cob by Ellen Weiss to watch how corn grows or Corn is Maize by Aliki. For grades 5-8 try The Life and Times of Corn by Charles Micucci.
Recipe: Polenta

**Ingredients**
- Yellow or dried white dent corn* or 3 cups coarsely ground cornmeal or grits.
- Water (4 times the amount of ground corn)
- 1 teaspoon salt per cup of corn
- Cubes of mild cheese, Monterey Jack, mozzarella, provolone or taleggio (optional)
- Butter (optional)

**Method**
- Loosen the settings on the molino so that the grind is very coarse.
- Have the learners line up and take turns grinding the corn.

Once you have a small pile of corn, part of the group can winnow it, separating the grain from the husk. Spread it out on a shallow plate and shake it until the husk rises to the top and separates from the grain. Remove the husks by hand. Don’t worry if some remains with the ground corn.

For every 1 cup of corn, add 4 cups of water in a large saucepan. Bring to a boil, stir in salt and reduce the heat to medium low.

Have the learners take turns stirring the polenta, it will require about 15 minutes of cooking.

If you like, after the polenta is cooked, you can stir in cubes of soft cheese like Monterey Jack and/or a few tablespoons of butter.

Spoon the polenta onto plates and add the topping you have made. You can use a simple tomato sauce, pesto or some grated cheese.

*In order to use corn from your garden, harvest and remove the husks. Dry the ears for 2-3 weeks until the kernels can be easily removed from the cob. If the corn kernels are not dried thoroughly before husking, they will mold in a container.

**Note:** You can also make polenta from coarsely ground cornmeal or grits.

**From the Garden**

While you are waiting, prepare a sauce from herbs or other garden ingredients from the Mortar and Pestle section.

For a large class, divide into groups. Have one group make the polenta, and the second group make the Tomato Sauce on page 107 with tomatoes from your garden.
CHAPTER 2: Kitchen Skills & Tools

INTRODUCTION

Throughout Mexico and Central America, corn is soaked to soften the hulls and rinsed before being ground into flour. The dried corn, or maize, is soaked in a mixture of water and lime (calcium carbonate), using a technique that is at least 3,500 years old. Corn soaked in this manner is called nixtamal, and when ground it is called masa. Through food processing, the corn becomes more nutritious as the B vitamins can be absorbed readily by the body. European countries such as Italy, who adopted the new grain enthusiastically without adopting the nixtamal process, found themselves with a diet poor in B vitamins, leading to pellagra (bad skin) where skin becomes swollen and red. Pellagra struck particularly hard in Northern Italy in the 18th and 19th centuries as poor farmers survived on little else besides polenta.

In order to make masa, you can use a Mexican Molino or you can use a flour grinder on a coarse setting. In order to make masa in class, you will need to soak the corn the day before and bring it in already rinsed.

Masa is the primary ingredient for many dishes throughout Latin America, including tamales, corn tortillas and the thick Salvadoran flatbreads called pupusas. Most are simple to prepare and appropriate for a classroom setting.

Masa Glossary

**Antojitos**: Various appetizers from Mexico made from masa and fillings

**Arepas**: Venezuelan masa cakes made from white cornmeal, fried and eaten stuffed or plain

**Gorditas**: Thick tortillas, stuffed with fillings and fried

**Huaraches**: Oblong masa ovals, fried and topped with various fillings, from Mexico City

**Masa**: Wet dough made from grinding fresh nixtamal

**Masa harina**: Flour made from dried masa

**Nixtamal**: Corn that has been soaked in lime and water, the hull removed

**Posole or hominy**: Corn that has been soaked in lime and water, the hull removed and then dried. It is cooked and eaten whole in stews or soups

**Pupusas**: Stuffed flatbreads from El Salvador made with no added fat, and then fried

**Sopes**: Thick disk of masa with pinched sides, pan fried and topped with filling

**Tamal or tamale**: Masa cake enriched with fat and broth, filled, wrapped in a corn husk or banana leaf and then steamed.

**Tortillas**: Flat breads made out of masa with no added fat and cooked on a dry skillet
GROWING CORN FOR MASA

Masa is made from dent or field corn, not from sweet corn like corn on the cob. It is a perfect crop for most school gardens, because it is ready in the fall, instead of the middle of summer like sweet corn.

Strains of corn that are good for masa include: Oaxacan Green Dent Corn, Hopi Blue, flour corn and dent corn. The widest variety are available from the Native Seed Search (www.nativeseeds.org). Make sure you try one that has a growing season that fits with your area.

PLANTING INSTRUCTIONS

Corn needs a good amount of nitrogen, so plant it in soil that has been amended with a fish/kelp meal or compost. You can also plant it with nitrogen fixing legumes such as black beans or fava beans. Midwest gardeners often grow corn on the tops of furrows to minimize soggy roots. Gardeners in dry states should try planting in rows that are 3-4 inches down, so that water will stay near the corn. Waffle gardens, which are submerged squares, are traditional in the Southwest. Plant it in rows that are dug 3-4 inches down, so that any rain water will stay and water the corn. Fill the trenches with water if you are watering by hand, or place drip tubing in the trench.

You can also plant corn in the middle of a large circle, as with a three sisters garden. Again, it should be planted in a bowl, where water will collect. The three sisters garden also provides additional nitrogen to the corn in the form of companion beans.

Plant the corn about 6 inches apart, after the soil has warmed up in late May to early June. It should sprout within a week. Dent corn has fewer pests and is easier to grow than sweet corn. Wait to harvest the ears until the stalks are beginning to dry out. Make sure the kernels are dried before you remove them from the cob. They will come off easier if they are dry.

Also, if the kernels are still wet, they will become moldy in a plastic bin or other deep container. They may take 2-3 weeks to dry.

Plan on doing a homemade masa class with garden-grown corn at the end of October or November before Thanksgiving. Once the kernels are dry, they can keep for 6-9 months. You can also save some seed for next year.

It is dry when the kernels can be easily removed from the cob. Do not grow more than one kind of corn in your garden if you want to save the seeds. They will cross pollinate and not breed true to the original strain.

PURCHASING CORN

Purchase dried corn in Mexican and Latin American grocery stores. It can be pink, blue, green or yellow. You can also used dried posole, which has already gone through the nixtamalization process, so just bring it to a boil, simmer for 10 minutes and turn off the heat. Let the posole
**Objective**

Learners will be able to explain what masa is, where it comes from and how to make corn tortillas.

**Materials**

- Induction cook top
- Flour grinder (molino)
- Shallow bowl for collecting masa
- Mixing bowl for tortilla dough
- 1-2 tortilla presses (see image below), can be found in Mexican grocery stores
- Heavy plastic bags for tortilla presses
- Scissors for cutting plastic
- Skillet

**Preparation**

- You must soak the corn the day before the class. See the next page for instructions.
- You may have the learners rinse the corn and remove the skins, or you may do that ahead of time as well.
- Make sure all of the desktops and/or counters are cleared of materials, cleaned, and sanitized.
- Make sure everyone has washed his/her hands.
- Review the recipe so learners know what to do. Do not have learners read the recipe while cooking.

**Set-Up**

Make two groups: 1) grinding the masa and 2) shaping the tortillas. As soon as you have ground a bowl of masa, start some of the learners immediately making the tortillas. If you are short on time, grind some of the masa before class, so that you can make the tortillas first thing. Have the learners complete the grinding and continue making the masa in batches.

**Eating & Evaluation**

Suggestions for activities do to while waiting for your tortillas:

- Read the book *La Tortillería* by Gary Paulsen or *Magda’s Tortillas* by Becky Chavaria-Chairez. Both are available in English and Spanish.
- Talk about the different ways to grind corn: Metate, Metal grinder, and Factory.
- Use the **Corn Worksheet** on page 116 to talk about corn and the different varieties.
- Discuss the vocabulary terms on page 78.
Recipe  Fresh Masa & Corn Tortillas

Ingredients

For the masa:
2 lbs dried dent or flour corn kernels
1 tablespoon pickling lime (calcium hydroxide), found with canning supplies in the grocery store

Method

Rinse the corn and put it in a large pot of water. Bring to a boil. Stir the pickling lime into a cup of water and add to the corn. Let it simmer for about 15 minutes, until the peels are softened. Let the corn soak overnight, the day before class.

Drain the corn and rinse. Rub the kernels between your hands to remove all of the yellow husks. Rinse 3 or 4 times, until all of the yellow is gone. To save time, you can also do this before the class. Now you have nixtamal.

Grind the nixtamal in a hand grinder. Now you have masa.

To make tortillas:
Place the masa in a mixing bowl and grab a piece to see if it holds together. If necessary, add a bit of water until the masa will keep the shape of a smooth ball. If the dough becomes dry as you work, add a few more drops of water.

Grab some masa and roll it into a smooth ball about the size of a golf ball. Get a heavy plastic bag and cut 2 squares of plastic slightly larger than the tortilla press. Place the ball in between the two sheets and squeeze down. Peel off the top sheet of plastic. Place the tortilla in the palm of your hand with the remaining sheet of plastic on top. Pull off the sheet.

