Lesson 5 – Increasing Plant-based Foods in School Nutrition Programs
Many people today are opting to eat plant-based meals. These meals may be once per week on Meatless Mondays, several times per week, or even two out of three meals a day. Others are choosing to eat entirely plant-based meals (a vegetarian diet). There are many reasons why people are choosing to eat plant-based meals, such as for personal health benefits, environmental concerns, or cost effectiveness. With meatless meals becoming a trend nationwide, schools are encouraged to provide this choice for student customers. Planning and serving plant-based meals may have a variety of benefits, including providing students with new, nutritious food choices and promoting future healthful lifestyles.

Plant-based meals are sometimes referred to as vegetarian meals however, these terms have different definitions. Plant-based meals place an emphasis on plant-based foods such as vegetables, fruits, whole grains, and legumes. Vegetarian meals, in addition to being plant-based, exclude meat and other animal products, to varying degrees.

A major benefit of plant-based foods is that they contain dietary fiber and phytonutrients that are not found in animal foods. Plant-based foods are also a source of micronutrients such as calcium, iron, potassium, folate, vitamin A, and vitamin C. Research on the possible health benefits of plant-based foods show that regular consumption of plant-based meals may lower the risk of cardiovascular disease and certain types of cancer. Diets rich in fruits, vegetables, whole grains, nuts, and legumes are linked to lower rates of obesity and a decrease in both blood cholesterol and blood pressure.

The American Academy of Nutrition and Dietetics supports plant-based meals for all stages of life including childhood, adolescence, and athletes. Although increased consumption of vegetables and fruits is a key recommendation of the Dietary Guidelines for Americans, research shows that Americans are still not eating the recommended amount of daily servings of fruits and vegetables. To address this finding, introducing children to fruits and vegetables at a young age may establish healthful habits throughout their lifetime. For example, schools may model healthful food choices by replacing traditional meat recipes with plant-based options that meet reimbursable meal requirements.

An important consideration for plant-based meals is that they are planned to meet the requirements for essential nutrients. For example, meat is a good source of iron, so when planning plant-based menus consider other iron sources, such as beans and cereals. Protein sources are another consideration. Plant-based meals should be designed to include a variety of complementary protein sources, including legumes, nuts, and seeds. Other foods, such as tofu and tempeh, are good sources of plant-based protein as well as calcium.

Americans are also exceeding the recommended intake of saturated fats. Saturated fats often come from animal sources and mixed dishes such as hamburgers, tacos, or pizza. There is evidence that shows high levels of saturated fat may lead to an increased risk of cardiovascular disease. When unsaturated fats replace saturated fats, the risk of...
cardiovascular disease events (such as heart attacks) may decrease. **Plant oils** are high in unsaturated fats and are a source of essential fats and vitamin E. Common sources of plant oils are nuts and seeds, avocado, and vegetable oil such as olive and canola oils.

In summary, incorporating more plant-based foods is a great way for schools to model healthful meals, encourage consumption of fruits and vegetables, and help students meet their nutrient recommendations.

**Concepts and Vocabulary**

**Calcium**: A mineral important for bone health and muscle function.

**Dietary fiber**: A type of carbohydrate that can’t be digested, but is important for digestive health. It may help reduce blood cholesterol and lower risk of heart disease.

**Iron**: A mineral that is important in red blood cells, and is used to move oxygen around in the blood.

**Legumes**: Types of seeds that can be eaten and are highly nutritious. Legumes include all types of beans, chickpeas, edamame (soybean), and lentils.

**Micronutrients**: Nutrients we consume in small amounts, including vitamins and minerals.

**Phytonutrients**: Natural plant chemicals that may have beneficial health effects. They are found in fruits, vegetables, whole grains, and drinks such as tea and wine. Also called phytochemicals.

**Plant oils**: Oils from plant sources that are usually liquid at room temperature and include mono- and poly-unsaturated fats.

**Plant-based foods**: Foods that come from plant sources such as fruits, vegetables, whole grains, and legumes; diets consisting primarily of plant-based foods are recommended by the Dietary Guidelines for Americans.

**Potassium**: A mineral that is important for muscle and nerve function. Eating a diet rich in potassium is also helpful in preventing high blood pressure.

**Protein**: A macronutrient that is needed for muscle growth and maintenance, but also several other important functions in the body. Protein can also be used for energy.

**Saturated fats**: A type of fat that is solid at room temperature. Too much saturated fat may raise the risk for heart disease.

**Tempeh**: A fermented soy food pressed into blocks that have a nutty flavor and firm texture. Tempeh is highly nutritious and known for its high levels of protein and micronutrients.

**Unsaturated fats**: A type of fat that is liquid at room temperature and considered healthier than saturated fats.

**Vegan**: A person who does not eat or use animal products.

**Vegetarian**: A person who does not eat meat, and sometimes other animal products.
5.1: Learning Activity

Overview

In this activity, participants will explore the health benefits of plant-based foods by adapting a meat-based recipe into a plant-based one. Participants will use food cards with nutrient information to swap out or add major ingredients.

