

Lesson 5: Protein

SCARLET CAMPERS

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Lesson Overview:

In this lesson, campers will learn about different sources of protein in their diets, how their bodies use proteins, and how to incorporate more plant-based proteins into their diets. First, campers will learn about protein sources and uses of protein in the body. Next, campers will work together to make chickpea cookie dough. Finally, they will make mosaic art with dry beans to end the lesson.

Behavior Change Objective:

As a result of this lesson, campers will incorporate more unprocessed proteins into their diets and be excited to cook with various forms of protein.

Learning Objectives:

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

- Identify plant and animal sources of protein
- Explain at least 1 vital function of protein in the body
- Demonstrate at least 1 method of preparing a protein

Key Words:

Protein, plant-based protein, animal-based protein, nutrition, nutrients, chick-peas, beans, baking

Before you Begin:

- Gather necessary supplies, listed below.
- Prepare example clay bean art
- Set out bowl of dried chickpeas at each table
- Prepare a circle of air-dry clay for each student



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Ingredients:

- 2 cans chickpeas
- 2/3 Cup Nut or seed butter (sunflower)
- 1/2 Cup oat flour
- 1/2 Cup maple syrup
- 3 tsp vanilla paste
- 1 tsp Kosher salt
- 1/2 Cup chocolate chips

Materials:

- Food processor
- Mixing bowls
- Mixing spoons
- Rubber spatulas
- Aluminum trays
- Parchment paper
- Measuring cups (1/2 C, 1/4 C, & 1/3 C) *Optional: Extra sets for each student table*
- Air-dry clay shapes
- Dried beans/lentils
- Dried chickpeas
- Paper plates
- Permanent marker

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 protein:

“Hi everybody, good to see you again! Today we are going to learn more about protein and what it does in our body. And then we are going to get to make art out of beans!”

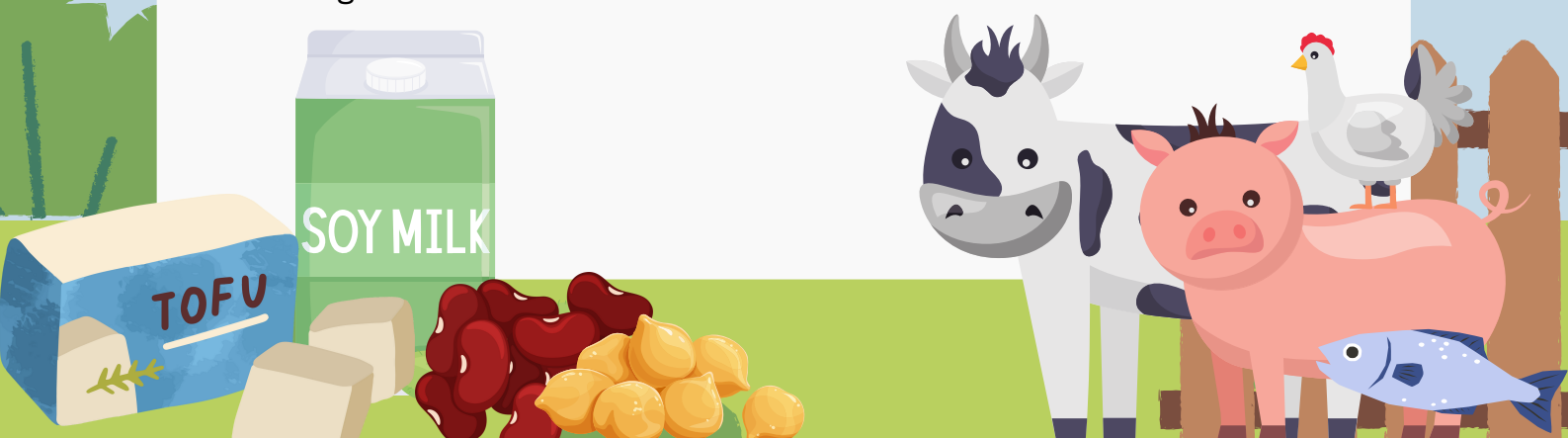
2. Review class attention grabber:

“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.*

“Good job! You guys are pros at that now”

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

“Before we talk about protein, I wanted to check in on everyone’s worms? What have you been feeding them? Are they turning the scraps into compost? Who moved their worms to a bigger bin? Who let their worms go?”