Quickly turn your hand over and plop the tortilla into a hot, ungreased skillet. Let it cook on one side until there are small brown spots on the bottom. Flip it over and press down with a balled up paper towel or kitchen towel. It should puff up. Let it cook for another minute and then remove to a plate. Repeat.

Note: You can also make fresh corn tortillas with masa harina, the dried form of masa. Masa harina can be found in the Mexican section of most grocery stores, or in most Mexican specialty grocers. Just mix water with the masa harina until you get a dough that sticks together. Knead it briefly and let it sit for 5 minutes. Add more water if necessary.

From the Garden

- Turn the tortillas into quesadillas, adding cheese and fresh vegetables. The possibilities include: cilantro, roasted chiles, grated squash or zucchini, sweet corn kernels, onions, garlic, chopped greens.
- Use tomatoes, tomatillos and/or chiles to make salsa as on page 23 of the Sensory Education Activity Guide.
Tamales

Objective
Learners will be able to explain what tamales are, what ingredients they have and how to cook them.

Materials
Induction cook top
1 5-qt pot with a lid
Steamer basket
Masa, as described on page 80
Shallow bowl for collecting masa
Standing mixer with paddle attachment
Spoons to spread masa
2 large mixing bowls

Preparation
- Soak the corn the day before the class. See instructions on page 81.
- You may have the learners rinse the corn and remove the skins, or you may do that ahead of time as well.
- Soak the corn husks in warm water in a large bowl or tub 1 hour before class.
- Make sure all of the desktops and/or counters are cleared of materials, cleaned, and sanitized.
- Make sure everyone has washed his/her hands.

Set-Up
Make three groups: 1) grinding the masa, 2) making the dough and 3) making the filling.

As you complete the dough, start some of the learners immediately making the tamales. If you are short on time, grind some of the masa before class, so that you can make the dough first thing. Have the learners complete the grinding and continue making the masa in batches.

As soon as the learners make enough tamales for the class, begin steaming them, while the learners continue the process.

Eating & Evaluation
Suggestions for activities do to while waiting for your tamales:
- Read the book La Tortilleria by Gary Paulsen or Magda's Tortillas by Becky Chavarria-Chairez. Both are available in English and Spanish.
- Talk about the different ways to grind corn: Metate, Metal grinder, and Factory.
- Use the Corn Worksheet on page 116 of the workbook to talk about corn and the different varieties.
Recipe: Tamales

**Ingredients**
- Fresh masa from page 81 (about 6 cups)
- 1 cup sunflower or corn oil or 1 1/2 cups lard
- 1-2 cups chicken broth
- 1 tablespoon salt

**For the filling:**
- 1 lb Mexican Chihuahua or Muenster cheese, grated
- 1/4 lb feta cheese, crumbled
- 1 cup chopped, roasted and peeled green chiles
- 1/4 cup toasted pumpkin seeds (optional)
- 1 pkg (about 40) dried corn husks

**Method**

Place the corn husks in a large bowl. Pour boiling water over them and let them sit while you make the dough and filling.

**For the dough:**

Divide all of the ingredients for the dough in half and mix in a large stationary mixer like a KitchenAid one half at a time. Using the paddle, mix together the masa, fat, broth and salt. Use just enough broth to make the masa smooth and fluffy, but not watery. Whip the masa on medium high until it is fluffy. You can check by placing a piece of dough in a glass of water. It should float.

**For the filling:** Mix together the grated cheese, feta cheese, green chiles and pumpkin seeds. Take a husk, smooth side facing up. Spread a thin (3/8") layer of masa over the mid section of the corn husk. Place 1-2 tablespoons of filling in the middle of the masa and press it down. Roll up the corn husk. Fold up the bottom (pointy) end of the corn husk. Be sure that the filling is surrounded by masa.

Put a steamer basket in the bottom of a large pot and add water up to the bottom of the basket. Place each tamale with the bottom (folded) side down and the open side facing up. After the pot is full, cover with a tightly fitted lid and bring the pot to a boil. Reduce to a medium heat and steam the tamales for 45 minutes, until they are firm and cooked through. Check periodically to see if more water is needed. Refer to this short video if you need assistance: http://www.saveur.com/article/techniques/video-how-to-fill-and-roll-tamales.

**From the Garden**

- Use the following garden vegetables for a filling: cilantro, roasted chiles, grated squash or zucchini, potatoes, sweet corn kernels, onions, garlic, chopped greens.
- Use tomatoes, tomatillos and/or chiles to make salsa for the tamales.
Objective
Learners will be able to explain what masa is, where it comes from and how to make pupusas from El Salvador.

Materials
Induction cook top
Masa, as described on page 80
2 mixing bowls
Cheese grater
8 cutting boards and small knives
2 peelers
2 mixing spoons
Skillet

Preparation
• Soak the corn the day before the class.
• You may have the learners rinse the corn and remove the skins, or you may do that ahead of time as well.
• Make sure all of the desktops and/or counters are cleared of materials, cleaned, and sanitized.
• Make sure everyone has washed his/her hands.
• Review the recipe so learners know what to do. Do not have learners read the recipe while cooking.

Set-Up
Make three groups: 1) grinding the masa, 2) making the filling and 3) making the curtido.

All of the learners will be able to make a pupusa as soon as the filling is made. For a large class, use two induction burners and two skillets.

Eating & Evaluation
Suggestions for activities do to while waiting for your pupusas:
• Talk about the different ways to grind corn: Metate, Metal grinder, and Factory.
• Use the Corn Worksheet on page 116 of the workbook to talk about corn and the different varieties.
• Discuss the vocabulary terms on page 78 related to pupusas and antojitos.
• What other shapes can you make with masa and stuffing?
Recipe  Pupusas

Ingredients
- 2 cups fresh masa made in class or using masa harina
- 2-4 tablespoons water
- 2 cups grated Monterey Jack or Mexican cheese
- 1/2 cup refried beans
- 1 cup grated vegetable (zucchini, squash, or carrots)

Method
Mix together the fresh masa and a little water until the dough holds together in a ball when you squeeze it. Add enough water so that it does not crack when you pat it into a flat disk.

Grate the cheese and the vegetables. Mix them together with the refried beans for the filling.

To make 3-inch round pupusas, put about 1/2 cup of the dough in your hand for each pupusa. Roll into a ball and flatten in your hand. Put about 2 tablespoons of the filling into the middle of the dough. Work the edges up over the filling and again form a ball, completely enclosing the filling.

Flatten each ball to about 1/4 inch or less and cook the pupusas on a hot, lightly oiled griddle for about 3 minutes per side, or until both sides are lightly browned. Serve warm with curtido and hot sauce on the side.

Recipe  Curtido (Cabbage Salad)

Ingredients
- 1/2 head green cabbage
- 2 carrots
- 1 white onion
- 1/2 cup cider vinegar
- 1/4 cup water
- 1 teaspoon salt
- 1 teaspoon dried oregano
- 1 teaspoon crushed red pepper flakes

Method
Cut the core out of the cabbage and shred it with a knife like coleslaw. Peel and grate the carrots, or peel them into long strips. Peel the onion, cut it in half and then into thin slices.

To make curtido, combine all ingredients in a large bowl and mix well.
**Simple Tools: Mortar and Pestle**

**INTRODUCTION**

Societies all over the world have developed some version of the mortar (bowl) and pestle (pounder) in order to make sauces, grind foods and create spice blends. Learners love to use this tool, taking turns pounding ingredients into a smooth pulp. Although modern cooks use a blender or food processor for many of these same recipes, a mortar and pestle has several advantages:

- Learners can take turns operating the tool, providing tasks for more people.
- It makes less noise than a blender.
- The flavors are blended together as opposed to being small pieces of chopped ingredients floating next to each other.
- You don’t need electricity.
- Learners can see and feel how the sauce is created.
- Traditional sauces are more nutritious because they have whole foods like nuts, beans and herbs as opposed to flour, cream and butter.

In a blender, the ingredients stay separate and become merely wet. In the mortar, the cook marries the flavors, using the weight of the stone pestle. The ingredients became more than their individual parts. Make sure you buy a mortar and pestle large enough for your purposes. The small white one is mainly useful for grinding herbs or 1-2 cloves of garlic. The best mortars are made of granite or marble. Buy one from an Asian store, especially Thai or Vietnamese groceries. Gourmet cooking stores often carry the Italian marble version, as well as smaller ceramic ones. Mexican or Latin American stores may carry the basalt molcajetes. Whichever you buy, make sure that it is taller than 8 inches and heavy enough to break your toe. The first time you pulverize fibrous ginger slices into a frothy paste, you’ll be hooked. Plan on spending $30-$50.

Grind dry spices with a circular motion. Tough wet ingredients like chilies, garlic or ginger will cooperate if you pound gently and consistently. You do not need to lift the pestle above the rim of the mortar, or the wet paste will slop everywhere. Use a spoon to scrape the sides of the bowl, keeping the flavorings in the middle. The clean up is simple—just rinse out the ingredients and then rub a half of a lemon and coarse salt around the bowl and rinse it out.