Getting Ready

Time Required

50 minutes

Materials Needed

(Materials provided in the curriculum)

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<thead>
<tr>
<th>For Each Group of 2-4 Participants</th>
<th>For the Facilitator</th>
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</thead>
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<tr>
<td>□ Flip chart paper</td>
<td>Optional:</td>
</tr>
<tr>
<td>□ Markers, pens, or pencils</td>
<td>□ Lesson 5 (PowerPoint)</td>
</tr>
<tr>
<td>□ Food Cards (Lesson Material 5-B)</td>
<td>□ Computer</td>
</tr>
<tr>
<td>□ Recipe Changes Worksheet</td>
<td>□ PowerPoint Projector</td>
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<td>(Activity Sheet 5-C)</td>
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<thead>
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<th>For the Class</th>
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<tbody>
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<td>□ Sample Recipes (Activity Material 5-A)</td>
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Preparation

Handouts
1. Make copies of the following:
   • *Sample Recipes (Activity Material 5-A)*, one or more copies as needed. (Each group will receive one recipe.)
     
     *Facilitator Tip: If there are more than five groups, it is acceptable for some groups to have the same recipe.*

   • *Recipe Changes Worksheet (Activity Sheet 5-C)*, one copy per group.

Other Materials
2. Print and cut out copies of the *Food Cards (Lesson Material 5-B)*, one set per group.

Classroom Set-Up
3. Organize the class into small groups of 2 to 4 participants. Provide each group with a sheet of flip chart paper and markers, pens, or pencils to answer opening questions/prompts.

Optional
4. Before participants arrive, connect laptop to projector. Load *Focus on Food Lesson 5* (PowerPoint).
Opening Questions/Prompts

Small Group Discussion

1. **Say**: Let’s get started with Lesson 5 Increasing Plant-based Foods in School Nutrition Programs! *(Slide 1)*
   To begin, I’d like everyone to discuss some opening questions within your group. *(Slide 2)* Once you’ve discussed the prompts within your groups, we will come back together as a class and discuss your thoughts and responses as a whole.

   The first prompt I’d like you to discuss within your groups is: *(Slide 3)*
   
   - **What are plant-based foods?**
     
     *Facilitator Tip: Explain to participants that they may write their answers independently or assign one person in their group to write down everyone’s thoughts. It may be helpful to explain to the class that they will learn more about these topics throughout the lesson.*
     
     *Facilitator Tip: If participants are struggling with the distinction between plant-based and more common terms such as vegetarian or vegan, then encourage them to focus on the foods that are included in plant-based. These foods are fruits, vegetables, whole grains, legumes, nuts, and seeds. Redirect talk and discussion on what “isn’t included” or what people “cannot have”.*

2. **Do**: Allow 2 to 3 minutes for groups to discuss the prompt. Repeat with the remaining prompt:
   
   - Explain the benefits of plant-based foods. *(Slide 4)*

Class Discussion

3. **Say**: As a class, let’s discuss what you talked about in your groups. What were some of your thoughts on the first prompt, what are plant-based foods?

4. **Do**: Allow about a minute for participants to share their thoughts on this topic with the class. Repeat with the remaining prompt: Explain the benefits of plant-based foods.
Procedure (Experiencing)

Recipe activity

5. **Say:** Now that we’ve completed our opening discussion, we’ll start on the activity for this lesson. *(Slide 5)* This activity involves changing a meat-based recipe to a plant-based recipe.

6. **Say:** I’m going to pass out a different recipe to each group as well as a set of food cards. Your goal is to recommend some changes to the recipe in order to make it plant-based. *(Slide 6)*
   - This might mean swapping out some ingredients or adding other ingredients.

7. **Say:** Once you’ve made changes that you are satisfied with, work together to fill in the recipe changes worksheet. You may need calculators for this exercise which we will also pass out as you work.

8. **Do:** Pass out *Sample Recipes (Activity Material 5-A), Food Cards (Lesson Material 5-B), Recipe Changes Worksheet (Activity Sheet 5-C)*, and a calculator for participants.

*Facilitator Tip: If participants ask about how they will know if the recipe will taste good, ask them how they would usually try new recipes at home or at work.*

*Facilitator Tip: If you do not have enough calculators for each group then have participants use their mobile devices.*

*Facilitator Tip: Participants may be concerned with creating a recipe that has an equal number of grams of protein compared to the original. If this is the case, assure them that their recipe doesn’t necessarily need to match the protein content.*
Activity Wrap-Up (Sharing, Processing, Generalizing)

9. **Say:** Let’s have each group share what changes they made to their recipe. *(Slide 7)*

10. **Do:** Follow the group’s line of thinking, and if necessary, ask more targeted questions.

   - Explain how you decided which foods or ingredients to add or swap out.
   - Explain how your changes to the recipe change the nutrients in the recipe.
   - Using what you know about those changes in nutrients, how would you describe this new recipe?
   - How are your changes similar to each other? How are they different?
   - How are the nutrient changes you’ve observed similar to each other? How are they different?
   - Thinking about the second opening prompt, how would you answer “Explain the benefits of plant-based foods?” differently?

_Facilitator Tip:_ Save the questions about similarities and differences until after a few of the groups have presented their changes.

_Facilitator Tip:_ If there are any misconceptions remaining in this phase of the lesson, you should address these now.

