

Lesson 1: Nutrients in Action



Lesson 1: Nutrients in Action

Background Information

Nutrients are substances that provide energy and structure to the body along with supporting 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, therefore they 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 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 to amino acids, which are then used for a variety of functions in the body. Protein's primary role in the body is to provide structure in the form of muscles, tendons, and collagen. However, 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. Protein also provides energy for our bodies (4 calories per gram). Excess protein is 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. There are two general classes of carbohydrates, including 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. Some examples of complex carbohydrates include starches found in potatoes and grains and fiber found in most plant-based foods. Simple sugars and starches provide 4 calories per gram, however simple sugars are absorbed more quickly than starches in the body. Excess carbohydrates 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. With regards to energy, fat serves as the primary fuel used by the body, providing 9 calories per gram. Fat is also an integral part of the structure of every cell in the human body. Additionally, fat plays a crucial role in hormonal and immune system regulation. There are two main types of fats: **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, 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 mostly polyunsaturated 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). It is also important to note that 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. Different vitamins serve different purposes in the body. 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 Appendix 1A for more detail on individual vitamins.)



Minerals are inorganic elements that come from water and soil and are absorbed by plants or eaten by animals. 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. (See Appendix 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: Diet recommendations for Americans produced jointly by the USDA and the US Department of Health and Human Services.

Antioxidants: Substances that help protect our cells and DNA from damage.

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

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

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.

Dietary Reference Intakes: Recommended intakes for each nutrient.

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: are 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

Getting Ready



Time Required

55 minutes

Overall, this lesson requires approximately 90 minutes. It is necessary to provide a strong foundation for the subsequent lessons to build on.



Materials Needed

(*Materials provided in the curriculum)

- Flip chart paper
- Markers, pens, or pencils
- Sheets of adhesive mailing labels, 1" x 2 5/8", such as Avery 5160
- *Nutrients in Action (Appendix 1A)
- *Student Lunch Choices (Appendix 1B)
- *Las Llamas Middle School Lunch Menu (Appendix 1C)
- *Nutrient Labels (Appendix 1D)

Optional:

- *Student Lunch Choices KEY (Appendix 1E)
- *Focus on Food Lesson 1 (PowerPoint)
- Computer
- PowerPoint Projector



Preparation

1. Make copies of *Nutrients in Action* (Appendix 1A), one copy per participant.

Facilitator Tip: To encourage group work, it is recommended that you provide one copy per group. 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.

2. Print one or more copies of *Student Lunch Choices* (Appendix 1B), so that each group has a set.
3. Make copies of *Las Llamas Middle School Lunch Menu* (Appendix 1C), one copy per group.
4. Print one or more copies of *Nutrient Labels* (Appendix 1D), enough that each group has a set. This should be printed either on adhesive mailing labels or on plain paper (please see Appendix 1B for additional instructions).

Appendix 1A – Nutrients in Action

Thiamin	Riboflavin	Vitamin B6
What does it do? Thiamin also called vitamin B1 is important in helping our bodies turn food into energy.	What does it do? Riboflavin also called vitamin B2 is important in helping our bodies turn food into energy.	What does it do? Vitamin B6 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.	Where can I find it? Dairy. Eggs. Meat and poultry. Milk and dairy. Nuts and seeds.	Where can I find it? Meat and poultry. Whole grains. Vegetables. Nuts and seeds.
What does it do? Folate also called vitamin B9 helps the body form red blood cells and is important for growth and repair. It is also important in helping our bodies turn food into energy.	What does it do? Vitamin B12 helps the body form red blood cells and is important in helping our bodies turn food into energy.	What does it do? Vitamin C is important in helping our bodies turn food into energy and is important in helping our bodies turn food into energy.
Where can I find it? Dark green leafy vegetables. Orange juice, carrots, tomatoes, and other fruits. Fortified and enriched grains. Beans and peas.	Where can I find it? Meat, poultry, and seafood. Dairy. Eggs. Fortified foods like Kefir.	Where can I find it? Citrus fruits. Peppers. Berries. Other fruits and vegetables. Potatoes. Tomatoes.

Appendix 1B – Student Lunch Choices

Group 1
Vitamin D
Iron
Protein

Monday
Leticia chose the corn and cheese enchiladas, with black beans, guava, and chocolate milk.
Did Leticia choose foods with your assigned nutrients on Monday? If yes, which nutrients?

Tuesday
On Tuesday, Leticia selected the Chicken veggie wrap, baked sweet potato fries, orange slices, and chocolate milk.
Did Leticia choose foods with your assigned nutrients on Tuesday? If yes, which nutrients?

Wednesday
On Wednesday, Leticia selected the chicken teriyaki on top of a burrito, and plain low fat milk.
Did Leticia choose foods with your assigned nutrients on Wednesday? If yes, which nutrients?

Thursday
On Thursday, Leticia selected the southwest salad, strawberries, and chocolate milk.
Did Leticia choose foods with your assigned nutrients on Thursday? If yes, which nutrients?

Friday
On Friday, Leticia selected the strawberry spinach salad, hot dog pepper strips with ketchup, a banana, and chocolate milk.
Did Leticia choose foods with your assigned nutrients on Friday? If yes, which nutrients?

Weekly
Over the entire week, did Leticia choose foods with your assigned nutrients at least once? If not, what nutrients was she missing?

Appendix 1C – Las Llamas Middle School Lunch Menu

Other Daily	Monday	Tuesday
Breads or Pasta Pretzels, seeded rye rolls, branio sauce, whole wheat bread	Grain and Cheese Enchiladas with black beans, corn, and cheese	Chicken Sandwich with white rice and sweet potato
Milk Choice Whole Milk 2% Milk 1% Milk Lactose Free Milk	Meat Choice Brown Rice, Corned Beef, Chili, and Beans	Chicken Veggie Wrap with cheese, tomatoes, onions, and lettuce
Vegetable Choice Beans Carrots	Vegetable Choice Beans Carrots	Vegetable Choice Beans Carrots
Fruit Choice Banana	Fruit Choice Apple	Fruit Choice Orange Slices
Drinks Chocolate Milk Whole Milk 2% Milk 1% Milk Lactose Free Milk Strawberry Yogurt Parfait Vanilla Yogurt Tropical Smoothie Iced Tea Fruit Smoothie	Drinks Chocolate Milk Whole Milk 2% Milk 1% Milk Lactose Free Milk Strawberry Yogurt Parfait Vanilla Yogurt Tropical Smoothie Iced Tea Fruit Smoothie	Drinks Chocolate Milk Whole Milk 2% Milk 1% Milk Lactose Free Milk Strawberry Yogurt Parfait Vanilla Yogurt Tropical Smoothie Iced Tea Fruit Smoothie

Group 1
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Vitamin D	Vitamin D	Vitamin D
Vitamin D	Vitamin D	Vitamin D
Vitamin D	Vitamin D	Vitamin D
Vitamin D	Vitamin D	Vitamin D
Vitamin D	Vitamin D	Vitamin D
Iron	Iron	Iron
Iron	Iron	Iron
Iron	Iron	Iron

5. Prepare one flip chart for each of the students in the *Student Lunch Choices* Handout (Appendix 1B). 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* (Appendix 1F)
6. Organize the class into small groups of 2 to 4 participants.

