



Lesson 1 – Nutrients in Action

Background Information

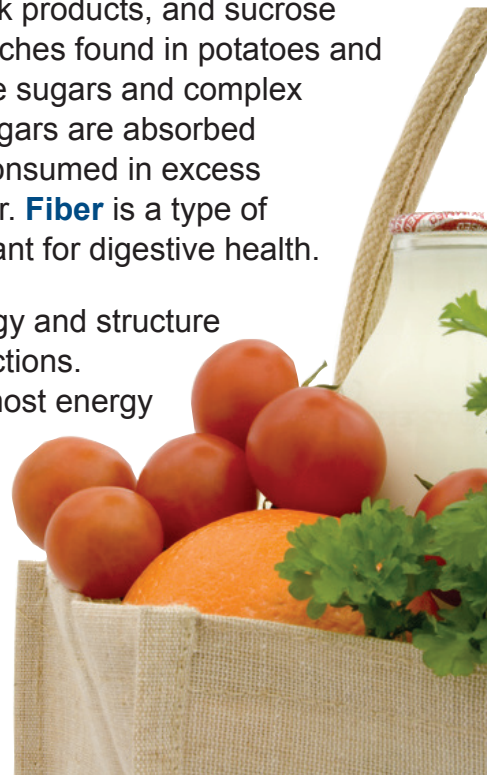
Nutrients are substances that provide energy and structure to the body and also support regulatory systems. There are six classes of nutrients: **protein**, **carbohydrates**, **fat**, **vitamins**, **minerals**, and **water**. **Essential nutrients** are nutrients that the body needs, but cannot make (or cannot make enough of) and have to be consumed through food. They provide the building blocks for all the things our bodies do on a daily basis. Without these, functions necessary for life and health start to break down. **Macronutrients** are the nutrients we eat in large amounts. These include protein, carbohydrates, and fat. These macronutrients also provide **calories**, which are a unit of heat energy.

Protein is broken down into its components called amino acids, which are then used for a variety of functions in the body. The primary role of protein in the body is to provide structure by forming muscles, tendons, and collagen. Additionally, protein also serves many regulatory roles in the body such as aiding in the transport of nutrients in our blood, supporting DNA and immune function, and providing the building blocks for many enzymes and hormones. Our bodies can also use protein as an energy source; it provides approximately 4 calories per gram. Protein consumed in excess is converted into fat to be stored and used for energy later.

Carbohydrates primarily serve as a source of energy for our bodies. In fact, carbohydrates are the main fuel for our brains. There are two general classes of carbohydrates called simple sugars and complex carbohydrates. Some examples of simple sugars include fructose found in fruit, lactose found in milk products, and sucrose found in table sugar. Complex carbohydrates include starches found in potatoes and grains, and **fiber** found in most plant-based foods. Simple sugars and complex carbohydrates provide 4 calories per gram, but simple sugars are absorbed more quickly than starches in the body. Carbohydrates consumed in excess are converted to fat to be stored and used for energy later. **Fiber** is a type of carbohydrate that our bodies cannot digest, but is important for digestive health.

Fat is a versatile macronutrient that provides energy and structure to the body in addition to supporting many regulatory functions.

Fatty acids are a component of fat. Our bodies get the most energy from fat which provides approximately 9 calories per gram, and is also the primary fuel used by the body. The structure that fat provides is from being an integral part of every cell in the human body. Hormonal and immune system regulation are also heavily influenced by fat. There are two main types of fats: **solid fats**, which are solid at room temperature, and **oils**, which are liquid at room temperature. **Solid fats**, which include *trans* fat and saturated fat, are generally considered



unhealthy because they have been linked to a higher risk for heart disease. Foods with solid fats generally come from animal sources such as dairy or meat. **Oils** generally contain polyunsaturated fats that are considered healthier than saturated fats. Most foods with oils are plant-based such as nuts, seeds, olives and avocados. Our bodies need certain types of polyunsaturated fatty acids, called **essential fatty acids**, because we are not able to make them on our own. These include what are called omega-6 fatty acids, and omega-3 fatty acids. Examples of foods containing essential fatty acids include fish, flax seeds, and walnuts (omega-3s) or soy beans and corn oil (omega-6s). As mentioned previously, when the other macronutrients are consumed in excess they are converted to fat. This is because body fat is the main way our bodies store energy for later use.

In addition to macronutrients, our bodies also need a variety of **micronutrients**. They are called micronutrients because our bodies only need very small amounts of them. These include **vitamins** and **minerals**.

Vitamins are nutrients that exclusively serve regulatory roles in the body. There are two major types: fat-soluble and water-soluble. **Vitamins A, D, E, and K** are classified as fat-soluble vitamins. **B vitamins**, and **vitamin C** are classified as water-soluble vitamins. Fat-soluble vitamins serve more general regulatory roles in the body. For example, vitamin K is needed for blood clotting, while vitamin D is needed for bone health and immune function. Water-soluble vitamins mainly serve as co-factors or “helpers” in many metabolic functions. For example, B vitamins assist in supporting proper metabolism (See Activity Handout 1A for more detail on individual vitamins.)

Minerals are inorganic elements that come from water or soil and are absorbed by plants or eaten by animals. Our bodies need many different minerals, some of which are **iron, calcium, magnesium, and zinc**. Like vitamins, different minerals serve different purposes. For example, iron is important in our red blood cells for moving oxygen around our bodies, while zinc is important for wound healing and immune function. (See Activity Handout 1A for more detail on individual minerals.)

For most essential nutrients, our bodies are able to save an extra supply to get us through times when we aren’t consuming enough. These stores differ by nutrient; some stores can last a very long time, but some cannot. If we aren’t consuming enough nutrients, our bodies are not able to build up this extra supply.

A balanced diet provides our bodies with all of the nutrients we need. The **United States Department of Agriculture** (USDA) has produced **MyPlate** as a tool for consumers to help guide their food choices. **MyPlate** recommendations are based on the current **Dietary Guidelines for Americans** and **Dietary References Intakes**. The USDA also uses these guidelines to develop the **National School Lunch Program** (NSLP) and **School Breakfast Program** (SBP) required meal patterns. Schools participating in the NSLP and SBP are required to follow these meal patterns in order to be reimbursed for the meals served to participating children.

Concepts and Vocabulary

2015-2020 Dietary Guidelines for Americans:

Dietary recommendations for Americans produced jointly by the USDA and the US Department of Health and Human Services.

B-vitamins: Vitamins that are important for helping our bodies turn food into energy.

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

Calories: A measure of how much energy a food has. These are a unit of heat energy.

Carbohydrate: A macronutrient that primarily provides our bodies with energy.

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.

Essential nutrients: Nutrients our bodies can only get from food.

Essential fatty acids: Fatty acids that our bodies cannot make. These include omega-6 and omega-3 fatty acids.

Energy: What our bodies use to power everything we do.

Fat: A macronutrient that provides energy, but also is important for cell structure and nerve function.

Fatty acids: A component of fat. These can be saturated or unsaturated.

Folate (Folic acid): A B-vitamin that helps the body form red blood cells and is needed for growth and repair. It is also important in pregnancy to help prevent birth defects.

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

Macronutrients: Nutrients we consume in large amounts, including carbohydrates, protein, and fat.

Magnesium: A mineral needed for bone health, and nerve and muscle function.

Meal Pattern (NSLP and SBP): The foods and amounts that are required to be served in meals that are part of the NSLP or SBP.

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

Minerals: Elements we get from foods, which are needed for functions in our bodies.

MyPlate: Governed by the United States Department of Agriculture, an illustration depicting the five food groups for a healthy diet, showing sections of a plate that should match how much of each food group goes on your plate.

National School Lunch Program (NSLP): A program administered by the USDA to provide reimbursement to schools for lunches served to children, provided they follow predetermined regulations and requirements.

Nutrients: Substances that provide energy and structure to the body along with supporting regulatory systems. There are six classes of nutrients including protein, carbohydrates, fat, vitamins, minerals, and water.

Oils: Fats that are liquid at room temperature, including mono- and poly-unsaturated fats.

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.

School Breakfast Program: A program administered by the USDA to provide reimbursement to schools for breakfasts served to children, provided they follow predetermined regulations and requirements.

Solid fats: Fats that are solid at room temperature, including saturated fats and trans fats.

United States Department of Agriculture: Government agency that develops and executes policy related to agriculture, farming, and food in the US.

Vitamin A: A vitamin that is needed for vision, wound healing, and growth.

Vitamin B12: A vitamin needed for forming red blood cells, and is important in helping our bodies turn food into energy. It is also needed for growth and repair.

Vitamin C: A vitamin needed for wound-healing, healthy gums, and also acts as an antioxidant.

Vitamin D: A vitamin that is needed for bone health and immune function. Sunlight helps us make this vitamin in our skin.

Vitamin E: A vitamin that is an important antioxidant and helps keep our cells healthy.

Vitamins: Substances we get from foods which are needed for functions in our bodies.

Zinc: A mineral that is important in immune function.

1.1: Learning Activity

Overview

In this activity, participants will explore how different foods provide different nutrients, the importance of variety in the diet, and how different nutrients perform different functions in the body. To discover these concepts, each group receives a handout with a list of student meal choices for a week. Next, using a sheet with information on three nutrients, participants are asked to analyze the student meal choices. The groups then share which of these nutrients the students did or didn't obtain using flip chart papers displayed around the room. This is followed by a class discussion of participant observations and patterns they noticed when analyzing the student's nutrient intake using the menus provided.

Getting Ready

Time Required

55 minutes

If using all lesson components (Learning Activity, Expanding Knowledge, and Goal Setting), the entire lesson requires approximately 1 hour and 15 minutes.

