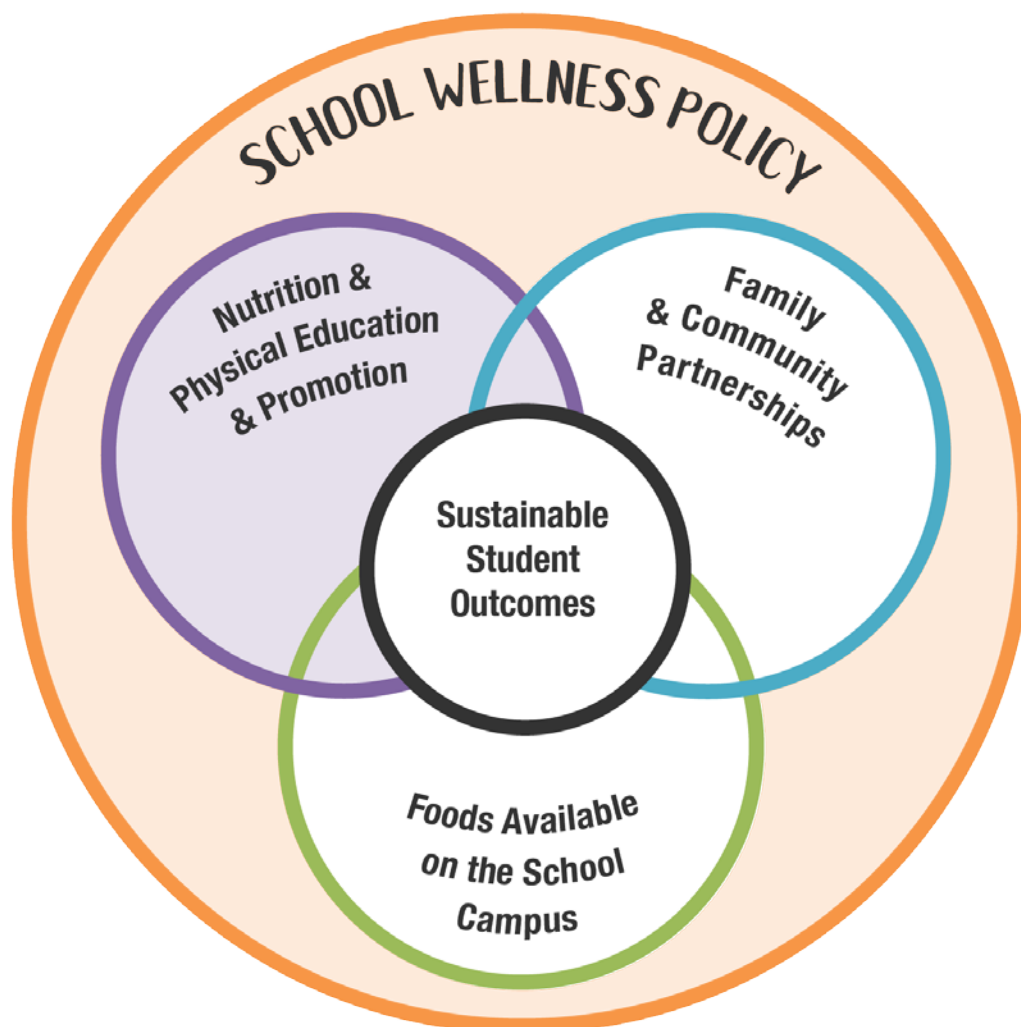


Nutrition and Physical Education and Promotion



Implementing *Discovering Healthy Choices* Curriculum
Building an Instructional Garden
Implementing *Cooking Up Healthy Choices* Curriculum
Implementing *Healthy Choices in Motion* Curriculum

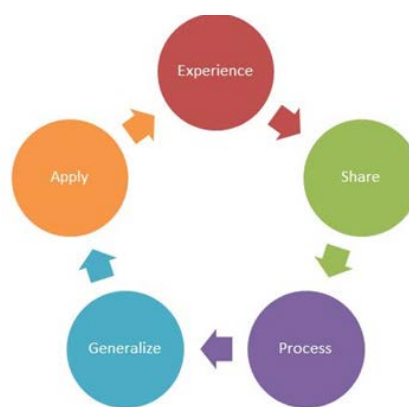
Implementing *Discovering Healthy Choices* Curriculum

Why *Discovering Healthy Choices*? Students who participate in garden-enhanced nutrition education have demonstrated an improvement in knowledge about nutrition, increased preferences for vegetables, and increased willingness to taste and eat vegetables.¹⁻³ *Discovering Healthy Choices* uses inquiry-based education and experiential learning approaches.⁴ This curriculum utilizes these two learning strategies to facilitate understanding of nutrition concepts and development of problem-solving skills so youth can make evidence-based decisions about the foods they eat.

Introduction

Discovering Healthy Choices allows students to explore a comprehensive set of nutrition concepts, including roles of nutrients, MyPlate recommendations, physical activity, reading food labels, understanding how food companies market their products, and making healthy snacks. Concepts for this curriculum were identified from Nutrition to Grow On; Dietary Guidelines for Americans, 2010; and USDA MyPlate.

All activities are structured around a five-step experiential learning cycle.⁵ In the Experience phase, students carry out the procedures of an activity. In the Share, Process, and Generalize phases, students participate in discussion about their observations and experiences, make inferences about them, and generalize these findings to real-world settings. In the Application phase, students use what they have learned and practice it in authentic settings. This is accomplished in *Discovering Healthy Choices* through garden-enhanced activities, and take-home activities that they can complete with their families.



**5-Step Experiential Learning Cycle
Pfeiffer and Jones, 1985**

The curriculum is organized into eight sequential modules that begin with foundational skills and build to more complex skills.

Download a copy of the curriculum

Discovering Healthy Choices is available as a free download through the UC Davis Center for Nutrition in Schools (<http://cns.ucdavis.edu>).

Program Connections

☑ Coordinate with *Cooking Up Healthy Choices* curriculum and *Team Up for Families Newsletters*