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Lesson Procedure and Script (continued):

4. Introduce the topic of protein (animal and plant sources):

“Today we’re going to talk about protein. Who knows what protein is? That’s right, it’s a nutrient found in some foods that does a lot of important stuff in our bodies. It builds and repairs tissues in your body—not the kind of tissue you blow your nose in, but the kind that makes up your body, like muscle tissue.”

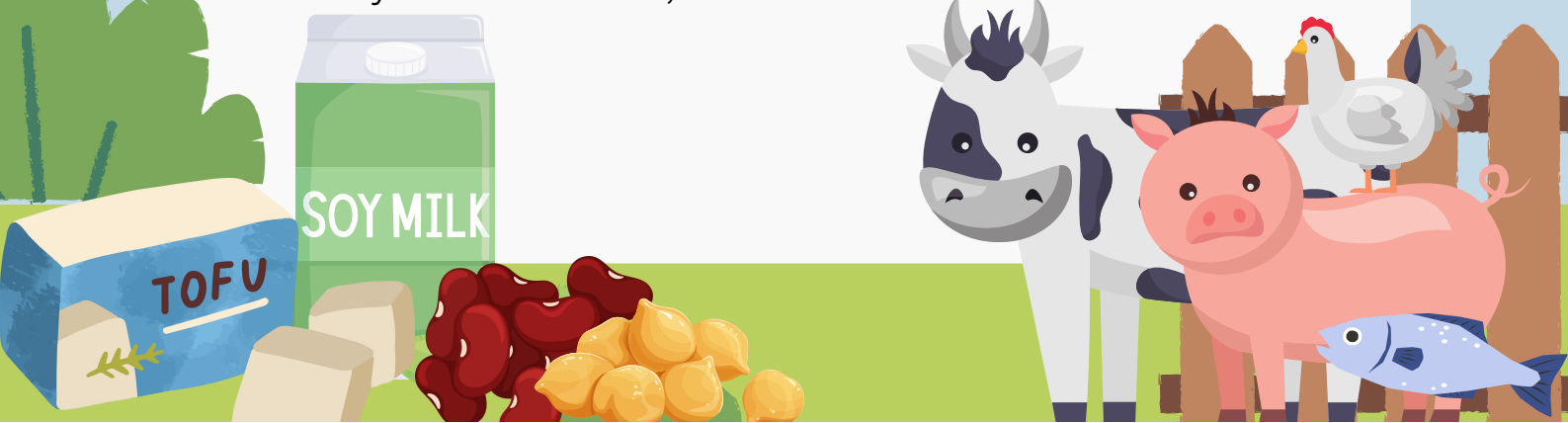
“A lot of different foods have protein in them. Protein can come from plants or animals. Can anyone name a plant protein? Right! Soy, tofu, tempeh, seitan, beans, lentils, peas, all kinds of plants have protein. Can anyone name an animal protein? Right! Any kind of meat like chicken, beef, fish, pork, or seafood contains protein. Dairy products have some protein too. Can anyone name a dairy product? Right! Milk, cheese, and yogurt are examples of dairy products.”

“For our projects today we’re going to focus on plant protein. Can anyone think of some reasons to eat plant protein instead of animal protein? Right, plant protein is better for the environment because its production releases fewer greenhouse gasses, it’s cheaper to grow plants than to take care of animals, plant proteins usually contain fiber, some people are vegetarians who don’t eat animal products, and plants just taste good! That doesn’t mean that animal protein is bad, it just means that there are a lot of good reasons to eat plant protein.”

5. Make plant protein snack – chocolate chip cooking dough balls:

“Today we are going to what do you think our plant protein is going to be today? Drumroll... chickpeas! We have some dried chickpeas at your tables so everyone can get a good look at them. If you soak these in water, then you can cook and eat them! Today we're using canned chickpeas, which are precooked.

We’re going to make chickpea chocolate chip cookie dough balls. Then while they rest in the freezer, we will use dried beans to make some art!”



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Lesson Procedure and Script (continued):

"First, we're going to mush up our wet ingredients- the chickpeas and sunflower seed butter- in the food processor. Then we'll add all of the other ingredients together, and use the food processor to mix it up."
Measure sunflower seed butter into food processor. Optionally, students can practice measuring at their tables using dried chickpeas and extra measuring cups.

"Sunflower seed butter is a great alternative to peanut butter, since some people are allergic to nuts. It has some protein as well as fats that can help things hold together and slow down digestion. Plus, it's really tasty!"