Materials Needed

(Materials provided in the curriculum)

For Each Group of 2-4 Participants <ul style="list-style-type: none"><input type="checkbox"/> Flip chart paper<input type="checkbox"/> Markers, pens, or pencils<input type="checkbox"/> Student Lunch Choices (Activity Sheet 1-B)<input type="checkbox"/> Las Llamas Middle School Lunch Menu (Handout 1-C)	For the Facilitator <ul style="list-style-type: none"><input type="checkbox"/> Student Lunch Choices KEY (Handout 1-E) Optional: <ul style="list-style-type: none"><input type="checkbox"/> Lesson 1 (PowerPoint)<input type="checkbox"/> Computer<input type="checkbox"/> PowerPoint Projector
For the Class <ul style="list-style-type: none"><input type="checkbox"/> Nutrient Labels (Lesson Material 1-D) (Printed on sheets of adhesive mailing labels, 1" x 2 5/8", such as Avery 5160)<input type="checkbox"/> Prepared flip chart paper with student name and days of week. (See Facilitator Resource 1-F for instructions)	For Each Participant <ul style="list-style-type: none"><input type="checkbox"/> Nutrients in Action (Handout 1-A), to be handed out at the end of the lesson. Optional: <ul style="list-style-type: none"><input type="checkbox"/> Student Lunch Choices KEY (Handout 1-E)

Preparation

Handouts

1. Make copies of the following handouts:

- **Nutrients in Action (Handout 1-A)**, one copy per participant.

Facilitator Tip: To encourage group work, it is recommended that you provide one copy per group to use during the activity. It may help to verbally explain that they will only get one copy per group and that taking turns reading aloud is recommended. At the end of the activity, distribute the **Nutrients in Action** handout to each participant as a take-home resource.

- **Student Lunch Choices (Activity Sheet 1-B)**, one set of students per group.
- **Las Llamas Middle School Lunch Menu (Handout 1-C)**, one copy per group.
- Optional: **Student Lunch Choices KEY (Handout 1-E)**, one copy per participant.

Other Materials

2. Print one or more copies of **Nutrient Labels (Lesson Material 1-D)**, enough that each group has a set. This should be printed either on adhesive mailing labels or on plain paper (refer to **Lesson Material 1-D** for additional instructions).
3. Prepare one flip chart for each of the students in **Student Lunch Choices (Handout 1-B)**. Each flip chart should have the following information:
 - Student name across the top;
 - Days of the week listed on the left-hand side; and
 - “At the end of the week, what nutrients are missing?” written near the bottom.
 - Refer to **Suggested Flip Chart Layout (Facilitator Resource 1-F)**.

Activity Set-up

4. Hang the prepared flip chart papers around the room. Spread them apart to reduce congestion during the activity.

Classroom Set-up

5. Organize the class into small groups of 2 to 4 participants.

Facilitator Tip: These groups can also be used in future lessons.

6. Provide each group with a sheet of flip chart paper and markers, pens, or pencils to answer opening questions/prompts.

Optional

7. Before participants arrive, connect laptop to projector. Load **Focus on Food Lesson 1** (PowerPoint).

Opening Questions/Prompts

Small Group Discussion

1. **Say:** Let's get started with Lesson 1 – Nutrients in Action! To begin, I'd like everyone to discuss some opening questions within your group. 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:

- Explain what you know about nutrients. **(Slide 3)**

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.

2. **Do:** Allow 2 to 3 minutes for groups to discuss the prompt. Repeat with the remaining two prompts:
 - Explain what you know about how different nutrients benefit your body. **(Slide 4)**
 - Explain what you know about the NSLP and SBP meal patterns. **(Slide 5)**

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, "Explain what you know about nutrients"?
4. **Do:** Allow about a minute for participants to share their thoughts on this topic with the class. Repeat with the remaining two prompts:
 - Explain what you know about how different nutrients benefit your body. **(Slide 4)**
 - Explain what you know about the NSLP and SBP meal patterns. **(Slide 5)**

Facilitator Tip: This sharing phase is a great opportunity to begin to build rapport with participants. Engage participants at this phase with phrases such as: "Tell me more about that";

Explain what you know about nutrients.

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Explain what you know about how different nutrients benefit your body.

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Explain what you know about the NSLP and SBP meal patterns.

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“What do you mean by...”; “Did anyone else write this?” At this stage, it is important that you do not correct misconceptions. Instead, make note of them, and if they are not corrected organically through the lesson, address them briefly at the end of the lesson.

Procedure (Experiencing)

Define “Nutrients”

Nutrients

Substances found in food and beverages that provide energy and structure to the body. They are used for growth, maintenance, and repair.

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5. **Say:** Before we get started with the activity, let’s make sure we’re all on the same page about the definition of a nutrient. Nutrients are substances found in food and beverages that provide energy and structure to the body. They are used for growth, maintenance, regulation, and repair. **(Slide 7)**

Small Group Work

6. **Say:** Now let’s move into this lesson’s activity. Each group will be provided with a few different handouts to use in the first part of this activity:

Each group will be assigned three different nutrients, which you will see on your handout.

Within your groups, use the information found in the ***Nutrients in Action*** and ***Las Llamas Middle School Lunch Menu*** handouts to determine whether or not the students on the ***Student Lunch Choices*** handout chose foods that contain your three assigned nutrients. **(Slide 8)**

Using the information found in your ***Nutrients in Action*** handout, determine whether or not the student on your ***Student Lunch Choices*** handout chose foods that contain your assigned nutrients.

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7. **Do:** Provide each group with:
 - One copy of ***Nutrients in Action (Handout 1-A)***.
 - One set of ***Student Lunch Choices (Activity Sheet 1-B)***.
 - One copy of ***Las Llamas Middle School Lunch Menu (Handout 1-C)***
8. **Do:** Allow several minutes for participants to complete the handout.

Facilitator Tip: If some groups finish earlier than others, ask them to take a look at some of the other nutrients on the Nutrients in Action Handout, and identify if the students chose foods with those as well.

Completing Student Flip Charts

9. **Say:** For the next part of this activity, there is a different flip chart paper for each student around the room.
- Your next task will use the Nutrient Labels.
 - If the student consumed one of your assigned nutrients, put a label for that nutrient next to the day of the week the student consumed it. **(Slide 9)**
 - For example, if a student consumed magnesium on Monday, you would put a label for magnesium in the space next to Monday for that student.
 - If, by the end of the week, they didn't consume one of your nutrients at all, put a label for that nutrient at the bottom of the flip chart, where it says, "At the end of the week, what nutrients are missing?"
 - Do this for all three of your group's nutrients.

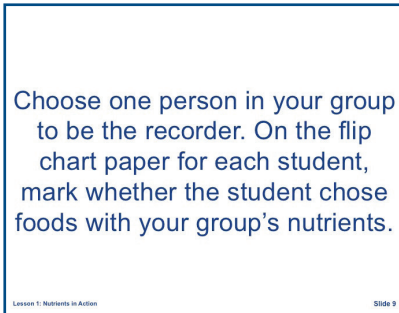
Facilitator Tip: Refer to Facilitator Resource 1-F for a reference photo of a completed flip chart.

Facilitator Tip: To reduce congestion, have two to three groups at a time complete this step.

10. **Do:** Provide a set of **Nutrient Labels (Lesson Material 1-D)** to each group, matched to the *Student Lunch Choices* they received earlier. Allow a few minutes for groups to complete the flip charts.

Class Discussion

11. **Say:** As a class, let's review the nutrients that the students consumed and did not consume. Who would like to volunteer to describe the nutrients found in the first student's choices, and what nutrients they didn't get over the course of the week?
12. **Do:** Allow a minute or two for the volunteer(s) to review the nutrients consumed and not consumed for each student. **(Slide 10)**

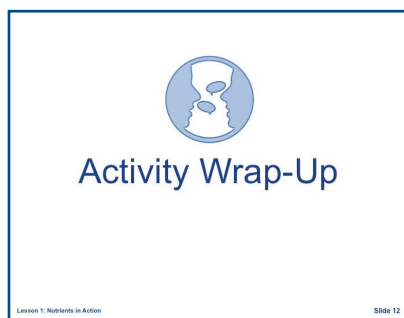


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Slide 10

Activity Wrap-Up (Sharing, Processing, and Generalizing)



Slide 12

13. **Say:** As a class, let's discuss your observations about the students and their choices. **(Slide 12)**

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

- Explain the differences and similarities between the food sources of different nutrients.
- Describe how the students' choices impacted the nutrients they are getting or missing.
- Describe what it might mean if they are missing a nutrient.
- What if the student doesn't get all their needed nutrients in one meal?
- Describe any connections you might see between the different components in the meal patterns and different nutrients.

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

15. **Say:** Before we move on to the next part of the activity, I have copies of the *Nutrients in Action* handout for everyone to keep.

Facilitator Tip: You may also wish to provide the Student Lunch Choices KEY (Handout 1-E) to each participant at this stage as well.

16. **Do:** Distribute copies of *Nutrients in Action (Handout 1-A)* to each participant.

Facilitator Tip: You can also ask for a volunteer to help distribute the handout.

Concept and Term Discovery/Introduction

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

- Different foods provide different nutrients
- Variety is a key factor when planning a nutritious diet.
- Eating a variety of foods helps prevent nutrient deficiencies.
- Different nutrients perform different functions in our bodies.
- The purpose of including the different components in the National School Lunch Program and School Breakfast Program meal patterns is to provide students with a variety of nutrients.

The following key vocabulary terms should be discovered by participants or introduced to them: nutrients, essential nutrients, energy, carbohydrates, fiber, protein, fat, oils, solid fats, minerals, calcium, iron, vitamins, B-vitamins, vitamin A, vitamin C, and vitamin D.

1.2: Expanding Knowledge

Overview

In this mini-lecture, participants will learn more about how different foods provide different nutrients, the importance of variety in the diet, and how different nutrients perform different functions in the body.

Getting Ready

Time Required

15 minutes

Materials Needed

(Materials provided in the curriculum)

For the Facilitator <ul style="list-style-type: none"><input type="checkbox"/> Lesson 1 (PowerPoint)<input type="checkbox"/> Computer<input type="checkbox"/> PowerPoint Projector	For Each Group of 2-4 Participants <ul style="list-style-type: none"><input type="checkbox"/> None
For the Class <ul style="list-style-type: none"><input type="checkbox"/> None	For Each Participant <ul style="list-style-type: none"><input type="checkbox"/> None

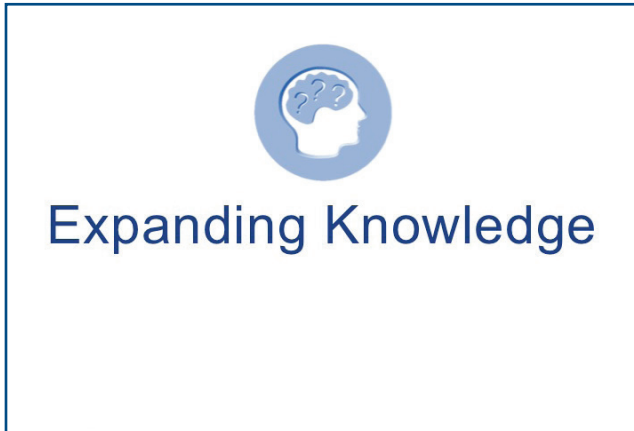
Preparation

Projector Set-up

1. Connect laptop to projector. Load **Focus on Food Lesson 1** (PowerPoint).
2. Queue the PowerPoint presentation to Slide 13.

