LESSON OUTLINE
Lesson #2 **: Label Busters**

Lesson Objective: Children learn to identify common food additives which can cause a negative impact on their health. Children use nutrition fact labels and ingredient lists to spot common additives called "red flags".

Classroom Lesson Outline:

1. Review *(2 minutes)*

2. Concepts taught: 3 Red Flags *(15 minutes)*
- a. Added sugars (Emphasis on high fructose corn syrup)
- b. Hydrogenated oils
- c. Artificial ingredients (Emphasis on colors and flavors)

3. Interactive Individual or Group Activities *(15 minutes)*
- a. In groups, students investigate ingredient lists to identify snacks with higher-quality ingredients
- b. Students fill out Label Buster activity sheet
- c. Review as a class

4. Optional Food Sample *(5 minutes)*

Recommended Reading

Sweet but Sinister, By Debra Ginsberg
The Facts About High-fructose Corn Syrup By Amy Palanjian
Guide to Natural Sweeteners

California State Standards met by grade

3rd grade content standards:
Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other three strands, students should develop their own questions and perform investigations.
Students will:
- b. Differenciate evidence from opinion and know that scientists do not rely on claims or conclusions unless they are backed by observations that can be confirmed.
- c. Collect data in an investigation and analyse those data to develop a logical conclusion.

4th grade content standards:
Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other three strands, students should develop their own questions and perform investigations.
Students will:
- a. Differenciate observation from inference (interpretation) and know scientists' explanations come partly from what they observe and partly from how they interpret their observations.

5th grade content standards:
Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other three strands, students should develop their own questions and perform investigations.
Students will:
- g. Record data by using appropriate graphic representations (including charts, graphs, and labeled diagrams) and make inferences based on those data.

SCRIPT

Lesson #2:
Label Busters

Docent note: The lesson begins with a review of the PFC Lesson.

In our first GrowingGreat lesson, we learned our bodies need a combination of protein, fats and carbohydrates.

Question: Who can remember the different categories of proteins?
Answers: 1. Animal – such as beef, fish, chicken and eggs
2. Dairy – such as milk, cheese and yogurt
3. Vegetable sources – such as beans and soy

Question: Who can remember the different categories of carbohydrates?
Answers: 1. Grain – such as breads, pastas, rice or corn
2. Fruit and vegetables – such as grapes, melons, broccoli and lettuce

We also learned that not all fats are created equal. We learned that some fats are actually beneficial for our bodies and our brains.

Question: Who can name some beneficial fats or foods high in beneficial fats?
Answers: Avocado, real butter, olive oil, olives, nuts and seeds, fatty fish like salmon…

It is important to eat a wide variety of proteins, fats and carbohydrates. To make sure you are choosing the foods that have the most benefit for your body, you want to choose foods that are whole and close to their source. Think of these as the higher-quality choice.

Let me give you an example of what I mean by whole and close to the source. If you pick an orange from a tree it is whole and looks just like it did when it came from its source – the tree. If you eat a whole, fresh orange you are eating something that looks and tastes just like it did when it was grown. If you squeeze the orange to make juice, it is not whole anymore and it is a little farther from its original source. It has been changed. If you drink a can of orange soda, you are drinking something that is really far from its original source and is not whole anymore! The orange is higher in quality than the orange soda.

Eating foods that are whole and closest to the source gives your body what it needs to perform at its best. Sometimes we have to grab a packaged food because we are in a hurry and don't have time to select something fresh from the refrigerator or the fruit bowl. These packaged foods are not as close to their original source, however they can be made with ingredients that are whole and close to the source.

PROP *Docent note: Nutrition Facts Label and Ingredient List. You can use the nutrition facts label and ingredient list from your food sample if you are serving food in this lesson.*

When you reach for a packaged food there are two places to look on the package that help you determine if it is a higher-quality food.

1. Point to Nutrition Facts: These are the nutrition facts. They tell us about the different nutrients which are found in the food, such as proteins, fats and carbohydrates
2. Point to Ingredients: The second place you can look is the ingredient list

Question: Raise your hand if you read the ingredients before you eat a food.

Question: Who knows what the ingredient list tells us about a food?

Answer: The ingredient list tells us everything that is used to make that food. For example, if you are reading the ingredients for bread, you will see flour, water, salt and possibly some others.

Sometimes it's easy to identify foods that are higher quality for our bodies and those that are lower quality, and not so good for us. For example, we all know that candy, soda and cookies are not great to eat all the time.

Other times it might not be easy to identify whether a food is higher in quality. For example, you may see a food whose package claims it is "nutritious" or "healthy" but it has a long list of complicated ingredients, which makes you wonder, "Is this really good for me?"

One way to spot the quality of food is to read the ingredient list.

