

LESSON GUIDE

EXPLORE NUTRITION

For ages 9-11
Upper Elementary



Foods work better together.



Designed for health and educational settings.

Supporting educators in exploring
food, health, and nutrition concepts.

Designed to pair with the Lesson Workbook and Learn & Do Slides.

Dear Educator,

Welcome to the *Explore Nutrition Unit*! Curiosity fuels learning. This program was designed as an engaging, evidence-based experience that inspires healthy eating patterns.

This unit allows for **flexible delivery across settings** for those who want to explore the role of food in health, recognize nutrition for the body and brain, identify influences on choices, and discover parts within food systems.

A collaboration between dietitians and educators across California built this nutrition unit with these foundational principles in mind:

- Childhood and adolescence are a time of growth, development, and building health habits, requiring nutrient-dense eating patterns that include a variety of dairy foods, vegetables, fruits, whole grains, protein and healthy fats from natural sources.
- Age-appropriate nutrition education acknowledges that children are not the main food buyers, preparers or decision makers but they are building attitudes and knowledge about food.
- Students bring real-life experiences to the learning process, reflecting their unique knowledge, cultures, preferences, and access to food.

This unit can be accessed online at DairyCouncilofCA.org. It includes the educator guide, a printed/printable workbook, and a slide deck with embedded videos.

The design is meant to provide you:

- Flexibility to adjust for time and abilities within your class.
- Social and emotional skill-building opportunities, supporting self-awareness, self-management, social understanding, and responsible decision making.
- Alignment to [core academic standards](#) for 4th and 5th grades (teachers who developed the lessons also reported relevance for additional ages).

When students see their own **foods and cultures** reflected in nutrition lessons, they are more likely to engage and connect learning to their own lives. We aimed to include a variety of culturally diverse foods and experiences while recognizing that no lesson can fully represent every culture or community. Opportunities for students to share their own foods and traditions are included throughout the lessons.

With gratitude for your partnership in nutrition education,



TABLE OF CONTENTS

 Click any Topic or Lesson title below to jump directly to that page in the guide.

TOPIC 1

Exploring Food, Health, and Nutrition	4
Lesson 1: Food Group Power	7
Lesson 2: Nutrients to the Rescue	9
Lesson 3: Food around the World	11
Lesson 4: Foods Work Together	13

TOPIC 2

Exploring Food Labels and Information	15
Lesson 1: What Is a Food Label?	17
Lesson 2: Food Label Detectives	19
Lesson 3: How Do We Know It's True?	21

TOPIC 3

Exploring Food Processing and Packaging	23
Lesson 1: Food Changes from Farm to You	26
Lesson 2: Gut Health	28
Lesson 3: Food Package Investigation	30
Lesson 4: Food's Journey from Farm to You	32
Acknowledgments & Contributors	33

EXPLORING FOOD, HEALTH, AND NUTRITION

Students learn that healthy eating patterns include a variety of foods that work together to support health, growth, and energy for the body and brain.

#	Lesson	Student Learning Objectives
1	Food Group Power	Define health and recognize a variety of foods that support health.
2	Nutrients to the Rescue	Recognize the types of nutrients in foods and how they help the body.
3	Food around the World	Recognize that dairy, vegetables, fruits, grains, and protein foods appear in many cuisines around the world.
4	Foods Work Together	Explain how foods work together to support health, growth, energy, and learning.

MATERIALS FOR ALL LESSONS

-  [Lesson Workbook](#) (print or PDF) – Specific pages are noted in the lesson instructions.
-  [Learn & Do Slides](#) (optional) – Slides support group discussions or independent work.

ESTIMATED TIME

Time estimates assume all lesson components are completed. Activities may be adapted, shortened, or spread across multiple sessions to meet your needs.

VOCABULARY

Vocabulary words are listed at the beginning of the workbook and in the lesson instructions.

Lesson	Word	Definition
1. Food Group Power	Healthy	beneficial to the body; being well
	Food groups	one way to sort foods based on some of the nutrients they contain and how they help the body
	Nutrition	how the body uses food for energy, health, and growth

Lesson	Word	Definition
2. Nutrients to the Rescue	Nutrient	a tiny part of food that helps the body and brain grow, work, and stay healthy
3. Food around the World	Culture	the beliefs, behaviors, and ways of life that are unique to a group of people, a family, or a community
4. Foods Work Together	Eating pattern	the mix of foods and drinks a person usually eats over time
	Variety	a mix of different types of food from each food group

NUTRITION NOTES

Notes support your understanding as an educator and provide additional context that can help guide student discussions and questions.

VARIETY SUPPORTS HEALTH

The Dietary Guidelines for Americans recommends eating a variety of foods that provide nutrients like vitamins and minerals.

Examples include:

- **Dairy** foods like milk, yogurt, and cheese
- **Vegetables** like leafy greens, broccoli, bell peppers, carrots, and potatoes
- **Fruits** like berries, citrus, apples, and bananas
- **Whole grains** like oats, rice, and whole wheat bread
- **Protein** foods like beans, nuts, seeds, eggs, fish, poultry, and lean beef
- **Healthy fats** naturally found in foods like nuts, seeds, seafood, olives, avocados, and some dairy foods

Many more familiar foods can be added to the examples by you and your students.

