



Lesson # 8

Lipids & Fats: All About Oils

Time Table

Total Time: 30 minutes

- 2** Minutes: Introduction to Lesson
- 15** Minutes: *All About Oils* PowerPoint Presentation
- 10** Minutes: Activity: *All About Oils Crossword Puzzle*
- 3** Minutes: Explain Take Home: *Healthy Fats*

Goal: Discuss with students the importance of getting a small amount of healthy fats in their diet and how to avoid foods high in saturated and trans-fat.

Objectives:

Students will:

- Understand the importance of fat in the diet.
- Be able to recognize healthy and unhealthy fats in the diet.
- Be able to list foods that are good sources of healthy fats.
- Learn which foods contain unhealthy fats such as saturated and trans-fats.

Materials:

- Lesson:
 - *Fit4Kidz Food Groups and MyPlate* teacher reference
 - *Bad Fat Burger* teacher reference
- Activity:
 - *All About Oils Crossword Puzzle* student activity worksheet
 - *All About Oils Crossword Puzzle* teacher answer key
 - Pencil or pen
- Take Home: *Healthy Fats* handout

Instructions:

1. Begin the lesson with a quick review of last week's *Dairy and Calcium* lesson by asking students to share what new dairy foods they tried in the past week.
2. Tell students that this week's lesson focuses on that dreaded term "fat" and despite what they may have heard, not all fat is bad. So the big question for today is, "are all fats considered bad?" Despite what you may have heard, not all fats are bad. Fats are a necessary part of your diet and while there are some bad fats, such as saturated and trans-fat, there are also good fats.
3. Display the MyPlate model and review the different food groups that are represented colors. Let's review the MyPlate model which is created by the United States Department of Agriculture (USDA) to give all Americans a model to follow to achieve optimal nutrition and obtain a healthy diet! We will review the different food groups that are represented in the MyPlate.
 - **Orange** = Grains Group
 - **Green** = Vegetables Group
 - **Red** = Fruits Group



- **Blue** = Dairy Group
- **Purple** = Protein Group (meats, eggs, and beans)

Oils are not included in the MyPlate model because they are **NOT** a food group. Oils are not a food group but they do contain essential nutrients which makes them essential to the overall diet pattern. Fats are part of most of the food groups but they are present in little amounts. Remind students that the reason the yellow stripe on the old pyramid is smaller than the others is because you should only eat a small amount of fats and oils compared to the other food groups.

Difference between Oils and Solid Fats

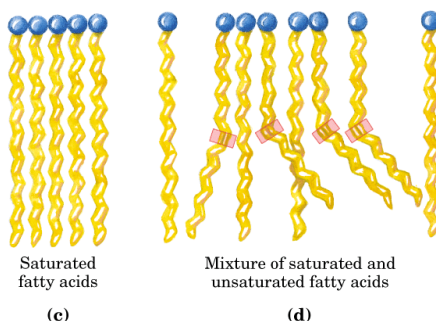
4. "Let's get the basics about fats down before we get into it further." Ask students, "Does anyone know the difference between oils and solid fats?" This may seem like an easy question, but you would be surprised about how many adults do not know the answer to this question. Oils are fats that are liquid at room temperature. Oils come from many sources, such as many kinds of plants and fish. Solid fats are fats that are solid at room temperature. They come from many animal foods and some can come from vegetable oils that have gone through the process of hydrogenation. Vegetable oils that have gone through hydrogenation are known as "trans-fats" and we will talk about that more later on.
5. Does anyone know common oils and solid fats that are part of everyone's daily diet?
 - Common oils: canola oil, corn oil, olive oil, safflower oil, soybean oil, and sunflower oil. All these oils are liquid at room temperature.
 - Common solid fats: butter, milk fat, beef fat, chicken fat, pork fat (lard), stick margarine, shortening, and partially hydrogenated oil.
6. Ask students to tell you what kind of foods they think of when they hear the word fat. Student may respond with high fat foods such as pizza, hamburgers and French fries. Explain to them that they might not have known that there are both good fats and bad fats.
 - **Good fats:** fish, nuts, seeds, avocados, and oils such as olive oil, canola oil and vegetable oil.
 - **Bad fats:** regular cheese, whole milk, butter, beef, bacon, sausage, cookies and doughnuts.
 - Keep in mind that milk and cheese are great sources of calcium so instead of cutting these foods completely out of your diet, substitute them for low-fat options to still get your calcium! Beef, bacon and sausage all contain protein, but to cut the fat, try other high-protein lean meats such as chicken, turkey or fish.

