EPISODE 01 | THE LETTUCE LAB

Join Leo as he discovers where his lettuce might have come from, featuring San Andreas High School's "Growing Hope" hydroponics lab • Episode length: 14 minutes • Extension: 10–20 minutes

THE BIG IDEA

Food can be grown in different ways. Hydroponics is a method of growing plants without soil. Plants get the water and nutrients they need through a carefully managed growing system.

LEARNING TARGETS

Students will be able to: (1) explain what hydroponics means, (2) identify what plants need to grow, (3) describe the journey of lettuce from seed to school meal, (4) identify one benefit and one challenge of hydroponic growing, and recognize the people and careers involved in growing food.

QUEST VOCABULARY

Hydroponics • Nutrients • Seedling • Transplant • Harvest

BEFORE YOU WATCH | 2 MINUTES

Ask: **Can plants grow without dirt? Why or why not?**

Invite students to make a prediction. Revisit their answers after the episode.

WATCH EPISODE 1: THE LETTUCE LAB | 14 MINUTES

DISCUSS & DISCOVER | 5-10 MINUTES

- What surprised Leo about the lettuce lab? What makes hydroponics different from growing plants in a field or garden?
- What do the lettuce plants need to grow?
- Why do students have to check the water, nutrients and lights?
- What is one benefit and one challenge of growing food hydroponically?
- How did teamwork help get the lettuce from the lab to the school lunch tray?

TAKE THE QUEST FURTHER

MATERIALS & SETUP

Paper or design sheet, pencils, colored markers. Optional: photo of a hydroponic setup or a real lettuce head for observation.

HANDS-ON ACTIVITY | 10-15 MINUTES

Challenge students to design their own hydroponic growing system.

Have students draw a lettuce plant and create a system that provides everything it needs to grow.

Ask them to label:

LIGHT • WATER • NUTRIENTS • AIR • ROOTS

Then ask: **What could happen if one part of your system stopped working?**

EXTEND THE LEARNING

Make It a STEM Challenge

In small groups, have students compare their designs and explain how their systems would conserve water and keep plants healthy.

TAKE-HOME EXPLORER MISSION

The Leafy Green Challenge

Find one leafy green on your school lunch tray, at home or at the grocery store this week.

Can you identify it?

Bonus challenge: Try a leafy green you haven't eaten before!



KEEP EXPLORING

TRUSTED RESOURCES

Inspire curiosity, engage minds, and foster a genuine connection to where food comes from and how it impacts ourselves and communities.

RESOURCE	WEBSITE
California Foundation for Agriculture in the Classroom – Farm to School Resources (Leafy Greens)	https://learnaboutag.org/farmtoschool/
California Grows...	https://cdn.agclassroom.org/ca/resources/learn/map.pdf
School Gardens	https://learnaboutag.org/resources/gardens/
USDA Food and Nutrition Administration – Team Nutrition	The Great Garden Detective Adventure: A Standards-Based Gardening Nutrition Curriculum for Grades 3 and 4 | Food and Nutrition Administration
Ag Bites	https://learnaboutag.org/resources/bites/
Harvest of the Month Educator Newsletters (Leafy Greens)	COMPILED Educator HOTM Newsletter.pdf - Google Drive
Dairy Council of California – Explore Nutrition	Explore Nutrition Unit
Dairy Council of California – Let's Eat Healthy Together Video Series	Let's Eat Healthy Together
Dairy Council of California – Education Professionals Nutrition Science Resources	Education Professionals



EPISODE 02 | ORANGE YOU CURIOUS

Leo discovers the next stop on his food quest: Old Grove Orange in Redlands! Farmer Bob and his friends show Leo where his orange came from • Episode length: 16 minutes • Extension: 10–20 minutes

THE BIG IDEA

The food on our school trays has a story. Farmers, plants, animals, natural resources and many other people and systems work together to grow our food and get it to us.

LEARNING TARGETS

Students will be able to: (1) describe how citrus grows, (2) identify ways farmers care for soil, water and plants, (3) sequence an orange's journey from grove to school, and (4) identify nutritional benefits of eating fruits such as citrus.

QUEST VOCABULARY

Citrus • Grove • Pollination • Sustainable • Harvest • Local Food

BEFORE YOU WATCH | 2 MINUTES

Hold up an orange or show students a picture.

Ask: **How many people, places and steps do you think it took to get this orange from a tree to you?**

Write down students' predictions. Revisit their answers after the episode.

WATCH EPISODE 2: ORANGE YOU CURIOUS | 16 MINUTES

DISCUSS & DISCOVER | 5-10 MINUTES

- What does and orange need to grow?
- How can animals such as sheep or chickens help on a farm?
- What are some ways farmers can take care of the land and water?
- What happens to an orange between the time it is picked and the time you find it on a school lunch tray?

TAKE THE QUEST FURTHER

MATERIALS & SETUP

Paper folded to divide it into six sections or six cards per student, pencils, colored markers. Write these words on the board: PACK, EAT, GROW, SORT, HARVEST, TRANSPORT.

