



LESSON PLAN – AMAZING TOMATO

Episode one 401 – Indiana Agriculture (Life Science)

Indiana often gets labeled as “The Corn State” -- but, as one Indiana amusement park has stated, “There’s More Than Corn in Indiana”. That’s true, there’s soy, tomato and popcorn – just to name a few. WFYI’s newest program, The Science of Agriculture, gives you an in-depth look at how some of the products you have in your pantry or refrigerator are made right here in the Hoosier state. We’re going to take you to Eldwood and go inside the Red Gold plant to see how ketchup is made, along with a trip to Cousin Willie’s Popcorn operation in Ramsey, Indiana. We’ll also take you inside one of the POET Biorefining plants to show you how ethanol is created.

Funded by:

Telamon Corporation

The Amazing Tomato - From Roots to Routes A Journey From Field to Table

Adapted from

Kansas Foundation for Agriculture in the Classroom

www.ksagclassroom.org

Overview

This lesson gives students a literal idea of where their food comes from and the processing that takes place with many of our foods. They may grow several of the foods that are included in their salsa recipe. They will design a recipe and run it by a “taste test” panel and then will discuss marketing and the economics of producing home-grown foods. They will compare commercially processed salsas from the store with their home-grown and processed salsa.

Background Information

The California School Garden Network’s “Gardens For Learning—Chapter 7” (pages 58-60) provides excellent information on planting seeds and transplanting plants. For this reference, check the “Resources” section of this lesson plan; this reference is available online.

The Amazing Tomato - From Roots to Routes California Foundation for Agriculture in the Classroom provides information on how to make your garden so you can grow the produce needed for this lesson. In the “Garden Plot: A Tale of Peter Rabbit” lesson plan, page 4 of the lesson plan provides information on to start a garden. For this reference, check the “Resources” section of this lesson plan; this reference is available online.

Plants require several things for sufficient growth. The easiest way to remember these factors is the acronym P.L.A.N.T.S.

Place: where the planted is located; Is it in a pot? In a garden? In a sunny location?

Light: in order to grow, plants need light

Air: plants need air so they grow sufficiently

Nutrients: plants require nutrients, too; Are there any nutrients available to the plant?

Thirsty: like people, plants need water on a regular basis

Soil: the medium in which plants should be grown for optimum results

Information adapted from Junior Master Gardner® Level 1 Curricula, <http://www.jmgkids.us>. Oklahoma Agriculture in the Classroom's lesson plan entitled "How Far Did it Travel? Exploring the Geography of Food" provides excellent background information on food transportation. For this reference, check the "Resources" section of this lesson plan; this reference is available online.

Connections to the Indiana Academic Core Standards for Science, Grades 3 – 6, 2010

SCI.3.3.1, SCI.3.3.2, SCI.3.4.1, SCI.4.3.3 201

Science Process Skills

- Classifying
- Communicating
- Hypothesizing and predicting
- Inferring
- Measuring
- Posing questions

Estimated Time Requirement

One 60 - minute session

Materials

- 1 or 2 blenders
- Small clear cups or bowls
- Cutting boards Colorful platters for display
- Paring knives or plastic knives
- Canning jars
- Recipe cards
- Funnels
- Markers
- Tortilla chips
- Labels for jars
- Measuring spoons
- Paper towels
- Measuring cups

- Salsa music—to dance to!
- Small bowls (for serving)
- For vegetable salsa:
 - Tomatoes
 - Garlic (fresh or pre-diced)
 - Onions
 - Limes
 - Bell peppers (any color)
 - Cilantro
 - Black beans
 - Cans of kernel corn
 - Any other ingredients you wish

Objectives

Students will be able to:

- understand where their food comes from,
- know the plant requirements for growth and length of time from planting to harvesting,
- understand marketing and economics concepts for home-grown foods,
- practice technical writing skills in creating recipe cards for their salsa recipes

Procedure

Anticipatory set:

- Read lesson plan and background information in their entirety.
- Purchase and/or grow ingredients for salsa.
- Display ingredients on a platter or in bowls so students may see the selection.
- For safety reasons, vegetables may be cut ahead of time. However, if a blender is available, this may not be necessary.

Instructional Format

- Share background information with students.
- Students will work in pairs or in small groups to complete this lesson.
- While enjoying each other's' salsas, answer conclusion question and discuss the activity.

Procedures

1. To enhance the learning experience, produce used in the lesson plan may be grown ahead of time. This step is optional; however, it does provide first-hand gardening experience for students.
2. Divide students into pairs or small groups.
3. Student will determine ingredients needed for salsa by researching salsa recipes. Go to www.kidsacookin.org to view a recipe.

4. Using a maximum of six ingredients, students will create their own salsa recipe. As they create their recipe, they must record the exact instructions and ingredient amounts they use so someone else can recreate this at home.
5. Students design their recipe and write it on an index card complete with a name for their recipe. They may also want to have one member of the team design a label; however, caution them not to take too much time on label design. Encourage creativity in naming the salsas.
6. Teams then present their “shopping” list to the teacher who fills their order on a sturdy plastic plate. The team returns to their table to make the recipe. If they need a blender, they must wait their turn and must clean it for the use of the next team.
7. Each team puts their recipe through a funnel into a pint canning jar and puts on lid and band.
8. For older students, take advantage of the math moments. Present a poster with the ingredients and their prices and materials and their prices (i.e. canning jar, blender). Have students determine how much each ingredient and material is worth. Then, students should add their cost as well as put a value on their labor. Have them determine a price they are willing to sell their salsa for. They may want to consider how many more jars they can make in an assembly line process in $\frac{3}{4}$ of an hour. This will reduce their cost of labor. Lastly, have them compare this with the cost of a salsa product in the grocery store ads in their local paper. How do they compare?
9. Next, the teams pour salsa into a small bowl and present their recipe to the rest of the class (each student then gets to taste test with tortilla chips). Teams should explain how and why they chose their ingredients, the process it took to decide on the salsa name and what their impression of their salsa is. For older students, have them report the price of their salsa and how their salsa compares to store-bought salsa.
10. Students vote on the top salsa to determine the “people’s choice” for the vegetable and the fruit salsa.
11. Discuss where food comes from and how it gets to our tables. Create a sequential model for a tomato to help students visualize the process.

Example: Tomato in salsa

Parent tomato that was genetically designed to be firm, red, juicy, fleshy, to withstand freezing temperatures - seed - truck garden or farmer’s field - harvest machine - harvest truck - tomato-crushing plant - canning facility - distributor - store

Assessment

- What six things do plants need to grow? Place, light, air, nutrients, thirsty (water), soil
- Explain the process of how a tomato, or another vegetable, gets from the field to the grocery store. (See example explained in Step 11 of the Procedures)

Extending the Lesson

- For a variation, fruit salsa may be made, and the routes of those ingredients can be discussed. Have students investigate food labels on already prepared salsa from the store.

- Have each group determine the differences between ready-made and homemade salsa.
- As a class, make a contrast/comparison table where students identify the differences between the homemade and ready-made salsa . Color, shelf-life, texture, preservatives, eye-appeal, etc.
- Have students' list advantages and disadvantages of making homemade salsa.
- Students could identify when and for whom they would like to make their recipe again.
- Compile all the recipes into a recipe book for family and friends...better yet, use the recipe books for a classroom fundraising experience!

Source of Lesson

Kansas Agriculture in the Classroom, www.ksagclassroom