Concept and Term Discovery/Introduction

Over the course of the lesson, participants should be able to identify the following concepts:

- Plant-based foods are important sources of essential nutrients.
- Plant-based meals may include a wider variety of nutrients than meat-based meals.
- Recipes can be adapted to be more plant-based by swapping out meat-based ingredients for plant-based ingredients.

The following key vocabulary terms should be discovered by participants or introduced to them: plant-based foods, dietary fiber, legumes, protein, and micronutrients.
5.2: Expanding Knowledge

Overview

In this mini-lecture, participants will learn more about what plant-based meals are, their potential health benefits, and important considerations when making plant-based meals.

Getting Ready

Time Required

5 minutes

Materials Needed

(Materials provided in the curriculum)

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<th>For Each Group of 2-4 Participants</th>
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<td>☐ PowerPoint Projector</td>
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<table>
<thead>
<tr>
<th>For the Class</th>
<th>For Each Participant</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ None</td>
<td>☐ None</td>
</tr>
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</table>

Preparation

Projector Set-Up

1. Connect laptop to projector. Load Focus on Food Lesson 5 (PowerPoint).
2. Queue the PowerPoint presentation to Slide 8.
Procedure

1. Do: Go through the Expanding Knowledge presentation slide by slide. The following script is available for use if you so choose.

**Slide 8**
That was a great discussion! Now it’s time to recap some concepts we learned throughout Lesson 5, Increasing Plant-based Foods in School Nutrition Programs.

**Slide 9**
Plant-based foods include fruits, vegetables, whole grains, legumes, nuts, and seeds.

**Slide 10**
Legumes are types of highly nutritious seeds that can be eaten. These include peas, soybeans, lentils, and various types of beans. Meals with legumes are a healthy alternative to meat-based dishes because they include protein, fiber, and various vitamins and minerals.

Now we’ll move onto the potential health benefits of plant-based foods.

What are some health benefits that plant-based foods offer?

[Pause to allow responses from the class.]
Those are great answers!

For the purposes of our discussion, plant-based foods provide the essential nutrients required for growth and development, and offer protective effects against disease and deficiency.

Some important plant-based nutrients include:

- Iron, which is in dried fruit, fortified beans and cereals, and spinach.
- Calcium, which is in collard greens, spinach, almonds, and fortified orange juice.
- Zinc, which is in whole grains, nuts, and legumes.
- Potassium, which is in most fruits and vegetables.
- Magnesium, which is in legumes and whole grains, and lastly,
- Omega-3 fatty acids, which can be found in walnuts and flaxseed.
Before we move any further, let’s also review what some of the functions of these nutrients are.

- Iron helps move oxygen in the body.
- Calcium helps build and repair bones and has a role in how muscles function.
- Zinc is involved in growth and immune health.
- Potassium has a role in the way muscles and nerves function.
- Magnesium contributes to bone health and also how muscles and nerves function, and lastly,
- Omega-3 fatty acids are involved in cardiovascular and brain health, and are anti-inflammatory.

Plant-based foods are high in vitamins and minerals that help the body perform important functions.

Can someone explain what fortified foods are?

[Pause to allow responses from the class.]

Those were great answers!

In plant-based diets many nutrients come from fortified foods. Fortified foods are foods with more nutrients added to the original amount. For example, fortified foods are often cereals, soy products, and juices. These foods make up an important part of plant-based meals because they provide a more complete range of nutrients.

Always check nutrition fact labels to verify that foods are fortified with the nutrients you are looking for. For example, you might be looking for calcium-fortified soy or vitamin D fortified juices.
In the long run, eating plant-based diets may reduce the risk factors of obesity, cardiovascular disease, diabetes, hypertension, and certain types of cancers. Diets rich in plant-based foods are also linked to lower rates of obesity and a decrease in both cholesterol and blood pressure.

Let’s take a deeper look at why the risk factors of certain chronic diseases may decrease. Keep in mind this is not a comprehensive take on nutrition and disease, but a brief overview of how plant-based foods can help reduce the risk factors that contribute to chronic disease.

Reduced calorie diets can result in meaningful weight loss and health benefits that help fight obesity. Plant-based foods are usually nutrient dense and lower in calories than meals with meats and cheeses. The fiber and protein found in plant-based foods also keeps you feeling fuller for longer.

Additionally, dietary choices can help control blood pressure to reduce the risk factors of hypertension and cardiovascular disease. For example, a common recommendation is to lower the amount of sodium in the diet from processed foods. However, it is also important to replace those foods with fruits and vegetables to increase the amount of potassium and magnesium in the diet.
Slide 18

Chronic diseases share similar risk factors with each other and reducing your risk for one may lower the risk of several others. For example, in plant-based foods fiber has many functions such as helping you feel fuller for longer, controlling blood sugar, and controlling blood cholesterol. These effects contribute to lowering the risk factors of several conditions we discussed like diabetes and cardiovascular disease at the same time.

Slide 19

Unfortunately, data from the Centers for Disease Control and Prevention (CDC) suggest that in 2015 around a third of California adolescents in grades 9-12 eat fruits and vegetables less than 1 time per day. These number were similar for adults. Keep in mind that one of the key recommendations of the Dietary Guidelines is to increase consumption of fruits and vegetables across all age groups.

There are many strategies to encourage children and adolescents to eat more plant-based foods, let’s discuss some of them.
Many school districts in California are serving creative plant-based meals. Here are five suggestions to try at work or at home to start serving plant-based meals of your own.

1. Build meals around protein. Use sources that are naturally low in fat like beans and rice. Avoid overloading meals with meat and cheese.

2. Use calcium-fortified, soy-based beverages: Soy foods provide calcium in similar amounts to milk and also contain less saturated fat.

3. Turn meat-based foods into plant-based ones: Many meat-based dishes can be adapted to be plant-based by swapping out or adding ingredients. For example, you could try black bean casserole, Greek quinoa, or garbanzo bean salad.

4. Try ethnic cuisines: Mediterranean, Indian, Middle Eastern, Hispanic, Asian, and foods have many nutritious plant-based dishes to draw inspiration from. Try something new.

MyPlate also has great recommendations for eating more plant-based foods.

1. Include beans and peas. Vegetarian chili, three bean salad, or split pea soup are all ways to enjoy beans and peas in meals.

2. Nuts make great snacks. Unsalted almonds, walnuts, or pecans can be in side dishes or salads. Lastly,

3. Make some small changes in restaurants. Ask restaurants for vegetarian options or if substitutions are available like tofu and beans for meat.

Which of these strategies do you like the most?

[Pause to allow responses from the class.]
Whether it is at home, at school, or in the community there are many settings to promote plant-based foods. For example, at home you might consider family meal planning or cooking. Schools might participate in Meatless Mondays or include healthy meals and snacks in their menus. Communities may have farmer’s markets or community gardens to visit. Incorporating more plant-based foods is a great way for everyone to model healthful meals, eat more fruits and vegetables, and help meet nutrient recommendations.
5.3: Goal Setting Activity

Overview

In this activity, participants will use what they’ve learned to set goals for incorporating more plant-based foods in their lives.

Getting Ready

Time Required
5 minutes

Materials Needed
(Materials provided in the curriculum)

For the Facilitator
Optional:
- Lesson 5 (PowerPoint)
- Computer
- PowerPoint Projector

For Each Group of 2-4 Participants
- Food Cards (Lesson Material 5-B)

For the Class
- None

For Each Participant
- Goal Setting – Increasing Plant-based Foods in School Nutrition Programs (Activity Sheet 5-D)

Optional:
- Focus on Food Lesson 5 Newsletter (Handout 5-E)

Preparation

Handouts
1. Make copies of the following handouts:
   - Goal Setting – Increasing Plant-based Foods in School Nutrition Programs (Activity Sheet 5-D), one for each participant.
   - Optional: Focus on Food Lesson 5 Newsletter (Handout 5-E), one for each participant.
**Projector Set-Up**

2. Connect laptop to projector. Load Focus on Food Lesson 5 (PowerPoint).

3. Queue the PowerPoint presentation to Slide 23.

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**Procedure**

1. **Say:** Now let’s move onto Goal Setting! *(Slide 21)* We’ve worked on adapting recipes to make them more plant-based. The next step is to set some goals and make a plan. I am going to distribute a Goal Setting Handout that has the following questions: *(Slide 22)*

   - Take a look through the food cards. Are there any plant-based ingredients or foods you enjoy? How could you include these in your meals or recipes?
   - Thinking about recipes that are served at your school, what are some changes you could suggest to make some of these more plant-based?

2. **Do:** Provide a copy of the *Goal Setting – Increasing Plant-based Foods in School Nutrition Programs (Activity Sheet 5-D)* to each participant. Allow participants a few minutes to complete the handout.

3. **Say:** Would anyone like to share the goals they set for themselves?

4. **Do:** Allow participants to share their goals.

**Optional:**

5. **Say:** I’m going to distribute one last handout, which is a newsletter with some extra information you might be interested in. Thank you all for participating in Lesson 5! *(Slide 23)*

6. **Do:** Provide a copy of the *Focus on Food Lesson 5 Newsletter (Handout 5-E)* to each participant.
LASAGNA

INGREDIENTS:
★ Ground beef
★ Mozarella cheese
★ Ricotta cheese
• Finely chopped onion
• Minced garlic cloves
• Tomato sauce
• Tomato juice
• Dry lasagna noodles
• Shredded mozzarella cheese
• Grated Parmesan cheese

TOTAL NUTRIENTS/PORTION:
| Calories | 329 kcal |
| Carbohydrates | 26 grams |
| Protein | 20 grams |
| Fat | 16 grams |
| Fiber | 2 grams |
| Iron | 3 milligrams |

INGREDIENT FACTS:

Ground Beef
1.6 oz/portion

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Mozzarella Cheese
0.8 oz/portion

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Ricotta cheese
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Lesson Material 5-A

Lesson 5 – Increasing Plant-based Foods in School Nutrition Programs

SPAGHETTI WITH MEAT SAUCE

INGREDIENT FACTS:

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<table>
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<td></td>
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<td></td>
<td>Iron 1.44 milligrams</td>
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INGREDIENTS:
- Ground beef
- Spaghetti
- Tomato puree
- Tomato sauce
- Onions, chopped
- Garlic cloves, minced
- Worcestershire sauce

TOTAL NUTRIENTS/PORION:

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<td>Iron</td>
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PASTA, BEEF, AND TOMATO CASSEROLE

INGREDIENTS:
★ Ground beef
★ Pasta, elbows
• Onions, chopped
• Celery, chopped
• Diced tomatoes, canned
• Tomato puree
• Chile sauce

TOTAL NUTRIENTS/PORTION:
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INGREDIENT FACTS:

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Pasta, elbows
0.8 oz/portion

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</tbody>
</table>
BEEF, PORK, AND NOODLE CASSEROLE

INGREDIENTS:
★ Ground beef
★ Ground pork
★ Cheddar cheese, grated or ground
• Onions, finely chopped
• Tomato soup
• Noodles
• Bread crumbs

TOTAL NUTRIENTS/PORTION:
<table>
<thead>
<tr>
<th>Nutrient</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calories</td>
<td>332 kcal</td>
</tr>
<tr>
<td>Carbohydrates</td>
<td>21 grams</td>
</tr>
<tr>
<td>Protein</td>
<td>20 grams</td>
</tr>
<tr>
<td>Fat</td>
<td>18 grams</td>
</tr>
<tr>
<td>Fiber</td>
<td>1 grams</td>
</tr>
<tr>
<td>Iron</td>
<td>3 milligrams</td>
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</table>

INGREDIENT FACTS:

Ground Beef
1.28 oz/portion

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<thead>
<tr>
<th>Nutrient</th>
<th>Amount</th>
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<tbody>
<tr>
<td>Protein</td>
<td>10.6 grams</td>
</tr>
<tr>
<td>Fat</td>
<td>2.75 grams</td>
</tr>
<tr>
<td>Calcium</td>
<td>3 milligrams</td>
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<tr>
<td>Potassium</td>
<td>166 milligrams</td>
</tr>
<tr>
<td>Iron</td>
<td>1.17 milligrams</td>
</tr>
<tr>
<td>Fiber</td>
<td>0 grams</td>
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</table>

Ground Pork
1.28 oz/portion

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<tr>
<th>Nutrient</th>
<th>Amount</th>
</tr>
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<tbody>
<tr>
<td>Protein</td>
<td>9.38 grams</td>
</tr>
<tr>
<td>Fat</td>
<td>7.53 grams</td>
</tr>
<tr>
<td>Calcium</td>
<td>8 milligrams</td>
</tr>
<tr>
<td>Potassium</td>
<td>131 milligrams</td>
</tr>
<tr>
<td>Iron</td>
<td>0.47 milligrams</td>
</tr>
<tr>
<td>Fiber</td>
<td>0 grams</td>
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</table>

Cheddar cheese
0.64 oz/portion

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<tbody>
<tr>
<td>Protein</td>
<td>4.15 grams</td>
</tr>
<tr>
<td>Fat</td>
<td>6.04 grams</td>
</tr>
<tr>
<td>Calcium</td>
<td>129 milligrams</td>
</tr>
<tr>
<td>Potassium</td>
<td>14 milligrams</td>
</tr>
<tr>
<td>Iron</td>
<td>0.03 milligrams</td>
</tr>
<tr>
<td>Fiber</td>
<td>0 grams</td>
</tr>
</tbody>
</table>
TERIYAKI CHICKEN AND RICE

INGREDIENTS:

- Chicken breasts
- Teriyaki sauce
- White rice
  - Orange juice
  - Dijon mustard
  - Dried parsley
  - Honey

TOTAL NUTRIENTS/PORTION:

<table>
<thead>
<tr>
<th>Nutrient</th>
<th>Per Portion</th>
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<tbody>
<tr>
<td>Calories</td>
<td>250 kcal</td>
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<tr>
<td>Carbohydrates</td>
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<tr>
<td>Protein</td>
<td>20.6 grams</td>
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<tr>
<td>Fat</td>
<td>2.1 grams</td>
</tr>
<tr>
<td>Fiber</td>
<td>0.3 grams</td>
</tr>
<tr>
<td>Iron</td>
<td>2.33 milligrams</td>
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INGREDIENT FACTS:

Chicken breasts
2 oz/portion

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<tr>
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<tr>
<td>Fat</td>
<td>2.03 grams</td>
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<tr>
<td>Calcium</td>
<td>9 milligrams</td>
</tr>
<tr>
<td>Potassium</td>
<td>146 milligrams</td>
</tr>
<tr>
<td>Iron</td>
<td>0.59 milligrams</td>
</tr>
<tr>
<td>Fiber</td>
<td>0 grams</td>
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</table>

Teriyaki sauce
1 serving

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<tbody>
<tr>
<td>Protein</td>
<td>0.73 grams</td>
</tr>
<tr>
<td>Fat</td>
<td>0.12 grams</td>
</tr>
<tr>
<td>Calcium</td>
<td>8 milligrams</td>
</tr>
<tr>
<td>Potassium</td>
<td>0 milligrams</td>
</tr>
<tr>
<td>Iron</td>
<td>0.40 milligrams</td>
</tr>
<tr>
<td>Fiber</td>
<td>0 grams</td>
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</table>

White rice
0.5 cups/serving

<table>
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<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protein</td>
<td>2.21 grams</td>
</tr>
<tr>
<td>Fat</td>
<td>0.20 grams</td>
</tr>
<tr>
<td>Calcium</td>
<td>3 milligrams</td>
</tr>
<tr>
<td>Potassium</td>
<td>27 milligrams</td>
</tr>
<tr>
<td>Iron</td>
<td>1.39 milligrams</td>
</tr>
<tr>
<td>Fiber</td>
<td>0.3 grams</td>
</tr>
<tr>
<td>Food Card</td>
<td>Nutritional Content</td>
</tr>
<tr>
<td>-----------</td>
<td>---------------------</td>
</tr>
<tr>
<td><strong>Tofu (Firm)</strong>&lt;br&gt;¼ block</td>
<td>Protein – 7.32 grams&lt;br&gt;Fat – 3.38 grams&lt;br&gt;Calcium – 553 milligrams&lt;br&gt;Potassium – 192 milligrams&lt;br&gt;Iron – 2.15 grams&lt;br&gt;Fiber – 1.9 grams</td>
</tr>
<tr>
<td><strong>Wild Rice</strong>&lt;br&gt;½ cup</td>
<td>Protein – 3.27 grams&lt;br&gt;Fat – 0.28 grams&lt;br&gt;Calcium – 2 milligrams&lt;br&gt;Potassium – 83 milligrams&lt;br&gt;Iron – 0.5 grams&lt;br&gt;Fiber – 1.5 grams</td>
</tr>
<tr>
<td><strong>Tempeh</strong>&lt;br&gt;3 ounces</td>
<td>Protein – 16.92 grams&lt;br&gt;Fat – 9.67 grams&lt;br&gt;Calcium – 82 milligrams&lt;br&gt; Potassium – 341 milligrams&lt;br&gt;Iron – 1.81 milligrams&lt;br&gt;Fiber – 0 grams</td>
</tr>
<tr>
<td><strong>Corn Tortilla</strong>&lt;br&gt;1 ounce</td>
<td>Protein – 1.62 grams&lt;br&gt;Fat – 0.81 grams&lt;br&gt;Calcium – 50 milligrams&lt;br&gt; Potassium – 44 milligrams&lt;br&gt;Iron – 0.4 grams&lt;br&gt;Fiber – 1.5 grams</td>
</tr>
<tr>
<td><strong>Green Peas (Raw)</strong>&lt;br&gt;½ cup</td>
<td>Protein – 3.93 grams&lt;br&gt;Fat – 0.29 grams&lt;br&gt;Calcium – 18 milligrams&lt;br&gt; Potassium – 177 milligrams&lt;br&gt;Iron – 1.07 grams&lt;br&gt;Fiber – 4.1 grams</td>
</tr>
<tr>
<td><strong>Almonds</strong>&lt;br&gt;1 ounce</td>
<td>Protein – 5.94 grams&lt;br&gt;Fat – 14.90 grams&lt;br&gt;Calcium – 76 milligrams&lt;br&gt; Potassium – 208 milligrams&lt;br&gt;Iron – 1 gram&lt;br&gt;Fiber – 3.5 grams</td>
</tr>
<tr>
<td>Food</td>
<td>Serving Size</td>
</tr>
<tr>
<td>-----------------------</td>
<td>--------------</td>
</tr>
<tr>
<td>Black Beans (cooked)</td>
<td>½ cup</td>
</tr>
<tr>
<td>Brown Rice (Cooked)</td>
<td>½ cup</td>
</tr>
<tr>
<td>Green Beans (Cooked)</td>
<td>½ cup</td>
</tr>
<tr>
<td>Broccoli (Cooked)</td>
<td>½ cup</td>
</tr>
<tr>
<td>Baked Potato (With skin)</td>
<td>1 medium</td>
</tr>
<tr>
<td>Kale (Cooked)</td>
<td>½ cup</td>
</tr>
</tbody>
</table>
Lesson 5 – Increasing Plant-based Foods in School Nutrition Programs

**Acorn Squash (Cooked)**

½ cup, cubes

- Protein – 1.15 grams
- Fat – 0.14 grams
- Calcium – 45 milligrams
- Potassium – 448 milligrams
- Iron – 0.95 grams
- Fiber – 4.5 grams

**Carrots (Raw)**

¼ cup

- Protein – 0.30 grams
- Fat – 0.08 grams
- Calcium – 11 milligrams
- Potassium – 102 milligrams
- Iron – 0.1 grams
- Fiber – 0.9 grams

**Corn (Yellow)**

½ cup

- Protein – 2.54 grams
- Fat – 1.12 grams
- Calcium – 2 milligrams
- Potassium – 162 milligrams
- Iron – 0.34 grams
- Fiber – 1.8 grams

**Cherry Tomatoes**

¼ cup

- Protein – 0.50 grams
- Fat – 0 grams
- Calcium – 4 milligrams
- Potassium – 88 milligrams
- Iron – 0 grams
- Fiber – 0.1 grams

**White Beans (Canned)**

½ cup

- Protein – 9.51 grams
- Fat – 0.38 grams
- Calcium – 97 milligrams
- Potassium – 595 milligrams
- Iron – 3.9 grams
- Fiber – 6.3 grams