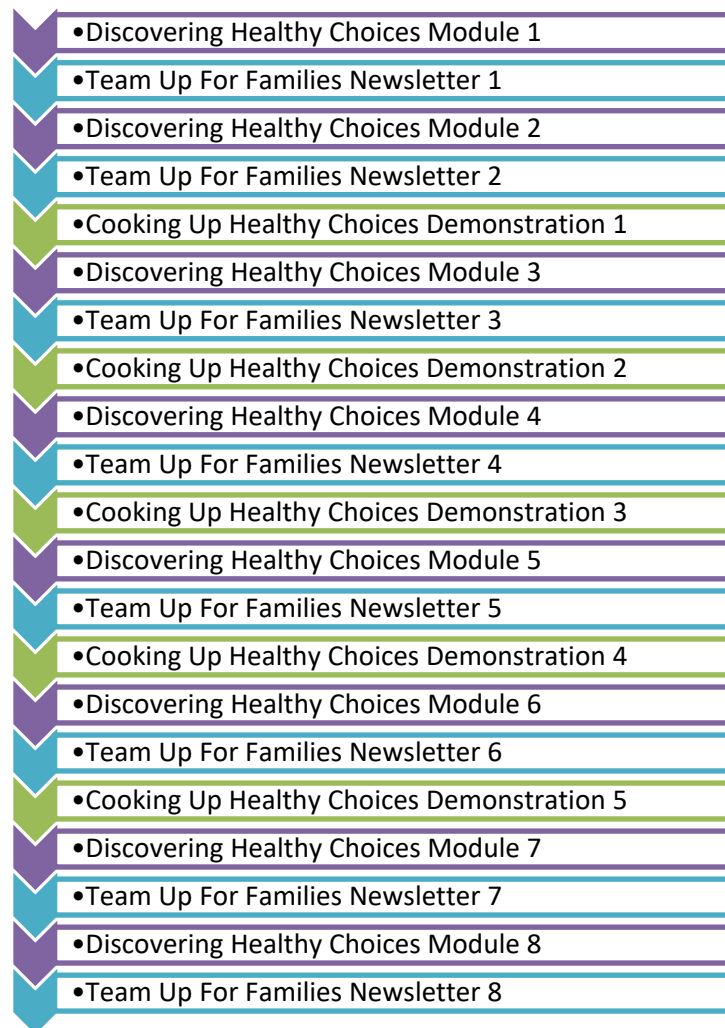
Discovering Healthy Choices was designed to be implemented in conjunction with the cooking demonstrations from *Cooking Up Healthy Choices*, and the family newsletters (*Team Up for Families*).

The vegetables that are recommended for growing in the instructional garden as part of the lessons are integrated in *Cooking Up Healthy Choices* and recipes in the *Team Up for Families* newsletters. The cooking demonstrations reinforce concepts students learn in *Discovering Healthy Choices*.

Finally, family newsletters include information for parents about the ideas their children are learning as part of this program, contain interactive quizzes that reinforce concepts, and contain recipes from *Cooking Up Healthy Choices*.




Shaping Healthy Choices Tip! In order to maximize the connections built into the curricula and newsletters, the following sequence is recommended:




☑ **Coordinate with those planning, designing, and building the garden**

Every module has a garden-enhanced activity and there are specific requirements for the garden. Communicate with those planning, designing, and building the garden to ensure the instructional garden will accommodate these activities.

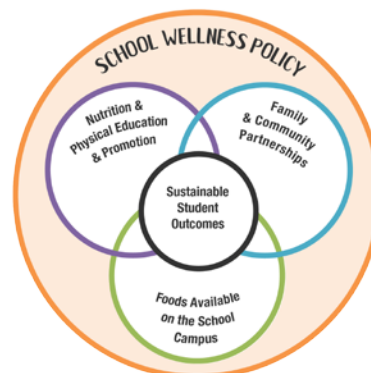
 **Shaping Healthy Choices Tip!** If gardening inexperience is a concern, consider reaching out to the community for assistance. Good places to start are parent volunteers with experience gardening, master gardeners in the area, as well as interested teachers. These individuals can provide their expertise and time to ensure the garden is a success.

Activities in *Discovering Healthy Choices* encourage the students to choose and grow their own vegetables. A list of recommended vegetables and herbs are listed in *Discovering Healthy Choices* Appendix 1C.

 **Shaping Healthy Choices Tip!** Consider allowing each student group to plant and harvest their own plot within the garden. This will allow the development of ownership of their own agricultural plot and provide an opportunity to more deeply engage in growing their own vegetables.

☑ **Coordinate with other Shaping Healthy Choices Program activities**

While the *Discovering Healthy Choices* nutrition curriculum is a cornerstone of the Shaping Healthy Choices Program, it is important to make sure that the other activities of the Shaping Healthy Choices Program are incorporated alongside the curriculum. Remember, the more connections you make between the program activities, the stronger the infrastructure of the program as a whole.



Ideas for this include:

- **Connecting with the lunchroom:** Consider displaying student art projects to decorate and enhance the atmosphere of the school lunchroom. If possible, consider asking lunchroom staff if they can use vegetables grown in the garden on the salad bar. Even just a few heads of lettuce, grown by the students mixed in with the other salad greens can generate a lot of student interest and pride.
- **Connecting with community health fairs:** Recruit student volunteers to help set up a booth at a health fair that applies the knowledge they have been learning through the curriculum.
- **Connecting with the nutrition promotion efforts:** Post a “Veggie Forecast” in the school office or in the *Team Up for Families* newsletter to keep families informed about the progress of the produce being grown in the garden.
- **Connecting with the school wellness committee:** Consider having your school-site wellness committee present success stories of the curriculum to the district-level wellness policy committee.

Facilitating *Discovering Healthy Choices*

✓ Read the Facilitator Tips in the *Discovering Healthy Choices* curriculum

This section in the *Discovering Healthy Choices* curriculum is intended to provide the facilitator with information needed to get the most out of activities in *Discovering Healthy Choices*. It also provides a guide for how to use the curriculum.



Shaping Healthy Choices Tip! If *Discovering Healthy Choices* will be facilitated by someone other than the classroom educator, it may be important to communicate with teachers about how to best facilitate the activities in their classrooms. The inquiry-based education strategy and group work may differ from how the classroom educator expects his/her classroom to function. The group discussions can appear chaotic so it is recommended that teachers are informed and are aware that classroom noise levels may be higher than normal. Ask if there are any students that need extra help, how they would like to address classroom management, and how they might like to participate in the activities themselves.

✓ Connect with other subject areas

Discovering Healthy Choices supports Common Core State Standards in Mathematics and English Language-Arts, Next Generation Science Standards, and California Nutrition Education Competencies. Please see the curriculum for a guide to which standards are supported in *Discovering Healthy Choices*.



Shaping Healthy Choices Tip! *Discovering Healthy Choices* can be paired with other concepts in other subject areas to make connections within a variety of subject areas. Here are a few examples:

- After discussing agriculture and climates around the world (Activity 1.1), extend the discussion of agriculture and climate within your state. In California, a fourth-grade content standard is to learn about geography, climate, and agricultural history and there is an opportunity to further reinforce these concepts.
- Before planting (Activity 2.3), grow seeds in cups to explore germination.
- Before discussing how plants attract pollinators (Activity 7.3), explore what pollinators are and how they are necessary for growing our food.
- Extend the interaction with the garden to include an activity to investigate the soil and decomposers.

✓ If curriculum is being implemented by educators other than the classroom teacher, communicate regularly with the teacher

It is important to keep the line of communicate open with teachers. Collaborating with classroom teachers can strengthen the delivery of the curriculum. Some examples of how you may consider involving the classroom teachers in this process include:

- **Provide the curriculum to the teachers.** This will help them better understand the process and be prepared for participation in the activities.

- **Keep them up to date on assigned homework and home participation requirements.** Ask the teacher if he/she is willing to assign and collect the homework. This is a great way to ensure communication lines remain open.