Procedure

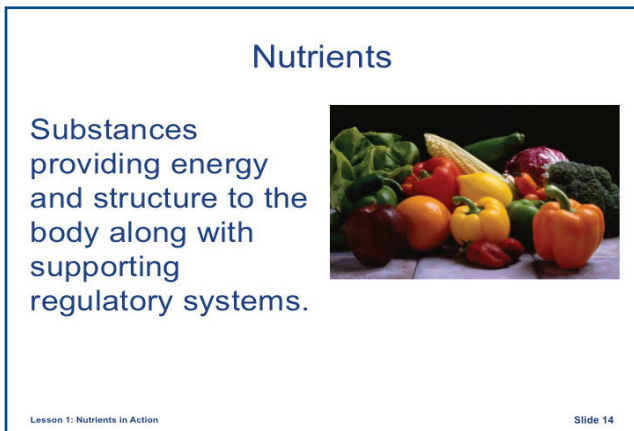
1. **Do:** Go through the Expanding Knowledge presentation slide by slide. The following script is available for use if you so choose.



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Now let's review some of the concepts we learned during Lesson 1, Nutrients in Action.

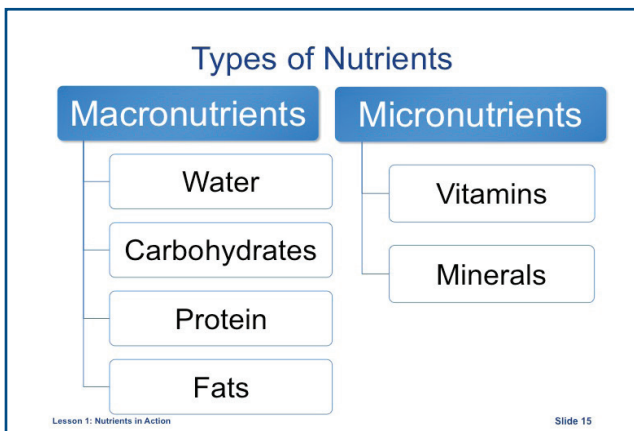


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What do we mean when we say nutrients? These are substances in food or beverages that support our body processes, by providing energy, structure, or supporting regulatory systems.

Some nutrients are essential, which means our bodies are not able to make them, or our bodies can make a little but not enough to meet our needs.



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We classify nutrients as either macronutrients, which are ones we need a lot of, or micronutrients, which are ones we only need in small amounts.


Water, carbohydrates, protein, and fats are all macronutrients, while vitamins and minerals are micronutrients.


Macronutrients


Macronutrients are nutrients we need a lot of.



 Carbohydrates

 Protein

 Fats

 Water

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Fun fact – Macro comes from the Greek word for “large”. Of the macronutrients, three provide us with calories.

Would anyone like to share which ones these are?

[Pause to allow responses from the class.]

Carbohydrates, protein, and fats all have calories, while water does not.

Calories

What do you think about when you hear the word calories?

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What do you think about when you hear the word “calories”?

[Pause to allow responses from the class.]

Calories

The measure of how much energy a food has.

The body uses calories to do physical work and maintain internal health.




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Calories are the way we talk about how much energy a food has. This energy is used by all our cells and organs in the body to move, to support health, to maintain life. They’re like gasoline to a car; with out energy we can’t run.

Water



- Helps move things around in the body
- Keeps things lubricated
- Regulates body temperature
- Water does not provide calories

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Water on the other hand, has no calories, but it serves very important purposes.

Does anyone want to guess what percentage of our bodies are water?

[Pause to allow responses from the class.]

Our bodies are made up of 60% water.

Water helps us move things around in our bodies, such as blood, or lymph, it keeps things lubricated.

It also regulates our body temperature through sweating. We sweat, and when sweat evaporates, it helps cool the body.

Carbohydrates

Simple Sugars

- Provides quick energy
- Food Sources: Fruit, milk, candy, table sugar

Complex Carbohydrates

Starch

- Food Sources: Grains, pasta, potatoes, rice

Fiber

- Supports digestive health, but doesn't provide calories.
- Food Sources: Fruits, vegetables, whole grains, beans, peas

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Moving on to carbohydrates, we classify those in two ways.

Simple sugars are sugars like glucose, sucrose, which is table sugar, fructose, lactose, which is found in milk, among others. These provide quick energy.

Complex carbohydrates are long chains of sugars all connected to make up starch, which we can digest, or fiber, which we can't. We can get complex carbohydrates from grain products, fruits, vegetables, beans and peas, etc.

Carbohydrates

What do carbohydrates do for us?

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What do carbohydrates do for us?

[Pause to allow responses from the class.]

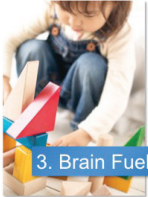
Carbohydrates



1. Fiber



2. Energy



3. Brain Fuel

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First, As mentioned earlier, fiber is a carbohydrate we can't digest.


- It is important for digestive health.
- A high fiber diet may lower risk for heart disease and diabetes.

Second, Carbohydrates provide us with energy and have 4 calories per gram.

Third, In fact, our brains use mostly carbohydrates for energy.


Protein

Animal Sources



- Meat
- Poultry
- Fish
- Eggs
- Dairy

Plant Sources



- Beans
- Peas
- Lentils
- Nuts
- Seeds

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Protein comes from both animal and plant sources. Animal sources include meat, poultry, fish, eggs, and dairy.

Plant sources include beans, dried peas, lentils, nuts, and seeds.

While they are not listed on this slide, other vegetables also have small amounts of protein.

Protein

What does protein do for us?

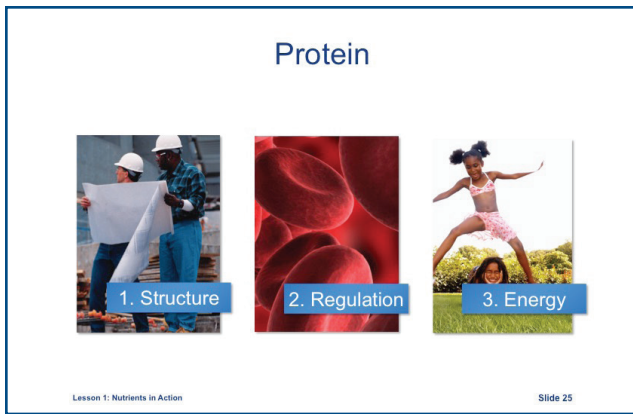
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Slide 24

What does protein do for us?

[Pause to allow responses from the class.]



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First, protein provides structure in the body, by making up our

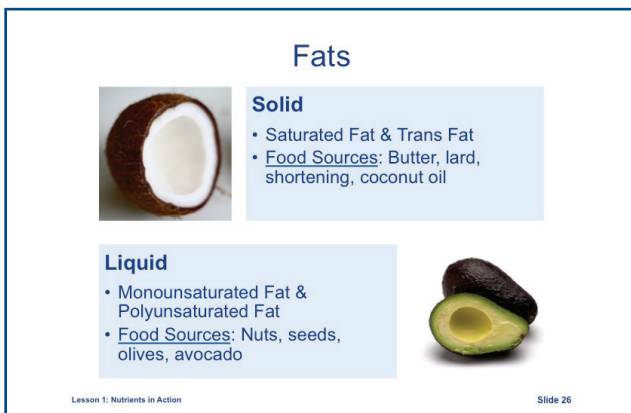
- Muscles
- Tendons
- And connective tissues, like collagen

Second, It helps regulate processes. Some of the ways it does this are by:

- Aiding in the transport on nutrients in our blood
- Supporting DNA and immune function
- Providing the building blocks for many enzymes and hormones

And third, it also serves as a source of energy

- Like carbohydrates, it has 4 calories per gram



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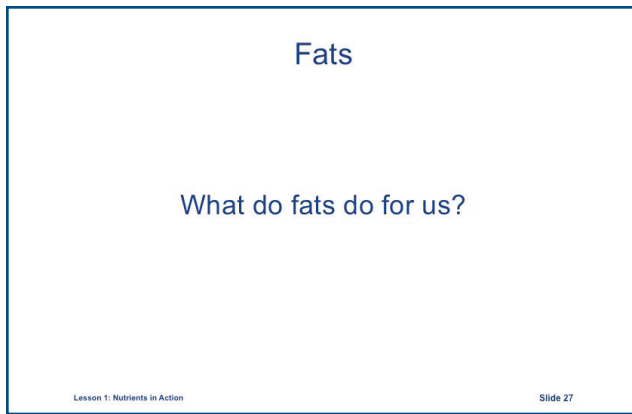
We can break down fats as either solid or liquid.

Solid fats are solid at room temperature, and include saturated fat and trans fat. Some examples are butter, lard, shortening, and coconut oil.

Consuming a lot of saturated fat and trans fat may raise risk for heart disease.

Liquid fats are unsaturated fats.

There are two kinds: monounsaturated and polyunsaturated. Sources of liquid fats include oils, nuts, seeds, olives, and avocado.



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What do fats do for us?

[Pause to allow responses from the class.]

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First, they provide structure and are an integral part of the structure of every cell in the human body; they make up the cell membrane, the outer barrier of the cell.