The following recipes provide a quick and simple flavor boost to garden produce. Since cooking equipment in schools is limited, you can create an extra sauce with no heat, therefore no need for an extra burner. Use the mortar and pestle with herbs, garlic, chiles, dried beans, nuts and seeds.

Make sure to check for nut allergies in your classroom before hand. Sometimes if learners are allergic to tree nuts, you can try sesame seeds, pumpkin seeds or sunflower seeds as flavor enhancements instead. Nuts and seeds provide body to sauces, healthy fats and minerals. For example, sesame seeds are high in calcium. If allergies are common in your school, keep a separate mortar and pestle for nut free cooking.
Mortars and Pestles Worldwide

Mortars made from various materials have varying functions. Cooks use the more porous surfaces, such as wood, lava rock, and earthenware, for dried herbs or grains. They use terracotta, stone and brass for wet pastes, and for dishes made with garlic or onions. Other common materials are brass, porcelain or wood.

EUROPE
Genovese Italians manufacture mortars specially designed to make pesto. Four rounded handles protrude from their edges. Apothecary-like porcelain bowls give the French a tool to crush garlic and bread crumbs for aioli. They have a handy spout, perfect for pouring garlicky mayonnaise onto food. Smaller 4-inch wooden mortars of most European countries are well adapted for crushing dried herbs.

MIDDLE EAST
Almonds, saffron, pepper and spices yield to the brass mortars of the Middle East. The cylindrical brass mortars of Greece and Syria pair with fresh herbs, such as mint, and sesame seeds. Porous wooden mortars work best for dried herbs, as well as spices such as cumin, coriander, cinnamon and cardamom. A 2-inch high basalt Iranian mortar is specifically designed for saffron threads.

INDIA
Indian food relies on ground pulses, grains and spices. The sil batta grinds grains and beans. Its flat stone table with ridges (the sil) has an oblong grinding stone (the batta) that functions like the Mexican metate. Cooks grind coconut, lentils, rice and hard spices on the stone. Other tools include the himan dasta, a bowl-shaped stone mortar that makes quick work of wet curry pastes; and an electric device designed to simulate traditional grinding.

ASIA
Thai cooks use earthenware mortars resembling terracotta flowerpots to grind dry spices. They use granite or basalt mortars to grind curry pastes, chilies, peanuts, garlic and ginger. Brass and aluminum are common and are used for dried spices. Japanese cooks prefer the suribachi, a glazed bowl with ridges engraved on the inside. They use the rough surface to grind gomasio, a traditional roasted sesame condiment.

MEXICO
As in Asia, traditional cooking techniques mandate different tools to grind, pound and puree chilies, corn and spices. The rectangular lava stone known as a metate combines with the spindle-like mano for grinding corn and masa. The molcajete is a short, squat mortar made from black basalt. It is used with the tejolote, an oblong pestle to grind chilies, seeds and spices. Do not use a lava mocajete for grinding wet pastes because it is too absorbent.

Classic Pesto Sauce

Objective
Learners will be able to use a traditional mortar and pestle and identify the uses of basil.

Background
Classic Genovese pesto combines fresh basil, garlic, salt and nuts in a mortar and pestle, making creamy pastes. A gentle extra virgin olive oil makes a light sauce with an herbal punch. It is traditionally served with flat tagliatelle noodles or curled trofie, small potatoes and Romano string beans.

Materials
Large marble or granite mortar and pestle for every 10 learners
Induction cook top
1 large pot
1 bowl for the basil leaves
1 large serving bowl
Tongs or spoons to serve pasta
Dish towel

Preparation
- Make sure all of the desktops and/or counters are cleared of materials, cleaned, and sanitized.
- Wash all of the vegetables.
- Make sure everyone has washed his/her hands.
- Review the recipe so learners know what to do.
  - Do not have learners read the recipe while cooking.
- Begin heating up the water for the pasta before class starts.

Set-Up
Place the mortar and pestle at the end of the table with a folded up kitchen towel under it.

Place the basil in a pile in the middle of one table.

Place the string beans and potatoes on another table.

Divide the learners into two groups. One group will pluck the leaves from the basil plant and the other will trim the ends of the beans and cut the potatoes.

Pull learners from each group to pound the pesto while they continue with their tasks.

Eating & Evaluation
Remind class to wait politely to be served before eating.

Have 3 or 4 learners volunteer to help pass out the samples.

Have the learners draw the process of making pesto, or, for older learners, write out the instructions. Discuss if they prefer the vegetables with the pesto sauce or plain.

Note: If you cook the potatoes ahead of time, this recipe does not need sharp knives. It is a good recipe for younger learners.
Recipe Classic Pesto Sauce

Ingredients

For the pesto:
- Basil
- Salt
- Garlic
- Lemon juice
- Pine nuts or walnuts (optional)*
- Olive oil

For the pasta:
- String beans
- Potatoes, red or Yukon gold
- Pasta
- Parmesan cheese

Method

Remove all of the leaves from the basil plant. Do not use the stems or blossoms. If the leaves are old and large, remove the tough part of the leaf spine (the petiole) as well.

Smash 1-2 cloves of garlic, 1/2 teaspoon of salt and 1-2 tablespoons of nuts (optional) in a mortar and pestle. Pound up and down until you have a smooth paste.

Slowly add the basil leaves, pounding as you go. Alternate with a squeeze of lemon to keep the basil from turning black. You can keep adding leaves until the mortar is half full. Stir in olive oil until the pesto is a sauce consistency.

Meanwhile, cut the potatoes into thick slices. Remove the ends from the beans.

Bring a large pot of water to a boil. Add the pasta, potatoes and beans. Boil for 10-12 minutes, until the pasta is cooked.

Put the pesto in a large bowl. Add a few ladles of hot water to the pesto in order to get a saucy consistency. Drain the noodles and toss them with the pesto.

Toss the pasta with Parmesan cheese and serve.

*Check with class about allergies before using nuts or substitute raw, unsalted sunflower seeds for nuts.
## Romesco Sauce

**Objective**
Learners will be able to use a traditional mortar and pestle and identify the uses of chiles.

**Background**
The traditional Catalan sauce Romesco consists of chiles, roasted nuts and tomatoes with a bit of vinegar and salt. Romesco tastes delicious on a variety of vegetables. Try it as a sauce with gnocchi, pasta or polenta. If you prefer the sauce more spicy, add more of the red chile flakes. If your learners do not tolerate spicy foods, leave them out.

**Materials**
For each table:
- Large marble or granite mortar and pestle for every 10 learners
- Dish towel
- Bowl for the Romesco
- Spoon or butter knife
- Cutting boards for vegetables
- Knives

**Preparation**
- Make sure all of the desktops and/or counters are cleared of materials, cleaned, and sanitized.
- Wash all of the vegetables.
- Make sure everyone has washed his/her hands.
- Review the recipe so learners know what to do.
- Do not have learners read the recipe while cooking.

**Set-Up**
Place the mortar and pestle at the end of the table with a folded up kitchen towel under it.

Divide the learners so that they are in groups no larger than 10.

Each group will first prepare the ingredients for the Romesco, and then cut up whatever vegetables you are going to cook.

Learners will take turns pounding the sauce while others are preparing the vegetables.

Remind class to wait politely to be served before eating. Have 3 or 4 learners volunteer to help pass out the samples.

**Eating & Evaluation**
Have the learners draw the process of making the sauce, or, for older learners, write out the instructions.

Discuss if they prefer the vegetables with the sauce or plain.

**From the Garden**
Serve the Romesco sauce with cooked green beans, sautéed summer squash, roasted winter squash, or potatoes.
Recipe  Romesco Sauce

**Ingredients**
- 2-3 dried red chiles (like New Mexican or Ancho)
- 2 cups water
- 2 cloves garlic
- 3/4 teaspoon salt
- 1/4 cup roasted plain almonds or hazelnuts*
- 2 Roma tomatoes, cut into quarters
- 1 teaspoon apple cider or sherry vinegar
- 3 tablespoons olive oil

**Method**
Bring the whole chiles to a boil in the 2 cups of water. Turn off the heat and let them cool. Remove the stems and seeds. Cut them into small pieces.

If you have a large mortar and pestle, use it. It is a lot more fun. Start with the garlic, salt and a few almonds. Pound them until they are a smooth paste. Slowly add the chiles, pounding in between each addition. Add almonds to keep the sauce from being too wet and messy. Keep pounding until you have added all of the almonds and chiles.

Gently grind in the tomatoes. After they are thoroughly mixed, stir in the vinegar and olive oil with a spoon. Serve with gnocchi, pasta, cooked string beans or bread.

*Check with class about allergies before using nuts or substitute toasted pumpkin seeds for almonds.
Thai Curry

Objective
Students will be able to make a spicy chile paste and then a Thai style curry dish.

Background
Thai Curry is one of those foods that make you feel blessed to have a mouth, nose and tongue with which to enjoy your food. The mortar and pestle releases all of its complex flavors. You can use either fresh green chiles or red chiles. Make the paste as spicy as you wish by controlling the amount of hot peppers you add. The final dish is not as spicy as you might think because of the cooling coconut milk in the curry.