**Asparagus (Cooked)**

½ cup

- Protein – 2.16 grams
- Fat – 0.20 grams
- Calcium – 21 milligrams
- Potassium – 202 milligrams
- Iron – 0.82 grams
- Fiber – 1.8 grams
<table>
<thead>
<tr>
<th>Food</th>
<th>Amount</th>
<th>Protein</th>
<th>Fat</th>
<th>Calcium</th>
<th>Potassium</th>
<th>Iron</th>
<th>Fiber</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soybeans</td>
<td>½ cup</td>
<td>11.12 g</td>
<td>5.76 g</td>
<td>130 mg</td>
<td>485 mg</td>
<td>2.25 g</td>
<td>3.8 g</td>
</tr>
<tr>
<td>Dates</td>
<td>¼ cup</td>
<td>0.9 g</td>
<td>0.6 g</td>
<td>14 mg</td>
<td>241 mg</td>
<td>0.37 g</td>
<td>3 g</td>
</tr>
<tr>
<td>White Mushrooms (Raw)</td>
<td>½ cup</td>
<td>1 g</td>
<td>0 g</td>
<td>1 mg</td>
<td>111 mg</td>
<td>0.17 g</td>
<td>0.3 g</td>
</tr>
<tr>
<td>Mixed Vegetables</td>
<td>1 cup</td>
<td>4.22 g</td>
<td>0.41 g</td>
<td>44 mg</td>
<td>474 mg</td>
<td>1.71 g</td>
<td>4.9 g</td>
</tr>
<tr>
<td>Pinto Beans (Canned)</td>
<td>½ cup</td>
<td>7.70 g</td>
<td>0.56 g</td>
<td>39 mg</td>
<td>373 mg</td>
<td>1.79 g</td>
<td>7.7 g</td>
</tr>
<tr>
<td>Spinach (Raw)</td>
<td>1 cup</td>
<td>0.86 g</td>
<td>0.12 g</td>
<td>30 mg</td>
<td>167 mg</td>
<td>0.8 g</td>
<td>0.7 g</td>
</tr>
</tbody>
</table>
Spaghetti Squash
½ cup
Protein – 0.51 grams
Fat – 0.20 grams
Calcium – 16 milligrams
Potassium – 91 milligrams
Iron – 0.26 milligrams
Fiber – 1.1 grams

Zucchini (cooked w/skin)
¼ cup
Protein – 0.51 grams
Fat – 0.16 grams
Calcium – 8 milligrams
Potassium – 119 milligrams
Iron – 0.17 milligrams
Fiber – 0.5 grams

Yellow Squash (cooked w/skin)
¼ cup
Protein – 0.47 grams
Fat – 0.18 grams
Calcium – 10 milligrams
Potassium – 80 milligrams
Iron – 0.17 milligrams
Fiber – 0.5 grams

Avocado
½ cup, pureed
Protein – 2.25 grams
Fat – 17.72 grams
Calcium – 15 milligrams
Potassium – 583 milligrams
Iron – 0.70 milligrams
Fiber – 7.8 grams

Sweet potato
1 small
Protein – 1.21 grams
Fat – 2.0 grams
Calcium – 23 milligrams
Potassium – 285 milligrams
Iron – 0.41 milligrams
Fiber – 2.0 grams

Sunbutter spread
2 Tbsp.
Protein – 6.00 grams
Calcium – 0 milligrams
Potassium – 180 milligrams
Iron – 1.44 milligrams
Fiber – 2.0 grams
Recipe Changes Worksheet

Describe the changes that you made to the recipe

Explain why you made those changes.

Which nutrients increased and by how much? Which decreased?
Goal Setting – Increasing Plant-based Foods in School Nutrition Programs

1. Take a look through the food cards. Are there any plant-based ingredients or foods you enjoy? How could you include these in your meals or recipes?

2. Thinking about recipes that are served at your school, what are some changes you could suggest to make some of these more plant-based?
Focus on Food Lesson 5 Newsletter

The optional newsletter on the following pages is designed to help reinforce the concepts learned. If offering this course in a single workshop, you may wish to distribute the lesson newsletters weekly in order to help refresh participants’ memory and solidify the concepts.
Did you know?

Did you know?

Getting the benefits from plant-based foods doesn’t mean you have to be 100% meat-free! It just means focusing on healthy plant-based foods!

Plant-based is great!

Maybe you’ve heard that meatless meals are a trend. Not only are they trendy, they can be really healthy too! Plant-based foods are some of the best sources of several nutrients, such as potassium, vitamin C, and folate.

There are many reasons why people are choosing to eat plant-based meals, such as for personal health benefits, environmental concerns, or because it can be less expensive than eating meat. Some people even choose to eat an entirely plant-based diet, which is usually referred to as a vegetarian diet. So how can we eat a more plant-based diet? Why should we?

Turn the page to learn more!
Are all vegetarian diets the same?

Nope! There are many different types of vegetarian diets. Here are a few of the most common ones:

**Vegetarian:** A diet that does not include meat, poultry, or fish, but might include eggs, dairy, or both.

**Semi-vegetarian:** A diet that is mostly vegetarian, but includes small amounts of poultry, eggs, dairy, or fish from time to time.