There are certain "red flags" we need to pay attention to in ingredients because they are lower quality and should be avoided or eaten in limited quantities.

Today we are going to concentrate on the three most common red flags added to foods we eat everyday:

They are:
1. Added sugars
2. Hydrogenated oils
3. Artificial colors and flavors

Let's start with ADDED SUGARS.

Docent note: write "added sugars" on the board.

Think back to our star chart which showed us our three fuel types, proteins, fats and carbohydrates (P, F, or C).

Question: Who can guess which fuel type sugar belongs in?

Answer: Carbohydrates. Sugars are a "GO" food, but not all sugars give us lasting energy.

There are whole carbohydrate foods that naturally contain sugar and there are processed carbohydrate foods with sugar added to them.

Some whole carbohydrate foods naturally containing sugar are fruits, vegetables and whole grains.

Some processed carbohydrate foods with sugar added to them are cookies, candy and soda.

When you eat a WHOLE food, such as an orange, you are eating natural sugar as well as many nutrients. Whole foods digest more SLOWLY in your body. This slower digestion gives you a longer lasting source of energy.

When you eat a processed food with sugar added, such as a candy bar or a bowl of sugary cereal, it is digested very quickly. It may provide a short burst of energy, however we are often left feeling hungry and tired very quickly.

There are many different names for added sugar used in ingredient lists so you won't always see the word "sugar."

Question: Does anyone know some of the different names for sugar? (I will give you a hint, anything ending in "ose" is an added sugar.)

Docent note: Write the following answers on the board.

Answers: The most common ones you will see are sugar, brown sugar, maltose, fructose, dextrose, sucrose, corn syrup and high fructose corn syrup.

Often you will see many of these different forms of sugar in the ingredients for a single food. This tells you there is a lot of added sugar in that food.

Question: Has anyone heard of high fructose corn syrup?

Docent note: Underline high fructose corn syrup on the board.

High fructose corn syrup is a highly processed sugar that manufacturers use in foods we eat everyday. We'd expect to see this type of sugar in sweets like ice cream, candy, soda, and cookies.

However, high fructose corn syrup is also found in foods that are not sweets like: ketchup, barbeque sauce, peanut butter, bread, yogurt and sports drinks.

High fructose corn syrup, and other added sugars, are in so many different foods that it is easy to eat a lot of sugar without even realizing it. Reading ingredient lists helps you know how much sugar is in your foods.

There are other, more natural ways to sweeten our foods, which are less processed!

Question: Can anyone name a sweetener that is closer to the source and comes from nature?

Answer: Fresh fruits are a great sweetener. You can add them to oatmeal or yogurt. Honey is a natural form of sugar, is closer to the source and less processed. Since it is a sugar it should still be eaten in moderation.

The second "Red Flag" is called HYDROGENATED OILS.

Docent note: Write HYDROGENATED OILS on the board

Manufacturers use this type of oil as a preservative to make food last longer on the shelf.

Question: Where do you think hydrogenated oils are found on the Star Chart?

Answer: FATS. Hydrogenated oil is a low-quality fat. The process of hydrogenation changes the oil from a liquid to a solid. The chemical changes make it difficult for our bodies to recognize and digest this type of fat.

You may also see it called trans fat, partially hydrogenated oil or shortening.

Hydrogenated oils, like high fructose corn syrup, are another "Red Flag" we find in many of the foods we eat everyday such as bread, peanut butter and crackers.

Another example of a food that may be made with hydrogenated oil is margarine. Margarine is a processed fat that many people use instead of butter. If you read ingredient lists, you can find butter substitute spreads that do not contain this processed fat. Sometimes people cannot eat butter because they are allergic to dairy.

The reasons you want to avoid foods containing hydrogenated oils are:
1. Your body doesn't recognize it as a food, so it is hard to digest
2. It can clog up your pipes (arteries) and cause disease when you get older

It is so important to avoid hydrogenated oils that the manufacturers who make packaged foods are required to list how much is in their food on the nutrition facts label. There it is called "trans fats."

Docent note: Refer to nutrition facts on the label prop.

Read your ingredients so you see how often hydrogenated oil is put in the foods you eat every day.

So far we have talked about two red-flag ingredients: added sugars and hydrogenated oils. Now let's talk about the third Red Flag: ARTIFICIAL INGREDIENTS.

Artificial ingredients are colors or dyes, flavors and sweeteners.

Docent note: write artificial ingredients = colors/dyes, flavors and sweeteners

Question: Can someone name a color or dye you would see in a sport drink or a candy?

Answers: Red, blue, yellow. Often they have a number after them, like Red dye #3.

Artificial colors are chemicals. They do not change the way a food tastes, only the way it looks. If a manufacturer makes a "raspberry" drink, and they don't use enough real fruit to make it red, they use artificial red dye to trick us into thinking it must have a lot of fruit because it looks so red!