This version substitutes commonly available ingredients for some of the Thai ingredients. If you have access to an Asian market, use traditional ingredients. If you don’t have access to an Asian market, substitute ginger, anchovies, lemon zest and lime zest, for the fresh galangal, shrimp paste, lemongrass and kaffir lime leaves, respectively.

If you don’t have a separate burner or rice cooker for rice, soak rice noodles in warm water and then add them to the curry at the last minute, simmering for a few minutes until they are soft.

Materials

<table>
<thead>
<tr>
<th>Item</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Large granite or terracotta mortar and pestle</td>
<td>Knives</td>
</tr>
<tr>
<td>Large bowl for veggies</td>
<td>Induction cook top</td>
</tr>
<tr>
<td>Small bowl for curry paste</td>
<td>Wooden spoon</td>
</tr>
<tr>
<td>Peelers</td>
<td>Wok, flat bottom</td>
</tr>
<tr>
<td>Cutting boards</td>
<td></td>
</tr>
</tbody>
</table>

Preparation
- Make sure all of the desktops and/or counters are cleared of materials, cleaned, and sanitized.
- Wash all of the vegetables.
- Make sure everyone has washed his her hands.
- Review the recipe so learners know what to do. Do not have learners read the recipe while cooking.

Set-Up
Place the mortar and pestle at the end of the table with a folded up kitchen towel under it.

Divide the learners so that they are in groups no larger than 10.

Each group will first prepare the ingredients for the curry paste, and then cut up whatever vegetables you are going to cook.

Learners will take turns pounding the sauce while others are preparing the vegetables.

Eating & Evaluation
Remind class to wait politely to be served before eating.

Have 3 or 4 learners volunteer to help pass out the samples.

From the Garden
Any vegetables appropriate for stew will work: zucchini, potatoes, peppers, eggplant (especially small varieties), winter squash, peas and green beans.
Recipe Thai Curry

Ingredients

For the chile paste:
- 1 dried mild red chile plus 1 tablespoon red pepper flakes or 2 spicy green chiles like serrano
- 1" piece of ginger or galangal, peeled and cut into pieces
- 1 clove garlic
- 1 teaspoon sugar
- 1/2 teaspoon salt
- 1 teaspoon coriander seeds
- 1/2 teaspoon whole peppercorns
- 3 anchovies or shrimp paste (optional)
- Zest of 1 lime, or 3 kaffir lime leaves
- Zest of 1/2 lemon, or 2 stalks minced lemongrass

For the curry:
- 1 onion
- 2 lbs vegetables (beans, yams, zucchini, peas, potatoes, sweet peppers or eggplant)
- 1 can of chick peas
- 1 can coconut milk
- 1-2 limes
- Salt or fish sauce
- 1/2 cup cilantro leaves, basil and/or mint

Method

For the chile paste:
Remove the stem and seeds from the whole dried chiles, if using them. Cut the chile up into small pieces. Cut the ginger and garlic into small pieces as well. Learners may use gloves when cutting chiles, or have the instructor cut them ahead of time.

Add the garlic, ginger, salt and sugar to a mortar and pestle. Pound them until they are smooth. Gradually add the rest of the ingredients, pounding after each addition until you have a smooth paste.

For the curry:
Cut the onion, and all of the vegetables into bite sized pieces.

Take the top, creamy layer of the coconut milk and add it to a hot frying pan. Add 1-2 tablespoons of the chile paste and cook for 2 minutes. Add the onions, vegetables and the rest of the coconut milk. Let the vegetables cook, uncovered, for 15 minutes, until soft. Add the chick peas.

Taste the curry and add lime juice and salt or fish sauce to taste. You can also add more curry paste if you want it to be spicier. Stir in the cilantro. Serve over noodles or cooked rice.
## Mole Sauce

<table>
<thead>
<tr>
<th>Objective</th>
<th>Learners will be able to identify red chiles and create a mole-style sauce.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Background</td>
<td>Mexican sauces rely on ground chiles, spices and seeds to create a rich flavor. This adaptation of the traditional mole sauce can be used with tamales, corn tortillas or in a bean and vegetable stew. Control the level of spice by adding more or less chipotle peppers.</td>
</tr>
</tbody>
</table>
| Materials | **For each table:**  
Large marble or granite mortar and pestle for every 10 learners  
Cutting boards for vegetables  
Knives  
**For the class:**  
Spoon to stir sauce  
Saucepan  
Strainer  
Induction cook top |
| Preparation | • Make sure all of the desktops and/or counters are cleared of materials, cleaned, and sanitized.  
• Soak the chiles and let them cool before class starts.  
• Wash all of the vegetables.  
• Make sure everyone has washed his/her hands.  
• Review the recipe so learners know what to do.  
Do not have learners read the recipe while cooking. |
| Set-Up | Place the mortar and pestle at the end of the table with a folded up kitchen towel under it.  
Divide the learners so that they are in groups no larger than 10.  
Each group will first prepare the ingredients for the mole, and then cut up whatever vegetables you are going to cook.  
Learners will take turns pounding the sauce while others are preparing the vegetables. |
| Eating & Evaluation | Remind class to wait politely to be served before eating.  
Have 3 or 4 learners volunteer to help pass out the samples.  
Bring a selection of chiles to class. Use The Great Chile Book by Mark Miller to show the class the different kinds of chiles. Try to match the red chile with the green chile. Which ones grow in your garden?  
Mole sauce tastes great with late fall vegetables.  
Add mole to a winter squash and black bean stew. |

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Recipe  Mole Sauce

Ingredients
- 6-8 dried red chiles (guajillo, negro, mulato or ancho)
- 2 dried or canned chipotle chiles
- 2 cups water
- 3/4 teaspoon salt
- 2 cloves garlic
- 2 tablespoons raisins
- 1 cake Mexican chocolate (3 oz) or 1 tablespoon cocoa powder
- 4 cloves
- 1/2 onion
- 1/2 stick cinnamon
- 1/2 teaspoon black peppercorns
- 1 1/2 teaspoon cumin seeds
- 1/2 teaspoon oregano
- 1/2 teaspoon thyme
- 1 tablespoon sesame seeds
- 1 1/2 teaspoons almonds or pumpkin seeds*
- 3 tablespoons olive oil

*Check with class about allergies before using nuts or substitute toasted pumpkin seeds for almonds.

Method
Break off the tops of all of the chiles and remove the seeds. Cut them into small pieces. Bring the whole chiles to a boil in the 2 cups of water. Turn off the heat and let them cool. Strain the chiles and save the water.

Chop the garlic, onion, raisins and chocolate into small pieces. Mix together the raisins, cinnamon, peppercorns, cumin, oregano, thyme and sesame seeds. Begin pounding the salt, garlic and almonds in the mortar and pestle. Add some of the chiles, then the spice mixture. Pound the ingredients until thoroughly mashed, and then slowly add more of each until they are all incorporated.

Heat the olive oil in a skillet and add the mole paste. Stir on medium heat and cook the paste slowly, until the flavors release and the paste gets thick. Turn off the heat.

Add the water from the chile soaking and whisk until you have a sauce. Add more water if necessary.

If you wish the sauce to be smoother, pour it through a fine mesh strainer or run through a food mill. Adjust salt to taste.

Note: For a richer flavor, toast the cinnamon, peppercorns, cumin, oregano and seeds in a dry skillet before grinding.

Use as a topping for corn quesadillas or tamales. Make a potato hash with cooked potatoes, chiles, zucchini and mole.
INTRODUCTION

Rolling pins are indispensable for making flatbreads, pastries, and pastas. All of these dishes have one thing in common; they need gluten in the form of wheat flour in order to keep them elastic and hold together when cooked. Dough that is cooked with dry heat, like in a frying pan or oven, makes pastry or simple bread. Dough that is cooked with wet heat, like boiling, creates noodles. Which-ever cooking method you use, these simple doughs provide a delicious base for fresh produce, herbs and spices.

Rolling pins come in all shapes, each designed for a different dish. Etruscans from the 9th century BC were responsible for the first known rolling pins, long slender rods. They were used to make a dough similar to pasta. American rolling pins are usually wooden and roll around a central spindle. They are used for pies and biscuits. French rolling pins are long and have a taper at the ends. They are used as leverage to make round shapes and thin the centers of the dough. Italian ravioli pins have grooves to press into pasta creating ravioli in sheets. German Springerle pins mark outlines of Christmas cookies. Indian small rolling pins, with a swelling in the mid section, roll out round parathas and chapatis. Marble rolling pins are used for pastries, to keep the dough cool while rolling.

Rolling pins have several advantages in the learner kitchen:

- They provide plenty of activity for busy hands and are appropriate for a wide variety of ages.
- You can make breads in a skillet, using minimal space and energy, rather than an oven.
- They provide hands on busy work for learners so you can have more action and less lecture in a class.
- They provide an opportunity to engage in a repetitive process, building manual skills.
- Use rolling pins to make quick cooking flatbreads.

To make rolling pins for your learners, buy a 48” x 2” dowel and cut it into 12” lengths. Sand the edges and rub them with mineral oil. The short length helps to keep the learners from hitting each other while they are working. Do not bring out the rolling pins until you are ready to start the activity. Otherwise, the learners will be paying attention to their new tools and not to your instructions.

