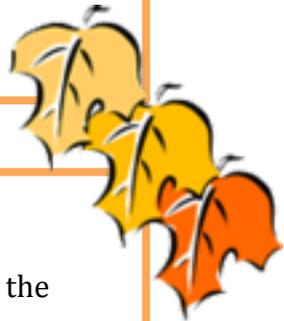




Play Guide: STEM in Cooking

About STEM in Cooking...

Cooking is a fun activity for parents and children to enjoy together! While cooking produces tasty treats, it also helps your children develop STEM skills. Elements of math, science and technology are found in even the simplest of recipes. Concepts such as chemical changes, plant life cycles, fractions, 1:1 correspondence, measurements and shapes can be explored. With the guidance of an adult, cooking allows children to participate in a hands on experience that allows for both learning and fun. Let's begin!



Math in Cooking

- Measuring instruments
 - Children will use measuring cups, tablespoons and teaspoons that correspond to each recipe.
 - Using these instruments will also help expose children to fractions (ex. $1/2$ C water).
- Sequencing
 - Following a recipe shows children the importance of order.
- Adding/joining
 - When combining ingredients, children can physically see the addition principles.

Science in Cooking

- Fermentation
 - Children can witness the effects of heat.
- Physical Science
 - Changes of state between solid, liquid and gases.
- Life science
 - Children can learn about plants through picking fruits and vegetables to eat.
- Scientific method
 - Children will use skills such as observing, hypothesizing, experimenting and concluding in their cooking.
- Simple machines
 - Microwaves, ovens and blenders can be used.

How can YOU enhance STEM learning through cooking?

There are many ways parents can explicitly highlight these STEM principles in cooking. One way you can help your children get the most out of this learning experience is through asking questions! Make sure to guide your children's thought process throughout the cooking process to make sure they make valuable connections between cooking aspects and STEM. For example...

- "This recipe calls for 2 cups of water and 2 cups of sugar. How many cups in total does this recipe require?"
- "What will happen when we put a pot of water on the stove?"





Apple Pie Bites



Ingredients:

- 1 small apple, cut into 8 slices
- 3 tablespoons butter, melted
- 1 [8 ounce] can refrigerated crescent dinner rolls
- $\frac{1}{4}$ cup sugar
- 1 teaspoon ground cinnamon

Directions:

1. **Preheat oven** to 375. Place cooking parchment paper on baking sheet.
2. In a small bowl, **combine** sugar and cinnamon. In a separate bowl, toss apple slices with **$\frac{1}{2}$ of melted butter** and **$\frac{1}{2}$ of the sugar mixture** then stir.
3. Separate dough into **8 triangles** on baking sheet. **Place one apple slice on each triangle**. Wrap your apple with the dough.
4. Lightly brush butter onto the dough and sprinkle sugar on top.
5. Bake **12 minutes**. Let cool for **5-10 minutes**.

Want more STEM?!

Instead of buying apples at the market, take your child apple picking! This is a great opportunity to talk about plant life. Take advantage of the trip and examine different types of fruits and vegetables while you're there!

Relation to STEM:

- Preheating oven
 - Use of technology! Show your children how the oven works and, if comfortable, allow them to set the temperature with supervision.
- Combining sugar and cinnamon
 - This is a perfect example of addition. Children can see the sum of two separate ingredients.
- $\frac{1}{2}$ melted butter and $\frac{1}{2}$ sugar mixture
 - Fractions, fractions, fractions! Teach your children different parts of a whole.
- Melted butter
 - Physical change from solid to liquid. Observe the microwave (technology!) work its magic.
- 8 triangles
 - Quantity and geometric shapes. Talk about other foods and their shapes.
- Place one apple slice on each triangle
 - 1:1 correspondence. When finished, have children count each apple slice and each triangle.
- 12 minutes and 5-10 minutes
 - Concept of time. Use this time to discuss your cooking experience! Ask your children what they've learned.

Additional Benefits of Cooking

Not only does cooking explore aspects of STEM, but it also has many other benefits for children. For example, cooking increases self-esteem and positive feelings about teamwork. Additionally, it helps children develop motor skills and provides opportunities for parents to actively engage with their children. By cooking ethnic dishes, you and your children can learn about other cultures. Cooking is a great time for everyone involved and it's the perfect recipe for STEM play and fun!

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