"Now, let's add the chickpeas. These chickpeas are actually beans, and, remind me again, what are they full of? That's right, protein! We are draining the water for this recipe, but it can actually be used as another source of protein. It is called aquafaba, and it becomes white and foamy if you whip it up!"

Pulse food processor to combine.

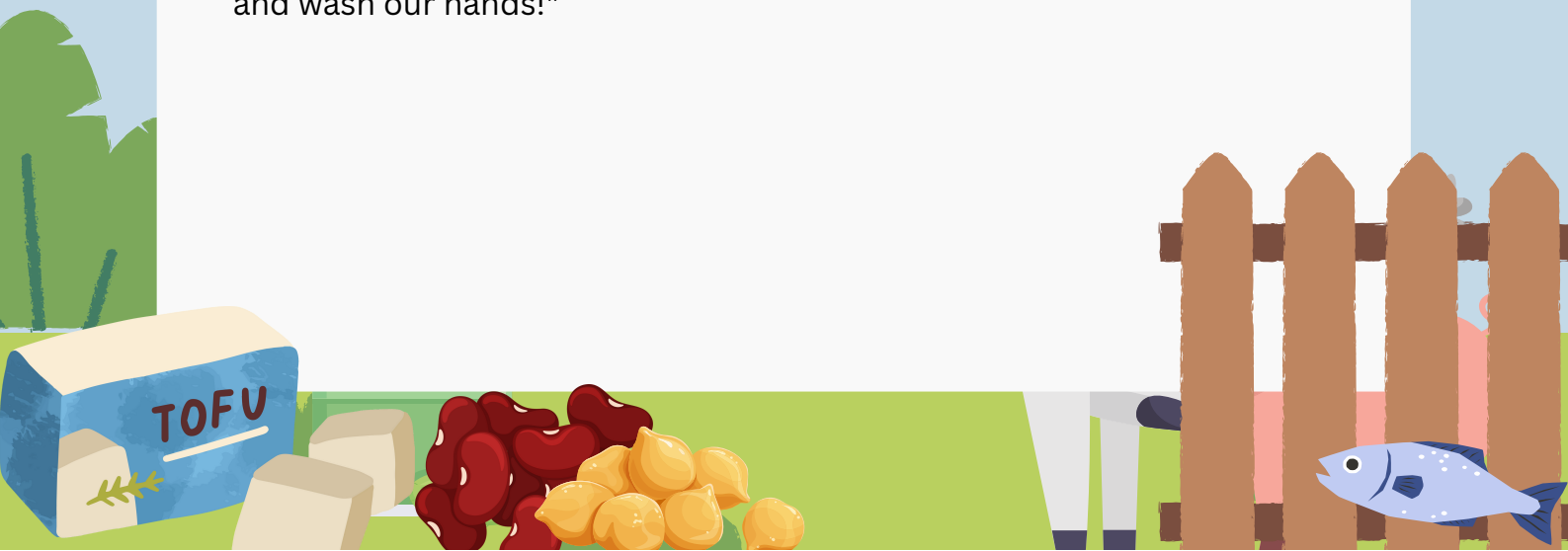
"Ok, now to add a little more flavor, let's add some salt and vanilla! A little salt can really make sweetness pop!"

"Great, now let's add our oat flour and maple syrup. These will add a little more structure to our dough and make it sweeter! We'll be talking about grains like this oat flour next week."

Run food processor to combine. If dough is too sticky, add more oat flour. Kids should be able to roll it without sticking to their hands.

6. Have students wash their hands and add chocolate chips

"Alright everyone, the dough still needs to be chilled, but first we need each of you to add your chocolate chips to the dough! Let's make a line and wash our hands!"



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Set out one scoop of dough for each student. If possible, give an adult at each table a bowl of chocolate chips to give to each student individually. Instruct adult to prevent students from eating chocolate chips instead of adding them to dough.

*"Now we are going to roll our dough into balls and add chocolate chips!"
Demonstrate rolling dough into a ball and adding chocolate chips.*

7. Chill dough and make bean art:

"Great job everyone!"

Collect dough balls in tray. Label with student's names and place in freezer.

"While the dough is setting, we'll make our bean art! Everyone will get a piece of air-dry clay. You can press the beans into the clay and make patterns, animals, your name- whatever you want! Here's the one I made! We'll let these dry all week and you can pick them up next time."

"Any questions? Great, let's go!"