To clean the rolling pins, allow the flour to dry and brush it off. Scrape off any dried dough and rinse briefly in water. Do not allow them to sit in water. Reapply mineral oil as needed.
Fresh Pasta

Objective
Learners will understand the proper consistency of pasta dough and be able to make their own fresh pasta.

Background
These quick fresh noodles need only boiling water to prepare. The simplest sauce is some chopped, fresh garlic, herbs and cheese.

If you plan to cook noodles with the tomato sauce (page 107) or a vegetable soup (page 49), follow these steps:
Make the dough
Make the sauce
Roll out or shape the dough
Boil the noodles
Mix everything together

Materials
For each group of 4 learners
4 rolling pins (See page 96 for suggestions)
Mixing bowl for each batch
Fork for each batch

For the class:
Induction cook top
Large pot for boiling water

Preparation
• Make sure all of the desktops and/or counters are cleared of materials, cleaned, and sanitized.
• Make sure everyone has washed his/her hands.

Set-Up
Each group of learners should have a bowl with 2 cups of flour and 3 whole eggs in it. They should also have a fork and a cup with 2 or 3 tablespoons of water.
Remind class to wait politely to be served before eating.
Have 3 or 4 learners volunteer to help pass out the samples.

Eating & Evaluation
Read the book From Wheat to Pasta by Robert Egan.
How is what we did the same as the factory in the book? How is it different?
Pasta is an important part of Italian cooking. See if you can match the pasta shape to a good sauce using the worksheet on page 118.
### Recipe

**Fresh Pasta**

#### Ingredients

- 2 cups unbleached all-purpose flour*
- 3 eggs
- 2 tablespoons olive oil
- Extra water, as needed
- Salt for the boiling water

*For a more chewy noodle, substitute up to 1 cup semolina flour for the all-purpose flour. The noodles will be more difficult to roll out, so this is best for older learners.

#### Method

Each group of learners should have a bowl with the flour and eggs (whole, not cracked) and a fork. Have the learners crack the eggs into the bowl and start stirring.

Depending on the age of the learners, have them measure the olive oil into the bowl, or have the teacher go to each station and add the olive oil.

After the dough is mixed, have the learners press the dough together to see if it will come into a ball. If it is too dry, add water a spoonful at a time until the dough comes together. Knead it into a ball.

Each station should divide their dough into pieces so that each learner can knead it for 5 minutes, until it is smooth and looks like play dough. It should not be sticky.

Bring all of the small pieces of dough together into one big ball. This will even out the consistencies of the various doughs. Rub it with olive oil, wrap it in plastic wrap and let it sit for 15 minutes. It is ready to be rolled out when the dough has relaxed.

Meanwhile, bring a large pot of water to a boil.

Cut the dough into pieces so that each learner has a piece.

Pat the dough into a round disk. Sprinkle a few tablespoons of flour in front of each learner on the tabletop. Start rolling out the dough. After each pass of the rolling pin, turn the dough over. When you roll out the dough, use enough flour so that the dough will not stick to the counter. You should end up with a piece about as thick as a post card. You should be able to see through the dough.

Sprinkle a thin layer of flour over the top of the dough. Loosely fold it over until you have a flat tube and cut roll into noodles with a sharp knife, following the guidelines on the next page. Scoop up the noodles with your fingers and gently shake them apart.

Cook them in rapidly boiling water, for 2-3 minutes or until they float to the surface and change from translucent gold to opaque ivory.
To make different styles of noodles:

- **Fettucine**—Cut into 1/4 inch strips
- **Linguine**—Cut into 1/8 inch strips
- **Paparadelle**—Cut into 5/8 inch strips
- **Farfalle**—Roll a flat sheet of pasta and then cut into 5/8 inch x 1 inch rectangles and pinch in the middle to form a bow.

If you do not have rolling pins, there are several noodles that you can shape by hand. Don’t worry if they are not perfect, but try not to make them more than 1/8” thick.

- **Orecchiette** or “little ears”—Take a piece of dough about as big as the tip of your pinkie finger. Flatten it into a disk and press it against the counter and sort of drag it with your thumb. It makes a little saucer with a dip in the middle. See picture below.

- **Trofie**—Take a small piece of dough about as bit as the tip of your pinkie finger. Roll it into a snake, smash it flat and then twist it. They look like little corkscrews and are good with soup or pesto.

- **Pici**—Long rolled snakes, make sure that they are thin.

**Serving suggestions:**
Add chopped garden greens, beans or broccoli to the boiling water along with the noodles. Drain and toss with garlic, olive oil and chopped fresh herbs or pesto.

Make the vegetable soup (page 49) with mixed garden produce and add the noodles just before serving.

Serve with the tomato sauce on page 107 tossed with cooked garden vegetables.
Flour Tortillas

Objective
Learners will be able to make their own flour tortillas and use a rolling pin.

Background
Flour tortillas are a great way to keep hands busy while you are preparing a quick sauce or filling. They can be turned into quesadillas with cooked vegetables, used as scoops for beans or sauces, or filled like a burrito.

Each learner can easily mix their own dough, and then make two tortillas. Or, you can make one large batch of dough if you are short on time and then divide it up to roll out.

If you use fresh ground whole wheat, sift out the large pieces of bran.

Materials
For each batch of dough:
1 mixing bowl
1 fork
Cup with a few tablespoons of water

For the class:
Induction cook top
Spatula

Preparation
• Make sure all of the desktops and/or counters are cleared of materials, cleaned, and sanitized.
• Make sure everyone has washed his/her hands.
• Review the recipe so learners know what to do. Do not have learners read the recipe while cooking.

Set-Up
Divide the learners into groups of no more than 8.
If the class is small, each learner can have a small bowl and mix an individual batch of dough. For larger classes, make one batch of dough for eight and then divide to roll out.

Place a bowl filled with flour in the middle of the table so the learners can measure the flour.

Eating & Evaluation
Remind class to wait politely to be served before eating.
Have 3 or 4 learners volunteer to help pass out the samples.
Recipe  

Flour Tortillas

**Ingredients**

For 8 servings:
- 1 cup unbleached all-purpose flour
- 1 cup whole wheat pastry flour, or regular whole wheat flour
- 4 tablespoons butter, chilled and cut into pieces
- Water
- 1/4 teaspoon salt

For 1 serving:
- 1/4 cup flour
- 1 1/2 teaspoons butter
- Water
- Pinch of salt

**Method**

Take a cup each of all-purpose and whole wheat flours and add the cold butter cut into pieces. Add a pinch of salt. Break up the butter with your fingers.

Add cold water, a spoonful at a time, until the dough just comes together into a ball. It will be softer than the pasta dough, but not sticky. Don’t stir it too much or the tortillas will get tough. Press it into a ball and let it sit for a few minutes to relax.

To make the tortillas, take a bit of dough the size of a golf ball and roll it out on a floured surface. Make sure to keep adding a bit of flour so the dough won’t stick. Roll it out fairly thin. Do all of the tortillas the same way.

Heat a skillet on medium-high heat until it is hot. Add a tortilla and cook it on the dry pan until there are little brown spots on one side and it is bubbly. Flip it over and cook it on the other side. Put in on a plate and do all the other tortillas the same way. Stack them on top of each other to keep them warm.

**Serving suggestions:**

Turn the tortillas into quesadillas with refried beans and serve with garden salsa from the Sensory Education, page 25.

Make a quick filling with garden produce like diced winter squash, potatoes, chiles, zucchini, onions and herbs. Add chile powder, garlic and salt for seasoning. Serve wrapped like a burrito with a small amount of grated cheese.

Spread with cream cheese and add slices of tomato, cucumber, grated carrots and/or radishes for a fresh salad wrap.
Scallion Pancakes

Objective

Learners will be able to make scallion pancakes and be able to make a complex flatbread using a rolling pin.

Background

Scallion pancakes are addicting treats that are fun to make and can adapt to a wide range of ages. If you are having a hard time visualizing the steps, you can check out step-by-step photos at: https://familystyles.wordpress.com/2009/09/07/my-new-addiction-dangerously-quick-and-easy-scallion-pancakes/

Materials

For each group:
- Cutting board
- Knives
- Mixing bowl for dough
- Fork for mixing
- Rolling pins
- Brush for oil

For the class:
- Induction cook top
- Skillet
- Knife to cut breads
- Serving platter
- 3-4 small bowls for dipping sauce
- Spoons for dipping sauce

Preparation

- Make sure all of the desktops and/or counters are cleared of materials, cleaned, and sanitized.
- If you have very young learners, cut the green onions ahead of time.
- Make sure everyone has washed his/her hands.
- Review the recipe so learners know what to do. Do not have learners read the recipe while cooking.
- Divide the learners into groups of no more than 8.

Set-Up

Divide each table into two groups:
1) make the dough and 2) cut the onions for the filling.
Then clean the table and give each learner a rolling pin and a piece of dough to shape the bread.

Use two burners if you have them to make the cooking go more quickly.

Eating & Evaluation

Remind class to wait politely to be served before eating.

Have 3 or 4 learners volunteer to help pass out the samples.