FOODS THAT DON'T FIT INTO A GROUP

Lessons are focused on foods that give nutrition. Foods that don't fit into a group likely don't provide a lot of nutrients. They may be widely available to students and provide comfort or enjoyment. These foods can fit into healthy eating patterns when nutritious foods are included most often.

Avoid teaching students to label foods or nutrients as “good” or “bad”. Foods contain many nutrients and components that work together in complex ways.

CHILDREN AND ADOLESCENTS NEED FUEL AND NUTRIENTS TO GROW STRONG AND STAY ENERGIZED

Childhood and adolescence is a unique growth period when bodies need enough energy (calories) and nutrients to support rapid growth, bone and brain development, learning, and overall health. During these years, young people often don't get enough of the following nutrients:

- **Calcium and vitamin D** (for bones and teeth)
- **Iron** (for carrying oxygen in the blood and supporting energy)
- **Potassium and fiber** (for heart and digestive health)

Rather than focusing on rules or exact amounts, when children eat a variety of dairy foods, vegetables, fruits, whole grains and proteins regularly, they can meet their nutrient needs.

FOCUS ON PATTERNS, NOT PERFECTION

General nutrition lessons do not need to focus on strict serving sizes or “perfect meals”. Healthy eating is a pattern built over time and can include many different foods. Encourage students to think about enjoying a variety of foods from different food groups each day, whenever possible.

SIMPLIFY NUTRITION

Nutrition can be a complex topic. Children, especially, don't need to be concerned about memorizing specific nutrients or quantities. Foods contain different nutrients, and nutrients have different jobs to help the body. A helpful takeaway is that foods work together to support health.

KEEP IN MIND

Healthy eating can look different based on culture, traditions, preferences, health needs, food access, and family routines.

ESTIMATED TIME (ALL COMPONENTS): 30–40 minutes



QUESTION TO EXPLORE:

What can food groups teach you about healthy eating?

BIG IDEAS FOR STUDENTS:

- One way to define healthy eating is by eating a mix of foods from different groups each day and week: dairy, vegetables, fruits, grains, and protein foods.
- Eating different types of foods from all of the groups supports health, growth, energy, learning, and performance.
- Think of food groups like players on a team or instruments in a band. Each one has its own strengths and contributes something different. Food groups work the same way. Each group helps the brain and body in different ways.
- Nutrition is how the body uses food. Eating is a practice that cares for the body and supports many areas of health.

INSTRUCTION:

PART 1: FOOD & HEALTH

1. **Brainstorm** with students: *What does it mean to be healthy?* Being healthy can look different for everyone, and there are many ways to eat healthfully. Examples include eating foods to fuel the body, being active, or getting enough sleep.
2. **Workbook “What Does It Mean to Be Healthy?”** Students use the slide or workbook to create a list or word map with meanings of the word “healthy.”
3. **Show** slides with examples of being healthy and share with students.
4. **Vocabulary.** In the workbook, review the words **healthy**, **food groups**, and **nutrition**.

PART 2: FOOD GROUPS

1. **Introduce.** *Food groups are one way to sort foods by some of the nutrition they provide and the ways they help your body. They are a reminder that many different foods work together as part of healthy eating.*
2. **Workbook “What Do You Know About Food Groups?”** Students complete the Know and Wonder sections, writing what they already Know about the food groups and what they Wonder about the food groups.

3. **Video.** Students watch [Let's Eat Healthy Together](https://www.dairyCouncilofCA.org/Together) Episode 1, "Food Adventure" at DairyCouncilofCA.org/Together and linked in the slides. Students may write notes in the Know, Wonder, Learn Table as they watch. They will finish filling in the Learn section at the end of the lesson.
4. **Workbook "Food Groups."** Give students time to explore the food groups as individuals, partners, or a class. Students:
 - Circle foods that are familiar.
 - Put a star next to foods that they would like to eat or try.
 - Draw or write familiar or favorite foods in the boxes below each food group (it's OK to guess which group they belong to).



EDUCATOR NOTE: School meals help many students access a variety of nutritious foods throughout the day.

5. **Discuss.** Invite students to share about their circles, stars, and food additions. Remind students that some foods may be similar to each other and others will be different. Highlight the variety of foods on the chart and selected by students.
6. **Reflect.** Students complete Learn on the Know, Wonder, Learn Table. What did the students learn about food groups?
7. **What Did Students Discover?** Invite students to answer the Question to Explore: *What can food groups teach you about healthy eating?* Tip: Many different types of foods from different food groups give the body what it needs.

NUTRIENTS TO THE RESCUE

ESTIMATED TIME (ALL COMPONENTS): 35–75 minutes

OPTIONAL PREPARATION: Review linked student comic strip resources and examples, which can be used in place of or in addition to the workbook page.