Chickpea Cookie Dough: Hands On Activity:

1. **Adults**- Make sure kids wash hands, tie back hair
2. **Kids**- Measure out 2/3 C. sunflower seed butter into food processor, dump in 2 cans of chickpeas (drained)
3. **Adults**- Pulse mixture until smooth
4. **Kids**- Measure out remaining ingredients
5. **Adults**- Scrape bean mixture down sides of food processor and add remaining ingredients. Process to combine
6. **Kids**- Wash hands
7. **Kids**- After dough is distributed, roll into balls
8. **Kids**- Press in chocolate chips
9. **Kids**- Put cookie dough into parchment-lined aluminum pan, cool in fridge
10. **Adults** – Have kids wash hands, pass out air dry clay and beans
11. **Kids** – Press beans into clay to make mosaic art
12. **Adults and Kids**- Enjoy your cookie dough!



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Recipe

Chickpea Cookie Dough

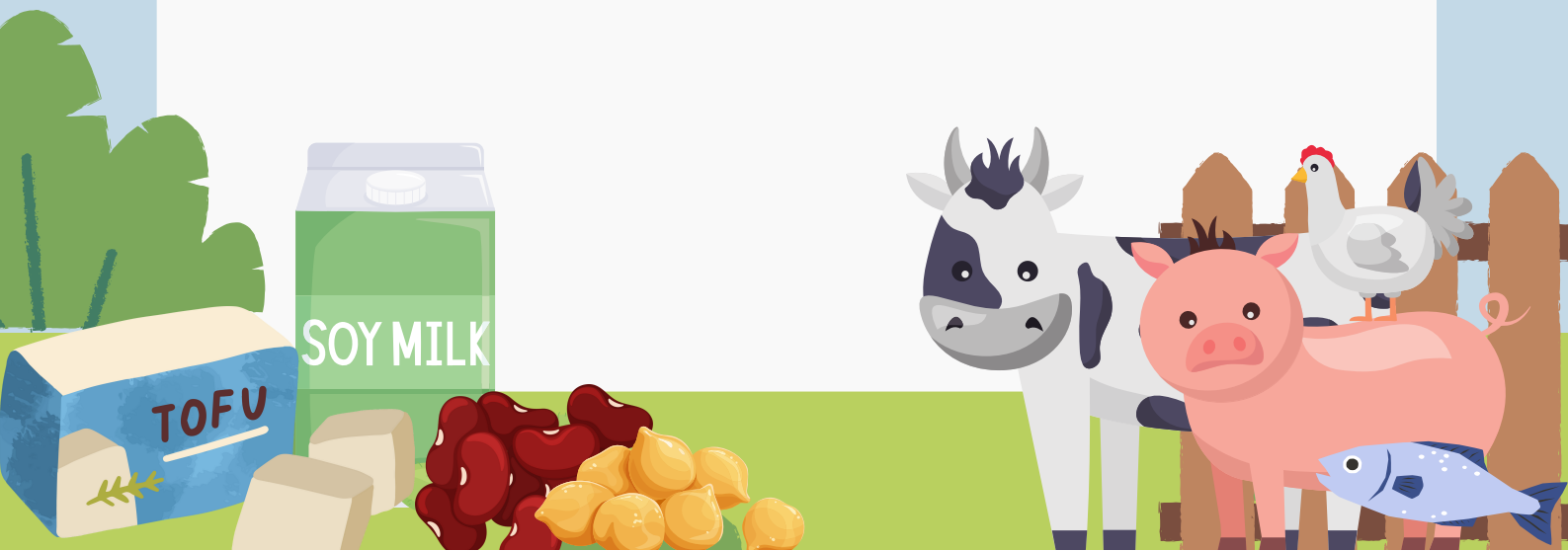
Ingredients

- 2 15 oz cans of chickpeas drained and rinsed
- ½ cup oat flour
- ½ cup maple syrup
- 2/3 cup almond butter or sunflower butter
- 3 teaspoon vanilla paste
- 1 teaspoon Kosher salt
- ½ cup mini chocolate chips



Instructions

1. Drain and rinse chickpeas.
2. In a food processor add chickpeas, almond flour, almond butter, maple syrup, vanilla extract, and salt. Process for 2-3 minutes or until completely smooth.
3. Add the mixture to a mixing bowl. Fold in chocolate chips. Enjoy immediately, or chill until firm and roll into balls.



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