Read “The Magic Pancakes from the Footbridge Tavern” in Favorite Children’s Stories from China & Tibet by Lotta Carswell Hume and Koon-Chiu Lo.
Recipe  Scallion Pancakes

Ingredients
- 2 cups all-purpose unbleached white flour
- 3/4-1 cup water
- 1/4 cup toasted sesame oil
- Coarse salt
- 1 bunch green onions (scallions), very finely sliced
- Vegetable oil for shallow frying

Dipping Sauce
- 1/4 cup soy sauce
- 1/4 cup rice wine vinegar
- 1 teaspoon toasted sesame oil
- 1 tablespoon grated fresh ginger

Method
Put the flour in a bowl. Add water until you have a dough that is like play dough or bread dough. The dough should remain soft. Take the dough out of the bowl and knead for 10 minutes, adding more flour if it is too sticky. Form the dough into a ball and put it in a bowl. Cover the bowl with a damp cloth and set aside while you slice the green onions.

Flour your work surface and knead the dough again. Divide the dough into 8 pieces. Roll out the dough until you have a thin circle. Keep turning it over and adding more flour to make sure it doesn’t stick. Brush sesame oil over the dough and sprinkle it with the green onions and a little coarse salt. Roll it up so you have a long snake and pinch the edges closed. Now wrap it in a spiral to form a patty. Flatten the patty with the rolling pin and dust it lightly with flour. Make all of the dough this way.

On a floured surface, roll out one patty until you have a 1/4 inch thick round. You may need to dust it with flour.

Cover a 10” to 12” heavy skillet with a thick coating of oil and heat over medium-low heat. When it is hot, put in a patty. Cook it for about 2 minutes. Turn it over and cook the second side the same way for 2 minutes. Now turn back to the first side. Keep doing this until both sides develop reddish-gold spots. Remove with a slotted spatula and place on a plate lined with a paper towel. Add more oil whenever necessary. Serve hot, each scallion pancake cut into wedges.

Mix the ingredients for the dipping sauce together and serve.

From the Garden
Serve with a side of quickly braised Chinese greens like bok choy, mizuna and Gailan (Chinese broccoli).

Use other herbs besides the green onions, such as garlic chives, fennel fronds, cilantro, chives or parsley.

Use grated vegetables in the filling like black radish, zucchini, carrots, parsnips, or winter squash. Make sure to squeeze the water out of the grated vegetables before adding them to the filling.
Stuffed Parathas

Objective
Learners will be able to make a stuffed paratha and use a rolling pin to craft a flatbread.

Background
Chapatis, puri, parathas and naan are all forms of Indian flatbread. Chapati are similar to tortillas, but without the fat. Puri are fried puffy breads, sometimes stuffed. Parathas are flaky stuffed breads, cooked in a skillet. Naan has yeast and is cooked in a very hot tandoori oven. Parathas are the most flexible for garden cooking classes, since they allow for the use of a variety of garden produce.

Materials
For each group:
- Cutting board
- Knives
- Mixing bowl for dough
- Fork for mixing
- Rolling pins
- Brush for oil

For the class:
- Induction cook top
- Skillet
- Knife to cut up breads
- Serving platter
- 3-4 small bowls for chutney or sauce
- Spoons for chutney or sauce

Preparation
- Make sure all of the desktops and/or counters are cleared of materials, cleaned, and sanitized.
- Make sure everyone has washed his/her hands.
- Review the recipe so learners know what to do. Do not have learners read the recipe while cooking.
- Divide the learners into groups of no more than 8.

Set-Up
Each group should cut up or prepare the filling first, before mixing the dough. Then clean the table and give each learner a rolling pin and a piece of dough to shape the bread. When the learners have finished cutting the filling ingredients, the instructor can cook them while they are making the dough. Use two burners if you have them to make the cooking go more quickly.

Eating and Evaluation
Remind class to wait politely to be served before eating. Have 3 or 4 learners volunteer to help pass out the samples. Read the book Everybody Bakes Bread by Norah Dooley.
**Recipe**

**Stuffed Parathas**

**Ingredients**

**For the parathas:**
- 1 cup whole wheat flour
- 1 cup unbleached white flour
- 1/2 teaspoon salt
- plus some more for sprinkling
- 2 tablespoons butter, chilled
- Water

**For the filling:**
- 2 tablespoons butter or oil
- 1 1/2 tablespoon grated fresh ginger
- 1 1/2 cups finely chopped or coarsely shredded vegetables (cauliflower, potatoes, carrots, onions, or kohlrabi)
- 1 teaspoon garam masala*
- 1/8 teaspoon cayenne pepper
- 3/4 teaspoon salt

*Garam masala is a North Indian spice mixture available in spice stores and natural food markets. It contains cardamom, black pepper, cumin, nutmeg, cinnamon, coriander and cloves. You can make your own in a spice or coffee grinder.

**Method**

Mix together the flours, salt and butter. Add enough water to make a dough that just comes together into a ball. It should be softer than pasta dough, but not sticky. Knead for 1-2 minutes. While the dough is resting, make the filling.

For the filling, heat the butter in a large frying pan. Add the ginger and vegetables and stir-fry for about 5 minutes. Add the garam masala, cayenne pepper and salt, stir well and take the pan off the heat. Divide the filling into 8 portions and set aside to cool.

Divide the dough into eight balls. Roll the balls out on a floured surface until they are 3 1/2 inches in diameter. Place a heaping teaspoon of stuffing in the middle. Gather the edges of the dough around the filling, and twist it slightly to form a closed ball. Flatten the ball, sprinkle with flour and roll out on a floured board until you have a 6-inch round.

Place the paratha on the heated griddle. Let it cook slowly until its underside develops light brown spots. Turn and cook the same way on the other side. Now dribble 1 teaspoon of butter or oil along the edges of the paratha so it goes under it, and 1 teaspoon on top. Turn the paratha over again and cook for about a minute. In all, the paratha should cook about 5 minutes and not remain raw inside. Do all the paratha the same way, stacking them one on top of the other in the same piece of foil.

**From the Garden**

Parathas can be filled with almost any combination of vegetables. They should be grated or finely chopped and cooked before using as a filling. If the filling is watery, squeeze it over a strainer to remove the water before using or else your paratha will become soggy.

Use tomatoes, onions, cucumbers and lemon to create a fresh chutney. Or mix together plain yogurt, mint and seeded cucumbers for raita to go with the parathas.
INTRODUCTION

Modern sauces rely on flour or cream to make them thick and so strainers are not as important today as they used to be. However, these modern sauces are not as nutritious as those that were thickened with nuts, ground vegetables, chiles and bread. Such sauces were the basis of Medieval cooking, where a mortar and pestle and strainer were necessary tools for all good cooks. Create simple, rich tasting sauces by cooking ingredients until they are very soft and then straining them or putting them through a food mill.

Sieves, food mills and food strainers all help to simplify cooking sauces and condiments. The most basic tool to strain unwanted material from a sauce is a wire mesh sieve. You can use it to separate fruit juice from seeds, remove chile skins from sauces, and lumps from sauces. If you wish to press fibers from starchy vegetables, or remove peels from apples, the next tool to use is the food mill. The food mill sits on top of a bowl or pot and has a blade which scrapes against a colander, leaving the seeds, peels and fiber in the mill, while the smooth pulp or sauce trickles through. For processing large amounts of fruit, such as apples, tomatoes, plums or cherries, you can use a food strainer. The most common type is the Italian type designed to process tomatoes into tomato sauce. All you need to do is to heat up the tomatoes or other fruit and then crank it through the food strainer, where the seeds and skins will be separated from the juice and tomato pulp.

The difference between using a food mill or food strainer and a food processor or blender, is that the fibers and seeds will be strained out of your final sauce, creating a smooth, appealing texture. If you want to experiment with more produce-based sauces, try using root vegetables, onions, garlic, and dried beans as the base for sauces with pasta or a cream soup. Cook them first in broth or water until very soft, and then process them. One incidental benefit for use with young learners, is that the ingredients do not need to be very well chopped. Make sure you combine ingredients that have a similar color so that you do not end up with a gray or unattractive looking sauce.

Here are some suggestions for combinations that would make a great soup or sauce:

- Red chiles, winter squash, carrots, onions, garlic and salt
- Tomatillos, green chiles, onions, potatoes, zucchini and salt
- Carrots, yams, oranges, herbs, onions, garlic, lemon and salt
- Sunchokes, potatoes, leeks, onions, herbs and salt
- White navy, cannellini or butter beans, garlic, herbs, lemon and salt
**Objective**
Learners will understand how to transform a raw tomato into a tomato sauce.

**Background**
There are two ways to make tomato sauce. You can blanch the tomatoes, peel them, remove the seeds, chop them and then sauté them with garlic in olive oil. This results in a chunky sauce that is fairly thick but it is a lot of work. Or you can put whole tomatoes into a large pot and cook them until they are soft, about 15 minutes. Then run them through a food strainer. This results in a smooth sauce that is fairly watery unless you add vegetables or cook it for a long time.