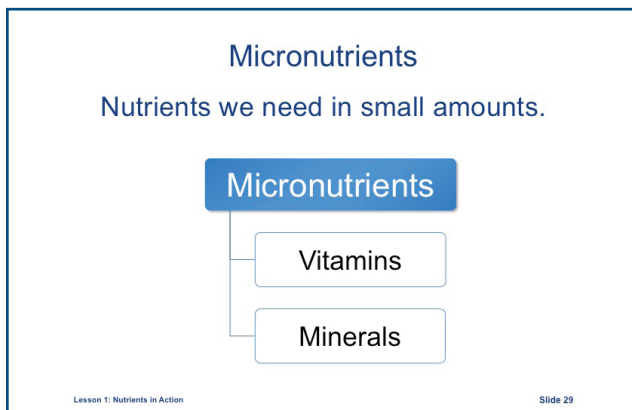
Second, They're involved in regulation. They are needed for

- Hormonal and immune system regulation
- And for nerve function
- They also provide essential fatty acids, which are omega-3 and omega-6 fatty acids. These also play an important role in regulation.

Third, they provide energy and are the main way our bodies store energy to use later

They have more than twice as many calories per gram as carbohydrates and protein, with 9 calories per gram

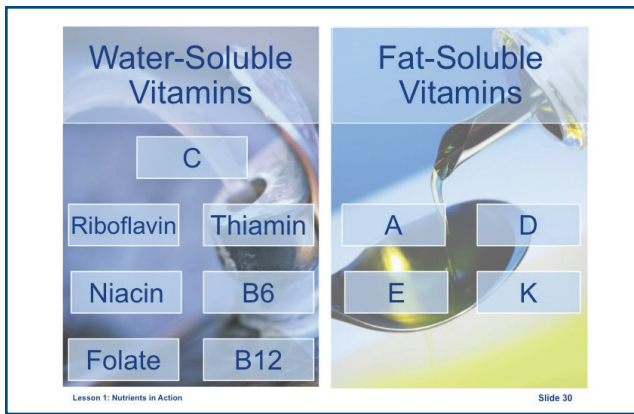
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Now that we've gone over the macronutrients, lets think small with micronutrients: Vitamins and Minerals. We only need these in small amounts.

Slide 29

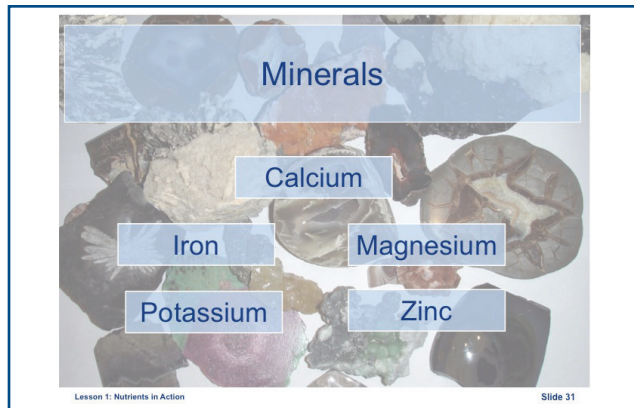


Slide 30

Water soluble vitamins can be carried by water, and serve as cofactors or “helpers” of metabolic processes in the body

Fat soluble vitamins can be carried by fat or oil, and serve general regulatory roles in the body like blood clotting, such as Vitamin K.

Slide 30

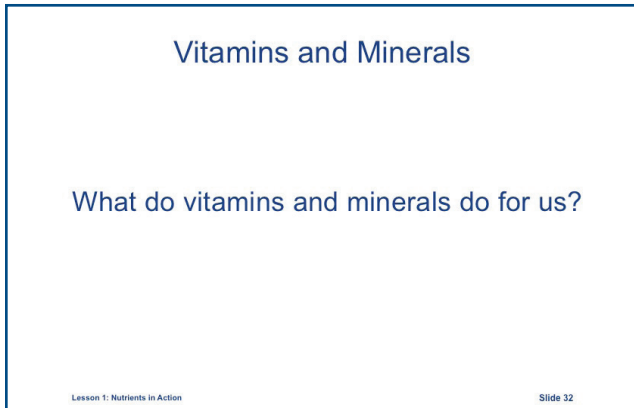


Slide 31

The minerals we investigated in the activity earlier were calcium, iron, magnesium, potassium, and zinc.

These are a few of the minerals that our bodies need, we actually require several more that we aren’t going to talk about today, like selenium, manganese, copper, and even more.

Slide 31












Slide 32

What do vitamins and minerals do for us?
 [Pause to allow responses from the class.]

Slide 32

Vitamins and Minerals

 <p>Strong bones: Vitamins D and K, Calcium, Magnesium, and Zinc</p>	 <p>Help turn food into energy: B Vitamins</p>
 <p>Healthy cells: Vitamins C and E</p>	 <p>Help absorb other nutrients: Vitamins C (helps absorb Iron) and Vitamin D (helps absorb Calcium)</p>
 <p>Healthy vision: Vitamin A</p>	 <p>Healthy red blood cells: Vitamin B12, Folate, Iron</p>
 <p>Healthy muscles: Calcium, Magnesium, and Potassium</p>	 <p>Healthy blood clotting: Vitamin K</p>
 <p>Healthy immune system: Vitamins C and D, Zinc</p>	 <p>Healthy blood pressure: Potassium</p>

Lesson 1: Nutrients in Action Slide 33

Slide 33

Slide 33

Vitamins and minerals work to support many body functions.

Along with calcium and vitamin D, strong bones need vitamin K, magnesium, and zinc.

Vitamins C and E help keep our cells healthy by acting as antioxidants. This means they help protect our cells from oxidative damage.

Vitamin A is needed for healthy vision.

Calcium, magnesium, and potassium are all needed for our muscles to function.

Vitamins C and D, and Zinc help support a healthy immune system.

B vitamins are also important in converting the food we eat into energy our cells are able to use.







Something important to keep in mind is that B vitamins don't give us energy. If you are not deficient in B vitamins, consuming a B vitamin supplement isn't going to help give you energy.

Some nutrients help us absorb other nutrients. Vitamin C helps absorb iron, while vitamin D helps absorb calcium.

Iron is commonly associated with healthy red blood cells and preventing anemia, but did you know that your red blood cells also need other nutrients, like vitamin B12 and folate?

You also need vitamin K for healthy blood clotting.

Different micronutrients are found in different foods

 <p>Grains: B vitamins (except B12), Iron, Zinc, Magnesium</p>	 <p>Dairy: A, Riboflavin, B12, D, Niacin, Calcium</p>
 <p>Meat, poultry, pork: A, B vitamins (except Folate), Iron, Zinc</p>	 <p>Certain fish: D, Calcium</p>
 <p>Nuts and seeds: Thiamin, B6, E, Magnesium, Zinc</p>	 <p>Oils: E</p>

Lesson 1: Nutrients in Action Slide 34

Slide 34

Slide 34

We can find all these micronutrients in different foods. Rather than read all these from the slide, I'd like to ask you: what are some examples of meals that would help you get most of all of these nutrients?

[Pause to allow responses from the class.]

Different micronutrients are found in different foods



Orange vegetables and fruit: A, Potassium



Peppers, tomatoes, potatoes: C, Potassium



Berries, citrus fruits: C



Beans and peas: Thiamin, Folate, Iron, Magnesium, Zinc



Green leafy vegetables: A, Riboflavin, C, K, Folate, Calcium, Iron, Magnesium, Potassium

Lesson 1: Nutrients in Action

Slide 35

Slide 35

Slide 35

Fruits and vegetables are a source of a lot of different nutrients. For example, if you eat a romaine salad with some tomatoes, roasted sweet potatoes, and some kidney beans, you'll consume all the nutrients on the screen, from Vitamin A to Zinc. Does anyone else want to give some examples of meals that are high in the nutrients?

[Pause to allow responses from the class.]

Importance of Variety

Different foods provide different nutrients.



A variety of different foods helps ensure you meet your nutrient needs.

Lesson 1: Nutrients in Action

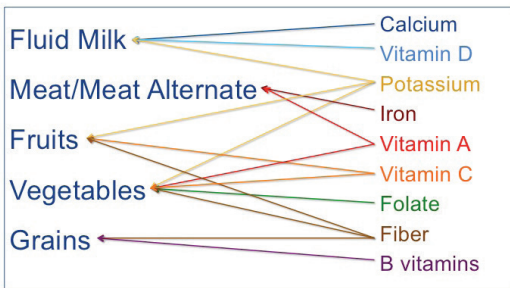
Slide 36

Slide 36

Slide 36

We observed in the activity that the child who ate the most variety was doing a pretty good job at consuming a variety of nutrients as well. Because different foods provide different nutrients, eating a variety of different foods helps ensure you meet your nutrient needs

NSLP Meal Pattern



Lesson 1: Nutrients in Action

37

Slide 37

Slide 37

The NSLP meal pattern has five components, and you can see all the variety in nutrients provided to students in our schools every single day. School meals are doing their part in helping kids grow up healthy.

These aren't even all the nutrients found in the components.

1.3: Goal Setting Activity

Overview

In this activity, participants will use what they've learned to set a goal of consuming more of a nutrient of their choice.

Getting Ready

Time Required

5 minutes

Materials Needed

(Materials provided in the curriculum)

For the Facilitator Optional: <input type="checkbox"/> Lesson 1 (PowerPoint) <input type="checkbox"/> Computer <input type="checkbox"/> PowerPoint Projector	For Each Group of 2-4 Participants <input type="checkbox"/> None
For the Class <input type="checkbox"/> None	For Each Participant <input type="checkbox"/> Goal Setting – Nutrients in Action (Activity Sheet 1-G) Optional: <input type="checkbox"/> Focus on Food Lesson 1 Newsletter (Handout 1-H)

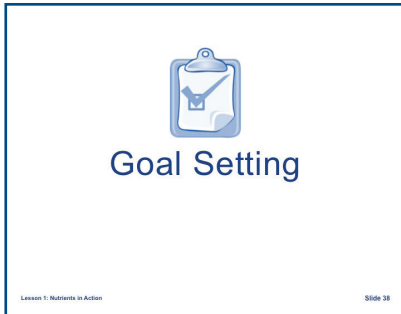
Preparation

Handouts

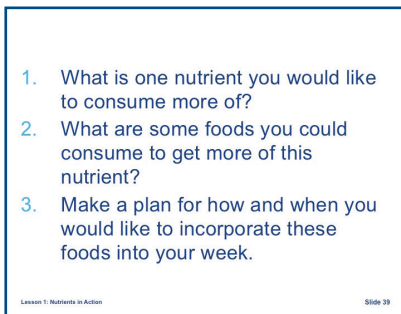
1. Make copies of the following handouts:
2. **Goal Setting – Nutrients in Action Handout (Activity Sheet 1-G), one for each participant.**
3. Optional: **Focus on Food Lesson 1 Newsletter (Handout 1-H)**, one for each participant.

