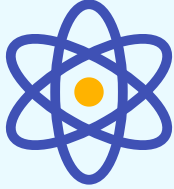# STEAM Activity Chart for Pickling and Fermentations

Science

Fill three dishes with about 2 inches of cold water Place a clear glass cup in each dish and label them 1, 2, and 3. In glass 1, mix one teaspoon of yeast, ¼ cup of warm water, and 2 teaspoons of sugar. In glass 2, mix one teaspoon of yeast with ¼ cup of warm water.In glass 3, place one teaspoon of yeast in the glass.Observe each cups reaction. Why do you think the reactions in each glass differed from one another?

Technology

Fermentation Technology is a field of science that involves the use of microorganisms and enzymes which have help the energy, material, pharmaceutical, chemical and food industries. Conduct research and learn how fermentation is used in one of the industries listed above. Are there products that you use that rely on fermentation technology?

Engineering

Ethanol is a good fuel for use in engines. It is added to gasoline and diesel to run engines in cars. Let's discover how it actually works! Combine yeast and warm water with sugar in a small resealable plastic bag and observe as the yeast "eats" the sugar and produces carbon dioxide and ethanol. What do you notice happening?
How do you think this process helps engines?

Art

Squeeze glue designs or pictures onto a piece of card stock. Sprinkle your design with salt until the glue is thoroughly covered. Tip the card stock to let excess salt fall off. Dip your paint brush into liquid watercolor paint then gently touch to the salt-covered glue lines. What do you notice happening? Let dry thoroughly (1-2 days). Enjoy your raised salt painting!
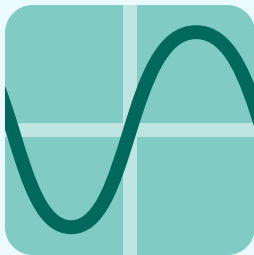
Mathematics

Different types of pickles use different salinity levels (proportions of salt in the brine). If you were making a recipe that called for 1 cup of brine, solve this problem! If a cup of water weighs around 236 grams, and each teaspoon of salt is 6 grams, what percentage of salinity is in this recipe?

Fun Facts!

Fermentation increases the nutritional value of raw vegetables.

Sourdough bread was once more valuable than gold.