HANDS-ON ACTIVITY | 10-15 MINUTES

Invite students to map an orange's journey from the grove to their plate.

Give students six cards or have them draw six boxes on a piece of paper. Have students put the steps in order and draw what happens during each one.

GROW → HARVEST → SORT → PACK → TRANSPORT → EAT

Ask: **Who helps at each stop along the journey?**

Add farmers, farm workers, drivers, food service staff and others to the map.

EXTEND THE LEARNING

Make It a Science Investigation

Cut open an orange and investigate it using the senses.

What do you see, smell, feel and taste?

Count the sections. Look for seeds. Examine the peel.

TAKE-HOME EXPLORER MISSION

Add One More Color!

Add one more fruit or vegetable to your day this week.

It might be orange slices at lunch, berries at breakfast, carrots for a snack or broccoli with dinner.

How many different colors can you try?



KEEP EXPLORING

TRUSTED RESOURCES

Inspire curiosity, engage minds, and foster a genuine connection to where food comes from and how it impacts ourselves and communities.

RESOURCE	WEBSITE
California Foundation for Agriculture in the Classroom – Farm to School Resources (Citrus)	https://learnaboutag.org/farmtoschool/
California Foundation for Agriculture in the Classroom – Taste and Teach	Taste & Teach | California Foundation for Agriculture in the Classroom
California Grows...	https://cdn.agclassroom.org/ca/resources/learn/map.pdf
Dairy Council of California – Explore Nutrition	Explore Nutrition Unit
Dairy Council of California – Let's Eat Healthy Together Video Series	Let's Eat Healthy Together
Dairy Council of California – Education Professionals Nutrition Science Resources	Education Professionals



EPISODE 03 | FROM COW TO CARTON

For the next stop on the food quest, Leo finds himself at Marvo Holsteins - a dairy farm with lots and lots of cows that make nutritious milk • Episode length: 17 minutes • Extension: 10–20 minutes

THE BIG IDEA

Milk comes from a farm system that depends on people, animals, crops, water and careful planning. Dairy farmers use sustainable practices to care for cows, reuse water, grow feed and make sure milk is safely cooled and transported.

LEARNING TARGETS

Students will be able to: (1) describe where milk comes from, (2) explain how crops and other materials can become animal feed, (3) identify ways a dairy farm reuses water, (4) recognize how farmers reduce waste by using materials people cannot eat, (5) explain why water, feed and animal care are important parts of sustainable agriculture, and (6) connect dairy farming practices to the milk they drink.

QUEST VOCABULARY

Dairy • Sustainable Agriculture • Feed • Reuse • Conserve • Transport

BEFORE YOU WATCH | 2 MINUTES

Write: **FARM → MILK**

Ask students: **What does a dairy farm need to produce milk?**

Invite students to make predictions. They may name cows, grass, water, food, farmers, barns, machines or trucks.

Create a class list before watching.

WATCH EPISODE 3: FROM COW TO CARTON | 17 MINUTES

DISCUSS & DISCOVER | 5-10 MINUTES

- Where does milk begin?
- What kinds of feed do the cows eat?
- Why does the farmer grow some of the feed on the farm?
- What are orange rinds and almond hulls, and why can they be useful to cows?
- How is water reused on the dairy farm?
- Why does milk need to be cooled before it is transported?
- What surprised you most about how a dairy farm works?

TAKE THE QUEST FURTHER

MATERIALS & SETUP

Easel paper, pencils, colored markers, challenge cards.

HANDS-ON ACTIVITY | 10-15 MINUTES

Tell students: Your challenge is to work together to design a dairy farm that cares for animals, uses water wisely and reduces waste.

Give each group a sheet of easel paper and ask them to draw a farm map. Their map should include:

- Cows and a place for them to eat and rest
- Crops or other sources of animal feed
- A feed-mixing area
- A water-reuse system
- A place to clean the cows
- A system for cooling milk before transport
- A truck or other way to safely transport the milk

EXTEND THE LEARNING

Provide these challenge cards, or read them aloud:

FEED CHALLENGE | The cows need nutritious feed. Include crops grown on the farm and at least one material that people cannot eat, such as orange rinds or almond hulls.

Ask: **How does using these materials help reduce waste?**

WATER CHALLENGE | The farm uses water more than once. Show how water can help clean or feed the cows, cool the milk, and water crops.

Ask: **Where does the water go next?**

ANIMAL CARE CHALLENGE | The cows need clean, safe and comfortable spaces.

Ask: **What will your farm do to care for the animals?**

MILK SAFETY CHALLENGE | The milk must be cooled and transported safely.

Ask: **Why is cooling the milk important before it travels?**

After groups complete their maps have each group explain one sustainable practice in its design.

Discuss:

- Which resources did your farm use?
- Which resources did your farm reuse?
- How did your farm reduce waste?
- How did your design support the cows?
- What part of the farm system was most important to your group?

Important discovery: A dairy farm is a connected system. Crops, feed, animals, water, milk and people all depend on one another.

TAKE-HOME EXPLORER MISSION

Become a Resource Detective

Look for one example of resource reuse at home, at school or in your community.