Optional

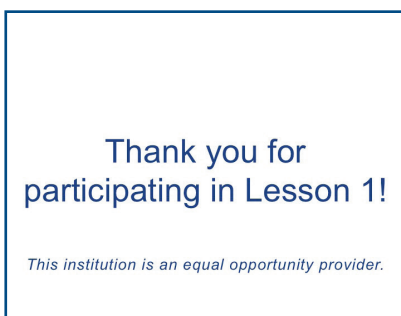
4. Connect laptop to projector. Load Focus on Food Lesson 1 (PowerPoint).
5. Queue the PowerPoint presentation to Slide 38.



Slide 38



Slide 39



Slide 40

Procedure

1. **Say:** Now let's move on to Goal Setting! **(Slide 38)** We've talked about how important consuming a variety of foods is to our health. 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 39)**
 - What is one nutrient you would like to consume more of?
 - What are some foods you could consume to get more of this nutrient?
 - Make a plan for how and when you will incorporate these foods into your week. What days of the week will you eat them? What is the meal or snack? (For example, carrot sticks for an afternoon snack on Wednesday.)
2. **Do:** Provide a copy of the **Goal Setting – Nutrients in Action Handout (Activity Sheet 1-G)** 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?

Optional:

4. **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 1! **(Slide 40)**
5. **Do:** Provide a copy of the **Focus on Food Lesson 1 Newsletter (Handout 1-H)** to each participant.

Nutrients in Action

Thiamin

What does it do?

Thiamin (also called vitamin B1) is important in helping our bodies turn food into energy.

Where can I find it?

Whole grains and fortified grains
Beans and Peas
Nuts and seeds
Pork

Riboflavin

What does it do?

Riboflavin (also called vitamin B2) is important in helping our bodies turn food into energy.

Where can I find it?

Green leafy vegetables
(Romaine lettuce, spinach,
broccoli, kale, etc.)
Fortified grains,
Dairy
Meat and poultry

Vitamin B6

What does it do?

Vitamin B6 (also called pyridoxine) is important in helping our bodies turn food into energy.

Where can I find it?

Meat and poultry
Whole grains
Vegetables
Nuts and seeds

Folate

What does it do?

Folate (also called vitamin B9) helps the body form red blood cells and is needed for growth and repair. It is also important in pregnancy to help prevent birth defects.

Where can I find it?

Dark green leafy vegetables
(Romaine lettuce, spinach,
broccoli, kale, etc.)
Fortified and enriched grains
Beans and Peas

Vitamin B12

What does it do?

Vitamin B12 (also called cobalamine) helps the body form red blood cells and is important in helping our bodies turn food into energy. It is also needed for growth and repair.

Where can I find it?

Meat, poultry, and seafood,
eggs
Dairy
Fermented foods like Kimchi

Vitamin C

What does it do?

Vitamin C is needed for growth and repair and a healthy immune system. It's also important because it helps our bodies absorb iron.

Where can I find it?

Citrus fruits
Peppers
Berries
Green leafy vegetables
(Romaine lettuce, spinach,
broccoli, kale, etc.)
Potatoes
Tomatoes

Vitamin A

What does it do?

Vitamin A is needed for vision, wound healing, and growth and repair.

Where can I find it?

Dark green leafy vegetables (Romaine lettuce, spinach, broccoli, kale, etc.)

Orange vegetables and fruit (sweet potatoes, butternut squash, carrots, pumpkin, cantaloupe)

Fortified milk and dairy products

Liver, Fish, Eggs

Fortified cereals

Vitamin D

What does it do?

Vitamin D helps our bodies absorb and use calcium. It is needed for strong bones and a healthy immune system.

Where can I find it?

Fortified dairy products

Some kinds of fatty fish (Canned pink salmon, mackerel, and sardines)

Mushrooms exposed to UV light

Other fortified foods, such as fortified cereals.

Sunlight helps our bodies make vitamin D.

Vitamin E

What does it do?

Vitamin E is an important antioxidant and helps keep our cells healthy.

Where can I find it?

Oils

Nuts and seeds

Avocados

Asparagus

Margarine

Vitamin K

What does it do?

Vitamin K is needed for strong bones and blood clotting.

Where can I find it?

Green leafy vegetables (Romaine lettuce, spinach, broccoli, kale, etc.)

Carbohydrates

What do they do?

Carbohydrates are a macronutrient that primarily provides our bodies with energy.

Some carbohydrates are also a good source of fiber. Fiber is a type of carbohydrate that can't be digested, but is important for digestive health.

Where can I find them?

Grains, fruits, vegetables, legumes, milk

Fiber is found in whole grains, fruits, vegetables, legumes, nuts and seeds.

Fats and Oils

What do they do?

Fats and oils are macronutrients that provide energy, and are important for cell structure and nerve function.

Some oils provide vitamin E and essential fatty acids needed for immune function.

Where can I find them?

Fat can be found in meat, eggs, dairy, fish, nuts, seeds, etc.

Oils can be found in vegetable oils, nuts and seeds, avocados, olives, fatty fish.

Protein

What does it do?

Protein is a macronutrient that is needed for growth and maintenance, and several other important functions in the body. Can also be used for energy.

Where can I find it?

Meat, eggs, dairy, beans, legumes, grains, small amounts in vegetables

Calcium

What does it do?

Calcium is important for bone health and muscle function.

Where can I find it?

Dairy

Dark green leafy vegetables (Romaine lettuce, spinach, broccoli, kale, etc.)

Foods fortified with calcium (tofu and fortified orange juice, etc.)

Fish with bones (Sardines, canned salmon)

Iron

What does it do?

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

Where can I find it?

Meat, poultry, and seafood

Beans and peas (except green peas)

Spinach and broccoli

Baked potato with skin

Whole grains, fortified grain products

Magnesium

What does it do?

Magnesium is important for bone health and muscle function.

Where can I find it?

Dark green leafy vegetables (Romaine lettuce, spinach, broccoli, kale, etc.)

Nuts and seeds

Beans and Peas

Whole grains

Chocolate

Potassium

What does it do?

Potassium is important for muscle and nerve function.

Eating a diet rich and potassium may help prevent high blood pressure.

Where can I find it?

Fruits and vegetables (especially bananas, oranges, avocados, potatoes, melons, spinach, sweet potato, tomatoes, winter squash, dried fruit)



Zinc

What does it do?

Zinc is important in immune function, cell division, and for strong bones.

Where can I find it?

Meat, poultry, and seafood

Beans and peas (except green peas)

Nuts

Whole grains and fortified grain

Student Lunch Choices - Group 1

Leticia's Choices	Which of your assigned nutrients (Vitamin D, Iron, and Protein) were in her choices?
Monday <ul style="list-style-type: none"> • Corn and Cheese Enchilada • Black Beans • Grapes • Fat-Free Chocolate Milk 	
Tuesday <ul style="list-style-type: none"> • Caesar Veggie Wrap • Baked Sweet Potato Fries • Orange Slices • Fat-Free Chocolate Milk 	
Wednesday <ul style="list-style-type: none"> • Chicken Teriyaki Stir Fry • Banana • Plain Low-Fat Milk 	
Thursday <ul style="list-style-type: none"> • Southwest Salad • Strawberries • Fat-Free Chocolate Milk 	
Friday <ul style="list-style-type: none"> • Strawberry Spinach Salad • Red Bell Pepper Strips with Hummus • Banana • Fat-Free Chocolate Milk 	

Over the entire week, did Leticia choose foods with your assigned nutrients at least once?

If not, what nutrients was she missing?

Student Lunch Choices - Group 1

Deon's Choices	Which of your assigned nutrients (Vitamin D, Iron, and Protein) were in his choices?
Monday <ul style="list-style-type: none"> • Pepperoni Pizza • Banana • Fat-Free Chocolate Milk 	
Tuesday <ul style="list-style-type: none"> • Pepperoni Pizza • Banana • Fat-Free Chocolate Milk 	
Wednesday <ul style="list-style-type: none"> • Pepperoni Pizza • Banana • Fat-Free Chocolate Milk 	
Thursday <ul style="list-style-type: none"> • Pepperoni Pizza • Banana • Fat-Free Chocolate Milk 	
Friday <ul style="list-style-type: none"> • Pepperoni Pizza • Banana • Fat-Free Chocolate Milk 	

Over the entire week, did Deon choose foods with your assigned nutrients at least once?

If not, what nutrients was he missing?

Student Lunch Choices - Group 1

Nikeah's Choices	Which of your assigned nutrients (Vitamin D, Iron, and Protein) were in her choices?
Monday <ul style="list-style-type: none"> • Thai Noodle Salad • Baby Carrots • Banana 	
Tuesday <ul style="list-style-type: none"> • Chicken Sandwich • Corn Niblets • Orange Slices 	
Wednesday <ul style="list-style-type: none"> • Chicken Teriyaki Stir Fry • Baby Carrots • Banana 	
Thursday <ul style="list-style-type: none"> • Spaghetti with Meat Sauce • Mashed Potatoes • Orange Slices 	
Friday <ul style="list-style-type: none"> • Peanut Butter and Jelly Sandwich • Baby Carrots • Banana 	

Over the entire week, did Nikeah choose foods with your assigned nutrients at least once?

If not, what nutrients was she missing?

Student Lunch Choices - Group 2

Leticia's Choices	Which of your assigned nutrients (Vitamin K, Magnesium, Fats and Oils) were in her choices?
Monday <ul style="list-style-type: none"> • Corn and Cheese Enchilada • Black Beans • Grapes • Fat-Free Chocolate Milk 	
Tuesday <ul style="list-style-type: none"> • Caesar Veggie Wrap • Baked Sweet Potato Fries • Orange Slices • Fat-Free Chocolate Milk 	
Wednesday <ul style="list-style-type: none"> • Chicken Teriyaki Stir Fry • Banana • Plain Low-Fat Milk 	
Thursday <ul style="list-style-type: none"> • Southwest Salad • Strawberries • Fat-Free Chocolate Milk 	
Friday <ul style="list-style-type: none"> • Strawberry Spinach Salad • Red Bell Pepper Strips with Hummus • Banana • Fat-Free Chocolate Milk 	

Over the entire week, did Leticia choose foods with your assigned nutrients at least once?