Question: Who can name an artificial sweetener you might find in a diet drink?

Answers: NutraSweet (aspartame), Splenda, saccharin.

Like artificial colors, artificial sweeteners are made from chemicals. Artificial flavors are usually just listed as artificial flavors. For example, if you read the ingredient list for strawberry candy it might list "artificial" strawberry flavor. Whole foods, real foods, naturally give us bright colors and sweet flavors.

Question: Who can name a High-Quality WHOLE carbohydrate that is NATURALLY red, super sweet and bursting with flavor?

Answers: Strawberry, grapes, raspberries, apples, cherries, pomegranates

A great way to eat a wide variety of HQ (High Quality) foods is to try to incorporate all the colors of the rainbow.

Question: Can anyone name some natural ways we can eat the color orange?

Answers: Oranges, peaches, nectarines, butternut squash, yams, orange bell peppers, mango, carrots, papayas.

Question: What is a natural way you can eat blue?

Answers: Blueberries are close, but if you juice them they come out more purple.

Blue as a food or drink is not a color found naturally, so be wary if you see blue foods that say "good for you!"

All artificial ingredients are man made and are more chemical than food. Each one can be harmful to your body, so it's best to have HIGH-QUALITY foods with natural color, flavor and sweetness straight from nature.

Now we are going to do an activity so you have a chance to read ingredient lists.

Docent note: have assistant hand out activity sheet now.

You are going to become a "label buster." You will investigate two different snack bars. Your job is to see if their ingredient lists live up to their label claims of being nutritious. By a label's claim, I mean the healthy nutrition statements that are spelled out in big letters or a bold star. An example is "Excellent source of vitamin C" or "wholesome".

Question: Can you name any others you may see on a packaged food or hear on a television commercial?

Answers: "Nutri" or "Nutritious" or "Healthy" as part of the name
"Excellent source of calcium"
"Made with real fruit"
Cereals - "part of this nutritious breakfast"

These are all different things that manufacturers say to give you the impression their food is

a higher-quality choice. You should never believe these claims until you do a little more research, such as reading the ingredient list.

After filling out your label buster activity sheet, you will decide if each bar's label is "busted" or not.

The bars you will investigate are: the Close to the Source Berry Bar and the Nutritious Fruity Bar.

Working with your seat partner, read the ingredients list for each bar looking for the "red flags" we just talked about and that are here on the white board..

As you come across "red flag" ingredients, check them off your activity sheet.
For example, I am reading the Nutritious Fruity Bar's ingredients. The first thing I am looking for is high fructose corn syrup. If I see it, I go to the row on my activity sheet that says high fructose corn syrup and put a check mark under the Nutritious Fruity Bar column.

Don't be surprised if you see the same red flag listed many times! Add another checkmark, too!

When you are finished reading the ingredients for both bars, answer the questions at the bottom of the activity sheet to decide which bar is "busted" because it does not live up to its label's claims.

Docent note: Instruct kids to start filling out their label buster forms by reading ingredient lists; assist younger students by walking around and helping them spot the red flags.

Question: Which bar has the most red flags in its ingredient lists?
Answer: Nutritious Fruity Bar

Question: Do these added ingredients sound whole or close to the source?
Answer: No.

Question: Is this bar busted?
Answer: Yes.

Let's review the ingredients for this bar:
1. It has Hydrogenated oils.
2. It has High Fructose Corn Syrup (HFCS) listed 3 TIMES!
3. It contains 7 different kinds of sugar (HFCS, fructose, brown sugar, molasses, dextrose, sugar, and honey).
4. It contains artificial color (red dye).
5. It has 2 kinds of artificial flavors (artificial brown sugar and artificial vanilla flavor).

Now let's compare it to the Close to the Source Berry Bar:
1. There are NO hydrogenated oils.
2. There is no HFCS.
3. There is 1 forms of sugar, it is minimally processed and close to the source (pineapple juice syrup).
4. There are no artificial colors.
5. There are no artificial flavors.

I want you to notice something else about the "busted" bars;

Docent note: hold up ingredient lists for both bars.

Lower-quality foods usually have a LONG list of ingredients, with lots of words we do not recognize. The Nutritious Fruity Bar has a very long list of ingredients.

Question: Do you recognize all of them?

The higher-quality bar has fewer ingredients and we recognize them. It is important to remember: higher quality foods have short ingredient lists and contain ingredients we recognize.

That is our lesson for today. You did a great job and learned about 3 different types of red flags you can look out for on ingredient lists:

1. Added sugars, especially high fructose corn syrup
2. Hydrogenated oils and partially hydrogenated oils
3. Artificial ingredients

Docent note: show the Grill Me take-home flyer. Encourage students to share it with their parents.