QUESTION TO EXPLORE:

What is healthy eating?

BIG IDEAS FOR STUDENTS:

- Food gives nutrients that are needed for bones, muscles, the brain, energy, health, and every job in the body.
- Nutrients are small and mighty.
- No single food or single nutrient does every job.
- Eating different types of foods most of the time gives the body different types of nutrients (and can taste good, too).

INSTRUCTION:

1. **Introduce.** *Have you thought about how foods help your body? Nutrients are the tiny superheroes with big jobs in your body.*
2. **Vocabulary.** In the workbook, review the word **nutrient**.
3. **Video.** Watch [Let's Eat Healthy Together Episode 2, "Team Nutrients"](https://www.dairycouncilofca.org/Together) at DairyCouncilofCA.org/Together and linked in the slides. The video discusses eating a variety of foods to get different nutrients.
4. **Workbook "Meet the Nutrient Team!"** Review with students the visual that describes what nutrients do for the body, found in both the lesson workbook and the slides. The nutrients defined on the visual are **carbohydrate, fat, mineral, protein, vitamin, and water**.

Optional: Create a tree map or graphic organizer of the nutrients.

5. **Workbook "Comic Strip: Nutrients to the Rescue."** Students create a comic strip using one or more nutrients as superhero characters who solve a problem, help a student, or perform a function in the body. Consider normal life scenarios where these nutrients are helpful. Examples are Powerful Protein, Cool Calcium, or Magnificent Minerals to the rescue for growing bones, energizing between school and activities, healing after an injury, etc.

**IDEAS:**

- Use online digital tools that help build comic strips.
- In place of a comic strip, students can create an infographic or presentation, record a podcast or movie, write a story, act out a performance, or draw a poster on the role of nutrients in health.
- If in a school, ask the cafeteria staff about hanging up the comic strips as visual nutrition promotion.

6. **Discuss.** Students present their comic strips to the class, group and/or families.
7. **What Did Students Discover?** Invite students to answer the Question to Explore: *What is healthy eating?* Tip: Healthy eating means eating different types of foods most of the time to get different nutrients.

FOOD AROUND THE WORLD

ESTIMATED TIME (ALL COMPONENTS): 30–40 minutes

OPTIONAL PREPARATION: Prepare to show a world map to locate countries named in this activity.



QUESTION TO EXPLORE:

What kind of food culture influences what you eat?

BIG IDEAS FOR STUDENTS:

- Many of the same foods are enjoyed in more than one country or culture.
- Cultures around the world have nutritious foods with unique flavors and ingredients.
- Food is part of celebrations, culture, family, and community.
- Trying and learning about food from different cultures can help people understand and respect one another.

INSTRUCTION:

1. **Vocabulary.** In the workbook, review the word **culture**.
2. **Video.** Watch [Let's Eat Healthy Together](https://www.dairycouncilofca.org/Together) Episode 10, "Food Culture and Traditions" at DairyCouncilofCA.org/Together and linked in the slides. The video explains that food culture and traditions connect people to their heritage, family, community, and selves.
3. **Poll.** *Do you enjoy food from different cultures at home, in restaurants, or at school?* Ask for students to raise hands and count or keep a tally. Examples: Chinese, Italian, Mexican, Korean, Filipino, Ethiopian, Vietnamese, Thai, Indian, American, etc. You can dig deeper and have students name their favorite meals.
4. **Discuss.** Help students engage in discussion with a partner, share with the class, or write independently. *What foods, practices, or traditions are important to your family or culture?*
5. **Workbook "Where in the World?"** Students fill out the column "Where do you think it came from?" After showing the slides in the next step, students can write the correct answers in the column "Where did it come from?"
6. **Game.** Play Food Around the World found in the slide deck. Ask students to look at each food picture, guessing the culture or country they connect the food with and where in the world it is popular and eaten often. Tip: Foods include spaghetti with tomato sauce, tacos, kefir/yogurt drink, sushi, cheeseburger, dumplings, arepas, tandoori chicken, and hummus and pita bread.



EDUCATOR NOTE: Some foods may be connected to more than one place because foods travel and change over time.

7. **What Did Students Discover?** Invite students to answer the Question to Explore: *What kind of food culture influences what you eat?* Tip: All answers are welcome. The lesson reinforces a message of food variety, that cultures may share foods or bring unique flavors and ingredients.

**“Where in the World?”
ANSWER
KEY**



Spaghetti with tomato sauce



Tacos



Kefir or yogurt drink

Where do you think it came from?



Where did it come from?



Italy

Mexico

Eastern Europe
and Central Asia



Sushi



Cheeseburger



Dumplings

Where do you think it came from?



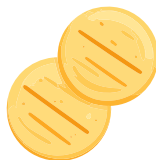
Where did it come from?



Japan

United States

China



Arepas



Tandoori Chicken



Hummus and Pita Bread

Where do you think it came from?



Where did it come from?