Time Management

- ✓ **Limit the opening questions to 10 minutes!** The opening questions phase of the activities is intended for the educator to gauge prior knowledge of the students and for the students to get oriented to and thinking about the subject matter. It is normal to want to spend more time on this section, but this is not where the learning happens.

- ✓ **Ensure enough time so that students can engage in all phases of each activity** For students to develop deep understanding of the concepts, it is critical that the students participate in all phases of each activity including Experiencing and Sharing, Processing, and Generalizing. Students learn by making observations and by discussing them with one another. The Sharing, Processing, and Generalizing phase is essential for students to make sense of what they observed and consider it within real-world contexts.



Shaping Healthy Choices Tip! It is common for an instructor to be unsure if the students understand the concepts and want to offer direct answers as a result. It is important to give the students a chance to come to conclusions on their own. Although students may not understand the concepts at first, by experiencing learning through the inquiry-based method they will ultimately learn and have a deeper understanding of what is being taught as a result.

- ✓ **Include travel time for garden visits.** If you are enhancing the implementation of the *Discovering Healthy Choices* with the use of an instructional garden, it is important to plan for sufficient time to get the students out into the garden. Often the garden is across campus and it takes the class a long time to move from one activity to the next so keep that in mind when planning out your time.

Materials and Preparation

- ✓ **Enlist help for purchase and preparation of materials** There are materials that will be needed for activities, like measuring cups, tape measures, and food items. Enlist help from parent volunteers or other community members to acquire supplies and prepare foods. Many lower income schools may qualify to receive low/no cost produce from their local food bank or the school's food and nutrition services may be able to order some items for recipe preparation.



Shaping Healthy Choices Tip! Many local businesses may be willing to donate supplies and/or time to assist in the development of the garden and preparation of foods for cooking demonstrations.

☑ Purchase seeds & seedlings

Planting seedlings is an important part of *Discovering Healthy Choices* activities. In activity 1.2, students are asked to select fruits and vegetables they want to plant. Record the plants they choose in this activity in order to prepare for planting in 2.3. Allowing students to choose the plants they want to grow fosters engagement with their garden.

The plants on this list were chosen because they are vegetables that are grown in the countries explored in activity 1.1. Additionally, they are used in the recipes from *Cooking Up Healthy Choices*, which are included in the *Team Up for Families* newsletters so that parents can cook them at home.

Seeds and seedlings can be purchased from a variety of places: grocery stores, nurseries, seed companies, and hardware stores. If funding for seedlings is a challenge, consider asking local stores for donations. Some seed companies have donation programs for schools.



Shaping Healthy Choices Tip! When preparing to plant seeds and seedlings in Activity 2.3, separate the seeds and put them into individual sealable bags for easy distribution to student groups. This will help students avoid accidentally pouring all the seeds from one seed packet into one hole, and ensure that all students get a few seeds to plant.

☑ Purchase garden tools for student use

Students will need tools to work in their garden throughout the *Discovering Healthy Choices* activities. In Activity 2.3, students participate in preparation and planting to learn about physical activity. The following basic garden supplies are recommended:

- Shovels
- Hoes
- Trowels
- Clip boards
- Clippers/pruners
- Labels to mark vegetables
- Zip-lock bags or other container for students to bring home harvested produce.



Shaping Healthy Choices Tip! It may be helpful to have a few pairs of gardening gloves on-hand if there are students who prefer not to work in the dirt. However, youth really like to feel the soil and may not want to use the gloves.

☑ Consider storage

It is helpful to have storage that is near the instructional garden. Consider purchasing or building outdoor storage for garden materials to provide easy access to tools and materials for students working in the garden.

☑ Take advantage of planting mistakes as learning opportunities

Students will not plant seeds or seedlings perfectly and you may or may not be familiar with how to plant and care for all the plants you will be growing. That's OK! The experience provides further opportunities for learning. For example, if students accidentally plant all of their seeds in one hole, encourage the students to predict what will happen to the growth of the seeds, make observations as they grow, and discover what happens when plants grow under this condition compared to other plants that were planted one per hole or as directed on the package. You can also go back later with the students and "thin out" or remove some of the excess sprouts to make room for the healthiest plants. These mistakes provide great opportunities for rich discussion and discovery.

☑ Harvest the vegetables

Giving students the opportunity to harvest produce and take it home to their families is important. This not only provides a reward to students for their work in caring for the garden, it also provides an opportunity for them to share with their families and further reinforce concepts at home. If there are not enough vegetables at harvest available for the cooking demonstration, it is acceptable to supplement the harvested amount with store-bought produce.



Shaping Healthy Choices Tip! During harvesting, engage in discussion about how to prepare or cook the produce. Students are excited to share these ideas with their families. If students want ideas, the *Team Up for Families* newsletters provide recipes from the cooking demonstrations that highlight produce that may be grown in the garden.

Additional Resources

1. Discovering Healthy Choices Curriculum available for download: <http://cns.ucdavis.edu/programs/shcp/discovering-healthy-choices.html>
2. **Appendix 1: Sample Open-ended Questions for Facilitators.** This resource includes some sample phrases to assist facilitators when constructing open-ended questions during the activity and discussion phases of the curriculum. This document contains two half sheets.
3. **Appendix 2: Plus Delta Reflection Form.** This form may be used to help facilitate reflection after lesson implementation.
4. **Center for Nutrition in Schools Website:** For more information on nutrition education curriculum for all grade levels, visit the Center for Nutrition in Schools Website: <http://cns.ucdavis.edu/resources/curriculum-classroom.html>

References

1. Morris JL, Zidenberg-Cherr S. Garden-enhanced nutrition curriculum improves fourth-grade school children's knowledge of nutrition and preferences for some vegetables. *J Am Diet Assoc.* 2002;102(1):91-93.
2. McAleese JD, Rankin LL. Garden-based nutrition education affects fruit and vegetable consumption in sixth-grade adolescents. *J Am Diet Assoc.* 2007;107(4):662-665.
3. Robinson-O'Brien R, Story M, Heim S. Impact of garden-based youth nutrition intervention programs: a review. *J Am Diet Assoc.* 2009;109(2):273-280.
4. Colburn A. An Inquiry Primer. *Science Scope.* Mar 2000;23(6):42-44.
5. Pfeiffer JW, Jones, J. E. *Reference guide to handbooks and annuals (revised).* San Diego: University Associates Publishers; 1985.

Appendix 1

Sample Open-Ended Questions for Facilitators

Observing

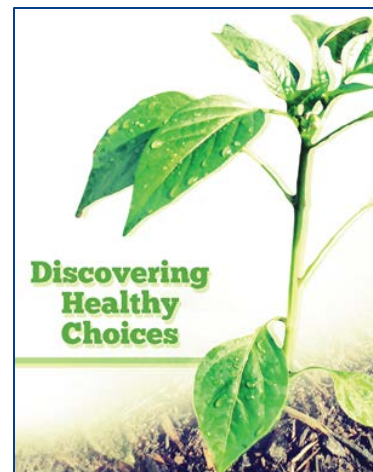
- Describe what you know about...
- Explain what you observed when...
- Tell me what happened when...
- What did you notice about...
- Tell me more about that...
- What do you mean by...