**Materials**

For each group:
- Bowls for diced vegetables
- Cutting boards
- Knives

For the class:
- Two containers to catch tomato pulp and seeds
- Large bowl for cooked tomatoes
- Food strainer or food mill
- Induction cook top
- Large pot with lid
- Wooden spoon for stirring
- Serving platter

**Preparation**
- Make sure all of the desktops and/or counters are cleared of materials, cleaned, and sanitized.
- Set up the food strainer and clamp it to a table. Place one bowl under the conical end and one bowl to catch the pulp.
- To save time, the instructor can cook the tomatoes before class and put them in a large bowl to cool.
- Make sure everyone has washed his/her hands.
- Review the recipe so learners know what to do. Do not have learners read the recipe while cooking.
- Divide the learners into groups of no more than 8.

**Set-Up**
Place the vegetables in the middle of the table.
If necessary, peel the onions and cut the larger vegetables in half for the learners.
Give each learner a knife and cutting board.

**Eating & Evaluation**
Remind class to wait politely to be served before eating.
Have 3 or 4 learners volunteer to help pass out the samples.
Have the learners take apart the food strainer. **Ask the following questions:**
- How does it work?
- If you wanted to add a motor to it, what would it do?
- If you did not have this machine, how would you make the tomato sauce?
Recipe | Tomato Sauce

**Ingredients**
- 5-6 lbs fresh tomatoes
- 1 bulb garlic
- 2-3 onions
- 1-2 lbs mixed vegetables (carrots, zucchini, peppers, eggplant, celery, or fennel)
- 1/2 cup fresh parsley and/or basil
- 1/4 cup mixed fresh herbs (thyme, rosemary, sage, oregano)
- 3 tablespoons olive oil
- Salt

**Method**
Take all of the tomatoes and put them in a large pot with 1” of water on the bottom. Bring them to a boil, and let them cook for 15 minutes, until they are soft. Turn off the heat and let them cool. Run them through a food strainer or food mill to separate the peels and seeds from the pulp. Save the pulp for the sauce. Save the tomato skins and seeds for the compost pile.

Meanwhile, chop up all the vegetables into small pieces. If you have older learners, this is a good opportunity to introduce chopping with a larger knife. If you have very young learners or limited time, chop all of the vegetables in a food processor.

Mince the parsley, basil and other herbs.

Heat the olive oil in a large pot. Add the vegetables and cook on medium high heat until they are soft. Stir in the tomato pulp and herbs. Let the sauce cook for 5-10 minutes and add salt to taste.
## Objective
Learners will be able to transform raw apples into applesauce and season it to their preference.

## Background
There are two ways to make applesauce. You can peel and core the apples, then cut them up and cook them for 15 minutes until soft. Or, cut the whole apples into quarters, cook them until soft and then run them through a food strainer to remove the seeds and peels. If you are using an apple with a dark red skin, like a Jonathan, your applesauce will be a lovely pink color.

## Materials

<table>
<thead>
<tr>
<th>For each group:</th>
<th>For the class:</th>
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<tbody>
<tr>
<td>Bowls for apples</td>
<td>Two containers to catch apple pulp and seeds</td>
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<td>Cutting boards</td>
<td>Large bowl for cooked apples</td>
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<tr>
<td>Knives</td>
<td>Food strainer or food mill</td>
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<td>Induction cook top</td>
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<td>Large pot with lid</td>
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<td>Wooden spoon for stirring</td>
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<td>Serving bowl</td>
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## Preparation
- Make sure all of the desktops and/or counters are cleared of materials, cleaned, and sanitized.
- Set up the food strainer and clamp it to a table. Place one bowl under the conical end and one bowl to catch the pulp.
- Make sure everyone has washed his/her hands.
- Review the recipe so learners know what to do. Do not have learners read the recipe while cooking.
- Divide the learners into groups of no more than 8.

## Set-Up
Place the apples in the middle of the table. If necessary, peel the apples and cut them in half for the learners. Give each learner a knife and cutting board.

## Eating & Evaluation
Remind class to wait politely to be served before eating. Have 3 or 4 learners volunteer to help pass out the samples.

While the apples are cooking, have the learners take apart the food strainer.

**Ask the following questions:**
- How does it work?
- If you wanted to add a motor to it, what would it do?
- If you did not have this machine, how would you make the applesauce?

You can also have the learners draw the machine in their notebooks.
Recipe Apple Sauce

Ingredients

- 10 lbs tart apples* such as Gravenstein, Jonathan, Jonagold or Macintosh
- Juice of 1/2 lemon (optional)
- 1/2 – 1 cup sugar
- 1 1/2 teaspoon cinnamon
- 1/2 teaspoon cloves
- 1 teaspoon allspice

Method

Cut the apples into large pieces. You do not need to peel them or remove the seeds. For young learners, cut the apples in half first, and make sure they are lying flat on the cutting boards.

Place the apple pieces in a large pot, along with 1 cup of water. Cover tightly. Turn the heat on to medium high and let the apples cook for 15-20 minutes, until soft and thoroughly cooked.

Put the apples through a food mill or food strainer to remove the skins and seeds. Add the spices and taste the applesauce. If it does not have enough flavor, add some sugar and/or lemon juice.

*If the apples are not tart, add lemon juice to taste.
### Cooking Supplies

#### FOR TASTING CLASSES WITH NO HEAT

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<tr>
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<th>UTENSIL</th>
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<th>CLEANING SUPPLIES</th>
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<td>1</td>
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<td>1</td>
<td>Mortar and pestles, large</td>
</tr>
<tr>
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<td>1</td>
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</tr>
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<td>Salt</td>
<td>1</td>
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</tr>
<tr>
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<td>Pepper</td>
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</tr>
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<td>Soup ladle</td>
</tr>
<tr>
<td>1</td>
<td>Sugar or honey</td>
<td>4</td>
<td>Metal or plastic spatula</td>
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#### FOR FULL RANGE OF COOKING CLASSES (RAW PREP AND THE USE OF HEAT)

<table>
<thead>
<tr>
<th>QTY</th>
<th>UTENSIL</th>
<th>QTY</th>
<th>CLEANING SUPPLIES</th>
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<tbody>
<tr>
<td>1</td>
<td>Bread knife</td>
<td>2</td>
<td>Brushes, vegetables</td>
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<td>1</td>
<td>Chef's knife</td>
<td>2</td>
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<td>24</td>
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<td>Spray sanitizer</td>
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<td>Butter knives</td>
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<td>Colander</td>
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<td>Wipes, Clorox</td>
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<td>Plastic bowls</td>
<td>1</td>
<td>Garbage can</td>
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<td>Compost container</td>
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<td>Mortar and pestles, large</td>
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<td>Serving spoons</td>
<td>1</td>
<td>Metal strainer</td>
</tr>
<tr>
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<td>Liquid measuring cups</td>
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<td>Mortar and pestles, large</td>
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<td>Salt</td>
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<td>Mesh skimmer</td>
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<td>Pepper</td>
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<td>Sugar or honey</td>
<td>4</td>
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<tr>
<td>16</td>
<td>Rolling pins¹</td>
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#### CLEANING SUPPLIES

<table>
<thead>
<tr>
<th>QTY</th>
<th>BRUSHES, VEGETABLES</th>
<th>QTYS</th>
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<td>1</td>
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</tr>
<tr>
<td>1</td>
<td></td>
<td>1</td>
<td>Dish soap</td>
</tr>
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<td>2</td>
<td></td>
<td>2</td>
<td>Dish gloves, pair</td>
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<tr>
<td>2</td>
<td></td>
<td>2</td>
<td>Wipes, Clorox</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td>1</td>
<td>Garbage can</td>
</tr>
<tr>
<td>1</td>
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<td>1</td>
<td>Compost container</td>
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<tr>
<td>2</td>
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<td>Paper towel, rolls</td>
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#### DISPOSABLES

<table>
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<tr>
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<tr>
<td>2</td>
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<td>2</td>
<td>Paper plates, small</td>
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<tr>
<td>4</td>
<td>Plastic forks</td>
</tr>
<tr>
<td>2</td>
<td>Plastic spoons</td>
</tr>
<tr>
<td>1</td>
<td>Napkins</td>
</tr>
</tbody>
</table>

#### STAPLES

<table>
<thead>
<tr>
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<th>STAPLES</th>
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<tbody>
<tr>
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<tr>
<td>1</td>
<td>Pepper</td>
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<tr>
<td>1</td>
<td>Olive oil</td>
</tr>
<tr>
<td>1</td>
<td>Cider vinegar</td>
</tr>
<tr>
<td>1</td>
<td>Sugar or honey</td>
</tr>
</tbody>
</table>

Suggestions based on class size of 24

¹Make rolling pins from 1 1/2” dowels, cut into 1 foot lengths, sanded at the ends.

*Make sure all pots and pans will work with induction burners

---

CHAPTER 2: Kitchen Skills & Tools          slowfoodusa.org
SUPPLIES AND EQUIPMENT

We have found the following supplies and equipment to work well in a school setting. Here are some recommended sources.