South America
(Columbia and Venezuela)

India

The Middle
East

FOODS WORK TOGETHER

ESTIMATED TIME (ALL COMPONENTS): 30–45 minutes

OPTIONAL PREPARATION: Gather grocery advertisements or other photos of food if offering a collage option in place of or in addition to drawing foods.



QUESTION TO EXPLORE:

What does a meal look like in your eating pattern?

BIG IDEAS FOR STUDENTS:

- An eating pattern is the mix of foods and drinks a person usually eats over time.
- A meal is like a chapter in a book. Many meals and foods make up an eating pattern, like chapters make up a whole story.
- Healthy eating patterns have a variety of foods like dairy, vegetables, fruits, grains, and protein foods.
- A favorite meal probably has more than one food group.
- Meals can look different for different people because what a person likes, where a person lives and who provides the meals are unique.

INSTRUCTION:

1. **Review** the Food Groups on the Lesson 1 workbook page and the Lesson 4 slides.
2. **Vocabulary.** In the workbook, review the words **eating pattern** and **variety**.
3. **Workbook “Build a Meal.”** Students draw, list, or create a collage about a favorite meal or a few foods that they commonly eat. Next, students label each food that is a part of the meal and list the food groups that are part of the meal: dairy, vegetables, fruits, grains, protein foods. Encourage students to use foods from their cultures and familiar meals.
4. **Discuss.** Students share about their meals with partners, teams, or the whole class. Remind students that everyone’s mealtime will look different. Encourage students to describe what they like about the meal. Take this opportunity to ask students questions.
 - *How does it taste?*
 - *What do you like about it?*
 - *Why or when do you usually eat it?*
 - *Were any foods hard to put into a food group?*

**IDEA:**

Create a visual bulletin board, “Our Food Stories,” to display diverse student meal drawings or ask students to draw and label their favorite foods on a collaborative poster for display in the classroom or cafeteria.

5. **Reflect.** Complete the following statements independently using the page in the workbook or discussing with a partner or group.
 - This is my favorite meal because...
 - One meal I heard about in my class that I would like to try is...
 - Eating a variety (different types) of food supports my health because...
 - People may eat differently because...
6. **What Did Students Discover?** Invite students to answer the Question to Explore: *What does a meal look like in your eating pattern?* Tip: All answers are welcome. Mixing tasty combinations of foods helps brains and bodies get what they need.

**IDEA:**

Engage students’ curiosity by hosting an interview with food and nutrition professionals such as from the cafeteria or watch [Let’s Eat Healthy Together](https://www.dairycouncilofca.org/Together) Episode 6 “Fuel Up With School Lunch” at [DairyCouncilofCA.org/Together](https://www.dairycouncilofca.org/Together) and discuss the question: How do your meals get chosen and who helps you with your meals?

EXPLORING FOOD LABELS AND INFORMATION

Students learn how to find, understand, and evaluate information about food.

#	Lesson	Student Learning Objectives
1	What Is a Food Label?	Use a nutrition label to learn information about a food.
2	Food Label Detectives	Recognize ingredients as a source of information on a label.
3	How Do We Know It's True?	Assess if information is reliable using a checklist.

MATERIALS FOR ALL LESSONS

-  [Lesson Workbook](#) (print or PDF) – Specific pages are noted in the lesson instructions.
-  [Learn & Do Slides](#) (optional) – Slides support group discussions or independent work.

ESTIMATED TIME

Time estimates assume all lesson components are completed. Activities may be adapted, shortened, or spread across multiple sessions to meet your needs.

VOCABULARY

Vocabulary words are listed at the beginning of the workbook and in the lesson instructions.

Lesson	Word	Definition
1. What is a Food Label?	Added sugar	sugar that is put into food or drinks to add sweetness, improve texture or color, or help the food stay fresh longer
	Calories	a measure of how much energy the body gets from food
	Nutrition Facts label	a table printed on the outside of food packages that lists the nutrient content of the food inside
2. Food Label Detectives	Ingredient	one of the things that makes up a food or is part of a food

Lesson	Word	Definition
3. How Do We Know It's True?	Influence	to affect the behavior of someone
	Reliable	information that is accurate, trustworthy, and comes from a source that you can believe

NUTRITION NOTES

Notes support your understanding as an educator and provide additional context that can help guide student discussions and questions.

FOOD LABELS PROVIDE INFORMATION

An age-appropriate goal for this lesson is to help students become aware of the information found on food packages and develop curiosity about what labels can tell them. Food labels are only one source of information about a food and do not tell the full story of how a food supports health.

AVOID “GOOD” AND “BAD” FOOD MESSAGING

Avoid teaching students to label foods or nutrients as “good” or “bad.” Foods contain many nutrients and components that work together in complex ways. Looking at only one nutrient such as sugar, fat, or protein does not always give the full picture of a food. Some foods naturally contain vitamins and minerals while others have nutrients added through processing.

