

Granola with Yogurt and Strawberries



GUIDING QUESTIONS

How have technologies evolved over time to harvest grain more efficiently? How does processing affect the foods we eat—positively and negatively?

1. WASH HANDS (5 minutes)

Ask students to wash hands. Divide students into three groups and assign each group to a table. Reiterate the safety rules for using the Charlie Cart.



2. INTRODUCE THE LESSON (10 minutes)

[Refer to the worksheet.] Today we will make homemade granola with dried fruit and seeds.

The main ingredient in granola is a grain called oats. Can you name other grains? (Wheat, barley, rye, corn.) Oats require less water than other grains, which is useful in times of drought—and they are full of vitamins and fiber. Most of the oats we grow in the United States are used for animals to eat. Humans eat the rest in various forms. What are some ways you have eaten oats? (Oatmeal, granola, breakfast cereal, nutrition bars.)

In early history, grains were harvested by hand with crude tools, like scythes.

[Show a picture of a scythe or refer to the worksheet.] As oats became more popular, inventors created new machines that could harvest grain more quickly. Today large machines called “combine harvesters” harvest the grain. Farmers can drive them through the fields or operate them remotely. They can harvest grain thousands of times faster than they could when they worked by hand.

We’ll work as table groups to measure and mix the ingredients for granola. While it’s baking, we’ll learn what it takes to process an oat grain into the oats we are using in our recipe today.

3. MAKE GRANOLA

(10 minutes hands-on time, 16 minutes bake time)

Ask students to read the recipe aloud.

DEMONSTRATE HOW TO MEASURE

- Ask a student to demonstrate how to measure dry ingredients properly. Fill the spoon or cup and scrape the top flat with a knife or scraper.
- Ask another student to demonstrate measuring liquid ingredients. Fill the liquid measuring cup and hold to eye level to ensure liquid is at the right mark.

MAKE GRANOLA

- Working as a group, measure and mix oats, brown sugar, and cinnamon in large mixing bowl.
- Pour oil over mixture and stir to coat.
- Add honey to oat mixture. With clean hands, rub honey into oats—leave clumps and lumps.
- Assign a student to bring mixture to the cart.

BAKE GRANOLA

- Preheat oven to 300°F with convection ON. Bake on 2 racks, top and bottom.
- Spread all the granola evenly across 2 lined baking sheets.
- Bake for 16 minutes, swapping position of baking sheets halfway through, until the oats begin to darken.
- Let cool for 10 minutes. Divide among 3 bowls.

WHILE GRANOLA IS BAKING

- Using the scrapers and tot knives, remove the stems and slice strawberries. Place stems in the compost bowl.

- Use the attached worksheet to help students examine the differences between agricultural tools then and now.

- Show the picture of the oat plant and name the parts: stalk, hay, straw, grain, hull. Pass around bowl of oats for students to see, taste, and touch. Discuss the journey from oat grain to rolled oat, using the information below. Ask students to try to recall the process by memory, working with a partner.

To become a rolled oat, like we used in our recipe today, the oat grain goes on a long journey. What do you think is the first step? (The grain is harvested.) A big tractor-like machine called a combine harvester is used to harvest the entire field.

Then, it takes a shower. The whole grain stalks are placed on a huge conveyer belt and cleaned by a high-powered sprayer.

After they are cleaned up, they take a long steam bath, to help them last longer in storage.

Next, they are either rolled or cut. Rolled oats—what we used today—are squished flat between giant cylinders (rollers).

Some oats will go through the cylinders several times until they are SUPER flat. These are called quick-cooking oats, and the thinnest are instant oats. During this part, the hull, or outside protective layer of the grain, is removed. The hull is not discarded—it is used to make many things, like plastic bottle caps and nylon stockings!

Lastly, the oats are roasted and packed to be shipped to the grocery store.

The combine harvester allowed farmers to harvest much more grain than they could before. The combine harvester was specialized for just one type of crop, so it could work very quickly and efficiently. But that meant planting just one crop in each field. Combines also required different resources, and suddenly many people who worked harvesting grain were out of a job.

COMPOSE GRANOLA

- When the granola is cool, bring a bowl to each table.
- Ask students to measure and add the pepitas, sunflower seeds, sesame seeds, and dried fruit. Stir to combine.

4. EAT AND DISCUSS (10 minutes)

Clean up and set the tables to eat. Serve 1 tablespoon granola with 1 to 2 tablespoons yogurt and 1 tablespoon of sliced strawberries.

DISCUSSION QUESTIONS

Why do you think we do all this work to harvest and process oats? What do you think happens to the oats during all of this processing?

How did the combine harvester change agriculture?