If not, what nutrients was she missing?

Student Lunch Choices - Group 2

Deon's Choices	Which of your assigned nutrients (Vitamin K, Magnesium, Fats and Oils) were in his choices?
Monday <ul style="list-style-type: none"> • Pepperoni Pizza • Banana • Fat-Free Chocolate Milk 	
Tuesday <ul style="list-style-type: none"> • Pepperoni Pizza • Banana • Fat-Free Chocolate Milk 	
Wednesday <ul style="list-style-type: none"> • Pepperoni Pizza • Banana • Fat-Free Chocolate Milk 	
Thursday <ul style="list-style-type: none"> • Pepperoni Pizza • Banana • Fat-Free Chocolate Milk 	
Friday <ul style="list-style-type: none"> • Pepperoni Pizza • Banana • Fat-Free Chocolate Milk 	

Over the entire week, did Deon choose foods with your assigned nutrients at least once?

If not, what nutrients was he missing?

Student Lunch Choices - Group 2

Nikeah's Choices	Which of your assigned nutrients (Vitamin K, Magnesium, Fats and Oils) were in her choices?
Monday <ul style="list-style-type: none"> • Thai Noodle Salad • Baby Carrots • Banana 	
Tuesday <ul style="list-style-type: none"> • Chicken Sandwich • Corn Niblets • Orange Slices 	
Wednesday <ul style="list-style-type: none"> • Chicken Teriyaki Stir Fry • Baby Carrots • Banana 	
Thursday <ul style="list-style-type: none"> • Spaghetti with Meat Sauce • Mashed Potatoes • Orange Slices 	
Friday <ul style="list-style-type: none"> • Peanut Butter and Jelly Sandwich • Baby Carrots • Banana 	

Over the entire week, did Nikeah choose foods with your assigned nutrients at least once?

If not, what nutrients was she missing?

Student Lunch Choices - Group 3

Leticia's Choices	Which of your assigned nutrients (Vitamin E, Potassium, Carbohydrates) were in her choices?
Monday <ul style="list-style-type: none"> • Corn and Cheese Enchilada • Black Beans • Grapes • Fat-Free Chocolate Milk 	
Tuesday <ul style="list-style-type: none"> • Caesar Veggie Wrap • Baked Sweet Potato Fries • Orange Slices • Fat-Free Chocolate Milk 	
Wednesday <ul style="list-style-type: none"> • Chicken Teriyaki Stir Fry • Banana • Plain Low-Fat Milk 	
Thursday <ul style="list-style-type: none"> • Southwest Salad • Strawberries • Fat-Free Chocolate Milk 	
Friday <ul style="list-style-type: none"> • Strawberry Spinach Salad • Red Bell Pepper Strips with Hummus • Banana • Fat-Free Chocolate Milk 	

Over the entire week, did Leticia choose foods with your assigned nutrients at least once?

If not, what nutrients was she missing?

Student Lunch Choices - Group 3

Deon's Choices	Which of your assigned nutrients (Vitamin E, Potassium, Carbohydrates) were in his choices?
Monday <ul style="list-style-type: none"> • Pepperoni Pizza • Banana • Fat-Free Chocolate Milk 	
Tuesday <ul style="list-style-type: none"> • Pepperoni Pizza • Banana • Fat-Free Chocolate Milk 	
Wednesday <ul style="list-style-type: none"> • Pepperoni Pizza • Banana • Fat-Free Chocolate Milk 	
Thursday <ul style="list-style-type: none"> • Pepperoni Pizza • Banana • Fat-Free Chocolate Milk 	
Friday <ul style="list-style-type: none"> • Pepperoni Pizza • Banana • Fat-Free Chocolate Milk 	

Over the entire week, did Deon choose foods with your assigned nutrients at least once?

If not, what nutrients was he missing?

Student Lunch Choices - Group 3

Nikeah's Choices	Which of your assigned nutrients (Vitamin E, Potassium, Carbohydrates) were in her choices?
Monday <ul style="list-style-type: none"> • Thai Noodle Salad • Baby Carrots • Banana 	
Tuesday <ul style="list-style-type: none"> • Chicken Sandwich • Corn Niblets • Orange Slices 	
Wednesday <ul style="list-style-type: none"> • Chicken Teriyaki Stir Fry • Baby Carrots • Banana 	
Thursday <ul style="list-style-type: none"> • Spaghetti with Meat Sauce • Mashed Potatoes • Orange Slices 	
Friday <ul style="list-style-type: none"> • Peanut Butter and Jelly Sandwich • Baby Carrots • Banana 	

Over the entire week, did Nikeah choose foods with your assigned nutrients at least once?

If not, what nutrients was she missing?

Student Lunch Choices - Group 4

Leticia's Choices	Which of your assigned nutrients (Calcium, Vitamin A, Vitamin B12) were in her choices?
Monday <ul style="list-style-type: none"> • Corn and Cheese Enchilada • Black Beans • Grapes • Fat-Free Chocolate Milk 	
Tuesday <ul style="list-style-type: none"> • Caesar Veggie Wrap • Baked Sweet Potato Fries • Orange Slices • Fat-Free Chocolate Milk 	
Wednesday <ul style="list-style-type: none"> • Chicken Teriyaki Stir Fry • Banana • Plain Low-Fat Milk 	
Thursday <ul style="list-style-type: none"> • Southwest Salad • Strawberries • Fat-Free Chocolate Milk 	
Friday <ul style="list-style-type: none"> • Strawberry Spinach Salad • Red Bell Pepper Strips with Hummus • Banana • Fat-Free Chocolate Milk 	

Over the entire week, did Leticia choose foods with your assigned nutrients at least once?

If not, what nutrients was she missing?

Student Lunch Choices - Group 4

Deon's Choices	Which of your assigned nutrients (Calcium, Vitamin A, Vitamin B12) were in his choices?
Monday <ul style="list-style-type: none"> • Pepperoni Pizza • Banana • Fat-Free Chocolate Milk 	
Tuesday <ul style="list-style-type: none"> • Pepperoni Pizza • Banana • Fat-Free Chocolate Milk 	
Wednesday <ul style="list-style-type: none"> • Pepperoni Pizza • Banana • Fat-Free Chocolate Milk 	
Thursday <ul style="list-style-type: none"> • Pepperoni Pizza • Banana • Fat-Free Chocolate Milk 	
Friday <ul style="list-style-type: none"> • Pepperoni Pizza • Banana • Fat-Free Chocolate Milk 	

Over the entire week, did Deon choose foods with your assigned nutrients at least once?

If not, what nutrients was he missing?

Student Lunch Choices - Group 4

Nikeah's Choices	Which of your assigned nutrients (Calcium, Vitamin A, Vitamin B12) were in her choices?
Monday <ul style="list-style-type: none"> • Thai Noodle Salad • Baby Carrots • Banana 	
Tuesday <ul style="list-style-type: none"> • Chicken Sandwich • Corn Niblets • Orange Slices 	
Wednesday <ul style="list-style-type: none"> • Chicken Teriyaki Stir Fry • Baby Carrots • Banana 	
Thursday <ul style="list-style-type: none"> • Spaghetti with Meat Sauce • Mashed Potatoes • Orange Slices 	
Friday <ul style="list-style-type: none"> • Peanut Butter and Jelly Sandwich • Baby Carrots • Banana 	

Over the entire week, did Nikeah choose foods with your assigned nutrients at least once?

If not, what nutrients was she missing?

Student Lunch Choices - Group 5

Leticia's Choices	Which of your assigned nutrients (Vitamin B6, Vitamin C, Zinc) were in her choices?
Monday <ul style="list-style-type: none"> • Corn and Cheese Enchilada • Black Beans • Grapes • Fat-Free Chocolate Milk 	
Tuesday <ul style="list-style-type: none"> • Caesar Veggie Wrap • Baked Sweet Potato Fries • Orange Slices • Fat-Free Chocolate Milk 	
Wednesday <ul style="list-style-type: none"> • Chicken Teriyaki Stir Fry • Banana • Plain Low-Fat Milk 	
Thursday <ul style="list-style-type: none"> • Southwest Salad • Strawberries • Fat-Free Chocolate Milk 	
Friday <ul style="list-style-type: none"> • Strawberry Spinach Salad • Red Bell Pepper Strips with Hummus • Banana • Fat-Free Chocolate Milk 	

Over the entire week, did Leticia choose foods with your assigned nutrients at least once?

If not, what nutrients was she missing?

Student Lunch Choices - Group 5

Deon's Choices	Which of your assigned nutrients (Vitamin B6, Vitamin C, Zinc) were in his choices?
Monday <ul style="list-style-type: none"> • Pepperoni Pizza • Banana • Fat-Free Chocolate Milk 	
Tuesday <ul style="list-style-type: none"> • Pepperoni Pizza • Banana • Fat-Free Chocolate Milk 	
Wednesday <ul style="list-style-type: none"> • Pepperoni Pizza • Banana • Fat-Free Chocolate Milk 	
Thursday <ul style="list-style-type: none"> • Pepperoni Pizza • Banana • Fat-Free Chocolate Milk 	
Friday <ul style="list-style-type: none"> • Pepperoni Pizza • Banana • Fat-Free Chocolate Milk 	

Over the entire week, did Deon choose foods with your assigned nutrients at least once?

If not, what nutrients was he missing?

Student Lunch Choices - Group 5

Nikeah's Choices	Which of your assigned nutrients (Vitamin B6, Vitamin C, Zinc) were in her choices?
Monday <ul style="list-style-type: none"> • Thai Noodle Salad • Baby Carrots • Banana 	
Tuesday <ul style="list-style-type: none"> • Chicken Sandwich • Corn Niblets • Orange Slices 	
Wednesday <ul style="list-style-type: none"> • Chicken Teriyaki Stir Fry • Baby Carrots • Banana 	
Thursday <ul style="list-style-type: none"> • Spaghetti with Meat Sauce • Mashed Potatoes • Orange Slices 	
Friday <ul style="list-style-type: none"> • Peanut Butter and Jelly Sandwich • Baby Carrots • Banana 	

Over the entire week, did Nikeah choose foods with your assigned nutrients at least once?