FOCUS ON AWARENESS, NOT COMPARISONS

The purpose of this topic is not to encourage students to closely monitor or compare every food they eat. Reading labels before eating is not necessary for most children unless needed for allergies or other health reasons (and can create disordered thinking around food). Instead, encourage students to:

- notice the kinds of information labels provide.
- ask questions.
- think critically about food messages and packaging.

FOOD CHOICES ARE INFLUENCED BY MANY FACTORS

Families may choose foods for many reasons, including:

- convenience and time
- cost and availability
- culture and traditions
- taste and familiarity
- health needs and preferences

Healthy eating can look different for different people and families.

WHAT IS A FOOD LABEL?

ESTIMATED TIME (ALL COMPONENTS): 30 minutes

OPTIONAL PREPARATION:

- Bring or ask students to bring food packages or photos of packages and labels.
- Cover the label of a food product so students can guess what's inside.



QUESTION TO EXPLORE:

What do you think you can learn about food from its package?

BIG IDEAS FOR STUDENTS:

- Food labels give information about what is in a food package.
- Food labels can help people learn about ingredients and nutrition in foods.
- Packages and labels are designed to communicate information and may influence food choices.

INSTRUCTION:

1. **Introduce.** Ask students the following questions:

- *Have you ever noticed a label on any of the foods you eat?*
- *Where have you seen a food label on a package?*
- *Why might a food not have a label?*
- *Have you ever noticed a family member looking at a package's food label when grocery shopping?*



EDUCATOR NOTE: Not all foods require labels. Foods such as fresh fruits and vegetables and single-ingredient foods like eggs may not have labels.

2. **Video.** Watch [Let's Eat Healthy Together Episode 4, "Label Detectives"](https://www.dairycouncilofca.org/Together) at DairyCouncilofCA.org/Together and linked in the slides. Before watching the video, ask students to consider the Question to Explore: *What do you think you can learn about food from its package?*

Optional: Duplicate the activity in the video. Shake an unlabeled box or a box with the label covered or let students take turns shaking it. The students guess what they think is inside by listening only. They learn why labels are important to give information about a food because it is hard to guess what's inside.

3. **Vocabulary.** In the workbook during or after the video, review the words **added sugar**, **calories**, and **Nutrition Facts label**.



EDUCATOR NOTE: In the United States, the Food and Drug Administration helps regulate food labels, including what information appears on packages and whether certain health claims are allowed.

4. **Workbook “Nutrition Facts Label.”** Students read the different parts of a Nutrition Facts label. To review the content, ask students to complete these sentence frames in the workbook:

The package gives me _____ to know more about the food. (information)
 Ingredients are listed on the _____ of the package. (label)
 The _____ Facts label lists the vitamins in a food. (Nutrition)

5. **Reflect.** Students discuss or write their answers to the following questions:
 - *Why do food packages need labels?*
 - *What can you learn from a label? What might be missing?*
 - *Why are ingredients listed on a label?*
6. **What Did Students Discover?** Invite students to answer the Question to Explore: *What do you think you can learn about food from its package?* Tip: Answers may vary widely, including the name of the food, how much is inside, if the package has nutrients, or what the food looks like inside the package.

FOOD LABEL DETECTIVES

ESTIMATED TIME (ALL COMPONENTS): 30–40 minutes

OPTIONAL PREPARATION: Bring in or ask students to bring in food packages with ingredients or photos of ingredient labels.



QUESTION TO EXPLORE:

What clues can ingredients give you about foods?

BIG IDEAS FOR STUDENTS:

- Food labels and ingredients can give information about foods.
- Ingredients can give clues about how a food was made and what it contains.
- Food labels can help people learn about foods, but they do not tell the whole story.
- Being curious about food information can help people learn more about foods and nutrition.

INSTRUCTION:

1. **Introduce.** Display any food packages or images of food packages and labels that you have available. Invite students to share what they remember or know about the kinds of information that is learned from a food package. Ask students to explain to each other the parts they recognize on the Nutrition Facts label. *Where would you find the ingredients in the package? What is an ingredient?*

This step may be a review if you watched the episode  “[Label Detectives](#)” in Lesson 1.

2. **Vocabulary.** In the workbook, review the word **ingredient**. *Why might it be important to know the ingredients in a food?* Tip: Answers could include allergies, curiosity, health, etc.



EDUCATOR NOTE: Because everyone has different access to foods, and because foods are complex, it is best not to highlight specific ingredients as “bad.”

3. **Workbook “Guess the Mystery Label.”** Reference the mystery labels on the page or slide. Students try to guess the food just from its ingredients. Ask students to share their answers and discuss their experience. Tip: Answers and explanations are on the slide: (1) milk, (2) applesauce, (3) whole-wheat bread.

Optional: Students can read the first 5 ingredients on the food package they brought in, and the class can guess the food.

4. **Discuss.** Remind students that labels are a source of a lot of information, but the labels don't always give all the information about a food. *What might be missing?* Tip: Answers include how it tastes, where a food comes from, etc.



EDUCATOR NOTE: Remind students that their job is to be curious about new information and to try new foods, not to look at labels for choosing what to eat.

