

***What are proteins, fats and carbohydrates?***

# Essential Standard

- 7.NPA.1 – Apply tools (MyPlate, Nutrition Facts Label) to plan and employ healthy nutrition and fitness.

# Clarifying Objective

- 7.NPA.1.2 - Analyze Nutrition Facts Labels for nutrients such as proteins, fats, and carbohydrates.

# Statement of Objective:

- *You have already learned about balancing nutrition for health. This lesson will give us an opportunity to compare and contrast three key nutrients in our foods: Protein, Fat and Carbohydrates to find out what nutritional value each one has for maintaining our health.*

*So, how do we decide what is good for us to eat?*

***The results of any weight management program based on a single food item is highly questionable and certainly not very practical over time.***

# Prezi on Nutrition

Analyzing Nutrition  
Food Labels

- Good vs. Bad Carbs Video Clip (5:00 min)



# Types of Carbohydrates

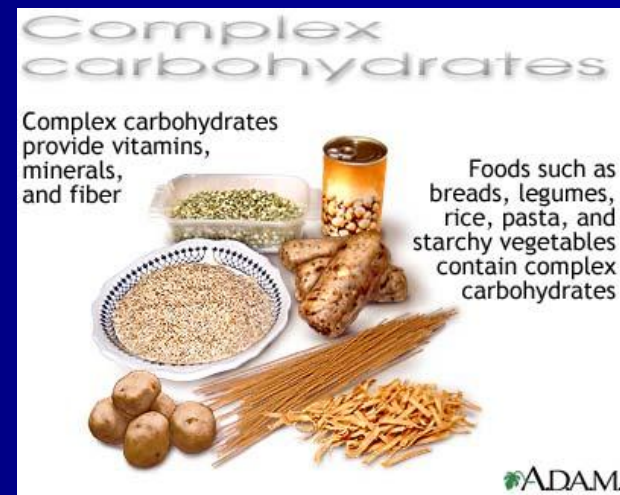
## ■ SIMPLE CARBOHYDRATES

- Simple carbohydrates are quick energy sources, but they **do not usually supply any other nutrients or fiber.**
- **give you quick energy to think and move fast.**



# COMPLEX CARBOHYDRATES

- supply energy and other nutrients and fiber that the body needs.
- They are a better choice
- give you energy that lasts a long time.



# Carbohydrates:

- Carbohydrates provide **four** calories per gram of energy
- Short term energy storage



- EMPTY carbohydrates give you energy but nothing else.

# GOOD CARBS



# BAD CARBS

## WHY CARBOHYDRATES MATTER TO YOU

Over the last 10 years, opinions have ranged wildly on carbohydrates. Some diets promote carbs as healthy, while others shun them. So are carbohydrates good or bad? The short answer is: they're both.

### CARBS ARE EVERYWHERE!

Carbohydrates are not just bread, rice or pasta – all of the following foods are examples of carbohydrates:



Breads & Cereals



Rice & Pastas



Nuts & Seeds



Vegetables & Fruits



Milk & Dairy



Juice & Soda



Candy & Desserts

### COMPLEX CARBS = GOOD

Good carbs are also referred to as complex carbohydrates. Their chemical structure and fibers require our bodies to work harder to digest, and energy is released over a longer time.

For the most part, good carbs are in their 'natural' state – or very close to it (including whole-grain breads, cereals and pastas).



Whole Grain Breads



Bran Cereals



Green Vegetables



Fresh Fruits

#### WHY ARE THEY GOOD?

- 👍 HIGH IN FIBER & NUTRIENTS
- 👍 LOW GLYCEMIC INDEX (SEE BELOW)
- 👍 HELP YOU FEEL FULL WITH FEWER CALORIES
- 👍 NATURALLY STIMULATES METABOLISM

### SIMPLE CARBS = BAD

Simple carbohydrates are smaller molecules of sugar that are digested quickly into our body. The energy is stored as glycogen in our cells, and if not used immediately gets converted to fat.

Bad carbs are generally 'processed' carb foods that have been stripped of their natural nutrients and fiber to make them more 'consumer friendly.'



Candy & Desserts



Sugared Cereals



Sodas & Sugary Drinks



Refined Breads

#### WHY ARE THEY BAD?

- 👎 LOW IN FIBER & NUTRIENTS
- 👎 HIGH GLYCEMIC INDEX (SEE BELOW)
- 👎 EMPTY CALORIES CONVERTED TO FAT
- 👎 HIGH BLOOD GLUCOSE LEVELS = FEEL TIRED

# Protein:

- Proteins provide **four** calories per gram of energy.
- Protein has multiple functions:
  1. **build and repair body tissue.**
  2. **maintain cell growth in the formation of new body tissue**
  3. **aid in the formation of enzymes, some hormones and antibodies.**
  4. **provide as energy if sufficient carbohydrates and fats are not supplied by the diet.**



- Individuals must supply themselves with fresh protein daily, since proteins are constantly needed to replace the wear and tear of the tissues
- The best animal sources of protein for optimum health are milk, eggs, cheese and lean meat.



<i>Healthy PROTEIN Foods</i>	
Beans & Peas	kidney beans, red beans, black beans, pinto beans, white beans, chickpeas, green peas, soybeans, tofu, and more
Nuts & Seeds	peanuts, almonds, walnuts, sunflower seeds, pecans, pumpkin seeds, cashews, and more
Fish	tuna, salmon, and many other types of fish
Lean Poultry	skinless chicken and turkey
Lean Meat	lean cuts of beef, pork, and lamb
Eggs	whole eggs, egg whites, and egg substitute
Milk	low-fat or non-fat

# How to Choose Protein



# 1. Start with a lean choice:

- The leanest beef cuts include round steaks and roasts (eye of round, top round, bottom round, round tip), top loin, top sirloin, and chuck shoulder and arm roasts.
- The leanest pork choices include pork loin, tenderloin, center loin, and ham.
- Choose extra lean ground beef. The label should say at least “90% lean.” You may be able to find ground beef that is 93% or 95% lean.
- Buy skinless chicken parts, or take off the skin before cooking.
- Boneless skinless chicken breasts and turkey cutlets are the leanest poultry choices.
- Choose lean turkey, roast beef, ham, or low-fat luncheon meats for sandwiches instead of luncheon/deli meats with more fat, such as regular bologna or salami.

## 2. Keep it lean:

- Trim away all of the visible fat from meats and poultry before cooking.
- Broil, grill, roast, poach, or boil meat, poultry, or fish instead of frying.
- Drain off any fat that appears during cooking.
- Skip or limit the breading on meat, poultry, or fish. Breading adds calories. It will also cause the food to soak up more fat during frying.
- Prepare beans and peas without added fats.
- Choose and prepare foods without high fat sauces or gravies.

## 3. Vary Your Protein Choices:

- Choose seafood at least twice a week as the main protein food. Look for seafood rich in omega-3 fatty acids, such as salmon, trout, and herring.
- Choose beans, peas, or soy products as a main dish or part of a meal often.
- Choose unsalted nuts as a snack, on salads, or in main dishes. Use nuts to replace meat or poultry

# Fat:

- Fats provide **nine** calories per gram of energy.
- one of three energy sources that we get from food
- **Our bodies need fat for nerve function, healthy skin and to protect our organs**

# Healthy vs Unhealthy

Fats

# Healthy

- healthy fats are plant fats (like nuts or olive oil) and fish oils, or have lower saturated fat (like low-fat milk)
- UNSATURATED FATS —
  - What: Oils found in plants and fish.
  - Where:
    - Vegetable oils like olive and canola oil.
    - Fish, nuts, seeds, peanut and other nut butters.
    - olives, chick peas, and avocados

# Unhealthy

## ■ SATURATED FATS —

- What: **Fats found mostly in animal foods.**
- Where:
  - **Whole milk, cheese, butter, ice cream, red meat, sour cream, lard, coconut and palm oils**

## ■ TRANS FATS —

- What: **Vegetable oils that are chemically changed to increase the shelf life of processed foods.**
- Where:
  - **Fast foods, packaged snacks (cookies, crackers, etc.), baked goods, and stick margarines.**

# How can I tell if a product has trans fats?

- Trans fats are created from plant oils through a process called partial hydrogenation, which makes them solid at room temperature.
- Any time you see the words “partially hydrogenated” in an ingredient listing, it means that trans fats are present!
- Many manufacturers have started labeling their products with “No Trans Fats!” or “Zero Trans Fats!”, but the law says they can do this even when there are up to 0.5g of trans fats in the product. Read the ingredients instead!



# Video Clips

- MyPlate: Dietary Guidelines for Elementary Students
- Fast Food Nutrition (Trans Fat)

# Game

- Divide the class into groups of 4 – 5
- Ask questions and the first group to buzz in a get the answer correct gets a point.
- The team with the most points win.
- Note:
  - Cover the screen so the students can not see the answers 😊

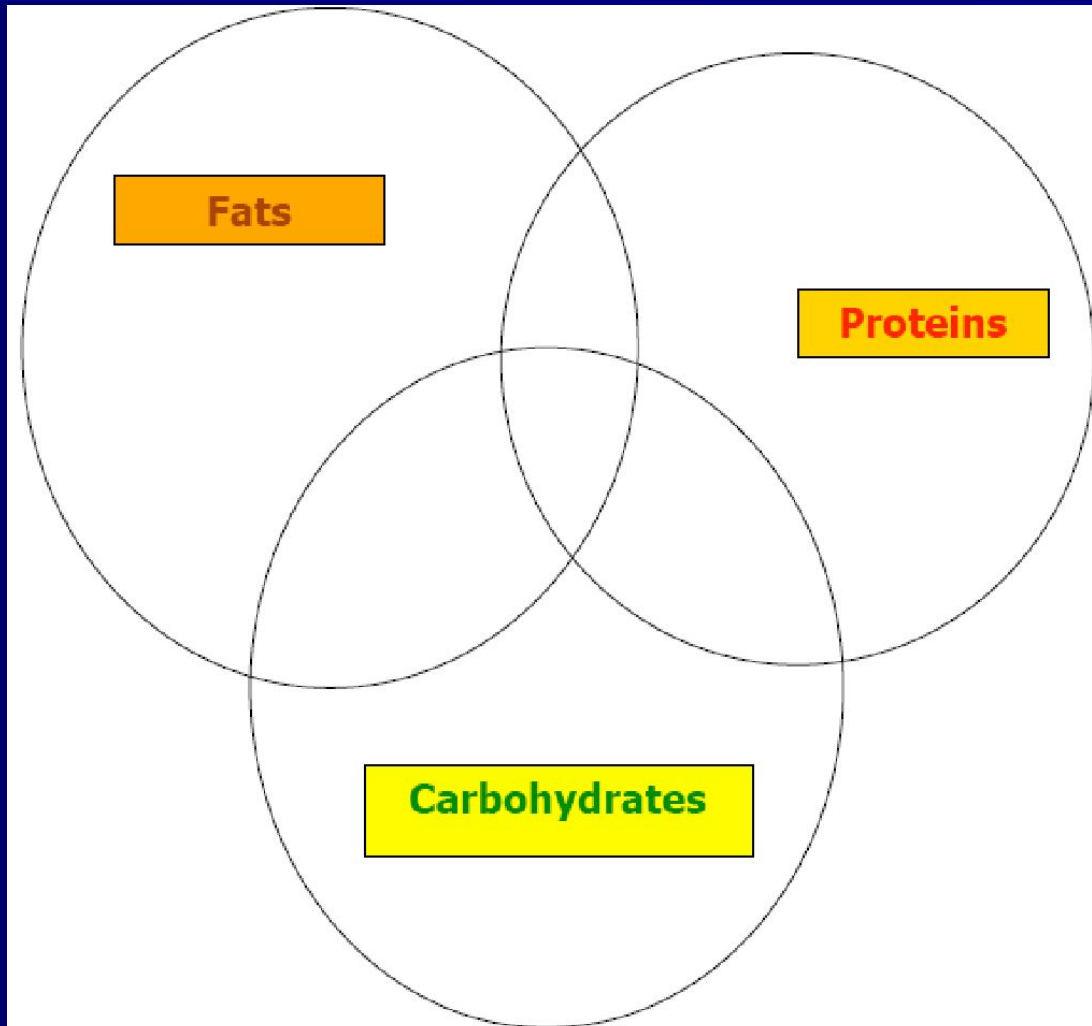
1. How much of your plate at meals should be fruits and vegetables? (Half)
2. What food groups does a beef taco fit into? (Protein Foods: ground meat; vegetable: lettuce, tomato; Grain: tortilla/taco shell; Dairy: cheese)
3. Shrimp belongs to what food group? (Protein Foods)
4. Yogurt belongs to what food group? (Dairy)
5. Beans and peas are special. They belong to two food groups. What are they? (Vegetables and Protein Foods)
6. 100% orange juice is part of what food group. (Fruits)
7. At least 60 minutes of \_\_\_\_\_ is recommended each day for a healthy lifestyle. (Physical activity)
8. Cream cheese is part of what food group? (TRICK! It's not part of any food group. Cream cheese is mostly fat. It does not contain enough nutrients to be part of the Dairy Group.)
9. Provide two examples of a whole-grain food. (Answers can vary, e.g., brown rice, whole-wheat bread/pasta/tortilla/crackers, oatmeal, buckwheat, quinoa, popcorn)
10. Water is part of what food group? (TRICK! It's not. But it is an essential nutrient, and some fruits and vegetables, like cucumber, celery, apple, orange, tomato, and watermelon, have high water content.)
11. Dark-Green, Starchy, Red and Orange, Beans and Peas — these are subgroups of foods in what food group? (Vegetable)
12. What is a whole-grain alternative to white rice? (Brown rice)
13. A Hawaiian pizza, with pineapple and ham as toppings, belongs to what food group? BONUS 2 points (All five! Fruit: pineapple; Vegetable: tomato sauce; Protein Foods: ham; Dairy: cheese; Grain: crust.)

14. Kale is an example of a \_\_\_\_\_. (Vegetable; specifically a dark-green vegetable)
15. Which of the following are examples of physical activity? Jumping rope, playing soccer, taking a walk, raking leaves, yoga, dancing, and sleeping. (All except for sleeping)
16. Name five vegetables beginning with the same letter. BONUS 5 points (Answers can vary, e.g., carrot, celery, collard greens, corn, cassava, cabbage, cauliflower.)
17. What food groups are missing from this meal: Fish, beans, broccoli, milk? (Grain, Fruit)
18. Name two options from each missing food group. BONUS 2 points (Answers can vary, e.g., 100% orange juice, mango, brown rice, whole-wheat pasta.)
19. Walnuts, almonds, and peanuts are examples of what, and all belong to what food group? BONUS 2 points (Nuts, Protein Foods)
20. Which of the following is not a whole grain? Oatmeal, shredded wheat, whole-wheat toast, corn flakes? (Corn flakes)
21. Identify four types of beans that are Protein Foods. (Answers can vary, e.g., black, kidney, soy, pinto, navy)
22. What are five foods from the Fruit Group that make good on-the-go snacks? (Examples include raisins, apples, plums, unsweetened applesauce cups, 100% fruit juice. Note that flavored gummies do not count as fruit.)
23. Make at least half your grains each day whole grains. Which of the following are examples of whole grains? Animal crackers, corn bread, cheese puffs, pretzels, whole-wheat crackers. (Only the whole-wheat crackers)
24. Create a breakfast with foods from the Protein Foods, Fruit, Dairy, and Grain Groups. Make your grain a whole grain. BONUS 4 points (Answers can vary; e.g., whole-wheat English muffin, scrambled egg, strawberries, fat-free milk.)
25. Create a healthy and delicious-sounding snack to help you soar through your day like a rocket ship. Your snack must have ingredients from at least three of the five food groups. BONUS 4 points (Answers can vary; e.g., yogurt with almonds and berries = Protein Foods, Dairy, Fruits.)

# Class Activity

- Write a song or rap to teach others about the different types of foods in the Protein Foods Group and why it's important to eat from this group.
- Include a message that encourages people to choose seafood (fish or shellfish) or beans and peas instead of meat at some meals.
- Students may want to use various instruments or improvise their own.

# Complimentary Circles



# My Pyramid Food Groups

Using the food groupings in My Pyramid, determine which nutrients (fats, protein, and carbohydrates) can be found in each group. Place a check in the appropriate column(s).

	<b>Protein</b>	<b>Fat</b>	<b>Carbohydrates</b>
<b>Grains</b>			
<b>Fruits</b>			
<b>Vegetables</b>			
<b>Meat and Beans</b>			
<b>Dairy</b>			
<b>Oils</b>			

### **What did you discover?**

Now consider your own food choices and whether you have the best balance of the three nutrients to stay healthy. Ask yourself:

1. Do I choose complex carbohydrates instead of sugary sweets? Which ones?
2. Do I limit my fat calories to less than 30% of my total daily calories? How do I limit it?
3. Do I get my protein from low fat sources? Which ones?



- *Now consider your own food choices and whether you have the best balance of the three nutrients to stay healthy. Ask yourself:*
  - *Do I choose complex carbohydrates instead of sugary sweets? Which ones?*
  - *Do I limit my fat calories to less than 30% of my total daily calories? How do I limit it?*
  - *Do I get my protein from low fat sources? Which ones?*

# Closure:

- *We have learned that all three nutrients (proteins, fats, and carbohydrates) have important roles in keeping us healthy. We also found that there are foods that are better sources of these nutrients than others. Now you can all make smarter choices for your own health!*