It might be:

- A water bottle that is refilled
- Food scraps that become compost
- A container that is used again
- Rainwater collected for plants
- Materials that are recycled or repurposed

Ask: What resource is being reused? How does reusing it help people, animals or the environment?





KEEP EXPLORING

TRUSTED RESOURCES

Inspire curiosity, engage minds, and foster a genuine connection to where food comes from and how it impacts ourselves and communities.

RESOURCE	WEBSITE
Dairy Council of California – Dairy Agricultural Literacy	Farm-to-You: Milk Farm to You: Dairy (CFAITC) Dairy Around the World Activity Sheet Let's Eat Heathy: Explore Dairy Storybook to Teach Students Food Groups and Where Their Food Comes From
California Grows...	https://cdn.agclassroom.org/ca/resources/learn/map.pdf
Dairy Council of California – Explore Nutrition	Explore Nutrition Unit
Dairy Council of California – Let's Eat Healthy Together Video Series	Let's Eat Healthy Together
PBS Learning Media – Renewable Energy: Powered by Poop | Exploring Energy	https://ca.pbslearningmedia.org/resource/exploring-energy-powered-by-poop/renewable-energy-powered-by-poop/
Dairy Council of California – Education Professionals Nutrition Science Resources	Education Professionals



EPISODE 04 | THE JOURNEY OF FOOD

Leo's final part of his quest has him learning about how and why food changes and goes through a journey of its own

• Episode length: 11 minutes • Extension: 10–20 minutes

THE BIG IDEA

There isn't one food that gives our bodies everything they need. Eating a variety of food from the five food groups helps give our bodies the different nutrients they need to learn, grow, play and stay healthy.

Knowing about food is only the beginning. Great Food Explorers can use what they learn to make choices every day!

LEARNING TARGETS

Students will be able to: (1) identify the five food groups, (2) explain why eating a variety of foods is important, (3) recognize that food can be changed for safety, nutrition, convenience and taste, and (4) choose one realistic action they can take to build a healthy diet.

QUEST VOCABULARY

Variety • Food Groups • MyPlate • Nutrients • Healthy Habit • Choice

BEFORE YOU WATCH | 2 MINUTES

Ask: **If you could eat only ONE food for an entire week, what would you choose?** After students answer, ask:

Would that one food give your body everything it needs? That's the final mystery of our Great Food Quest!

WATCH EPISODE 4: THE JOURNEY OF FOOD | 11 MINUTES

DISCUSS & DISCOVER | 5-10 MINUTES

- What are the five food groups?
- Why does our body need different kinds of foods?
- Why do people process or change foods?
- What did lettuce, oranges and dairy each teach us during our quest?
- How can knowing where food comes from change the way we think about it?
- What's one healthy choice you can make yourself?

TAKE THE QUEST FURTHER

MATERIALS & SETUP

Blank paper or a templated plate worksheet, pencils, colored markers.

HANDS-ON ACTIVITY | 10-15 MINUTES

BUILD A QUEST-WORTHY MEAL: Have students draw a school lunch tray or plate. Challenge them to create a meal containing foods from several food groups.

Label each food: **FRUIT • VEGETABLE • GRAINS • PROTEIN • DAIRY**

Then have students circle:

☆ A food they already enjoy.

🔍 A food they would like to learn more about.

🚀 A food they are willing to try.

Ask:

What could you add or change to give your meal more variety?

There isn't one "perfect" plate. The goal is to explore how different foods can work together.

TAKE-HOME EXPLORER MISSION

Choose **ONE** mission to complete this week:

🌈 **COLOR QUEST**
Add another color of fruit or vegetable to your day.

🥕 **TASTE QUEST**
Try a fruit or vegetable you haven't tried before.

🗺️ **FOOD ORIGIN QUEST**
Find out where one food you eat comes from.

🍽️ **FOOD GROUP QUEST**
See how many food groups you can find on your school lunch tray.

👩‍🍳 **KITCHEN QUEST**
Help prepare a fruit or vegetable at home.

Afterward, ask yourself: **What did I try? What did I discover? What will I do again?**

KEEP EXPLORING

TRUSTED RESOURCES

Inspire curiosity, engage minds, and foster a genuine connection to where food comes from and how it impacts ourselves and communities.

RESOURCE	WEBSITE
California Foundation for Agriculture in the Classroom – Taste and Teach	https://learnaboutag.org/tasteandteach/
California Foundation for Agriculture in the Classroom – Knowin' What's Growin' (4th Grade)	Knowin' What's Growin' | California Foundation for Agriculture in the Classroom
California Grows...	https://cdn.agclassroom.org/ca/resources/learn/map.pdf
Ag Bites	https://learnaboutag.org/resources/bites/
Dairy Council of California – Explore Nutrition	Explore Nutrition Unit
Dairy Council of California – The Market Mystery	Storybook to Teach Students Food Groups and Where Their Food Comes From
Dairy Council of California – Let's Eat Healthy Together Video Series	Let's Eat Healthy Together
Dairy Council of California – Education Professionals Nutrition Science Resources	Education Professionals