5. **What Did Students Discover?** Invite students to answer the Question to Explore: *What clues can ingredients give you about foods?* Tip: Ingredients may tell what's in the food, give clues about taste, or alert people to an allergy risk.



IDEA:

Sometimes ingredients are easy to read. Other times the words are long and scientific. Consider giving the class some larger words that they research to find the everyday term and role of the ingredient in food. They can present results to the class. Examples: Sodium bicarbonate is baking soda. Sodium chloride is table salt. Ascorbic acid is vitamin C.

"Guess the Mystery Label" ANSWER KEY



HOW DO WE KNOW IT'S TRUE?

ESTIMATED TIME (ALL COMPONENTS): 30–40 minutes



QUESTION TO EXPLORE:

How do you know what information is true?

BIG IDEAS FOR STUDENTS:

- People learn information in many ways and from many sources.
- Not all information a person hears or sees is accurate or reliable.
- Asking questions and finding answers can help to decide if information is true or useful.
- Information from the internet, advertisements, media, and other sources can influence what people think and do.

INSTRUCTION:

1. **Introduce.** Students individually or as a group discuss or write their responses to the following questions:
 - *Where do you learn new information? Tip: Answers could be watching videos, listening to a teacher, talking to friends or family, reading on the internet, books, commercials, etc.*
 - *How do you know if the information is true or not? How do you know if it is fact or opinion?*
 - *Have you ever learned something and then later found out it was not correct?*
2. **Vocabulary.** In the workbook, review the words **influence** and **reliable**.
3. **Workbook “Reliable Source Checklist.”** Review the checklist before students answer the questions. The checklist and the articles are provided in the workbook and on the slides. Checklist:
 - Is the information current?
 - Is the information useful to you?
 - Is the author an expert?
 - Is the information accurate?
 - What is the purpose of the information?

As a class, read the articles and answer the questions on the checklist. Tip: One article is far-fetched, and the other shows reliable information.

4. **Reflect.** Students independently reflect or discuss in pairs what they have learned and how they might use it in the future to decide if a source is reliable.
5. **What Did Students Discover?** Invite students to answer the Question to Explore: *How do you know what information is true?* Tip: Students can ask questions like the ones from the activity to think if something is true.



EDUCATOR NOTE: Nutrition information online may oversimplify foods or promote “healthy” and “unhealthy” labels. Encourage students to think critically about nutrition messages and recognize that nutrition and health are more complex than a single claim, label, or nutrient.

EXPLORING FOOD PROCESSING AND PACKAGING

Foods go through many steps before they are eaten, and those changes can support safety, accessibility, and nutrition.

#	Lesson	Student Learning Objectives
1	Food Changes from Farm to You	Describe why and how foods change during processing.
2	Gut Health	Understand how nutrition impacts gut health.
3	Food Package Investigation	Explain how food packaging and advertisements may influence people's thoughts, feelings, and food choices.
4	Food's Journey from Farm to You	Recognize ways food is grown, raised, harvested, and made available to people.

MATERIALS FOR ALL LESSONS

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VOCABULARY

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Lesson	Word	Definition
1. Food Changes from Farm to You	Food processing	the ways food is cleaned, changed, or prepared to be ready to eat

Lesson	Word	Definition
2. Gut Health	Fermentation	a process where helpful bacteria change a food's taste, texture, how long it lasts, and add health benefits to some foods
	Gut	the part of the body that digests food and helps the body use nutrients from food; the stomach and intestines
3. Food Package Investigation	Advertisement	information that tries to get people interested in a product or encourage them to buy it
	Persuade	to encourage or convince someone to think, feel, or do something

NUTRITION NOTES

Notes support your understanding as an educator and provide additional context that can help guide student discussions and questions.

FOOD PROCESSING HAS MANY PURPOSES

Food processing includes many different types of changes that food can go through before it is eaten. Examples include:

- Washing, bagging, or cutting food for easy storage or eating
- pasteurizing (heating) milk or other foods for safety
- freezing food to preserve freshness
- canning food to increase shelf life

Processing may help improve food safety, convenience, taste, shelf life, or nutrition. Because foods can be processed in many different ways, overly simple messages about processed foods can be confusing or misleading.

FERMENTATION IS A TYPE OF FOOD PROCESSING

Fermentation is a process where tiny living organisms such as bacteria or yeast help change foods. Fermentation can change a food's flavor, texture, and shelf life and add health benefits to some foods. Examples of fermented foods include yogurt, kefir, kimchi, and sauerkraut.

THE GUT IMPACTS HEALTH

Researchers continue to explore how the gut and its collection of tiny organisms may affect:

- How the body breaks down food (digestion).
- How the body uses nutrients (metabolism).
- How the body fights disease and stays well (immunity).
- Overall health.

LACTOSE IS A NATURALLY OCCURRING SUGAR

Dairy foods have different amounts of lactose, the naturally occurring sugar in milk. If lactose intolerant, the body doesn't break down that sugar, and it can cause discomfort. A food process can remove lactose in dairy to make foods like lactose-free milk. Processes like yogurt fermentation or cheese aging reduce the amount of lactose, with many options across cultures available to people who are lactose intolerant so they can consume dairy.

BE CURIOUS ABOUT THE JOURNEY

Foods provide many nutrients and components that work together in complex ways. Encourage students to stay curious about how foods are grown, processed, prepared, and enjoyed as part of overall eating patterns.

FOOD CHANGES FROM FARM TO YOU

ESTIMATED TIME (ALL COMPONENTS): 30–40 minutes

OPTIONAL PREPARATION: Queue up optional videos explaining how the foods shown are made or processed.



QUESTION TO EXPLORE:

How and why does food change from the farm to you?

BIG IDEAS FOR STUDENTS:

- Foods can be changed before they are eaten. Some food processing helps make foods safe or easier to eat, protects or improves nutrition, or adds taste.
- Food may be washed, cut, bagged, canned, bottled, or frozen after leaving the farm.
- Some foods need to be processed into a form that can be eaten, like when wheat is made into bread.
- Some processing like freezing or canning helps food last longer.

INSTRUCTION:

1. **Vocabulary.** In the workbook, review the word **food processing**.
2. **Workbook “Let’s Make Predictions.”** Students write predictions about how the following foods are made from their original foods:
 - a. How do grapes become raisins?
 - b. How does milk become yogurt?
 - c. How do carrots become baby carrots?
 - d. How does grain turn into a cracker?
 - e. How do nuts turn into nut butter?
3. **Slides or Research.** After predicting, present the slides to see the steps that the foods go through to be processed.

Optional: Students can research videos about how these foods are made and present to the class.
4. **Discuss.** Students write in their workbooks then discuss: *How did your predictions compare to the actual steps?*

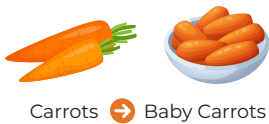
“Let’s Make Predictions” ANSWER KEY



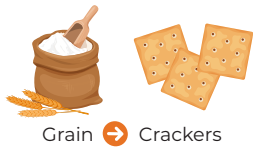
❶ After grapes are ripe on the vines, they are picked. ❷ Grapes get cleaned. ❸ Then dried in the sun or by machines. ❹ Then packaged.



❶ Milk is heated and cooled. ❷ Starter culture (live healthy bacteria) is added. ❸ The culture eats the milk sugar and turns the milk into creamy thick yogurt (a process called fermentation). ❹ The yogurt is cooled and packaged.



❶ Carrots are picked out of the ground. ❷ Carrots get sorted, cleaned, cut, peeled, and cleaned again. ❸ Then packaged into bags for the store or school.



❶ Wheat is harvested or cut from its plant. ❷ Wheat is ground into a powder called flour. ❸ Flour is made into dough by adding other ingredients. ❹ The dough is baked, cut, and boxed.



❶ Nuts are harvested or picked from plants. ❷ The shells are removed and nuts are cleaned. ❸ The nuts get roasted or cooked, crushed and ground into a butter. ❹ The nut butter is packaged into jars.

IDEA:

Students can compare and contrast a pair of foods listed. Describe how the two foods taste, look, sound, feel, and smell, and how they are eaten. Students can discuss or write their compare/contrast descriptions.

5. **Reflect.** Discuss and/or write the answer in the workbook for each pairing: *Why do you think this food is processed?* Options: safety, nutrition, taste, easier to eat, lasts longer.
6. **What Did Students Discover?** Invite students to answer the Question to Explore: *How and why does food change from the farm to you?*

IDEA:

Students can trace where their food or meals come from using the [🗺️ California Grows... Map](https://www.learnaboutag.org/) at [LearnAboutAg.org](https://www.learnaboutag.org/), which lists the top 3 crops grown by county. Discuss why certain crops grow best in specific climates and regions of the state.

TOPIC 3 LESSON 2

GUT HEALTH

ESTIMATED TIME (ALL COMPONENTS): 30–45 minutes



QUESTION TO EXPLORE:

How does nutrition impact gut health?

BIG IDEAS FOR STUDENTS:

- The gut is home to trillions of tiny living organisms that help digest food and support health.
- The gut includes organs like the stomach and intestines and can affect the body in many ways, including energy, digestion, and mood.
- Foods like yogurt, fruits, vegetables, whole grains, and some cheeses support healthy guts.
- Fermentation is a process that adds health benefits to a food. Tiny living organisms like bacteria or yeast help change a food like milk into yogurt or vegetables into kimchi.

INSTRUCTION:

1. **Introduce.** *What do you think of when you hear the word “gut”? What happens inside your gut?*
2. **Video Option.** Watch  [Let's Eat Healthy Together Episode 7, “Get to Know Your Gut”](https://www.dairycouncilofca.org/Together) at [DairyCouncilofCA.org/Together](https://www.dairycouncilofca.org/Together) and linked in the slides. The video explains how food travels through the gut and the process of digestion.
3. **Vocabulary.** In the workbook, review the words **gut** and **fermentation**.
4. **Workbook “The Secret City inside the Gut.”** Students read the article independently or as a class. The article explains the fascinating world in the gut and how it impacts many parts of the body and health.