**Gourmet Sleuth** has unusual cooking supplies and ingredients, including a Mexican molino for preparing masa as well as a selection of mortars and pestles. [http://store.gourmetsleuth.com](http://store.gourmetsleuth.com) and for the grinder: [http://www.gourmetsleuth.com/shop/detail/corn-masa-grinder-molino-2](http://www.gourmetsleuth.com/shop/detail/corn-masa-grinder-molino-2)

Induction burners: We recommend using portable inductions burners for all cooking because of their increase in safety and energy conservation.

**Penzeys Spices** carries spices and spice mixes from all over the world. Order in the shop or online. [http://www.penzeys.com/](http://www.penzeys.com/)

**Savory Spice** carries spices and spice mixes from all over the world. Order in the shop or online. [http://www.savoryspiceshop.com/](http://www.savoryspiceshop.com/)

**Sur La Table** has food mills, mortars and pestles and rolling pins. [http://www.surlatable.com](http://www.surlatable.com)

Thai granite large mortar and pestle [http://importfood.com/mortarpestone.html](http://importfood.com/mortarpestone.html)

**Victorio** Model 250 Food Strainer is the best foodmill type of device for tomatoes and applesauce. [http://victorio.info/food-strainer.html](http://victorio.info/food-strainer.html)

You can also try the Roma Food Strainer

**WonderMill** Junior hand grain mill [http://www.thewondermill.com](http://www.thewondermill.com)

World of Starches

Match the grain to its origin

Amaranth
Arrowroot
Barley
Buckwheat
Chestnut
Chickpeas
Common Millet
Corn

Durum wheat
Emmer
Farro
Gram Beans
Kamut
Lentils
Mesquite
Oats

Pearl Millet
Potatoes
Quinoa
Rice
Rye
Sorghum
Soy Beans
Spelt

Sweet Potato
Tapioca
Taro
Yam
Yucca
Wheat
Wild Rice
### Which Starch?

Place the starch in its category

<table>
<thead>
<tr>
<th>Grains</th>
<th>Nuts</th>
<th>Legumes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amaranth</td>
<td>Gram Beans</td>
<td>Soy Beans</td>
</tr>
<tr>
<td>Arrowroot</td>
<td>Kamut</td>
<td>Spelt</td>
</tr>
<tr>
<td>Barley</td>
<td>Lentils</td>
<td>Sweet Potato</td>
</tr>
<tr>
<td>Buckwheat</td>
<td>Mesquite</td>
<td>Tapioca</td>
</tr>
<tr>
<td>Chestnut</td>
<td>Oats</td>
<td>Taro</td>
</tr>
<tr>
<td>Chickpeas</td>
<td>Pearl Millet</td>
<td>Yam</td>
</tr>
<tr>
<td>Common Millet</td>
<td>Potatoes</td>
<td>Yucca</td>
</tr>
<tr>
<td>Corn</td>
<td>Quinoa</td>
<td>Wheat</td>
</tr>
<tr>
<td>Durum wheat</td>
<td>Rice</td>
<td>Wild Rice</td>
</tr>
<tr>
<td>Emmer</td>
<td>Rye</td>
<td></td>
</tr>
<tr>
<td>Farro</td>
<td>Sorghum</td>
<td></td>
</tr>
</tbody>
</table>

### Tubers

Amaranth  | Arrowroot  | Barley  | Buckwheat | Chestnut | Chickpeas | Common Millet | Corn  | Durum wheat | Emmer  | Farro  |
-----------|------------|---------|-----------|----------|-----------|---------------|-------|-------------|--------|--------|
Gram Beans | Kamut      | Lentils | Mesquite  | Oats     | Pearl Millet | Potatoes       | Quinoa| Rice        | Rye    | Sorghum|
Soy Beans  | Spelt      | Sweet Potato | Tapioca | Taro    | Yam       | Yucca          | Wheat | Wild Rice   |        |        |
Seed Words

Seed Coat—the outside coating that protects the seed.
Endosperm—the part that contains flour and food for the seed.
Bean—the exterior layers of a grain that protects the seed and provides fiber.
Germ—the part of the grain that contains the embryo plant and nutrients.
Radicle—the root.
Kernel—a single grain.
Cotyledon—the part of the seed that contains food for plant growth.
Hilum—the scar on the seed coat that shows where the seed was connected to the plant.
Embryo—baby plant.
Corn

Zea mays

Dent, flour and sweet corn
Ear of corn with silk
Corn kernels
Corn germination
Corn
Zea mays

<table>
<thead>
<tr>
<th>Part of Plant</th>
<th>Fruit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plant Family</td>
<td>Grasses/Poaceae</td>
</tr>
<tr>
<td>Languages</td>
<td>Spanish <em>elote</em> (fresh) or <em>maiz</em> (flour)</td>
</tr>
<tr>
<td>Origin</td>
<td>Mexico</td>
</tr>
<tr>
<td>Planting</td>
<td>Plant outside after the soil is warm. In dry areas, plant in trenches or waffle gardens. Mulching helps preserve moisture. Make sure to plant at least 3 rows to ensure pollination. The tassel holds the pollen that fertilizes the kernels. Each piece of silk takes pollen to one kernel.</td>
</tr>
<tr>
<td>Cultivation Tips</td>
<td>Best varieties for school gardens are dent or flour because they are ready for harvest in the fall. Try Hopi Blue, Hopi Pink or Oaxacan dent.</td>
</tr>
<tr>
<td>Harvest</td>
<td>Sweet corn is usually harvested in July. Dry corn is ready in late September, before the first frost. Make sure kernels are completely dry before storing, they should come easily off the cob.</td>
</tr>
<tr>
<td>History</td>
<td>Corn originates from Oaxaca, Mexico where there are still hundreds of varieties. The origins are obscure, but it is thought to have originated from the wild grass teosinte. Native Mexicans developed the process of nixtamalization (soaking dry corn in water with lime) in order to soften the pedicels and make masa, or corn flour. Masa allows humans to absorb the vitamin B in corn; in other areas of the world that rely on corn people often get vitamin B deficiencies, or pellagra (“ugly skin”).</td>
</tr>
<tr>
<td>Uses</td>
<td>Fresh corn can be eaten whole, or used in salads and soups. Dried corn ground as masa is the basis for numerous Central American dishes such as tamales, tortillas, sopes, gorditas, pupusas, arepas and huaraches. Corn and beans provide the foundation of many traditional Native American and Mexican diets.</td>
</tr>
</tbody>
</table>
**Pasta Shapes**

**Match the pasta to a sauce**

In Italy there are hundreds of pasta shapes. Each one is made to go with a specific sauce. Look at the different shapes of pasta on the worksheet. What kinds of pasta do you think will go best with each type of dish? Think about why your choices will work. Write a type of noodle under each sauce on the worksheet.

**Cream Sauce** needs a pasta that is long and flat in order to stick to the noodles but not too much.

**Heavy Meat Sauce** needs a pasta that will hold its shape and has places to grab onto the sauce.

**Light Marinara Sauce** needs a thin noodle or shape that will hold the sauce but not be too heavy.

**Pasta Salad** needs a pasta that will hold its shape in the salad and stand up to other ingredients.

**Soup** needs a small pasta that won’t break apart.

- **Bowties**—Medium sized pasta that holds its shape
- **Ditalini**—Small round pasta that is good with broth
- **Fettucine**—Long flat noodles used in creamy sauces
- **Gemelli**—Medium sized loose twists
- **Spirals**—Thick corkscrew pasta that holds its shape
- **Orecchiette**—Thick round disks that hold chunky sauce
- **Penne**—Medium sized tubes that hold sauce
- **Spaghetti**—Round long noodles for light sauces
- **Shells**—Medium sized pasta that holds sauce
- **Stars**—Very small pasta that tastes good in brothy soup
- **Trofie**—Hand made twists
- **Wheels**—Medium sized pasta with holes.
Pasta Shapes Worksheet

Match the pasta to a sauce

Heavy Meat Sauce

Light Marinara Sauce

Pasta Salad

Soup

Cream Sauce

Wheels—Ruote
Stars—Stelline
Spaghetti
Spirals—Rotini
Fettucine
Gemelli

Penne
Trofie
Bowties—Farfalle
Shells—Conciglie
Orecchiette
Ditalini
# Tasting Worksheet

**Name of food you are tasting**

<table>
<thead>
<tr>
<th>Type</th>
<th>Yuck!</th>
<th>Not good</th>
<th>OK</th>
<th>Like</th>
<th>Yum!</th>
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</table>

<table>
<thead>
<tr>
<th>Type</th>
<th>Yuck!</th>
<th>Not good</th>
<th>OK</th>
<th>Like</th>
<th>Yum!</th>
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</table>

<table>
<thead>
<tr>
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<th>Like</th>
<th>Yum!</th>
</tr>
</thead>
</table>
Journal

Name of activity ____________________________

What did you do today?  First... Second... Third...

Favorite Verbs

________________________________________  ______________________________________  ______________________________________

________________________________________  ______________________________________

Name ____________________________ Date ____________________________ Location ____________________________
Journal

Name of plant or food ______________________________________

What do you see today?  I notice... I wonder... That reminds me of...

Favorite Nouns

__________________________________  ____________________________________  ____________________________________

__________________________________  ____________________________________  ____________________________________

Name _______________________  Date _______________________  Location ___________________