Fryday

Chemical Changes in Fair Food

FOODIES QUEST 08 CHEMISTRY | STATE FAIR OF TEXAS CURRICULUM

The food at the Fair is definitely a big reason to go, but did you know the food vendors also have to become chemists to come up with the greatest product? Explore how good chemistry can make or break a food vendor!

During this Foodie Quest, you will:

- ★Discover how chemical and physical changes equal deliciousness
- ★Identify what safety precautions Fair vendors must take while prepping food

Standards

- ★Science Chemistry TEKS: 3C, 3E, 4A, 4D
- ★Art TEKS: Art I: 1A, 2A, 4A
- ★ELAR TEKS: E2(15)(D), E2(25), E2(26)
- ★Career Development TEKS: 1A, 4D, 7A, 7B

Before You Go

- ★Crack an egg, examine the properties as a class, and note them.
- ★Fry the egg on a hot plate (or bring in a pre-fried egg) and note the properties during the frying process and after.
- ★Display a glass of liquid and a glass of ice.
- ★Introduce the terms ***physical change*** and ***chemical change*** and explain that in a chemical change, change can't be reversed without another chemical process. Physical changes can be reversed.
- ★Ask the students to identify which example is a chemical change and which is a physical change and why.
- ★Discuss cooking methods and how a substance such as sugar can turn into something that looks and tastes quite different such as caramel by applying heat or cold to it.
  - o As a simple example of heat and cold application, ask what temperature water needs to be to freeze or boil.
- ★ Talk about fried foods students have eaten and how the food changed from its original state.

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STATE FAIR MAP

Invitation

★Invite students to bring the listed materials and follow the route, and perform the tasks below at the State Fair of Texas:

Plan Your Route

★Food vendors are located throughout the Fair

★In addition, you will find the Food Court in the Tower Building (the tall building with the giant golden eagle on the top, near Big Tex)

Optional Materials to Bring

★Writing utensil and something to write on

OR

★A way to digitally take notes

While You're There

The objective of your visit is to identify what changes matter undergoes while food is prepared at the Fair, and record that so you can refer to it during your projects back at school. Also note how vendors keep themselves safe during the physical and chemical change process.

★**TASTY CHANGES:** Find a few food and drink vendors serving your favorites.

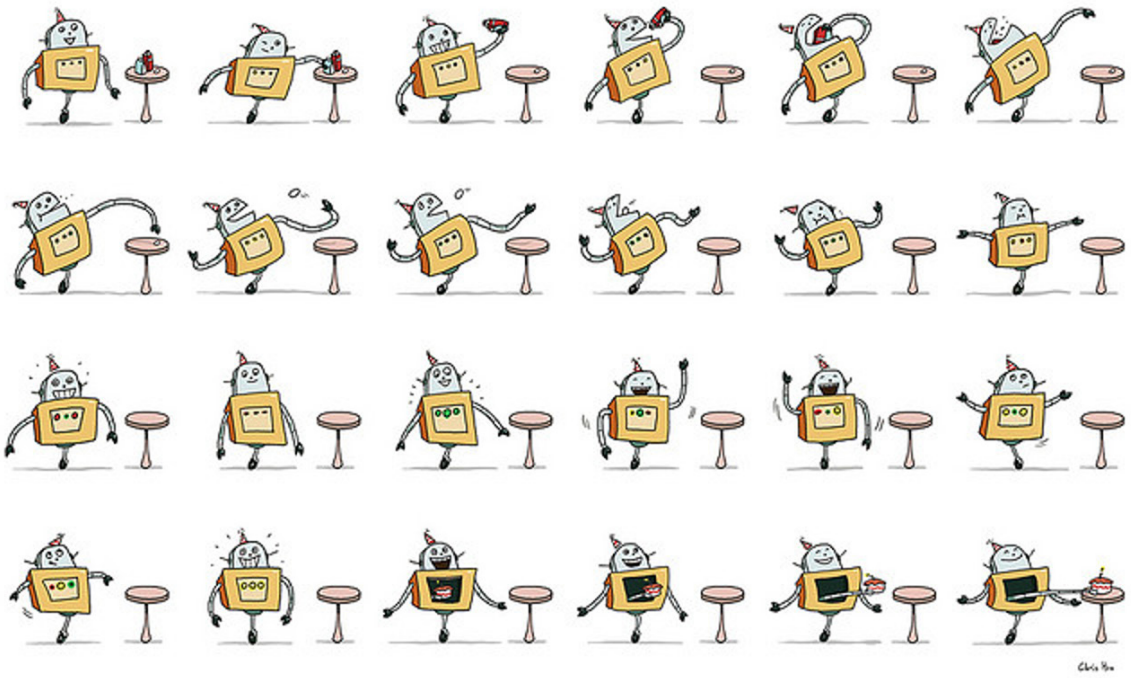
- o Observe the preparation/cooking process to see what the vendor starts with, how they prepare their product, and what the end product looks like.
- o Note whether heat or cold was applied during the preparation process and if you think it's a chemical or physical change.
- o If possible, interview the vendor to identify what temperature their product is when it's complete and what temperature change their product has to undergo to transform into tasty perfection!
- o Note if the vendor has safety gear they must use in preparing their products.

After the Fair

When you return to class following your State Fair visit, you will compare observations with those of your classmates.

- ★Make a class-wide chart of the items you observed, whether heat or cold was applied, and if the change was chemical or physical.
- ★Come up with a plan to make one food that uses a chemical or physical change on your own.
- ★Make the food at home, describe the change, identify if heat or cold was applied, and bring it for a class potluck!

ART PORTION



Source: http://www.webart.ovh/img/flipbook2.jpg

Create a flipbook to illustrate the changes that happened to your food as you were cooking!

- ★Take a moment to watch this quick YouTube video on how to easily make a flipbook using notecards. https://www.youtube.com/watch?v=UGsOeY9rW9A
- ★Make a few practice sketches with a small stack of cards to get the hang of it, and then create your final project based on your food.
- ★As you are presenting your food, pass your book around so that your peers can see your creative visual example as well!

ENGLISH PORTION

Make a menu for your "restaurant" that classifies the Fair food into two categories: physical and chemical (to represent the physical and chemical reactions you observed the food going through at the Fair).

- ★Use the chart of Fair food observations that the class developed when you returned from the Fair.
- ★The menu should be sketched out, reviewed, and edited before making a final copy on poster board.
- ★You will then compare your menu to those of your classmates to see the different ways in which the chemical reactions and food items were presented.