If not, what nutrients was she missing?

Las Llamas Middle School Lunch Menu

<i>Offered Daily</i>	<i>Monday</i>	<i>Tuesday</i>
<p><i>Entrée</i> Pepperoni Pizza Pepperoni, low-fat cheese, tomato sauce, whole wheat crust</p> <p><i>Milk Choices</i> Low-Fat Milk Fat-Free Chocolate Milk</p> <p><i>Vegetable Choice</i> Baby Carrots</p> <p><i>Fruit Choice</i> Banana</p>	<p><i>Entrée Choices</i> Corn and Cheese Enchilada Whole grain flour tortillas, low-fat cheese Side of Spanish rice Brown rice, canned tomatoes</p> <p>Thai Noodle Salad Chicken, whole wheat noodles, sesame dressing, chopped red bell pepper, shredded cabbage, carrots</p> <p><i>Vegetable Choices</i> Broccoli Black Beans</p> <p><i>Fruit Choice</i> Red Grapes</p>	<p><i>Entrée Choices</i> Chicken Sandwich Chicken patty, whole grain sliced bread</p> <p>Caesar Veggie Wrap Whole grain tortilla, Romaine lettuce, shredded carrots, low-fat cheese, low-fat Caesar dressing</p> <p><i>Vegetable Choices</i> Baked Sweet Potato Fries Corn Niblets</p> <p><i>Fruit Choice</i> Orange Slices</p>
<i>Wednesday</i>	<i>Thursday</i>	<i>Friday</i>
<p><i>Entrée Choices</i> Chicken Teriyaki Stir Fry with Brown Rice Chicken, carrots, zucchini, red bell pepper, teriyaki sauce, over brown rice</p> <p>Strawberry Yogurt Parfait Vanilla yogurt, low-fat granola, sliced strawberries</p> <p><i>Vegetable Choices</i> Romaine Salad Celery Sticks</p> <p><i>Fruit Choice</i> Apple</p>	<p><i>Entrée Choices</i> Spaghetti with Meat Sauce Whole grain-rich spaghetti, tomato and ground beef sauce</p> <p>Southwest Salad with a Whole Grain Roll Spinach, black beans, corn, diced tomato, green bell pepper, low-fat dressing</p> <p><i>Vegetable Choices</i> Mashed Potatoes Spinach Salad</p> <p><i>Fruit Choice</i> Strawberries</p>	<p><i>Entrée Choices</i> Peanut Butter and Jelly Sandwich Whole grain sliced bread, peanut butter, grape jelly</p> <p>Strawberry Spinach Salad with a Whole Grain Roll Spinach, sliced strawberries, shredded cheese, sliced almonds, low-fat dressing,</p> <p><i>Vegetable Choices</i> Hummus and Red Bell Pepper Strips Peas</p> <p><i>Fruit Choice</i> Orange Slices</p>

Nutrient Labels

Instructions:

The nutrient labels are designed to be printed on standard mailing labels (1" x 2 5/8"), such as Avery 5160. For ease of use and printing, the nutrient label file is provided as a separate Word document.

First, download the Word document from the following weblink:

<http://cns.ucdavis.edu/content/training/fof/lessonmaterials/foflabels.docx>

Once downloaded, print the file on the mailing labels of your choice.

The nutrient labels can also be printed on plain paper. If this is the case, cut out the individual labels and place each nutrient into a separate, labeled envelope to simplify distribution to groups. Provide each group with a roll of tape.

Student Lunch Choices - KEY

Leticia's Choices	Which of your assigned nutrients (Vitamin D, Iron, and Protein) were in her choices?
Monday <ul style="list-style-type: none"> • Corn and Cheese Enchilada • Black Beans • Grapes • Fat-Free Chocolate Milk 	Thiamin, Riboflavin, Vitamin B6, Folate, Vitamin B12, Vitamin C, Vitamin A, Vitamin D, Carbohydrates, Fats and Oils, Protein, Calcium, Iron, Magnesium, Potassium, and Zinc
Tuesday <ul style="list-style-type: none"> • Caesar Veggie Wrap • Baked Sweet Potato Fries • Orange Slices • Fat-Free Chocolate Milk 	Thiamin, Riboflavin, Vitamin B6, Folate, Vitamin B12, Vitamin C, Vitamin A, Vitamin D, Vitamin K, Carbohydrates, Fats and Oils, Protein, Calcium, Iron, Magnesium, Potassium, and Zinc
Wednesday <ul style="list-style-type: none"> • Chicken Teriyaki Stir Fry • Banana • Plain Low-Fat Milk 	Thiamin, Riboflavin, Vitamin B6, Folate, Vitamin B12, Vitamin C, Vitamin A, Vitamin D, Carbohydrates, Fats and Oils, Protein, Calcium, Iron, Magnesium, Potassium, and Zinc
Thursday <ul style="list-style-type: none"> • Southwest Salad • Strawberries • Fat-Free Chocolate Milk 	Thiamin, Riboflavin, Vitamin B6, Folate, Vitamin B12, Vitamin C, Vitamin A, Vitamin D, Vitamin K, Carbohydrates, Fats and Oils, Protein, Calcium, Iron, Magnesium, Potassium, and Zinc
Friday <ul style="list-style-type: none"> • Strawberry Spinach Salad • Red Bell Pepper Strips with Hummus • Banana • Fat-Free Chocolate Milk 	Thiamin, Riboflavin, Vitamin B6, Folate, Vitamin B12, Vitamin C, Vitamin A, Vitamin D, Vitamin E, Vitamin K, Carbohydrates, Fats and Oils, Protein, Calcium, Iron, Magnesium, Potassium, and Zinc

Over the entire week, did Leticia choose foods with your assigned nutrients at least once?

Leticia chose foods with all assigned nutrients at least once.

If not, what nutrients was she missing?

She is not missing any nutrients.

Student Lunch Choices - KEY

Deon's Choices	Which of your assigned nutrients (Vitamin D, Iron, and Protein) were in his choices?
Monday <ul style="list-style-type: none"> • Pepperoni Pizza • Banana • Fat-Free Chocolate Milk 	Thiamin, Riboflavin, Vitamin B6, Folate, Vitamin B12, Vitamin C, Vitamin A, Vitamin D, Carbohydrates, Fats and Oils, Protein, Calcium, Iron, Magnesium, Potassium, Zinc
Tuesday <ul style="list-style-type: none"> • Pepperoni Pizza • Banana • Fat-Free Chocolate Milk 	Thiamin, Riboflavin, Vitamin B6, Folate, Vitamin B12, Vitamin C, Vitamin A, Vitamin D, Carbohydrates, Fats and Oils, Protein, Calcium, Iron, Magnesium, Potassium, Zinc
Wednesday <ul style="list-style-type: none"> • Pepperoni Pizza • Banana • Fat-Free Chocolate Milk 	Thiamin, Riboflavin, Vitamin B6, Folate, Vitamin B12, Vitamin C, Vitamin A, Vitamin D, Carbohydrates, Fats and Oils, Protein, Calcium, Iron, Magnesium, Potassium, Zinc
Thursday <ul style="list-style-type: none"> • Pepperoni Pizza • Banana • Fat-Free Chocolate Milk 	Thiamin, Riboflavin, Vitamin B6, Folate, Vitamin B12, Vitamin C, Vitamin A, Vitamin D, Carbohydrates, Fats and Oils, Protein, Calcium, Iron, Magnesium, Potassium, Zinc
Friday <ul style="list-style-type: none"> • Pepperoni Pizza • Banana • Fat-Free Chocolate Milk 	Thiamin, Riboflavin, Vitamin B6, Folate, Vitamin B12, Vitamin C, Vitamin A, Vitamin D, Carbohydrates, Fats and Oils, Protein, Calcium, Iron, Magnesium, Potassium, Zinc

Over the entire week, did Deon choose foods with your assigned nutrients at least once?

Thiamin, Riboflavin, Vitamin B6, Folate, Vitamin B12, Vitamin C, Vitamin A, Vitamin D, Carbohydrates, Fats and Oils, Protein, Calcium, Iron, Magnesium, Potassium, Zinc

If not, what nutrients was he missing?

No, Deon is missing Vitamin E and Vitamin K.

Student Lunch Choices - Group 1

Nikeah's Choices	Which of your assigned nutrients (Vitamin D, Iron, and Protein) were in her choices?
Monday <ul style="list-style-type: none"> • Thai Noodle Salad • Baby Carrots • Banana 	Thiamin, Riboflavin, Vitamin B6, Folate, Vitamin B12, Vitamin C, Vitamin A, Vitamin E, Carbohydrates, Fats and Oils, Protein, Iron, Magnesium, Potassium, and Zinc
Tuesday <ul style="list-style-type: none"> • Chicken Sandwich • Corn Niblets • Orange Slices 	Thiamin, Riboflavin, Vitamin B6, Folate, Vitamin B12, Vitamin C, Vitamin A, Carbohydrates, Fats and Oils, Protein, Iron, Magnesium, Potassium, and Zinc
Wednesday <ul style="list-style-type: none"> • Chicken Teriyaki Stir Fry • Baby Carrots • Banana 	Thiamin, Riboflavin, Vitamin B6, Folate, Vitamin B12, Vitamin C, Vitamin A, Carbohydrates, Fats and Oils, Protein, Iron, Magnesium, Potassium, and Zinc
Thursday <ul style="list-style-type: none"> • Spaghetti with Meat Sauce • Mashed Potatoes • Orange Slices 	Thiamin, Riboflavin, Vitamin B6, Folate, Vitamin B12, Vitamin C, Vitamin A, Carbohydrates, Fats and Oils, Protein, Iron, Magnesium, Potassium, and Zinc
Friday <ul style="list-style-type: none"> • Peanut Butter and Jelly Sandwich • Baby Carrots • Banana 	Thiamin, Riboflavin, Vitamin B6, Folate, Vitamin A, Vitamin E, Carbohydrates, Fats and Oils, Protein, Iron, Magnesium, Potassium, and Zinc

Over the entire week, did Nikeah choose foods with your assigned nutrients at least once?

No.

If not, what nutrients was she missing?

Nikeah is missing Vitamin D, Vitamin K, and Calcium.

