

STORRYBOARD ENG

STEM aspects, food technology aspects related to food transformation and consumption

On a sunny morning at AgriValley Elementary, the science class began with an air of excitement. Mrs. Wheat, the teacher, announced a special project on how science and technology transform raw ingredients into the food we eat. The students eagerly awaited the arrival of a guest speaker, Mia, a food technologist. Dressed in a white lab coat, Mia entered the room carrying a model of a food factory, ready to guide the class into the fascinating world of food science.

During lunch that day, Alex and Jane, two curious students, noticed the large amount of uneaten food left behind. They reflected on the issue of food waste and wondered how much of it could be prevented. Their questions fueled their interest in the upcoming lesson with Mia.

The next morning, the class visited a food technology lab. The lab was filled with machines, microscopes, and robots, each playing a role in food production and preservation. Mia explained that science helps solve problems like food waste and ensures that food is safe to consume. The students were intrigued as they explored the lab, beginning their journey of discovery.

At the first station, the class learned about freezing as a preservation technique. They observed berries being rapidly frozen, a process that slows bacterial growth and keeps fruits fresh for months. The practicality and efficiency of this method sparked amazement among the students.

Moving to another station, the students saw scientists testing milk samples under microscopes. Mia demonstrated how food safety is ensured by checking for harmful bacteria. This station underscored the importance of science in maintaining the quality of food and highlighted the role of expiration dates in protecting consumers.

Next, the students observed the transformation of wheat into bread. Machines ground the wheat into flour, mixed it with other ingredients, and baked it into fresh loaves. The industrial scale of this process contrasted with the simplicity of home baking, leaving the students impressed by its efficiency.

The class then explored fermentation, a natural process that turns milk into yogurt. They learned about the beneficial microbes involved in this transformation, an essential concept that challenged their preconceived notions about bacteria.

Robotics captured the students' attention at the next station, where a robot sorted fruits with precision and speed. The use of robotics in food production demonstrated how technology can streamline operations and reduce manual labor.

Sustainability became the focus as Mia introduced a composting machine that turned food scraps into fertilizer. This process emphasized the potential of reusing waste to create something valuable, inspiring the students to think about recycling food in their own lives.

Back in the classroom, Mia gave a lesson on healthy eating. She explained how understanding food science helps individuals make better dietary choices and introduced the concept of balancing processed and natural foods. The students gained a new appreciation for the role of food science in promoting health.

The students then participated in a hands-on activity to make cheese. By adding vinegar to milk and watching it curdle, they witnessed the transformative power of simple scientific principles. This activity brought the concepts they had learned to life.

Mia concluded the lesson by showcasing innovative food products like plant-based protein bars, demonstrating how food science creates healthier and more sustainable options. She also introduced career paths in food technology and robotics, inspiring the students to imagine their futures in STEM fields.

To share their newfound knowledge, the students created posters about food transformation and sustainability. These were displayed at a community event, where they presented their work to parents and neighbors, spreading awareness about food science.

As the day ended, the students reflected on their journey. They sat together, enjoying a healthy meal and discussing the science behind their food. The experience had transformed their understanding of what it takes to bring food from farm to plate, instilling in them a sense of curiosity and responsibility for the future.

COMICS

Page 1: The beginning

- Setting: A bustling classroom. Mrs. Wheat, the teacher, announces a special project.
- Visuals: Students sitting eagerly, imagining foods like bread, milk, and fruits turning into meals.
- Dialogue:
 - Mrs. Wheat: "Class, today we'll explore how science and technology turn raw ingredients into the food we eat!"
 - Alex: "Like magic?"
 - Mrs. Wheat: "Better! Science!"

Page 2: The Problem

- Setting: Alex and Jane discussing food waste during lunch.
- Visuals: A cafeteria with leftover food
- Dialogue:
 - Alex: "Why do we throw away so much food?"
 - Jane: "I heard some foods spoil before reaching stores."

Page 3: Introduction to STEM

- Setting: Mrs. Wheat introduces Mia, a young food technologist.
- Visuals: Mia holding a model of a food factory, students gathering around.
- Dialogue:
 - Mia: "Science helps solve problems like food waste and makes food safe for everyone!"
 - Alex: "Show us how!"

Page 4: A Field Trip to a Lab

- Setting: The class visits a local food technology lab.
- Visuals: Lab equipment like microscopes, conveyor belts, and machines.
- Dialogue:

- Mia: "Welcome to our lab! Here, we'll explore how STEM transforms food."