Making Sense of what happened

- Based on what you observed, what do you think about...
- How did you decide to go about...
- Using what you know, explain...
- Explain your thoughts about...
- What do you mean by...
- Would you tell me more about...
- What do you already know about...

Reasoning

- Imagine...
- Suppose...
- Predict...
- If..., then...
- How might...
- Can you create...
- What are some of the possible consequences...
- What if...
- What do you think would happen if...
- Is there another way to...
- How might you do that differently...



Sample Open-Ended Questions for Facilitators

Observing

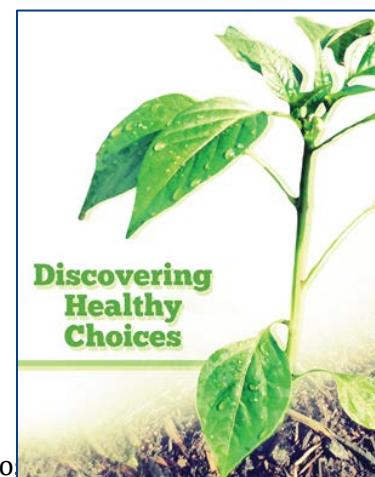
- Describe what you know about...
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- What did you notice about...
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Making Sense of what happened

- Based on what you observed, what do you think about...
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- Using what you know, explain...
- Explain your thoughts about...
- What do you mean by...
- Would you tell me more about...
- What do you already know about...

Reasoning

- Imagine...
- Suppose...
- Predict...
- If..., then...
- How might...
- Can you create...
- What are some of the possible consequences...
- What if...
- What do you think would happen if...
- Is there another way to...
- How might you do that differently...



Appendix 2: Plus/Delta Reflections

+ Things that worked well	Δ Things to be improved

Things to consider

- Questioning: Open-ended or closed?
- Learner-centeredness: Who is doing the bulk of the work?
- Constructivism: Are the students figuring it out?
- Materials: Are they appropriate?
- Room set-up
- Time management
- Other



Building an Instructional Garden

Why instructional school gardens? Garden-enhanced nutrition education has been shown to improve children's knowledge of nutrition, as well as the core academic subject areas of math, language arts, science, and history.^{1,2} In addition to enhancing a student's learning environment, research shows that children are more likely to taste and eat vegetables that they have grown themselves.²⁻⁴

Introduction

The instructional garden serves as an authentic setting in which students can learn and apply nutrition-related concepts and problem solving skills. *Discovering Healthy Choices* integrates a garden-enhanced activity into every module.

Program Connections

Coordinate with *Discovering Healthy Choices* curriculum

The garden-enhanced activities within *Discovering Healthy Choices* are intended to serve as an authentic setting for students to learn about nutrition while also giving them opportunities to be physically active and to grow and harvest their own vegetables. It is important for there to be coordination between those facilitating *Discovering Healthy Choices* and those building or maintaining the instructional garden. This is because activities require specific interactions between students and the garden and these should be considered during the planning, designing, building, and maintenance of the garden.



Shaping Healthy Choices Tip! Be sure to communicate with those facilitating the *Discovering Healthy Choices* activities to strengthen the garden and the classroom connection and ensure adequate time is allotted for the incorporation of the garden as a learning environment.

Activities in *Discovering Healthy Choices* encourage the students to choose and grow their own vegetables. A list of recommended vegetables and herbs are listed in *Discovering Healthy Choices* Appendix 1C.

Start gardening and implementing your school garden program. Let the community know about it every step of the way, from planning to building to planting and harvesting. Get the word out by sharing pictures and videos of your experiences with colleagues, friends and family to inspire other community gardens. Over time, revisit the plan and make any needed changes based on lessons learned or feedback from partners and neighbors.



Shaping Healthy Choices Tip! Consider allowing each student group to plant and harvest their own plot within the garden. This will allow the development of ownership of

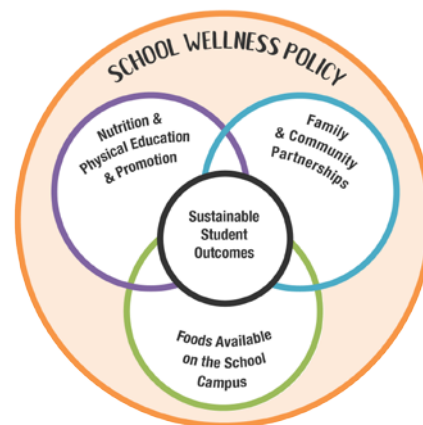
their own agricultural plot, and provide an opportunity to more deeply engage in growing their own vegetables.

☑ **Connect with *Cooking Up Healthy Choices***

The vegetables that are being grown in the school garden may be harvested and used in *Cooking Up Healthy Choices* cooking demonstrations. Even just a few ingredients from the garden can get students excited about eating their vegetables.

☑ **Coordinate with other Shaping Healthy Choices Program activities**

While an instructional school garden is a crucial Shaping Healthy Choices Program activity, it is important to make sure that the other activities of the Shaping Healthy Choices Program are tied back to the garden. Remember, the more connections you make between the program activities, the stronger the infrastructure of the program as a whole.



Ideas for this include:

- **Connecting with the lunchroom:** Consider coordinating with the food and nutrition services director to incorporate foods being grown in the garden into the lunchroom.
- **Connecting with community health fairs:** Recruit student volunteers to help set up a booth at the health fair that shows off what they have been doing in their garden.
- **Connecting with the nutrition promotion efforts:** Coordinate with administrators to display photos of garden activities in the office or in the school newsletter.
- **Connecting with the school wellness committee:** Getting the school wellness committee involved with the garden is a great way to ensure the garden is maintained through the years.
- It is important to make sure that other aspects of the Shaping Healthy Choices Program are integrated while the garden is being utilized. In addition to using the produce that is grown for *Cooking Up Healthy Choices*, consider creating a poster with photos of students harvesting vegetables and working in the garden, or lead tours of the garden during the health fair.
- Consider hosting *Garden Open House Days* or *Lunchtime in the Garden* where students and teachers can spend some free time learning about their garden while watering, weeding, reading a story, or relaxing.

Materials and Preparation

☑ **Plan and design your garden**

An instructional garden can take many forms, from a traditional in-ground or raised-bed garden to container gardens using wheelbarrows or buckets. Depending upon the budget and available space, there are many different ways to give students experience growing and harvesting their own vegetables.

The following resources may help with the planning and design of an instructional garden:

- California School Garden Network. Gardens for Learning, a guide for creating and sustaining your school garden. Available for free download <http://www.csgn.org/steps>
- Center for Eco Literacy. Getting Started, A Guide for Creating School Gardens as Outdoor Classrooms. Available for free download <http://www.ecoliteracy.org/downloads/getting-started>
- Sunset Western Garden Book. (2007). 8th Edition.

