

Lesson 6: Whole Grains

SCARLET CAMPERS

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Lesson Overview:

In this lesson, campers will learn about the concept of whole grains. The lesson will begin by mixing ingredients for whole grain blueberry muffins and baking the batter. Next, campers will learn about different types of grain and the definition of a whole grain. Then, campers will make small sensory bins with colored rice. The lesson will end with campers enjoying the whole grain blueberry muffins and discussing their taste and texture.

Behavior Change Objective:

As a result of this lesson, campers will be familiar with whole grains and choose to incorporate whole grains into their daily food choices.

Learning Objectives:

After participating in this lesson, campers will be able to:

- Identify at least three grains
- Verbalize the definition of a whole grain
- Demonstrate at least 1 method of preparing a whole grain

Key Words:

Whole grains, baking for kids, blueberry muffin, nutrition, sensory rice, rice crafts

Before you Begin:

- Gather necessary materials, listed below
- Mix wet muffin ingredients (see recipe), including flax meal mixture
- Mix dry muffin ingredients (see recipe) and set aside
- Line mini muffin tins with cupcake liners
- Preheat oven to 400 degrees Fahrenheit
- For each student, lay 3 pipe cleaners at right angles and twist the center to hold in place so that they form a star shape. Set aside.
- Make a batch of muffins beforehand using recipe before class starts and set to cool



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Ingredients:

- 4 tablespoons flax meal (*wet*)
- ½-1 cup water (to mix with flax meal)
- 3 ½ cup plus whole wheat flour (*dry*)
- 2 teaspoon baking powder (*dry*)
- 1 teaspoon kosher salt (*dry*)
- ⅔ extra-virgin olive oil (*wet*)
- 1 cup honey or maple syrup (*wet*)
- 1 cup almond milk (*wet*)
- 4 teaspoon vanilla extract (*wet*)
- 2 cup (12 ounce) blueberries, fresh or frozen (*to mix with batter*)
- 4 tablespoons sugar (*topping*)
- 1 cup instant oats (*topping*)
- 1 bag dry brown rice for display
- Whole grain/multigrain Cheerios, 1 box per ten students

Materials:

- 2 large mixing bowls
- 3 clear bowls
- Wooden spoon (1 per 6 students in group)
- Miniature muffin tins (*Smaller muffins will bake and cool more quickly than larger ones*)
- Miniature cupcake liners
- Sheet pan/ Cookie sheet
- Rubber spatula
- Potholders
- Pipe cleaners (4 per student)
- Cooking Spray

Lesson Procedure and Script:

These are the talking points but make it your own! Most of all, have fun!

1. Introduce yourself and lesson topic of grains:

“Hi everyone, how are you today? In today’s lesson we are going to learn more about grains and about a particular type of grain called whole grains. We are also going to get to make and eat whole grain blueberry muffins! Then, we’re going to use whole grains to make bird feeders you can take home!”

2. Review class attention grabber:

“Does everyone remember what I do when I need to get your attention?”-
Demonstrate 2 slow claps, then 3 fast claps, wait for students to clap back.

3. Review previous lessons – Plant a Seed/Food Combinations/Fruit Skewers/Composting/Protein:

“Did anyone eat anything with beans in it this week? What other foods with protein did you eat? Did anyone have plant protein? Animal protein?”



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Lesson Procedure and Script (continued):

5. Introduce topic of grains:

Note: If a whiteboard is available, a diagram of a grain with germ, endosperm, and bran is helpful. Color in the bran and leave the germ white.

“Let’s talk about grains. Does anyone know what grains are? Right, things like wheat, the rice at your tables, oats, corn, barley, rye, quinoa, buckwheat, even popcorn are grains! Grains are actually seeds that come from different grasses. Not like the grass that grows on your lawn though! Humans have been farming different grains for thousands of years. People collect the grains from the grasses, then you can do all kinds of things with them. Grains can be ground up into flour and used for baking, like we’re doing today.”

“Has anybody heard the phrase “whole grain”? What do you think that means? Right, it meant that you’re eating the whole grain! Whole grains have a few basic parts. The outer layer is called the bran, which has a lot of fiber that helps you digest foods. The germ is the part that would grow into a new plant if you planted your grain seed. Next is the endosperm, which has a lot of carbohydrates to feed the baby plant. When you take off the bran and the germ and just use the endosperm of wheat, that’s how you get white flour. If you leave the grain all together, what do you get? Right, whole wheat flour!”

Everybody has some brown rice at your table, go ahead and feel it. That rough exterior is the bran, and gives the rice its color! There is also red, and even black rice with differently colored brans!

Our blueberry muffins are made from whole grain flour and also contains other whole grains too like flaxseed and oatmeal.”



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Lesson Procedure and Script (continued):

4. Make whole grain blueberry muffins:

“As part of our lesson today we’re going to be baking blueberry muffins!