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

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

Optional:

8. Make copies of *Student Lunch Choices KEY* (Appendix 1E), one copy per participant.
9. Before participants arrive, connect laptop to projector. Load *Focus on Food Lesson 1* (PowerPoint).



Opening Questions/Prompts

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. **(Slide 2)**



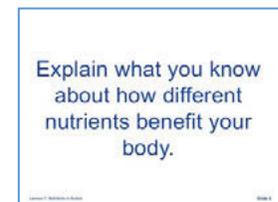
The first prompt I'd like you to discuss within your groups is:

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

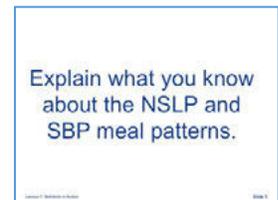
Facilitator Tip: Explain to students that they may write their answers independently or assign one person in their group to write down everyone's thoughts. It may be helpful to explain to the class that they will not be graded at this stage, and that they will learn more about these topics throughout the lesson.



2. **Do:** Allow 2 to 3 minutes for groups to discuss the prompts.
3. **Say:** Now I'd like you to discuss within your groups the next prompt:
 - Explain what you know about how different nutrients benefit your body. **(Slide 4)**



4. **Do:** Allow 2 to 3 minutes for groups to discuss the prompts.
5. **Say:** Now I'd like you to discuss within your groups the last prompt:
 - Explain what you know about the NSLP and SBP meal patterns. **(Slide 5)**



6. **Do:** Allow 2 to 3 minutes for groups to discuss the prompts.
7. **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"?
8. **Do:** Allow about a minute for participants to share their thoughts on this topic with the class.

Facilitator Tip: This sharing phase is a great opportunity to begin to build rapport with participants. Some statements and questions to help engage participants at this phase are: "Tell me more about that"; "What do you mean by..."; "How is that motivating you?"; "Did anyone else write this?"; "That's a very popular opinion." 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.

9. **Say:** What were some of your thoughts on the second prompt, "Explain what you know about how different nutrients benefit your body"?
10. **Do:** Allow about a minute for participants to share their thoughts on this topic with the class.

Facilitator Tip: Continue to make note of misconceptions as they arise. Assure participants that there will be more time to discuss these topics at the end of the lesson.
11. **Say:** What were some of your thoughts on the last prompt, "Explain what you know about the NSLP and SBP meal patterns"?

12. **Do:** Allow about a minute for participants to share their thoughts on this topic with the class.

Facilitator Tip: Continue to make note of misconceptions as they arise. Assure participants that there will be more time to discuss these topics at the end of the lesson.

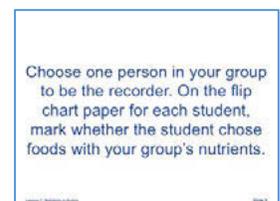
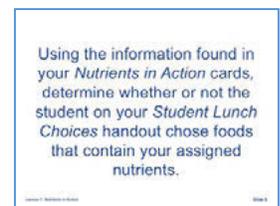
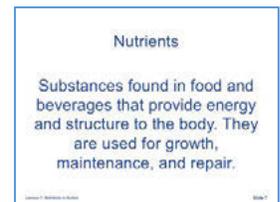


Procedure (Experiencing)

- 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)**
- 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, you will 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)**
- Do:** Provide each group with:
 - One copy of the *Nutrients in Action* Handout (Appendix 1A).
 - One set of the *Student Lunch Choices* Handouts (Appendix 1B).
 - One copy of *Las Llamas Middle School Lunch Menu* (Appendix 1C)
- Do:** Allow several minutes for participants to complete the handout. While participants do so, hang the prepared flip chart papers on the walls around the room.

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.

Facilitator Tip: To reduce congestion during the next step spread the flip charts far apart.
- 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* that will be handed out.
 - 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 Appendix 1F 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.

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

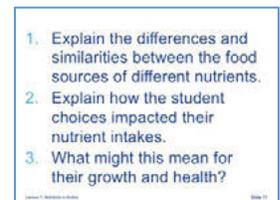


7. **Say:** As a class, let's review the nutrients that the students consumed and did not consume. Who would like to volunteer to describe the nutrients found in the first student's choices, and what nutrients they didn't get over the course of the week?

8. **Do:** Allow a minute or two for the volunteer(s) to review the nutrients consumed and not consumed for each student. **(Slide 10)**

9. **Say:** Now that we have an idea of the nutrients consumed and not consumed by the students, there are few discussion topics to talk over in your groups. Feel free to jot down ideas on your flip chart paper, or on the back of a handout. **(Slide 11)**

- Explain the differences and similarities between the food sources of different nutrients.
- Explain how the student choices impacted their nutrient intake.
- What might this mean for their growth and health?



10. **Do:** While participants are discussing within their groups, visit each group to help guide discussion if needed.

Facilitator Tip: If needed, use prompts to help guide the discussion. Some examples are:

- What are some patterns you notice in the food sources of nutrients?
- Describe the kinds of foods students chose that helped them get a lot of nutrients.
- Describe what the impacts might be if students chose the same foods every single day.
- If they do this a lot, describe what you think will happen in the long term.



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

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

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

- What did you notice about the foods the students chose?
- 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.

3. **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* (Appendix 1E) to each participant at this stage as well.

4. **Do:** Distribute copies of the *Nutrients in Action* Handout 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, the importance of variety in diet, and that eating a variety of foods helps prevent nutrient deficiencies.
- It is important that participants understand that different nutrients perform different functions in our bodies.
- Participants should also understand that 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

Getting Ready



Time Required

15 minutes



Materials Needed

(*Materials provided in the curriculum)

- **Focus on Food Lesson 1* (PowerPoint)
- PowerPoint Projector
- Computer



Preparation

1. Connect laptop to projector. Load *Focus on Food Lesson 1* (PowerPoint).
2. Queue the PowerPoint presentation to Slide 12.



Procedure (Experiencing)

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



Expanding Knowledge

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Slide 13

Slide 13

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

What are nutrients?

- Nutrients are substances that provide energy and structure to the body along with supporting regulatory systems.
- Food contains nutrients.
- Essential nutrients are nutrients that the body needs, but cannot make or cannot make enough of.