☑ Obtain materials

Once the garden has been designed, the next step is to compile a list of materials needed in order to build the garden.

California Fertilizer Foundation awards grants of \$1,200 to California K-12 school garden programs.

- Awards include educational materials. Applications reviewed in January and June. <http://www.calfertilizer.org/grant.htm>

National Gardening Association. Offers a variety of grant programs with awards of up to \$500 <http://www.kidsgardening.com/grants.asp>

Orchard Supply Hardware (OSH) School Garden Project. Grants of up to \$1,000 in materials, plus support from an OSH Garden Coordinator. Preference for schools that have never had a garden before. Watch site for grant cycles. <http://www.osh.com>

Western Growers Foundation (WGA). From WGA Homepage, click on School Garden Programs. WGA offers grants of \$1,000 and \$1,500 plus garden start-up supplies. Applications due November 15 and June 1 of each year. <http://www.wga.com>

☑ Enlist help

Form a diverse network of partnerships to help leverage resources and gain access to materials, tools, funding, volunteers, and technical assistance. For example, offering teachers the curriculum not only keeps them informed but also allows them to participate in the activities with their class. Brainstorm about who can be a resource for your garden program, how you will involve them initially, and most importantly, how you will keep them involved over the long term. Ideas for potential partners are the following:



Shaping Healthy Choices Tip! Organizing a community garden build can increase helping hands to lessen the load of building and maintaining the school garden. See the chapter appendix for a sample “garden build” flyer.

- **Custodial Engineer.** This person may be your greatest ally and asset in the school community to support ongoing site maintenance and can provide enthusiasm the garden. Keep the line of communication open with this stakeholder during the planning phases of the garden build.
- **School Community Partners.** Students, principals, teachers, parents, the parent teacher organization/association (PTA/PTO), and family members can be great resources during the

planning, building, and/or maintenance of the garden. Typically there will be a few green thumbs in this group.

- **Master Gardeners.** The USDA’s national educational network includes Cooperative Extension offices in communities across the country where Extension Master Gardeners help with gardening challenges and give advice on what grows best in each area. Master Gardeners can be a valuable resource for teams consisting mostly of first time gardeners, or for teams looking for more guidance on how to address challenges such as how to incorporate irrigation in the garden.

Planning for Planting in the Garden

Choosing and planting seeds & seedlings

Choosing and planting seedlings (young plants) is a key component of the experiential learning process employed in *Discovering Healthy Choices* activities. In Activity 1.2, students are asked to select fruits, vegetables, and habitat plants they want to plant. The habitat plants are herbs and flowers that attract beneficial insects and are important for carrying out Activity 7.3. Allowing students to choose the plants they want to grow fosters engagement with their garden.

The plants on this list were chosen because they are vegetables that are grown in the countries explored in Activity 1.1. Additionally, they are used in the recipes from *Cooking Up Healthy Choices*, which are included in the *Team Up for Families* newsletters so that parents can cook them at home.

Seeds and seedlings can be purchased from a variety of places: grocery stores, nurseries, seed companies, and hardware stores. If funding for seedlings is a challenge, consider asking local stores for donations. Cooperative Extension Master Gardeners may be able to point you in the direction of some seed companies that have donation programs for schools, as well as local universities that can help assist in getting materials and building the garden.



Shaping Healthy Choices Tip! When preparing to plant seeds and seedlings in Activity 2.3, separate the seeds and put them into individual sealable bags for easy distribution to student groups. This will help students avoid accidentally pouring all the seeds from one seed packet into one hole, and ensure that all students get a few seeds to plant.

Purchase garden tools for student use

Students will need tools to work in their garden throughout the *Discovering Healthy Choices* activities. In activity 2.3, students participate in preparation and planting to learn about physical activity. The following basic garden supplies are recommended:

- Shovels
- Hoes
- Trowels
- Clip boards
- Clippers/pruners
- Labels to mark vegetables
- Zip-lock bags or other container for students to bring home harvested produce.



Shaping Healthy Choices Tip! It may be helpful to have a few pairs of gardening gloves on-hand if there are students who prefer not to get their hands dirty. However, youth may also want to feel the soil and gloves may not be necessary.

Establish a Plan for Maintenance and Sustainability

A common barrier for a school community's willingness to build an instructional garden is concern that the garden will not be maintained over time. This can be avoided if a plan for sustainability is in place. Consider the following questions when establishing this plan:

1. **Who will take lead/oversee the garden?** Ideally two individuals are responsible for coordinating the garden backed by an active committee that includes classroom teachers and food and nutrition services staff. If possible, provide a stipend for volunteer garden coordinators.
2. **Do you have a long-term plan for funding?** Funding can come from a variety of sources. Funds may be available through the school or PTA/PTO budget. There are also national and local grants available. Local organizations are often willing to donate garden materials for schools.
3. **Who will maintain the garden?** Garden maintenance involves tasks such as weeding, watering, and planting new seeds/seedlings. Enlisting the help of other school community members is a great way to ensure that the school garden is maintained for years to come.



Shaping Healthy Choices Tip! There are many community members that can contribute to the maintenance of the garden. Consider the following stakeholders as potential garden leaders:

- Wellness committee members
- PTA/PTOs
- Enthusiastic teacher(s)
- Nutrition educator(s) implementing the *Discovering Healthy Choices* curriculum
- Student leaders that show an interest in the garden can also assist with the watering and care of the garden.

Additional Resources

1. **Extension Master Gardeners:** Find a state extension master gardener program near you. <http://articles.extension.org/pages/9925/state-and-provincial-master-gardener-programs:-extension-and-affiliated-program-listings>
2. **USDA Gardening Resources:** This website houses a series of informative webinars and workshop opportunities. http://www.usda.gov/wps/portal/usda/usdahome?navid=GARDEN_RT3&parentnav=PEOPLES_GARDEN&navtype=RT
3. **Center for Nutrition in Schools Website:** For more gardening resources visit the Center for Nutrition in Schools Website: <http://cns.ucdavis.edu/resources/garden.html>

References

1. Graham H, Zidenberg-Cherr S. California teachers perceive school gardens as an effective nutritional tool to promote healthful eating habits. *J Am Diet Assoc.* 2005;105(11):1797-1800.
2. Morris JL, Zidenberg-Cherr S. Garden-enhanced nutrition curriculum improves fourth-grade school children's knowledge of nutrition and preferences for some vegetables. *J Am Diet Assoc.* 2002;102(1):91-93.
3. McAleese JD, Rankin LL. Garden-based nutrition education affects fruit and vegetable consumption in sixth-grade adolescents. *J Am Diet Assoc.* 2007;107(4):662-665.
4. Robinson-O'Brien R, Story M, Heim S. Impact of garden-based youth nutrition intervention programs: a review. *J Am Diet Assoc.* 2009;109(2):273-280.

Facilitating *Cooking Up Healthy Choices* Curriculum

Why Cooking Demonstrations? Research shows that school-based nutrition interventions that feature cooking demonstrations enhance students' self-efficacy, improve preferences for and consumption of the vegetables featured in demonstrations, and increase involvement in cooking at home.^{1,2}

Introduction

Cooking Up Healthy Choices is a learner-centered, cooking demonstration-based nutrition curriculum that was developed for the Nutrition Education & Promotion component of the Shaping Healthy Choices Program. The objective of this curriculum is to facilitate understanding of nutrition concepts and exploration of cooking so youth can make connections to food and how food is prepared, as well as make evidence-based decisions about the foods they eat.

Download a copy of the curriculum

Cooking Up Healthy Choices is available as a free download through the UC Davis Center for Nutrition in Schools (<http://cns.ucdavis.edu>).

Program Connections

Coordinate with *Discovering Healthy Choices* curriculum and *Team Up for Families* newsletters.

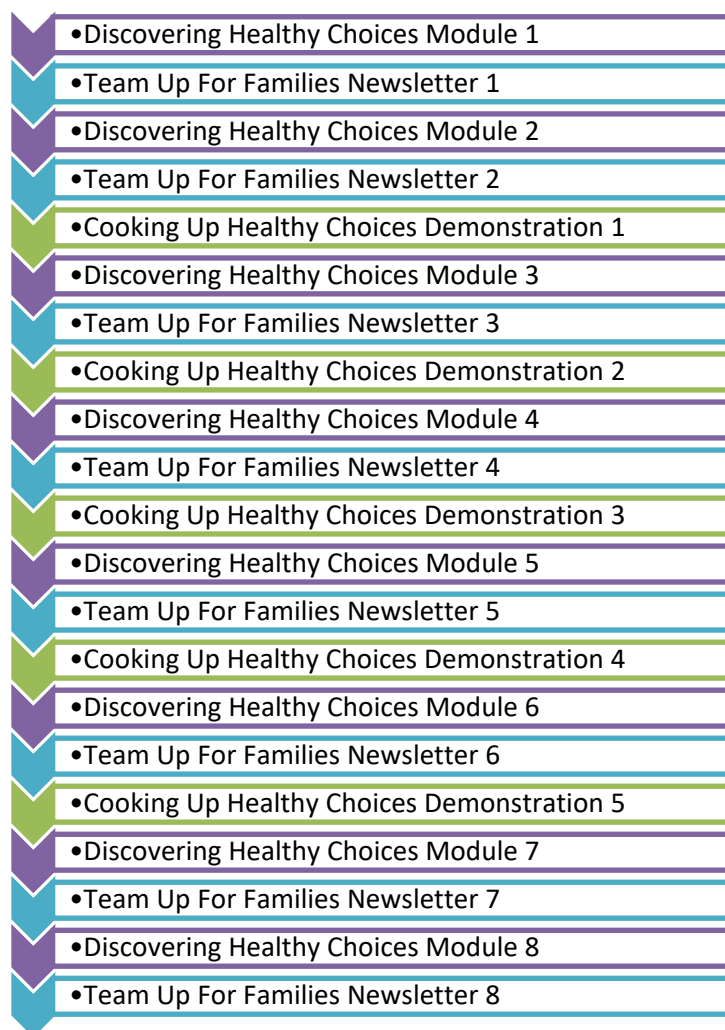
Cooking Up Healthy Choices was designed to be implemented in conjunction with *Discovering Healthy Choices* and *Team Up for Families* newsletters.

The vegetables that are used in *Cooking Up Healthy Choices* are recommended to be grown as part of the garden-enhanced activities.

The cooking demonstrations reinforce concepts students learn in *Discovering Healthy Choices*. Finally, family newsletters include information for parents about the ideas their children are learning as part of this program, contain interactive quizzes that reinforce concepts, and contain recipes from *Cooking Up Healthy Choices*.



Shaping Healthy Choices Tip! In order to maximize the connections built into the curricula and newsletters, the following sequence is recommended:



Coordinate with other Shaping Healthy Choices Program activities

While the cooking demonstrations are a critical Shaping Healthy Choices Program activity, it is important to make sure that the other activities of the Shaping Healthy Choices Program are tied back to the cooking demonstrations. Remember, the more connections you make between the program activities, the stronger the infrastructure of the program as a whole.

Ideas for this include:

- **Connecting with the lunchroom:** Consider featuring recipes from *Cooking Up Healthy Choices* as menu items.

- **Connecting with the instructional garden:** Using produce grown in the garden in the recipes is a great way to establish a connection between program activities.
- **Connecting with community health fairs:** Featuring cooking demonstrations from *Cooking Up Healthy Choices* during a community event can be a fun way to engage guests.
- **Connecting with the nutrition promotion efforts:** Coordinate with administrators to display photos in the office of children enjoying the recipes.

Facilitating Cooking Up Healthy Choices

Read the Facilitators Tips in *Cooking Up Healthy Choices*

This section in the *Cooking Up Healthy Choices* curriculum is intended to provide the facilitator with information needed to get the most out of activities in *Cooking Up Healthy Choices*. It also provides a guide for how to use the curriculum.



Shaping Healthy Choices Tip! If *Cooking Up Healthy Choices* will be facilitated by someone other than the classroom educator, it may be important to communicate with teachers about how to best facilitate the activities in their classrooms. This can be done by providing the curriculum to teachers or educators and being available when questions arise. Offering these resources will help them better understand the process and be prepared for participation in the activities.

Materials and Preparation

Purchase equipment

The following is a list of the basic equipment recommended to conduct cooking demonstrations from *Cooking Up Healthy Choices*.

- Portable burner--Check with schools about restrictions with open flames in the classroom (you may need to use an induction burner and pan).
- Skillet
- Cooking pot
- Measuring cups
- Measuring spoons
- Cutting board
- Chef's knife
- Can opener
- Large spoon
- Spatula
- Food processor or blender
- Kitchen rags
- Trash bags
- Small disposable plates and bowls
- Disposable forks and spoons
- Napkins



Shaping Healthy Choices Tip! A rolling cart is a great addition to your supplies list. It is a convenient way to store and transport equipment and ingredients while also functioning as additional counter space to hold prepped ingredients and tools if space in the classroom is limited.

Enlist help for purchase and preparation of materials

If time and/or funding are limited, enlist help from parent volunteers or other community members to purchase or donate supplies and prepare ingredients ahead of time.

Harvest vegetables from the garden

Giving students the opportunity to harvest produce for use in the cooking demonstrations is a great way for them to make connections with the food they are growing in the garden. If the yield from the garden is too low for the lesson, you can also supplement with store-bought vegetables.

Whether novice or expert, get cooking!

These recipes are designed for anyone of any skill level to prepare. Many different people may conduct the cooking demonstrations for youth, including school educators, community members, parents, Cooperative Extension educators (master food preservers), nurses, chefs, and farmers, amongst many others.

The emphasis is for students to explore cooking new foods and using different cooking techniques using all five senses, and not on the facilitator conducting a perfect demonstration.