“This recipe only has three parts. First is this dry mix, which has whole wheat flour, baking powder, and a pinch of salt. Then we have our wet ingredients, which are almond milk, flaxseed meal, water, honey, and vanilla. Last is the thing that makes our muffins blueberry muffins- blueberries!”

“Can we get three volunteers to come up and help? Great! First, dump the wet ingredients into the dry ingredients. Good job! Our next volunteer can start stirring the batter. Well done! Now that the batter is mixed, our last volunteer can dump in the blueberries. Excellent!”

Fill muffin cups and top with oat mixture.

“Looking good! Now it’s time to bake our muffins. We have already preheated our oven to 350 degrees Fahrenheit, now we’ll pop these in for 20-25 minutes to bake.

That was fun!



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(continued)

Lesson Procedure and Script (continued):

7. Hand out pre-baked muffins for students to taste.

"Now everyone will get a chance to try a whole grain blueberry muffin! Enjoy, and tell the rest of your table about the taste and the texture of the muffins!"

Give students a chance to try the muffins and discuss at their tables. If students dislike the muffins, remind them not to "yuck my yum" and that everyone has different tastes.

"Those were great! I'm sure the ones you made will be just as good! Does anyone want to talk about the taste and texture of the muffins?"

6. Make whole grain bird feeders

"Okay everyone, now we're going to use a different whole grain food you might be familiar with: whole grain cereal! We have whole grain and multigrain cheerios here, can you think of any other whole grain cereals? We're going to use them to make bird feeders that you can hang outside to give birds a nutritious snack! We have our pipe cleaners ready for you all to thread cheerios onto. Make sure to leave room at the top to twist it closed, then use the last pipe cleaner to make a little hook!"

Demonstrate completed birdfeeder, and the beginning of the process with a fresh set of pipe cleaners. Hand out pipe cleaner stars. Do not allow students to pick colors.

(Refer to <https://blossomsandposies.com/blog/cheerio-bird-feeders/> for example)



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Whole Grain Blueberry Muffins/Sensory Rice Bins: Hands-On Activity:

1. **Adults**- Preheat oven to 350 degrees before class
2. **Adults**- Pull wet mix from fridge, blueberries from freezer
3. **Kids**- (3 volunteers) Pour wet mix into dry mix, stir until combined, pour in blueberries
4. **Adults and Kids**- Line 2 muffin tins with cupcake liners, spray liners and pan with nonstick cooking spray
5. **Adults and Kids**- Kids scoop up a spoonful of batter, adults use rubber spatula to guide it into muffin cups. Kids sprinkle oats on top.
6. **Adults**- Bake muffins for 20-25 minutes until firm
7. **Adults**- Set out bowl of rice varieties, plastic bins
8. **Adults and Kids**- Fill bins with choice of rice varieties
9. **Kids**- Decorate bins
10. **Adults**- Pull muffins when they are firm, carefully place on cooling racks. Allow muffins to cool completely
11. **Adults and Kids**- Enjoy some muffins!



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Recipe

Whole Grain Blueberry Muffins

Ingredients:

- 4 tablespoons flax meal
- ½-1 cup water
- 3 ½ cup plus whole wheat flour
- 2 teaspoon baking powder
- 1 teaspoon kosher salt
- ⅔ extra-virgin olive oil
- 1 cup honey or maple syrup
- 1 cup almond milk
- 4 teaspoon vanilla extract
- 2 cup (12 ounce) blueberries, fresh or frozen
- 4 tablespoon coconut sugar
- 1 cup instant oats



Instructions:

1. Preheat the oven to 400 degrees Fahrenheit.
2. Combine flax meal with ½ cup water, set aside. If mixture is too thick, add water to get an egg-like consistency.
3. In a large mixing bowl, combine flour with the baking powder and salt. Mix them together with a whisk.
4. In a medium mixing bowl, combine the oil and honey or maple syrup and beat together with a whisk. Add the flax mixture and beat well, then add the almond milk and vanilla. Mix well.
5. Pour the wet ingredients into the dry and mix with a big spoon, just until combined (a few lumps are ok). Gently fold the blueberries into the batter. The mixture will be thick, but don't worry.
6. Mix oats and coconut sugar in a small bowl.
7. Divide the batter evenly between the 24 muffin cups (I used an ice cream scoop with a wire level, which worked perfectly). Sprinkle the tops of the muffins with coconut sugar and oat mixture. Bake the muffins for 16 to 19 minutes, or until the muffins are golden on top and a toothpick inserted into a muffin comes out clean.
8. Place the muffin tin on a cooling rack to cool. You might need to run a butter knife along the outer edge of the muffins to loosen them from the pan. If you have leftover muffins, store them, covered, at room temperature for 2 days, or in the refrigerator for up to 5 days. Freeze leftover muffins for up to 3 months.



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