Lesson 1: Nutrients in Action

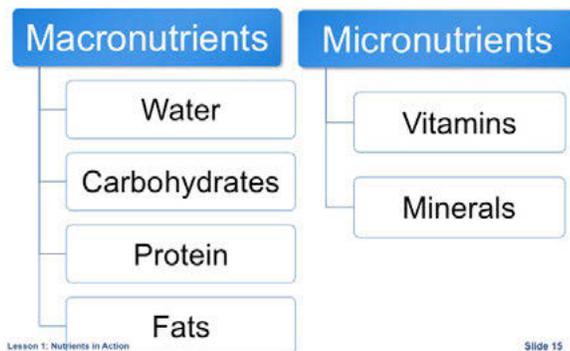
Slide 14

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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Six Types of Nutrients



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Slide 15

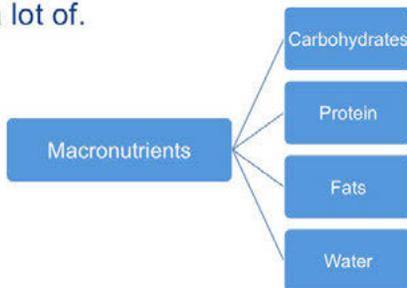
We classify nutrients as either macronutrients, which are ones we need a lot of, or micronutrients, which are ones we only need in small amounts.

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

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Macronutrients

- Macronutrients are nutrients we need a lot of.



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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.

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Calories

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

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Slide 17

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

[Pause to allow responses from the class.]

Calories

- Calorie is 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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Slide 18

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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Slide 19

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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Slide 20

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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Slide 21

What do carbohydrates do for us?

[Pause to allow responses from the class.]

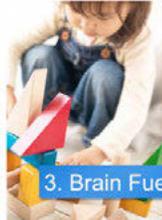
Carbohydrates



1. Fiber



2. Energy



3. Brain Fuel

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Slide 22

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	Plant Sources
Meat	Beans
Poultry	Peas
Fish	Lentils
Eggs	Nuts
Dairy	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.

Slide 23

Protein

- What does protein do for us?

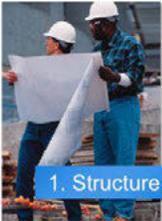
Lesson 1: Nutrients in Action Slide 24

What does protein do for us?

[Pause to allow responses from the class.]

Slide 24

Protein



1. Structure



2. Regulation



3. Energy

Lesson 1: Nutrients in Action Slide 25

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

Slide 25

Fats

Solid

- Saturated Fat & Trans Fat
- Food Sources: Butter, lard, shortening, coconut oil

Liquid

- Monounsaturated Fat & Polyunsaturated Fat
- Food Sources: Nuts, seeds, olives, avocado

Lesson 1: Nutrients in Action

Slide 26

Slide 26

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 kind: monounsaturated and polyunsaturated. Sources of liquid fats include oils, nuts, seeds, olives, and avocado.

Fats

- What do fats do for us?

Lesson 1: Nutrients in Action

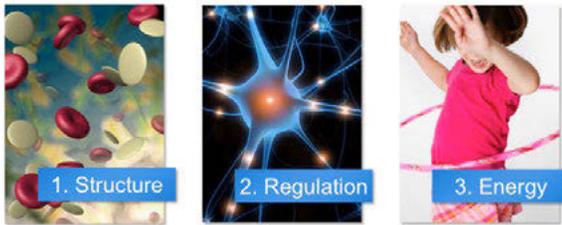
Slide 27

Slide 27

What do fats do for us?

[Pause to allow responses from the class.]

Fats



Lesson 1: Nutrients in Action

Slide 28

Slide 28

What do fats do for us?

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.

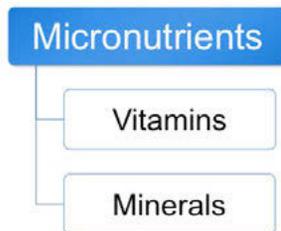
Second, They're involved in regulation. They are needed for

- 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

Micronutrients

- Micronutrients are nutrients we need in small amounts.

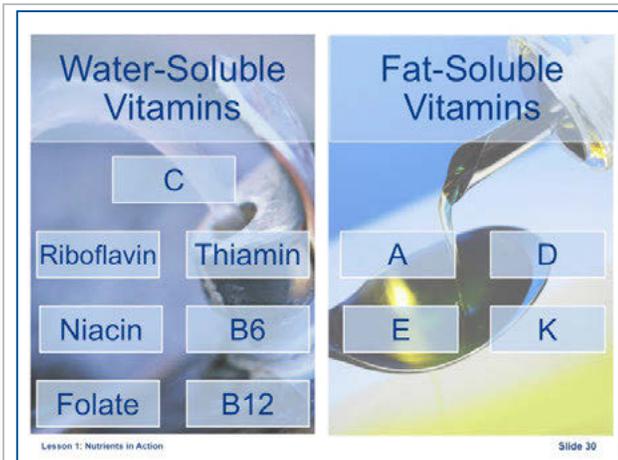


Lesson 1: Nutrients in Action

Slide 29

Slide 29

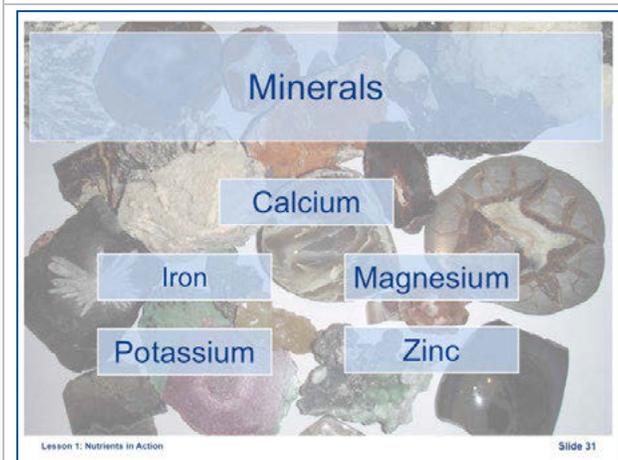
Now that we've gone over the macronutrients, lets think small with micronutrients: Vitamins and Minerals. We only need these in small amounts.



Slide 30

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

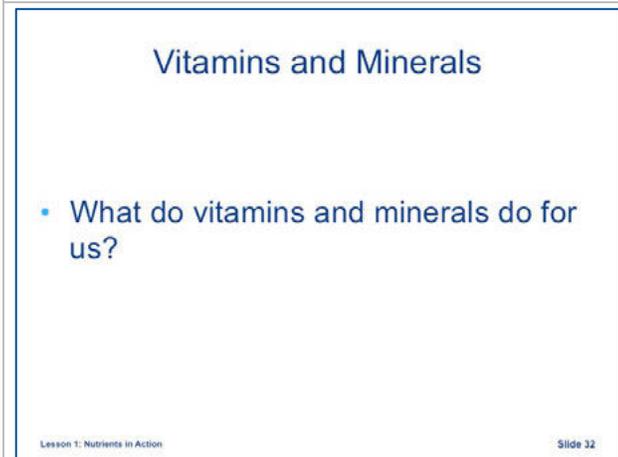
Fat soluble vitamins can be carried by fat or oil, and serve general regulatory roles in the body like blood clotting, such as Vitamin K



Slide 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 32

What do vitamins and minerals do for us?

[Pause to allow responses from the class.]

Strong bones: Vitamins D and K, Calcium, Magnesium, and Zinc

Healthy cells: Vitamins C and E

Healthy vision: Vitamin A

Healthy muscles: Calcium, Magnesium, and Potassium

Healthy immune system: Vitamins C and D, Zinc

Lesson 1: Nutrients in Action 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.

Help turn food into energy: B Vitamins

Help absorb other nutrients: Vitamins C (helps absorb Iron) and Vitamin D (helps absorb Calcium)

Healthy red blood cells: Vitamin B12, Folate, Iron

Healthy blood clotting: Vitamin K

Healthy blood pressure: Potassium

Lesson 1: Nutrients in Action Slide 34

Slide 34

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

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

Lesson 1: Nutrients in Action Slide 35

Slide 35

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 36

Slide 36

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

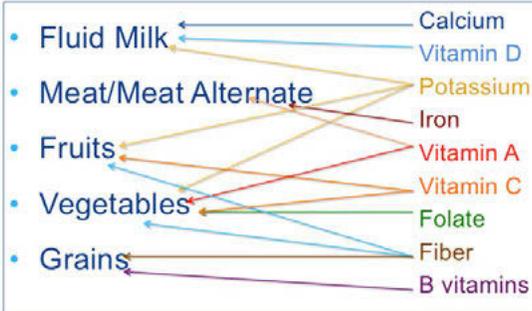
- Because different foods provide different nutrients, eating a variety of different foods helps ensure you meet your nutrient needs

Lesson 1: Nutrients in Action Slide 37

Slide 37

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

38

Slide 38

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

Getting Ready



Time Required

5 minutes



Materials Needed

(*Materials provided in the curriculum)

*Goal Setting: Nutrients in Action (Appendix 1G)

Optional:

*Focus on Food Lesson 1 Newsletter (Appendix 1H)

*Focus on Food Lesson 1 (PowerPoint)

Computer

PowerPoint Projector



Preparation

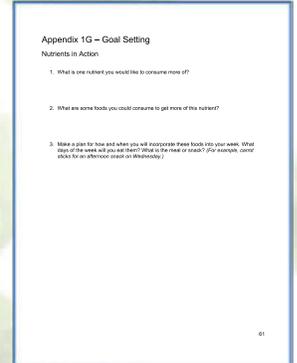
1. Make copies of the *Goal Setting: Nutrients in Action* Handout (Appendix 1G), one for each participant.

Optional:

2. Make copies of the *Focus on Food Lesson 1 Newsletter* (Appendix 1H), one for each participant.

3. Connect laptop to projector. Load *Focus on Food Lesson 1* (PowerPoint).

4. Queue the PowerPoint Presentation to Slide 39.



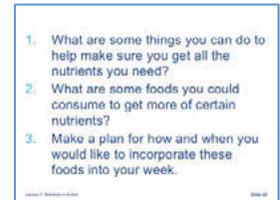


Procedure (Experiencing)

1. **Say:** Now let's move on to Goal Setting! **(Slide 39)** 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 40)**



- 1) What is one nutrient you would like to consume more of?
- 2) What are some foods you could consume to get more of this nutrient?
- 3) 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 (Appendix 1G) 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 41)**
5. **Do:** Provide a copy of the *Focus on Food Lesson 1 Newsletter* (Appendix 1H) to each participant.



Appendix 1A – Nutrients in Action

<p style="text-align: center;">Thiamin</p> <p style="text-align: center;"><i>What does it do?</i></p> <p>Thiamin (also called vitamin B1) is important in helping our bodies turn food into energy.</p> <p style="text-align: center;"><i>Where can I find it?</i></p> <p>Whole grains and fortified grains Beans and Peas Nuts and seeds Pork</p>	<p style="text-align: center;">Riboflavin</p> <p style="text-align: center;"><i>What does it do?</i></p> <p>Riboflavin (also called vitamin B2) is important in helping our bodies turn food into energy.</p> <p style="text-align: center;"><i>Where can I find it?</i></p> <p>Green leafy vegetables (Romaine lettuce, spinach, broccoli, kale, etc.) Fortified grains, Dairy Meat and poultry</p>	<p style="text-align: center;">Vitamin B6</p> <p style="text-align: center;"><i>What does it do?</i></p> <p>Vitamin B6 (also called pyridoxine) is important in helping our bodies turn food into energy.</p> <p style="text-align: center;"><i>Where can I find it?</i></p> <p>Meat and poultry Whole grains Vegetables Nuts and seeds</p>
<p style="text-align: center;">Folate</p> <p style="text-align: center;"><i>What does it do?</i></p> <p>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.</p> <p style="text-align: center;"><i>Where can I find it?</i></p> <p>Dark green leafy vegetables (Romaine lettuce, spinach, broccoli, kale, etc.) Fortified and enriched grains Beans and Peas</p>	<p style="text-align: center;">Vitamin B12</p> <p style="text-align: center;"><i>What does it do?</i></p> <p>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.</p> <p style="text-align: center;"><i>Where can I find it?</i></p> <p>Meat, poultry, and seafood, eggs Dairy Fermented foods like Kimchi</p>	<p style="text-align: center;">Vitamin C</p> <p style="text-align: center;"><i>What does it do?</i></p> <p>Vitamin C is needed for growth and repair and a healthy immune system. It's also important because it helps our bodies absorb iron.</p> <p style="text-align: center;"><i>Where can I find it?</i></p> <p>Citrus fruits Peppers Berries Green leafy vegetables (Romaine lettuce, spinach, broccoli, kale, etc.) Potatoes Tomatoes</p>

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

Appendix 1B – Student Lunch Choices

Group 1:
Vitamin D
Iron
Protein

Leticia

Monday

Leticia chose the *corn and cheese enchilada*, with *black beans*, *grapes*, and *chocolate milk*.

Did Leticia choose foods with your assigned nutrients on Monday? If yes, which nutrients?

Tuesday

On Tuesday, Leticia selected the *Caesar veggie wrap*, *baked sweet potato fries*, *orange slices*, and *chocolate milk*.

Did Leticia choose foods with your assigned nutrients on Tuesday? If yes, which nutrients?

Wednesday

On Wednesday, Leticia selected the *chicken teriyaki stir fry*, *a banana*, and *plain low-fat milk*.

Did Leticia choose foods with your assigned nutrients on Wednesday? If yes, which nutrients?

Thursday

On Thursday, Leticia selected the *southwest salad*, *strawberries*, and *chocolate milk*.

Did Leticia choose foods with your assigned nutrients on Thursday? If yes, which nutrients?

Friday

On Friday, Leticia selected the *strawberry spinach salad*, *red bell pepper strips with hummus*, *a banana*, and *chocolate milk*.

Did Leticia choose foods with your assigned nutrients on Friday? If yes, which nutrients?

Weekly

Over the entire week, did Leticia choose foods with your assigned nutrients at least once? If not, what nutrients was she missing?

Group 1:
Vitamin D
Iron
Protein

Deon

Monday

On Monday, Deon chose *pepperoni pizza, a banana, and fat-free chocolate milk.*

Did Deon choose foods with your assigned nutrients on Monday? If yes, which nutrients?

Tuesday

On Tuesday, Deon selected *pepperoni pizza, a banana, and fat-free chocolate milk.*

Did Deon choose foods with your assigned nutrients on Tuesday? If yes, which nutrients?

Wednesday

On Wednesday, Deon selected *pepperoni pizza, a banana, and fat-free chocolate milk.*

Did Deon choose foods with your assigned nutrients on Wednesday? If yes, which nutrients?

Thursday

On Thursday, Deon selected *pepperoni pizza, a banana, and fat-free chocolate milk.*

Did Deon choose foods with your assigned nutrients on Thursday? If yes, which nutrients?

Friday

On Friday, Deon selected *pepperoni pizza, a banana, and fat-free chocolate milk.*

Did Deon choose foods with your assigned nutrients on Friday? If yes, which nutrients?

Weekly

Over the entire week, did Deon choose foods with your assigned nutrients at least once? If not, what nutrients was he missing? If yes, which nutrients?

Group 1:
Vitamin D
Iron
Protein

Nikeah

Monday

On Monday, Nikeah chose the *Thai noodle salad, baby carrots, and a banana.*

Did Nikeah choose foods with your assigned nutrients on Monday? If yes, which nutrients?

Tuesday

On Tuesday, Nikeah selected the *chicken sandwich, corn niblets, and orange slices.*

Did Nikeah choose foods with your assigned nutrients on Tuesday? If yes, which nutrients?

Wednesday

On Wednesday, Nikeah selected the *chicken teriyaki stir fry, baby carrots, and a banana.*

Did Nikeah choose foods with your assigned nutrients on Wednesday? If yes, which nutrients?

Thursday

On Thursday, Nikeah selected the *spaghetti with meat sauce, mashed potatoes, and orange slices.*

Did Nikeah choose foods with your assigned nutrients on Thursday? If yes, which nutrients?

Friday

On Friday, Nikeah selected the *peanut butter and jelly sandwich, baby carrots, and a banana.*

Did Nikeah choose foods with your assigned nutrients on Friday? If yes, which nutrients?

Weekly

Over the entire week, did Nikeah choose foods with your assigned nutrients at least once? If not, what nutrients was she missing?

Group 2:
Vitamin K
Magnesium
Fats and Oils

Leticia

Monday

Leticia chose the *corn and cheese enchilada*, with *black beans*, *grapes*, and *chocolate milk*.

Did Leticia choose foods with your assigned nutrients on Monday? If yes, which nutrients?

Tuesday

On Tuesday, Leticia selected the *Caesar veggie wrap*, *baked sweet potato fries*, *orange slices*, and *chocolate milk*.

Did Leticia choose foods with your assigned nutrients on Tuesday? If yes, which nutrients?

Wednesday

On Wednesday, Leticia selected the *chicken teriyaki stir fry*, *a banana*, and *plain low-fat milk*.

Did Leticia choose foods with your assigned nutrients on Wednesday? If yes, which nutrients?

Thursday

On Thursday, Leticia selected the *southwest salad*, *strawberries*, and *chocolate milk*.

Did Leticia choose foods with your assigned nutrients on Thursday? If yes, which nutrients?

Friday

On Friday, Leticia selected the *strawberry spinach salad*, *red bell pepper strips with hummus*, *a banana*, and *chocolate milk*.

Did Leticia choose foods with your assigned nutrients on Friday? If yes, which nutrients?

Weekly

Over the entire week, did Leticia choose foods with your assigned nutrients at least once? If not, what nutrients was she missing?

Group 2:
Vitamin K
Magnesium
Fats and Oils

Deon

Monday

On Monday, Deon chose *pepperoni pizza, a banana, and fat-free chocolate milk.*

Did Deon choose foods with your assigned nutrients on Monday? If yes, which nutrients?

Tuesday

On Tuesday, Deon selected *pepperoni pizza, a banana, and fat-free chocolate milk.*

Did Deon choose foods with your assigned nutrients on Tuesday? If yes, which nutrients?

Wednesday

On Wednesday, Deon selected *pepperoni pizza, a banana, and fat-free chocolate milk.*

Did Deon choose foods with your assigned nutrients on Wednesday? If yes, which nutrients?

Thursday

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Did Deon choose foods with your assigned nutrients on Thursday? If yes, which nutrients?

Friday

On Friday, Deon selected *pepperoni pizza, a banana, and fat-free chocolate milk.*

Did Deon choose foods with your assigned nutrients on Friday? If yes, which nutrients?

Weekly

Over the entire week, did Deon choose foods with your assigned nutrients at least once? If not, what nutrients was he missing? If yes, which nutrients?

Nikeah

Monday

On Monday, Nikeah chose the *Thai noodle salad, baby carrots, and a banana.*

Did Nikeah choose foods with your assigned nutrients on Monday? If yes, which nutrients?

Tuesday

On Tuesday, Nikeah selected the *chicken sandwich, corn niblets, and orange slices.*

Did Nikeah choose foods with your assigned nutrients on Tuesday? If yes, which nutrients?

Wednesday

On Wednesday, Nikeah selected the *chicken teriyaki stir fry, baby carrots, and a banana.*

Did Nikeah choose foods with your assigned nutrients on Wednesday? If yes, which nutrients?

Thursday

On Thursday, Nikeah selected the *spaghetti with meat sauce, mashed potatoes, and orange slices.*

Did Nikeah choose foods with your assigned nutrients on Thursday? If yes, which nutrients?

Friday

On Friday, Nikeah selected the *peanut butter and jelly sandwich, baby carrots, and a banana.*

Did Nikeah choose foods with your assigned nutrients on Friday? If yes, which nutrients?

Weekly

Over the entire week, did Nikeah choose foods with your assigned nutrients at least once? If not, what nutrients was she missing?

Leticia

Monday

Leticia chose the *corn and cheese enchilada*, with *black beans*, *grapes*, and *chocolate milk*.

Did Leticia choose foods with your assigned nutrients on Monday? If yes, which nutrients?

Tuesday

On Tuesday, Leticia selected the *Caesar veggie wrap*, *baked sweet potato fries*, *orange slices*, and *chocolate milk*.

Did Leticia choose foods with your assigned nutrients on Tuesday? If yes, which nutrients?

Wednesday

On Wednesday, Leticia selected the *chicken teriyaki stir fry*, *a banana*, and *plain low-fat milk*.

Did Leticia choose foods with your assigned nutrients on Wednesday? If yes, which nutrients?

Thursday

On Thursday, Leticia selected the *southwest salad*, *strawberries*, and *chocolate milk*.

Did Leticia choose foods with your assigned nutrients on Thursday? If yes, which nutrients?

Friday

On Friday, Leticia selected the *strawberry spinach salad*, *red bell pepper strips with hummus*, *a banana*, and *chocolate milk*.

Did Leticia choose foods with your assigned nutrients on Friday? If yes, which nutrients?

Weekly

Over the entire week, did Leticia choose foods with your assigned nutrients at least once? If not, what nutrients was she missing?

Group 3:
Vitamin E
Potassium
Carbohydrates

Deon

Monday

On Monday, Deon chose *pepperoni pizza, a banana, and fat-free chocolate milk.*

Did Deon choose foods with your assigned nutrients on Monday? If yes, which nutrients?

Tuesday

On Tuesday, Deon selected *pepperoni pizza, a banana, and fat-free chocolate milk.*

Did Deon choose foods with your assigned nutrients on Tuesday? If yes, which nutrients?

Wednesday

On Wednesday, Deon selected *pepperoni pizza, a banana, and fat-free chocolate milk.*

Did Deon choose foods with your assigned nutrients on Wednesday? If yes, which nutrients?

Thursday

On Thursday, Deon selected *pepperoni pizza, a banana, and fat-free chocolate milk.*

Did Deon choose foods with your assigned nutrients on Thursday? If yes, which nutrients?

Friday

On Friday, Deon selected *pepperoni pizza, a banana, and fat-free chocolate milk.*

Did Deon choose foods with your assigned nutrients on Friday? If yes, which nutrients?

Weekly

Over the entire week, did Deon choose foods with your assigned nutrients at least once? If not, what nutrients was he missing? If yes, which nutrients?

Group 3:
Vitamin E
Potassium
Carbohydrates

Nikeah

Monday

On Monday, Nikeah chose the *Thai noodle salad, baby carrots, and a banana.*

Did Nikeah choose foods with your assigned nutrients on Monday? If yes, which nutrients?

Tuesday

On Tuesday, Nikeah selected the *chicken sandwich, corn niblets, and orange slices.*

Did Nikeah choose foods with your assigned nutrients on Tuesday? If yes, which nutrients?

Wednesday

On Wednesday, Nikeah selected the *chicken teriyaki stir fry, baby carrots, and a banana.*

Did Nikeah choose foods with your assigned nutrients on Wednesday? If yes, which nutrients?

Thursday

On Thursday, Nikeah selected the *spaghetti with meat sauce, mashed potatoes, and orange slices.*

Did Nikeah choose foods with your assigned nutrients on Thursday? If yes, which nutrients?

Friday

On Friday, Nikeah selected the *peanut butter and jelly sandwich, baby carrots, and a banana.*

Did Nikeah choose foods with your assigned nutrients on Friday? If yes, which nutrients?

Weekly

Over the entire week, did Nikeah choose foods with your assigned nutrients at least once? If not, what nutrients was she missing?

Group 4:
Calcium
Vitamin A
Vitamin B12

Leticia

Monday

Leticia chose the *corn and cheese enchilada*, with *black beans*, *grapes*, and *chocolate milk*.

Did Leticia choose foods with your assigned nutrients on Monday? If yes, which nutrients?

Tuesday

On Tuesday, Leticia selected the *Caesar veggie wrap*, *baked sweet potato fries*, *orange slices*, and *chocolate milk*.

Did Leticia choose foods with your assigned nutrients on Tuesday? If yes, which nutrients?

Wednesday

On Wednesday, Leticia selected the *chicken teriyaki stir fry*, *a banana*, and *plain low-fat milk*.

Did Leticia choose foods with your assigned nutrients on Wednesday? If yes, which nutrients?

Thursday

On Thursday, Leticia selected the *southwest salad*, *strawberries*, and *chocolate milk*.

Did Leticia choose foods with your assigned nutrients on Thursday? If yes, which nutrients?

Friday

On Friday, Leticia selected the *strawberry spinach salad*, *red bell pepper strips with hummus*, *a banana*, and *chocolate milk*.

Did Leticia choose foods with your assigned nutrients on Friday? If yes, which nutrients?

Weekly

Over the entire week, did Leticia choose foods with your assigned nutrients at least once? If not, what nutrients was she missing?

Group 4:
Calcium
Vitamin A
Vitamin B12

Deon

Monday

On Monday, Deon chose *pepperoni pizza, a banana, and fat-free chocolate milk.*

Did Deon choose foods with your assigned nutrients on Monday? If yes, which nutrients?

Tuesday

On Tuesday, Deon selected *pepperoni pizza, a banana, and fat-free chocolate milk.*

Did Deon choose foods with your assigned nutrients on Tuesday? If yes, which nutrients?

Wednesday

On Wednesday, Deon selected *pepperoni pizza, a banana, and fat-free chocolate milk.*

Did Deon choose foods with your assigned nutrients on Wednesday? If yes, which nutrients?

Thursday

On Thursday, Deon selected *pepperoni pizza, a banana, and fat-free chocolate milk.*

Did Deon choose foods with your assigned nutrients on Thursday? If yes, which nutrients?

Friday

On Friday, Deon selected *pepperoni pizza, a banana, and fat-free chocolate milk.*

Did Deon choose foods with your assigned nutrients on Friday? If yes, which nutrients?

Weekly

Over the entire week, did Deon choose foods with your assigned nutrients at least once? If not, what nutrients was he missing? If yes, which nutrients?

Group 4:
Calcium
Vitamin A
Vitamin B12

Nikeah

Monday

On Monday, Nikeah chose the *Thai noodle salad, baby carrots, and a banana.*

Did Nikeah choose foods with your assigned nutrients on Monday? If yes, which nutrients?

Tuesday

On Tuesday, Nikeah selected the *chicken sandwich, corn niblets, and orange slices.*

Did Nikeah choose foods with your assigned nutrients on Tuesday? If yes, which nutrients?

Wednesday

On Wednesday, Nikeah selected the *chicken teriyaki stir fry, baby carrots, and a banana.*

Did Nikeah choose foods with your assigned nutrients on Wednesday? If yes, which nutrients?

Thursday

On Thursday, Nikeah selected the *spaghetti with meat sauce, mashed potatoes, and orange slices.*

Did Nikeah choose foods with your assigned nutrients on Thursday? If yes, which nutrients?

Friday

On Friday, Nikeah selected the *peanut butter and jelly sandwich, baby carrots, and a banana.*

Did Nikeah choose foods with your assigned nutrients on Friday? If yes, which nutrients?

Weekly

Over the entire week, did Nikeah choose foods with your assigned nutrients at least once? If not, what nutrients was she missing?

Group 5:
Vitamin B6
Vitamin C
Zinc

Leticia

Monday

Leticia chose the *corn and cheese enchilada*, with *black beans*, *grapes*, and *chocolate milk*.

Did Leticia choose foods with your assigned nutrients on Monday? If yes, which nutrients?

Tuesday

On Tuesday, Leticia selected the *Caesar veggie wrap*, *baked sweet potato fries*, *orange slices*, and *chocolate milk*.

Did Leticia choose foods with your assigned nutrients on Tuesday? If yes, which nutrients?

Wednesday

On Wednesday, Leticia selected the *chicken teriyaki stir fry*, *a banana*, and *plain low-fat milk*.

Did Leticia choose foods with your assigned nutrients on Wednesday? If yes, which nutrients?

Thursday

On Thursday, Leticia selected the *southwest salad*, *strawberries*, and *chocolate milk*.

Did Leticia choose foods with your assigned nutrients on Thursday? If yes, which nutrients?

Friday

On Friday, Leticia selected the *strawberry spinach salad*, *red bell pepper strips with hummus*, *a banana*, and *chocolate milk*.

Did Leticia choose foods with your assigned nutrients on Friday? If yes, which nutrients?

Weekly

Over the entire week, did Leticia choose foods with your assigned nutrients at least once? If not, what nutrients was she missing?

Group 5:
Vitamin B6
Vitamin C
Zinc

Deon

Monday

On Monday, Deon chose *pepperoni pizza, a banana, and fat-free chocolate milk.*

Did Deon choose foods with your assigned nutrients on Monday? If yes, which nutrients?

Tuesday

On Tuesday, Deon selected *pepperoni pizza, a banana, and fat-free chocolate milk.*

Did Deon choose foods with your assigned nutrients on Tuesday? If yes, which nutrients?

Wednesday

On Wednesday, Deon selected *pepperoni pizza, a banana, and fat-free chocolate milk.*

Did Deon choose foods with your assigned nutrients on Wednesday? If yes, which nutrients?

Thursday

On Thursday, Deon selected *pepperoni pizza, a banana, and fat-free chocolate milk.*

Did Deon choose foods with your assigned nutrients on Thursday? If yes, which nutrients?

Friday

On Friday, Deon selected *pepperoni pizza, a banana, and fat-free chocolate milk.*

Did Deon choose foods with your assigned nutrients on Friday? If yes, which nutrients?

Weekly

Over the entire week, did Deon choose foods with your assigned nutrients at least once? If not, what nutrients was he missing? If yes, which nutrients?

Group 5:
Vitamin B6
Vitamin C
Zinc

Nikeah

Monday

On Monday, Nikeah chose the *Thai noodle salad, baby carrots, and a banana.*

Did Nikeah choose foods with your assigned nutrients on Monday? If yes, which nutrients?

Tuesday

On Tuesday, Nikeah selected the *chicken sandwich, corn niblets, and orange slices.*

Did Nikeah choose foods with your assigned nutrients on Tuesday? If yes, which nutrients?

Wednesday

On Wednesday, Nikeah selected the *chicken teriyaki stir fry, baby carrots, and a banana.*

Did Nikeah choose foods with your assigned nutrients on Wednesday? If yes, which nutrients?

Thursday

On Thursday, Nikeah selected the *spaghetti with meat sauce, mashed potatoes, and orange slices.*

Did Nikeah choose foods with your assigned nutrients on Thursday? If yes, which nutrients?

Friday

On Friday, Nikeah selected the *peanut butter and jelly sandwich, baby carrots, and a banana.*

Did Nikeah choose foods with your assigned nutrients on Friday? If yes, which nutrients?

Weekly

Over the entire week, did Nikeah choose foods with your assigned nutrients at least once? If not, what nutrients was she missing?

Appendix 1C – 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>

Appendix 1D – Nutrient Labels

Instructions:

The following are designed to be printed on standard mailing labels (1" x 2 5/8"), such as Avery 5160.

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.

Group 1

(page 1 of 2)

Vitamin D

Iron

Iron

Iron

Iron

Iron

Iron

Iron

Iron

Iron

Group 1

(page 2 of 2)

Iron

Iron

Iron

Iron

Iron

Iron

Protein

Group 2

(page 1 of 2)

Vitamin K

Magnesium

Magnesium

Magnesium

Magnesium

Magnesium

Magnesium

Magnesium

Magnesium

Magnesium

Group 2

(page 2 of 2)

Magnesium

Magnesium

Magnesium

Magnesium

Magnesium

Magnesium

Fats and Oils

Group 3

(page 1 of 2)

Vitamin E

Potassium

Potassium

Potassium

Potassium

Potassium

Potassium

Potassium

Potassium

Potassium

Group 3

(page 2 of 2)

Potassium

Potassium

Potassium

Potassium

Potassium

Potassium

Carbohydrates

Group 4

(page 1 of 2)

Calcium

Vitamin A

Group 4

(page 2 of 2)

Vitamin A

Vitamin A

Vitamin A

Vitamin A

Vitamin A

Vitamin A

Vitamin B12

Group 5

(page 1 of 2)

Vitamin B6

Vitamin C

Group 5

(page 2 of 2)

Vitamin C

Vitamin C

Vitamin C

Vitamin C

Vitamin C

Vitamin C

Zinc

Appendix 1E – Student Lunch Choices KEY

Leticia

Monday

Leticia chose the *corn and cheese enchilada, with black beans, grapes, and chocolate milk.*

Did Leticia choose foods with your assigned nutrients on Monday? If yes, which nutrients?

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

On Tuesday, Leticia selected the *Caesar veggie wrap, baked sweet potato fries, orange slices, and chocolate milk.*

Did Leticia choose foods with your assigned nutrients on Tuesday? If yes, which nutrients?

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

On Wednesday, Leticia selected the *chicken teriyaki stir fry, a banana, and plain low-fat milk.*

Did Leticia choose foods with your assigned nutrients on Wednesday? If yes, which nutrients?

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

On Thursday, Leticia selected the *southwest salad, strawberries, and chocolate milk.*

Did Leticia choose foods with your assigned nutrients on Thursday? If yes, which nutrients?

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

On Friday, Leticia selected the *strawberry spinach salad, red bell pepper strips with hummus, a banana, and chocolate milk.*

Did Leticia choose foods with your assigned nutrients on Friday? If yes, which nutrients?

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

Weekly

Over the entire week, did Leticia choose foods with your assigned nutrients at least once? If not, what nutrients was she missing? Leticia chose foods with all assigned nutrients at least once. She is not missing any nutrients.

Deon

Monday

On Monday, Deon chose *pepperoni pizza, a banana, and fat-free chocolate milk*.

Did Deon choose foods with your assigned nutrients on Monday? If yes, which nutrients?

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

Tuesday

On Tuesday, Deon selected *pepperoni pizza, a banana, and fat-free chocolate milk*.

Did Deon choose foods with your assigned nutrients on Tuesday? If yes, which nutrients?

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

Wednesday

On Wednesday, Deon selected *pepperoni pizza, a banana, and fat-free chocolate milk*.

Did Deon choose foods with your assigned nutrients on Wednesday? If yes, which nutrients?

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

Thursday

On Thursday, Deon selected *pepperoni pizza, a banana, and fat-free chocolate milk*.

Did Deon choose foods with your assigned nutrients on Thursday? If yes, which nutrients?

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

Friday

On Friday, Deon selected *pepperoni pizza, a banana, and fat-free chocolate milk*.

Did Deon choose foods with your assigned nutrients on Friday? If yes, which nutrients?

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

Weekly

Over the entire week, did Deon choose foods with your assigned nutrients at least once? If not, what nutrients was he missing? If yes, which nutrients? No, Deon is missing Vitamin E and Vitamin K.

Nikeah

Monday

On Monday, Nikeah chose the *Thai noodle salad, baby carrots, and a banana.*

Did Nikeah choose foods with your assigned nutrients on Monday? If yes, which nutrients?

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

Tuesday

On Tuesday, Nikeah selected the *chicken sandwich, corn niblets, and orange slices.*

Did Nikeah choose foods with your assigned nutrients on Tuesday? If yes, which nutrients?

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

Wednesday

On Wednesday, Nikeah selected the *chicken teriyaki stir fry, baby carrots, and a banana.*

Did Nikeah choose foods with your assigned nutrients on Wednesday? If yes, which nutrients?

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

Thursday

On Thursday, Nikeah selected the *spaghetti with meat sauce, mashed potatoes, and orange slices.*

Did Nikeah choose foods with your assigned nutrients on Thursday? If yes, which nutrients?

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

Friday

On Friday, Nikeah selected the *peanut butter and jelly sandwich, baby carrots, and a banana.*

Did Nikeah choose foods with your assigned nutrients on Friday? If yes, which nutrients?

Thiamin, Riboflavin, Vitamin B6, Folate, Vitamin A, Vitamin E, Carbohydrates, Fats and Oils, Protein, Iron, Magnesium, Potassium, and Zinc

Weekly

Over the entire week, did Nikeah choose foods with your assigned nutrients at least once? If not, what nutrients was she missing? No, Nikeah is missing Vitamin D, Vitamin K, and Calcium.

Appendix 1F – 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.

Appendix 1H – 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

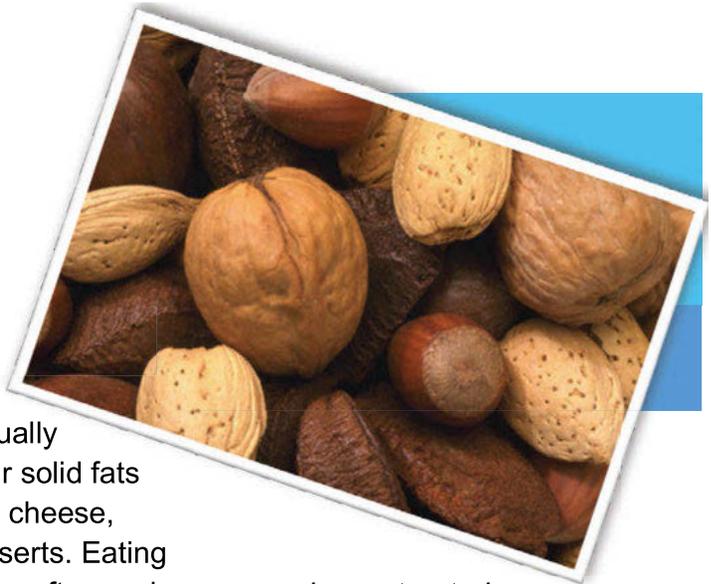
Protein, carbohydrates, and fats are the three nutrients that our bodies can use for energy. Let's dive into what else these do for us.

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!

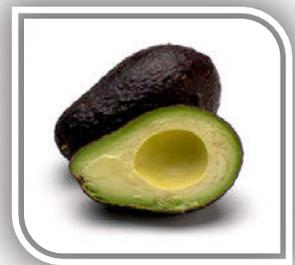
Try these easy substitutions to eat more healthy fats.



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
2. 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.

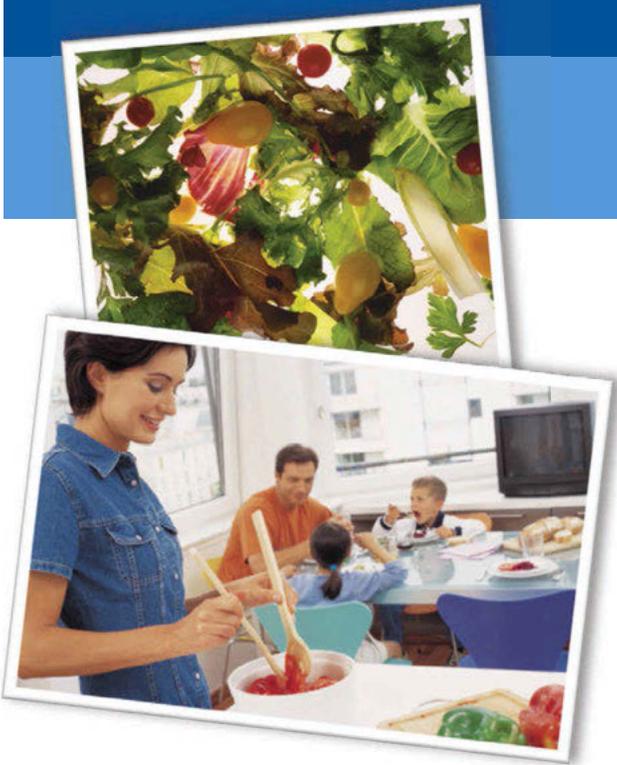
Minerals

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!



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/

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.

Check your answers at the bottom of the page!

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Office of the Assistant Secretary for Civil Rights
1400 Independence Avenue, SW
Washington, D.C. 20250-9410;

(2) fax: (202) 690-7442; or

(3) email: program.intake@usda.gov.

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