Information about Unsaturated Fats

Good fats are unsaturated fats. There are two types of unsaturated fat which are monounsaturated and polyunsaturated. Monounsaturated fats (MUFAs) are fatty acid chains that have one "kink" in their chain preventing them from becoming solid at room temperature. Polyunsaturated fats which are also known as PUFAs are fatty acid chains that have more than one "kink" in the chain. These kinks prevent the fats from becoming solid at room temperature.

7. Draw the picture illustrated below on the board and explain that these are fatty acid chains. Explain that the "kinks" in the fatty acid chains make a huge

difference in how the fat reacts to temperature. On the left, are five fatty acids with no kinks in the chain which makes them saturated and these fats are found in butter and meats. Saturated fatty acids become solid in room temperature because they have no kinks. On the right there is a mixture of saturated and unsaturated fatty acids. You can clearly see how the kinks in the chains cause the chain to become tangled. This is what causes oils which are unsaturated fatty acids to stay liquid at room temperature. This is a little confusing so if anyone has questions, feel free to ask.



8. Unsaturated fats lower your risk for heart disease and are usually found in foods from plants and fish. MUFAs are found in canola, peanut and olive oils. They can also be found in foods such as avocados, nuts (almonds, hazelnuts and pecans), and seeds (pumpkin and sesame seeds). PUFAs are found in sunflower, corn, soybean and flaxseed oils. They can also be found in foods such as walnuts, flaxseeds, and fish.
9. You may have also heard of omega-3 fats. Omega-3 is a type of PUFA that can not be made by the body. These are an essential part of your diet and you should make sure you get enough. Omega-3 is found in foods such as, fish, flaxseed, walnuts, some oils, and omega-3 supplements.

Information about Saturated and Trans-fats

Explain that our body actually makes all the saturated fat we need so we do not need to eat any of it. Also, the saturated and trans-fat we eat in food is bad for our heart and can add pounds to our weight. The main sources of saturated fat in our diet are red meat and whole-milk dairy products such as cheese, milk and ice cream. Saturated fat can also be found in seafood and poultry with skin. Because dairy products provide much of our calcium and vitamin D, instead of eating regular cheese and whole milk products; you can eat low-fat cheese, low-fat milk and other low-fat dairy products so you are still able to get these nutrients. Trans-fats are found in, baked goods such as doughnuts and cookies, margarine, snack-foods and other processed and fried foods.

Show students the *Bad Fat Burger* teacher reference. Ask them the questions below.

- **Question:** Which parts of this burger do you think contains "bad" fat?
- **Answer:** The beef hamburger patty and the regular cheese.
- **Question:** Why are the beef patty and the regular cheese considered "bad" fats?
- **Answer:** They are made from saturated fatty acids and they become solid at room temperature.
- **Question:** What do you think we could substitute for these bad fats to still get a tasty burger that is healthier for you?

- **Answer:** You can substitute the beef patty for a veggie burger, salmon burger, turkey burger or grilled chicken breast and you can substitute the regular cheese for low-fat cheese to get a delicious healthy meal!

Why is fat important?

A little bit of good fat is important to have in your diet because it allows your body to grow and develop like it should, it provides fuel for the body, and it helps some vitamins be absorbed in your body like vitamins A, D, E and K.

Student's Goal: This week try two healthy-fat recipes at home with your parents! Try the green monster goodness dip and the sea of apples sandwich.

Activity: *All About Oils Crossword Puzzle!*

- Pass out the *All About Oils Crossword Puzzle* activity worksheet.
- Have students use pens or pencils to fill in the answers to the questions under the **down** and **across** sections on the worksheet. Then have them fill these answers into the crossword puzzle.
- After the students have completed the activity, share the answers with them. The instructor's answer key is provided on the website.
- Collect the activity sheets and put them into each student's personal *Fit4kidz* binders or folders.

Take Home: *Healthy Fats*

- Pass out the *Healthy Fats* handout with recipes for the students to bring home and use with their parents.
- For further reference, students and families can visit www.fit4kidz.us.