Page 5: Food Preservation

- Setting: Lab room where fruits are being processed.
- Visuals: A machine freezing berries, a diagram showing bacteria growth slowing.
- Dialogue:
 - Mia: "We use freezing and drying techniques to keep fruits fresh."
 - Jane: "How does freezing work?"
 - Mia: "It slows down bacteria growth, preserving nutrients!"
- Visuals: A machine freezing berries, a diagram showing bacteria growth slowing.

Page 6: Food Safety

- Setting: Lab section testing food samples.
- Visuals: Scientists testing milk under a microscope.
- Dialogue:
 - Mia: "We test food for bacteria to ensure it's safe to eat."
 - Alex: "Is that why food has expiration dates?"
 - Mia: "Exactly!"

Page 7: Processing Wheat

- Setting: A demonstration of wheat turning into flour and bread.
- Visuals: Machines grinding wheat and bread coming out of ovens.
- Dialogue:
 - Mia: "Wheat is ground into flour, then baked into bread using precise measurements."
 - Jane: "Like baking at home?"
 - Mia: "Yes, but scaled up!"

Page 8: Fermentation

- Setting: Students observe a machine fermenting milk into yogurt.
- Visuals: Milk turning into yogurt with diagrams.
- Dialogue:
 - Mia: "Fermentation is a natural process where microbes turn milk into yogurt."
 - Alex: "Microbes? Like germs?"
 - Mia: "Good ones!"

Page 9: Packaging for Safety

- Setting: Packaging station with advanced machinery.
- Visuals: Bags being sealed and students eating chips.
- Dialogue:
 - Mia: "We use airtight packaging to keep food fresh longer."
 - Jane: "That's how chips stay crunchy!"

Page 10: STEM and Robotics

- Setting: A robot sorting fruits.

- Visuals: Robots picking fruits with laser precision.
- Dialogue:
 - Mia: "Robots help sort and pack food quickly and efficiently."
 - Alex: "They're so fast!"

Page 11: Sustainability

- Setting: Students learn about reducing food waste.
- Visuals: Machines turning peels into compost or animal feed.
- Dialogue:
 - Mia: "Technology helps us reduce waste by reusing scraps."
 - Jane: "Like composting?"
 - Mia: "Exactly, but on a bigger scale!"

Page 12: Healthy Eating

- Setting: A mini-classroom in the lab.
- Visuals: A food pyramid with natural and processed options.
- Dialogue:
 - Mia: "Understanding food science helps us make healthier choices."
 - Alex: "So, processed food can still be healthy?"
 - Mia: "Yes, if we choose wisely!"

Page 13: Students' Experiment

- Setting: Students try making cheese in the lab.
- Visuals: Students laughing and holding curdled milk.
- Dialogue:
 - Mia: "Let's make cheese! Add vinegar to milk and stir."
 - Alex: "It's like magic!"

Page 14: Food Innovations

- Setting: A showcase of new food products.
- Visuals: Displays of plant-based foods.
- Dialogue:
 - Mia: "Scientists create healthier snacks using less sugar and more nutrients."
 - Jane: "Like what?"
 - Mia: "Check these protein bars made from plants!"

Page 15: STEM Careers

- Setting: Mia shares career options in STEM and food technology.
- Visuals: Children imagining themselves in lab coats.
- Dialogue:
 - Mia: "You can be a food scientist, technologist, or even a robotics engineer!"
 - Alex: "I want to design robots for food!"

Page 16: Back to School

- Setting: Students return to their classroom.
- Visuals: Students drawing diagrams of food processes.
- Dialogue:
 - Mrs. Wheat: "What did you learn today?"
 - Jane: "Science makes food safe, healthy, and sustainable!"

Page 17: Applying the Knowledge

- Setting: Students create posters about food transformation.
- Visuals: Posters with slogans like "Save Food, Save the Planet!"
- Dialogue:
 - Alex: "Let's teach others about food science!"
 - Jane: "And how to waste less food."

Page 18: A Healthy Lunch

- Setting: Students enjoying a healthy meal they helped prepare.
- Visuals: Fresh vegetables and students smiling.
- Dialogue:
 - Alex: "This salad tastes better knowing the science behind it!"

Page 19: Community Event

- Setting: Students present their learnings to parents.
- Visuals: A fair with booths showcasing food tech.
- Dialogue:
 - Jane: "Food science is everywhere!"
 - Parent: "Great job, kids!"

Page 20: Final Message

- Setting: A closing panel with Mia and the students.
- Visuals: Students waving goodbye, surrounded by healthy food.
- Dialogue:
 - Mia: "The next time you eat, remember the science that made it possible!"