

Situation

Experiment with states of matter using food!



STEM Ahoy! Food Chemistry Engineering Design Challenge

Criteria:

Can a new way to "eat" juice!

Constraints:

Determine which liquids to use.
Work as a family engineering team!
* Create your own criteria!

Problem & Career Focus

Amidst the Coronavirus pandemic, you are bored of eating the same old food! Your task is to research the different states of matter and experiment with changing liquids to solids and gases! Your team of chemists, chemical engineers, food science technicians, and pharmacists are designing a unique way to eat juice! Research how food can be changed into the different states of matter! What are some ways solids can turn into gases? How can liquids turn into solids?

Materials:

Suggested Items:

- * Apple Juice
- * Grape Juice
- * Other juices you desire!
- * Sodium Alginate (gelling agent)
- * Calcium Chloride
- * Blender
- * Bowls
- * Syringe
- * Small Hand-Held Strainer

Investigating Questions:

What are the states of matter?

How can you alter your food chemistry experiment to make different shapes?

What steps of the engineering design process did you use?

Things to Consider

1. What items in your refrigerator can you use (with parent permission)?
2. How will you describe the changing states of matter through the process?

Educational Standards Correlations

Language Arts, Engineering, Science, Physics, Mathematics, Chemistry, Home Economics