Provide the prompts to interact with the content: *Star the main idea of the article, underline key details that support the main idea, and put a question mark by words you do not know or understand.*

5. **Workbook “The Gut Questions.”** Students answer questions about the gut and discuss together.
 - *What is the gut? How would you describe the gut?*
 - *What are 3 ways the gut helps your body?*
 - *Name 2 foods that may help your gut?*

6. **What Did Students Discover?** Invite students to answer the Question to Explore: *How does nutrition impact gut health?* Tip: Foods that people eat can help support the tiny living organisms in the gut, especially eating a variety of nutritious foods, which can help the gut work properly and support overall health.

FOOD PACKAGE INVESTIGATION

ESTIMATED TIME (ALL COMPONENTS): 45–60 minutes

OPTIONAL PREPARATION: Bring in or ask students to bring in food packages or photos of a variety of packages from bagged, frozen, canned, boxed, or bottled foods.



QUESTION TO EXPLORE:

How can food packaging influence the choices people make?

BIG IDEAS FOR STUDENTS:

- Foods are processed into different packages like bags, cans, boxes, cartons, or bottles.
- Food packages can make storage, carrying, and eating easier.
- Food packaging and advertisements can influence how people think and feel about food.
- Packaging and advertisements are designed to catch people's attention. Learning to notice these messages and decide how they make people think or feel will help with making informed choices.

INSTRUCTION:

1. **Introduce.** If you already completed lessons from Topic 2, students may remember types of information that can be learned from a food package. *Can you name some types of packages that foods come in? Do you know why foods come in the packaging they do? Can you think of a food that doesn't have a package?* Package examples include a box, a bag, a can, etc.
2. **Workbook “Food Package Investigation.”** Display or pass out food packages so students can look at them easily and closely. Students will write answers to these questions in the workbook during their observations:
 - a. *What do you notice about the colors and words on the package?*
 - b. *Does the package mention anything about ingredients in the food?*
 - c. *Are there any pictures on the package? What are they?*
 - d. *How does the package design make you feel about the food?*
3. **Workbook “To Try or Not to Try.”** Students work with a partner to record details about the colors, pictures, words, design, or anything else on a package that makes them want to try or not try the food.

4. **Reflect.** After completing the Venn diagram in the workbook, students use those details to write a response to this question: *Do you feel like you are more likely or less likely to try the food based on the packaging? Why?*

Optional: Have the student teams present what they noticed about their food package and whether or not the package influenced their opinions.

5. **Vocabulary.** In the workbook, review the words **advertisement** and **persuade**. Remind students that they are now more informed decision-makers! Encourage them to apply what they learned when they see an advertisement for a new product.
6. **What Did Students Discover?** Invite students to answer the Question to Explore: *How can food packaging influence the choices people make?* Tip: Packaging can influence by informing or making a product look appealing.



IDEA:

Students create an advertisement using words, drawings, or pictures to persuade friends to try the meal from topic 1. Include vocabulary, ingredients, nutrition, and taste. Don't forget to give the meal a fun name! If at a school, ask decision-makers if the advertisements can be posted in the cafeteria.

FOOD'S JOURNEY FROM FARM TO YOU

(MULTIPLE ACTIVITY OPTIONS)

ESTIMATED TIME: Varies

PREPARATION: Review activity options to choose what will work in your classroom.



QUESTION TO EXPLORE:

What can you learn about food by exploring its journey?

BIG IDEAS FOR STUDENTS:

- Nutrition and agriculture are connected. Understanding where food comes from helps make informed food choices and builds a stronger connection to food and community.
- Food doesn't begin at the grocery store or the table – it is grown, raised, harvested, and more.
- Many people and steps get food from the farm to you, from farmers and ranchers to truck drivers, grocery workers, and cooks. The story behind food makes it too good to waste!
- California produces an amazing amount of food from a diverse group of farmers. It is worth exploring top crops (milk, grapes, almonds, and many others). Over 1/3 of the country's vegetables and over 3/4 of the country's fruits and nuts are grown in California. *Sources: usda.gov and cdfa.ca.gov*
- Agriculture involves traditions, communities, cultures, jobs, history, science, math, and more!

INSTRUCTION:

1. Explore the agricultural literacy activities available at [DairyCouncilofCA.org/DAL](https://dairycouncilofca.org/DAL). Here are just a few examples:
 - Farm-to-You Worksheet Series
 - Market Mystery Storybook
 - Dairy Around the World
 - Taste and Teach
 - Mobile Dairy Classroom
 - The Great Food Quest Video Series
2. Additional Agricultural Literacy Resources:
 - [California Grows...Map](https://learnaboutag.org) (LearnAboutAg.org)
 - [Poop-to-Power Video](https://pbslearningmedia.org) (PBSLearningMedia.org)

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