**Pescatarian:** A diet that includes fish, but not other types of meat.

**Vegan:** A diet that does not contain any animal products including meat, poultry, fish, eggs, dairy, or gelatin.

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Going Plant-Based for Your Health

Benefits of a plant-based diet

**Plant-based diets** have many potential health benefits. Research shows that vegetarians have a lower risk of developing heart disease and certain types of cancer.

This might be because vegetarian diets often have more fiber and lower saturated fat compared to diets with meat.

Let’s not forget all the great nutrients in plant-based foods including dietary fiber and phyttonutrients (which aren’t found in animal foods at all!), as well as calcium, iron, potassium, folate, vitamin A, and vitamin C.

Most Americans aren’t eating enough fruits, vegetables, and whole grains and eating plant-based meals is a great way to add more of these foods to your diet!

Plant-based diets are also a way to introduce children to fruits and vegetables at a young age to help them start healthy habits that last a lifetime!
Delicious Dunking Dip Recipe!

This recipe is a great plant-based snack that goes well with a variety of fresh veggies and whole grain crackers or pitas. 
*Recipe serves 4-6 people*

**Dunking Dip:**
1. 15-oz can cannellini or garbanzo beans, drained
2. 3 cloves garlic, roughly chopped
3. 1 cup spinach
4. 2 tablespoons tahini (sesame seed paste)
5. 2 tablespoons lemon juice from 2 lemons
6. 1/4 cup extra virgin olive oil
7. 2 tablespoons rice vinegar
8. 1/2 teaspoon salt

**Dunkers:**
- Carrots sliced into large medallions (baby carrots work great too!)
- Broccoli, cut into bite-size florets
- Radishes, sliced
- Cauliflower, cut into bite-size pieces
- Asparagus, sliced into bite-size pieces
- Whole wheat pita bread, cut into pieces
- Whole wheat crackers

**Directions:**
1. In a food processor or blender, blend all Dunking Dip ingredients for approximately 2 minutes until smooth.
2. Place bean dip in a serving bowl.
3. Scoop bean dip with various vegetable and whole grain dunkers to enjoy!

*Recipe courtesy of Cooking Up Healthy Choices. For more information about this curriculum, please visit: http://cns.ucdavis.edu/programs/shcp/cooking.html.*

**What is fortification?**

Fortifying foods with nutrients means that more is added to the original amount. For those that go entirely plant-based (such as vegetarians or vegans), fortified foods are important. For example, vegetarians who don’t eat dairy should get calcium from a combination of foods that are calcium-fortified. In fact, schools that serve soy milk in the lunch or breakfast program need to make sure that the soy milk they serve is fortified so that it has the same amount of nutrients as regular milk.
Five Tips for Planning Plant-Based Meals

1. Build your meals around protein: Use sources that are naturally low in fat such as: beans, lentils, and rice. Avoid overloading meals with high-fat cheeses to replace meat.

2. Use calcium-fortified, soy-based beverages such as soy milk: These can provide calcium in amounts similar to milk, and also be lower in saturated fat.

3. Choose complementary foods: Complementary foods such as beans and brown rice, lentil soup and bread, tofu or tempeh with quinoa, or even a peanut butter sandwich (but don’t forget to go whole grain) allow the right combinations of essential protein to be included in the diet.

4. Turn meat-based dishes into plant-based dishes: Many recipes that contain meat can be adapted to be plant-based by substituting tofu, beans, or lentils for meat.

5. Try ethnic cuisines: Indian, Middle Eastern, Hispanic, and Asian foods have many plant-based dishes that have plenty of protein from beans, nuts, and high-protein grains.

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Getting Your Nutrients from Plant-Based Sources

**Protein**: Beans, nuts, quinoa, tofu, and other soy-based protein foods

**Iron**: Dried or fortified beans, cereals, spinach, chard, and dried fruit

**Calcium**: Collard greens, spinach, almonds, calcium-fortified orange juice, fortified cereal, fortified soymilk, and tofu

**Vitamin B12**: Vitamin supplements, fortified breakfast cereals, fortified soymilk, and nutritional yeast

**Vitamin D**: Fortified breakfast cereals, fortified soymilk, and fortified orange juice

**Omega-3 Fatty Acids**: Walnuts and ground flaxseeds

**Zinc**: Whole grains, nuts, and legumes
Test your knowledge with the plant-based foods quiz!

1. What does it mean for a food to be fortified?
   a. It is unprocessed.
   b. It has fewer calories.
   c. Nutrients are removed in processing.
   d. More of a nutrient is added to the original amount.

2. Which of the following is generally true about vegan diets?
   a. They contain small amounts of eggs and dairy.
   b. They include small amounts of poultry and fish.
   c. No animal products of any kind are included.
   d. They only include raw foods.

3. True or false: Walnuts are a source of omega-3 fatty acids.
   □ True
   □ False

4. Which of these foods is a good source of protein?
   a. Quinoa
   b. Dried fruit
   c. Orange juice
   c. Bell pepper

Check your answers at the bottom of the page!

The Results are In!

If you got all four right:
You really know your plant-based foods! Keep on learning more and trying new foods.

If you got two or three right:
You’re on the right track! Try finding the information you missed in the other pages of the newsletter to become a nutrient master.

If you got one or less right:
It just means you have more chances to learn! Try reading through this newsletter again to learn more about what you missed.