Suggested Flip Chart Layout

Student Name (e.g. Deon)

Monday

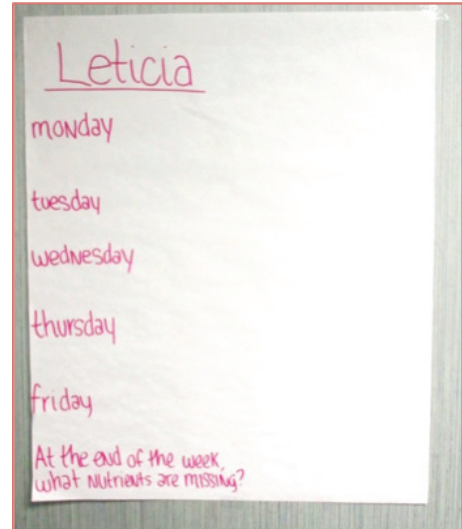
Tuesday

Wednesday

Thursday

Friday

At the end of the week,
what nutrients are missing?



This image is an example of the flip chart layout.



This image is an example of the flip chart after the activity has been completed by participants.

Focus on Food Lesson 1 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.

Nutrients in Action

In this issue...

Proteins, Carbs, and Fat
And Why We Need Them Page 2

Macronutrient or
Micronutrient? Page 2

The Skinny on Different
Kinds of Fats Page 3

Swap It Out! Try these easy
substitutions to eat more
healthy fats. Page 3

Quiz: Are you a vitamin or
mineral? Page 4

Vitamins and Minerals
Micro and Mighty Page 4

Test your knowledge! Take
our nutrient quiz! Page 5

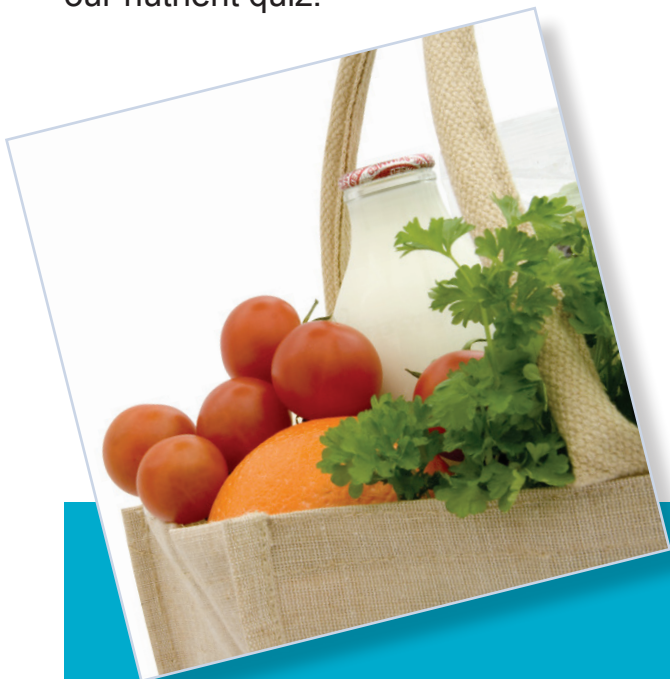


Let's talk about nutrients.

Nutrients are the building blocks for every little thing our bodies do. Much like a really complicated machine, there are many different things we need, and they come from different foods. Like a car needs gas, oil, air in the tires, brake fluid, and other things to run, our bodies need **water, carbohydrates, protein, essential fatty acids, vitamins, and minerals.**

So what do we mean when we say something is an **essential nutrient**? It means the body can't make it, or can't make enough of it and we need to get it from food.

Turn the page to learn more about different nutrients!



Did you know?

All foods contain nutrients, but some have more than others. Foods that are packed with healthy nutrients are called **nutrient-dense.**



Macronutrient or a Micronutrient?

One of the ways we talk about nutrients is **macronutrients** and **micronutrients**.

A macronutrient is one that we need to eat a lot of. These include **protein**, **carbohydrates**, and **fat**.

Micronutrients are nutrients that we only need in small amounts. These include **vitamins** and **minerals**.



Protein, Carbs, and Fat

And why we need them

Protein, **carbohydrates**, and **fats** are the three nutrients that our bodies can use for energy. Let's dive into what else these do for us.

Protein is made up of **amino acids**, which are then used for a variety of functions in the body. Generally, when people think of protein, they think of building and maintaining muscle, but proteins in our bodies perform a wide variety of tasks. Proteins transport nutrients in our blood, support DNA and immune function, and are the building blocks for enzymes and hormones. When we have more protein than we need, it gets burned for energy or converted to fat to be stored and used for energy later.

Carbohydrates primarily serve as a source of energy for our bodies. In fact, carbohydrates are the main fuel for our brains. When we eat too much, carbs are converted to fat to be stored and used for energy later. **Fiber** is a type of carbohydrate that our bodies can't digest, but is important for digestive health. It keeps us regular, and might help prevent diseases like diverticulitis and colon cancer.

Fat not only serves as a primary fuel used by the body for energy, but also contributes several important functions. Fats are made up of **fatty acids**, which are used for a variety of functions in the body. The outside barriers of our cells, the cell membrane, are made up of a substance called phospholipid, which contains fatty acids. Fat is also needed for nerve and immune function and is the main way our bodies store energy to use later.

The Skinny on Different Kinds of Fats



There are two main types: solid fats, which are solid at room temperature, and oils, which are liquid at room temperature. These have different effects on our health.

Solid Fats

Solid fats, which include trans fat and saturated fat, are generally considered unhealthy, because they have been linked to a higher risk for heart disease. What kinds of foods have solid fats? Some of the main ones can be easy to recognize: butter, shortening, lard. But Americans actually get a lot of their solid fats from foods like cheese, pizza,

and desserts. Eating these foods less often and eating smaller portions are two ways a lot of people can eat less solid fat.

Oils

Oils generally contain mostly unsaturated fats. Unsaturated fats come in two types: monounsaturated and polyunsaturated. These are often called healthy fats, because they might help reduce risk of heart disease. Our bodies need certain types of polyunsaturated

fatty acids, called essential fatty acids, because we are not able to make them on our own. These include omega-6 fatty acids, and omega-3 fatty acids.

You can find omega-6 fatty acids in corn oil, soybean oil, and nuts and seeds.

Omega-3 fatty acids can be found in fatty fish (salmon, mackerel, and tuna) and also in walnuts and flaxseed.

Swap it out!

Try these easy substitutions to eat more healthy fats.



Sautee veggies in olive or canola oil instead of butter.



Have a small handful of nuts instead of chips for a snack.



Use a little bit of avocado on your sandwich instead of cheese.



Quiz: Are you a vitamin or mineral?

1. Which would you rather have as your computer desktop background?
 - a. Photo of adorable cows munching on grass
 - b. Photo of the Grand Canyon
3. Which of these would you rather have in your kitchen?
 - a. A really nice bottle of olive oil
 - b. A cast iron skillet
3. How do you feel on a really hot day?
 - a. Some heat is okay. Too much heat – no thanks!
 - b. Handle it just fine. Heat doesn't bother you.

If you chose mostly A's:

You're a vitamin! Vitamins are made by plants and animals, some are found in oil, and some vitamins can be destroyed by too much heat.

If you chose mostly B's:

You're a mineral! Minerals originally come from the soil, cooking in a cast iron skillet can add a little bit of iron (a mineral) to your food, and minerals aren't affected by heat.

Vitamins and Minerals

Micro and Mighty

Vitamins and minerals are micronutrients that are used to help our bodies carry out all the processes we need for life. Unlike macronutrients, they can't be burned for energy.

Vitamins

Vitamins are substances made by plants and animals that our own bodies are generally not able to make, and we need to get through food. There are two major types: fat-soluble and water-soluble.

Fat-Soluble Vitamins

Vitamins A, D, E, and K are the fat-soluble vitamins. This means that they dissolve in fat, but not water (generally). These vitamins serve different purposes in the body. For example, vitamin K is needed for blood clotting, while vitamin D is needed for bone health and immune function.

Water-Soluble Vitamins

Water-soluble vitamins include the B vitamins and vitamin C. These dissolved in water and are important in helping our bodies turn food into energy. Vitamin C also acts as an antioxidant. It helps protect our cells from damage.

Minerals

Minerals are essential micronutrients that originally come from the soil. Our bodies need quite a few different minerals, some of which are iron, calcium, magnesium, and zinc. Like vitamins, different minerals serve different purposes. For example, iron is important in our red blood cells for moving oxygen around our bodies, while zinc is important for wound healing and immune function.

Too much of a good thing?

If some is good, more is better, right? Not always. When it comes to some essential nutrients, there can be some serious health risks from excessive intake. While it can be easy to take too many vitamin and mineral pills to the point where you've eaten an unsafe amount of certain nutrients, a healthy balanced diet has everything you need, without the risk of going over! Eat all the fruits and veggies you want – just go easy on the supplements.

Test your knowledge! Take our nutrient quiz!

1. Which of these nutrients is needed for blood clotting?
 - a. Vitamin K
 - b. Vitamin E
 - c. Vitamin A
 - d. Vitamin C
2. If you eat more protein than your body needs, what happens to the extra?
 - a. You build more muscle with it.
 - b. It gets used for energy or stored as fat.
 - c. It gets turned into vitamin E.
 - d. Nothing. It's impossible to eat more protein than you need.
3. Iron is what kind of nutrient?
 - a. Fat-soluble vitamin
 - b. Water-soluble vitamin
 - c. Carbohydrate
 - d. Mineral
4. Which of these nutrients helps protect our cells from damage by acting as an antioxidant?
 - a. Vitamin B12
 - b. Potassium
 - c. Vitamin C
 - d. Protein
5. True or false – Taking a lot of vitamin and mineral supplements is never a problem.
 - True – It's perfectly safe
 - False – Taking too many can have health risks.



The Results are In!

If you got all five right:

You are a nutrient rock star! You know what nutrients do and where to find them. Keep getting out there and learning more!

If you got three or four right:

You're on the right track! Try finding the information you missed in other pages of this newsletter to become a nutrient master!

If you got one or two right:

It just means you have more opportunities to learn. Read through the newsletter again, or try contacting your local Cooperative Extension office to get reliable nutrition information. Find your Cooperative Extension office at http://ucanr.edu/County_Offices/

Check your answers at the bottom of the page!

1. a; 2. b; 3. d; 4. c; 5. False