If something goes wrong, turn those unplanned events into learning opportunities. For example, if your burner stops working, borrow a microwave from the teacher's lounge to steam the vegetables instead of sauté to demonstrate problem-solving skills in the kitchen.

Encourage students to try everything at least once

Positively encourage youth to try new foods they are exposed to in the recipes. Cooking in front of the children and involving them in the experience by letting them touch, smell, and observe what you are doing is a great way to get them interested and excited to try new foods. Many youth are often surprised to find they enjoy a new vegetable they thought they would not like.

Be seasonal

Recipes were designed to represent a wide variety of seasonal produce. Conduct cooking demonstrations in timing with the produce that is seasonally available. For example, the Fresh Fall Salad may be conducted in the fall, and the Veg-Out Chilean Stew may be conducted in the winter, and the Stir Fry contains vegetables available in the spring.

Connect with other subjects

Consider incorporating concepts from other subject areas including food science and food safety. You can engage students with something as simple as asking them to be sure to observe you following safe kitchen habits like proper knife handling and washing your hands.

Project the cooking demonstration

Many classrooms now have digital projectors. By using the digital projector, all of the students will be able to see how the food is being prepared.

Additional Resources

1. **Center for Nutrition in Schools Website:** For more information on curriculum for all grade levels, visit the Center for Nutrition in Schools Website:
<http://cns.ucdavis.edu/resources/curriculum-classroom.html>

References

1. Chen Q, Goto K, Wolff C, Bianco-Simeral S, Gruneisen K, Gray K. Cooking up diversity. Impact of a multicomponent, multicultural, experiential intervention on food and cooking behaviors among elementary-school students from low-income ethnically diverse families. *Appetite*. 2014;80:114-122.
2. Cunningham-Sabo L, Lohse B. Cooking with Kids positively affects fourth graders' vegetable preferences and attitudes and self-efficacy for food and cooking. *Child Obes*. 2013;9(6):549-55

Implementing the *Healthy Choices in Motion* Curriculum

Why *Healthy Choices in Motion*?

Physical activity has been shown to have a wide range of beneficial health effects, yet few children meet the United States physical activity recommendation of 60 minutes of moderate-to-vigorous activity everyday. A combination of cultural and environmental factors contributes to students engaging in physical activity, including knowledge about physical activity. A set of physical activity lessons with an optional technology-enhancement, called *Healthy Choices in Motion*, was created to supplement the Shaping Healthy Choices Program.

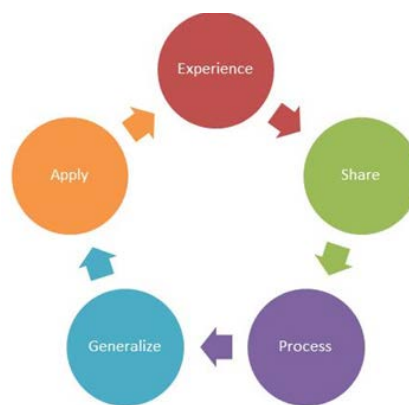
Students who participate in *Healthy Choices in Motion* have demonstrated an improvement in knowledge about physical activity. *Healthy Choices in Motion* uses inquiry-based education and experiential learning approaches. This curriculum utilizes these two learning strategies to facilitate understanding of physical activity concepts and development of problem-solving skills so students can make evidence-based decisions about engaging in physical activity.

Introduction

Healthy Choices in Motion allows students to explore a comprehensive set of physical activity concepts, including the benefits of physical activity, recommendations across the lifespan, the five components of physical fitness, why doing a variety of physical activity is important, and what being physically active means to you. Concepts for this curriculum were identified from the 2008 Physical Activity Guidelines for Americans, Dietary Guidelines for Americans, 2015, CATCH, Centers for Disease Control, and California Department of Education.

All activities are structured around a five-step experiential learning cycle.⁵ In the Experience phase, students carry out the procedures of an activity. In the Share, Process, and Generalize phases, students participate in discussion about their observations and experiences, make inferences about them, and generalize these findings to real-world settings. In the Application phase, students use what they have learned and practice it in authentic settings. This is accomplished in *Healthy Choices in Motion* through a take-home journal that students can complete with their families and an optional technology-enhancement.

The curriculum is organized into five sequential modules that begin with foundational skills and build to more complex skills.



**5-Step Experiential Learning Cycle
Pfeiffer and Jones, 1985**

Download a copy of the curriculum

Healthy Choices in Motion is available as a free download through the UC Davis Center for Nutrition in Schools (<http://cns.ucdavis.edu>).

Program Connections

Coordinate with *Discovering Healthy Choices*, *Cooking Up Healthy Choices* curriculum, and *Team Up for Families* Newsletters

Healthy Choices in Motion was designed to be implemented in conjunction with the garden-enhanced nutrition education modules from *Discovering Healthy Choices*, cooking demonstrations from *Cooking Up Healthy Choices*, and the family newsletters (*Team Up for Families*).

Healthy Choices in Motion can be implemented at any point during the Shaping Healthy Choices Program after students have completed Module 2 in *Discovering Healthy Choices*. Some options are listed below:

Option 1: Identify a period of 5 consecutive weeks after Module 2 has been completed and facilitate all 5 *Healthy Choices in Motion* lessons consecutively each week. For example, you can wait until students return from winter break to facilitate *Healthy Choices in Motion*.

Option 2: After students have completed Module 2, alternate each week with *Discovering Healthy Choices* and *Healthy Choices in Motion*.

Facilitating *Healthy Choices in Motion*

Read the Facilitator Tips in the *Healthy Choices in Motion* curriculum

This section in the *Healthy Choices in Motion* curriculum is intended to provide the facilitator with information needed to get the most out of activities in *Healthy Choices in Motion*. It also provides a guide for how to use the curriculum.



Shaping Healthy Choices Tip! If *Healthy Choices in Motion* will be facilitated by someone other than the classroom educator, it may be important to communicate with teachers about how to best facilitate the activities in their classrooms. The inquiry-based education strategy and group work may differ from how the classroom educator expects his/her classroom to function. The group discussions can appear chaotic so it is recommended that teachers are informed and are aware that classroom noise levels may be higher than normal. Ask if there are any students that need extra help, how they would like to address classroom management, and how they might like to participate in the activities themselves.

Connect with other subject areas

Healthy Choices in Motion supports Common Core State Standards in Mathematics and English Language-Arts, Next Generation Science Standards, and Physical Education Model Content

Standards for California Public Schools Grades K-12. Please see the curriculum for a guide to which standards are supported in *Healthy Choices in Motion*.

If curriculum is being implemented by educators other than the classroom teacher, communicate regularly with the teacher

It is important to keep the line of communicate open with teachers. Collaborating with classroom teachers can strengthen the delivery of the curriculum. Some examples of how you may consider involving the classroom teachers in this process include:

- **Provide the curriculum to the teachers.** This will help them better understand the process and be prepared for participation in the activities.
- **Keep them up to date on assigned journaling and home participation requirements.** Ask the teacher if he/she is willing to assign and collect the journal. This is a great way to ensure communication lines remain open.

Time Management

Limit the opening questions to 3-5 minutes

The opening questions phase of the activities is intended for the educator to gauge prior knowledge of the students and for the students to get oriented to and thinking about the subject matter. It is normal to want to spend more time on this section, but this is not where the learning happens.

Ensure enough time so that students can engage in all phases of each activity

For students to develop deep understanding of the concepts, it is critical that the students participate in all phases of each activity including Experiencing and Sharing, Processing, and Generalizing. Students learn by making observations and by discussing them with one another. The Sharing, Processing, and Generalizing phase is essential for students to make sense of what they observed and consider it within real-world contexts.



Shaping Healthy Choices Tip! It is common for an instructor to be unsure if the students understand the concepts and want to offer direct answers as a result. It is important to give the students a chance to come to conclusions on their own. Although students may not understand the concepts at first, by experiencing learning through the inquiry-based method they will ultimately learn and have a deeper understanding of what is being taught as a result.

Include travel time for going outside

If you are able to do the lesson outside, it is important to plan for sufficient time to get the students out of the classroom.

Remember the journal activities

Factor in enough time to allow students to share from their journal each lesson. You can work with the teacher and see if they'd be willing to assign the journal activities as classroom homework or offer another classroom incentive for completed journals.

- ☑ **Set expectations before the lesson begins**
- ☑ **Use the teacher tools the students are familiar with**
Utilizing classroom management strategies that the teacher already has in place will limit the amount of time it takes to get students settled and focused for the next step in the lesson.
- ☑ **Be willing to be flexible**
- ☑ **Minimize the time for transitions by being clear about the next goal**

Materials and Preparation

- ☑ **Enlist help for purchase and preparation of materials**
There are materials that will be needed for activities, like frisbees, bean bags, yard sticks, and stop watches. Enlist help from parent volunteers or other community members to acquire supplies.

Tips for Lesson 1: The Benefits of Physical Activity

- ☑ **Farm-to-Market Activity**
This activity is great for taking outside; ask the school if there's an open space outside you could use for the lesson. If you're unable to take the activity outside, push the desks in the classroom to the periphery. Whether you're inside or outside, arrive early to set up the frisbees and bean bags before the lesson begins.



Shaping Healthy Choices Tip! Bring clipboards and pencils so students are able to take their worksheets outside.

- ☑ **Reduce bean bags**
If you are running low on time, use only 3 bean bags instead of 4. In this shortened version, students are still able to engage with the Farm-to-Market activity and discover the concepts.



Shaping Healthy Choices Tip! You can use the table tents provided as a classroom management tool. For example, "line up here if you are a Running Radish." The table tents can also be placed in front of each frisbee so each team knows exactly where to go.

- ☑ **Consider cleanup**
Have the students pick up their frisbees and bean bags at the end of the activity.

Tips for Lesson 2: Physical Activity Recommendations

☑ Review the physical activities

Some of the activities, such as football feet, can be difficult to explain to the students. Review the *Healthy Choices in Motion* video demonstration to make sure you can explain the different exercises to the students.



Shaping Healthy Choices Tip! Have students demonstrate the exercises in front of the class before the activity to clarify form and intensity.

☑ Ask the students about intensity levels

Have the students identify and explain the different intensity levels in their own words.



Shaping Healthy Choices Tip! Use the white board to talk through each character together during the sharing section of the lesson. Reviewing each character as a class can help students solidify the concepts.

Tips for Lesson 3: Components of Physical Fitness

☑ Arrive early

Assess the space before the lesson and set up the classroom before you begin (i.e. tape down measuring sticks for the “sit-and-reach.”)

☑ Demonstrate the form together

Show the students how to perform each exercise so they understand proper form.

☑ Create stations

Designate areas of the classroom for each station and leave the proper measuring tools at each station. Keep a watchful eye, since students tend to overuse the stopwatches when they should be using a different measuring tool, such as counting push-ups. Some suggestions:

- High Heel Run: Three timers, to be used only at the station
- Planks: Timers, to be used only at the station
- Push-ups: “Measure with your brain!”

☑ Assign roles

Assign each team member a role by passing out slips of papers with a number at the beginning (numbered 1-4). The number the team member receives is their role for that round. Rotate each role at each station. Write the corresponding numbers and roles on the white board and change after each round.

Roles:

1. Recorder
2. Measurer
3. Athlete
4. Athlete

For example, for the first round the student with #1 will be the recorder, the student with #2 will be the measurer, and students with #3 and #4 will be the athletes (you can add an extra athlete role if a team has 5 members). For the next round, #4 could be the recorder, #3 could be the measurer, and #1 and #2 could be the athletes.

Keep an eye on the clock

Allow for students to have 4 minutes at each station. It's okay if they don't completely finish all the stations. They'll be able to hear about the other team's experiences during the sharing portion of the lesson.



Shaping Healthy Choices Tip! If students haven't learned averages in class yet, it's okay to skip this part of the handout.

Body composition

You can introduce body composition as all parts of the body (muscles, fat, etc.). It is important to reiterate health at every size, as students already have misconceptions about what constitutes a "healthy person". Prompts are included below to help navigate the conversation.

Example: What is your body made of?

- Water, fat, bone, muscle
- Your body is unique to you!
- "Is mine the same as yours? Should it be?"
- "It is what it is" instead of giving it influence
- How do you add to it? i.e. muscle (instead of taking it away)
- "Exercise makes you skinny" can be addressed as, "You should all do it. It's good for you and keeps you healthy".

Tips for Lesson 4: We Need a Variety of Physical Activity

Read Ricky's and Sonia's stories ahead of time

Familiarize yourself with Ricky's and Sonia's stories before teaching this lesson. Add up the minutes of physical activity beforehand, so you experience what the students will experience and have an idea of how the lesson functions.



Shaping Healthy Choices Tip! If students are counting activities that aren't physical activity, redirect them by asking them what intensity level the activity is. For instance, if a student feels that eating breakfast counts as physical activity, ask them what intensity they think chewing food is. Chances are they will reconsider their thought process.



Shaping Healthy Choices Tip! If students haven't learned bar graphs, have them visually represent their findings through a picture, such as clock, or by creating a list or table.

Tips for Lesson 5: Being a Physically Active Person

Set the mood

Help students stay on task by drawing an example of a person on the board at the beginning of the lesson. Ask the class if drawing things that are unrelated to the lessons, such as a mustache, is staying on task.

Engage with the artists

During their artwork time, walk around the room and engage with the team members. If students are drawing something unrelated, pointedly ask why they were doing that and how it relates to physical activity. For example: "What do you like to do for physical activity? How can you make your person represent this?"



Shaping Healthy Choices Tip! Remind the youth that their drawing should represent everyone in the group, not just the team member being traced. The drawings should not be of a specific person, but rather a visual representation of all the physical activity concepts they learned.