EXIT TICKET

Which Charlie Cart lesson did you like best this year and why?

5. CLEAN UP (10 minutes)

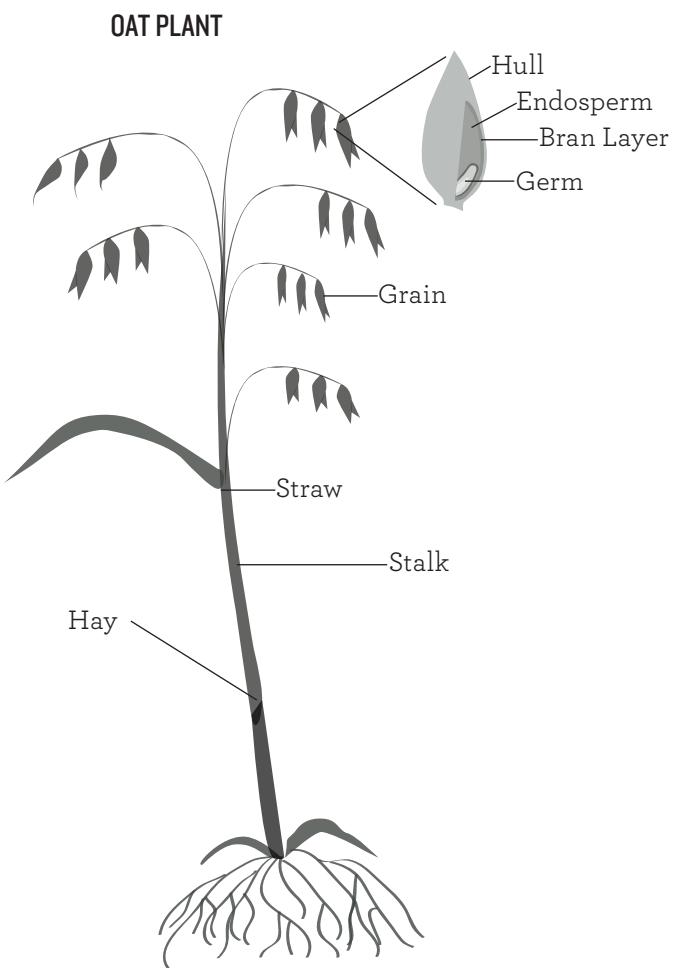
ADDITIONAL RESOURCES

Watch a combine harvester at work:

www.youtube.com/watch?v=QXYN7qcy43I

Pass around bowl of oats for students to see, taste,

and touch. Discuss the journey from oat grain to rolled oat, using the information below. Ask students to try to recall the process by memory, working with a partner.



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SEASON: SPRING

MAKES: 1 1/2 CUPS

You will need: Parchment paper

INGREDIENTS

Note: Use organics whenever possible.

1 cup rolled (old-fashioned) oats
1 teaspoon brown sugar
 $\frac{1}{4}$ teaspoon ground cinnamon
1 tablespoon grapeseed or vegetable oil
2 tablespoons honey
2 teaspoons roasted, salted pepitas
2 teaspoons roasted, salted sunflower seeds
2 teaspoons roasted sesame seeds (optional)
2 tablespoons dried fruit
(such as cranberries or raisins)
 $\frac{1}{2}$ cup organic strawberries
1 cup plain whole-milk yogurt

PREPARATION

1. Wash and dry strawberries.
2. Preheat oven to 300°F. Line a baking sheet with parchment paper.
3. Combine the oats, brown sugar, and cinnamon in large mixing bowl.
4. Pour the oil over mixture and stir to coat.
5. Add the honey to oat mixture. With clean hands, rub honey into oats—leave clumps and lumps.
6. Spread the granola mixture onto the lined baking sheet in one layer and bake for 18 to 20 minutes, until toasted and crisp, and very slightly browned. Remove from oven and let cool for 10 minutes. You may have to peel the granola off the parchment. This is a sign you will have delicious granola. Break it up into pieces, and transfer to a bowl.
7. Slice strawberries.
8. When granola is cool, add the pepitas, sunflower seeds, sesame seeds, and dried fruit. Stir to combine.
9. Serve granola with a dollop of yogurt and a tablespoon of sliced strawberries. Granola will keep, in a tightly sealed jar at room temperature, for up to 1 week.

Harvesting Methods

Traditional



What quantities can be harvested with a scythe? (Circle one)



SMALL



LARGE

What type of fuel powers a scythe? (Circle one)



HUMAN



Modern



What quantities can be harvested with a combine? (Circle one)



SMALL



LARGE

What type of fuel powers a combine harvester? (Circle one)



HUMAN



GASOLINE

Describe the similarities and differences:
