STEAM IN THE KITCHEN!

Science
Technology
Engineering
Arts
Math

A gift for children from the Sierra Association of Foster Families

I, Grandma Giggles, would like to tell YOU about grocery carts!

The first picture is the first grocery cart ever designed and assembled:

It was done by the brilliant - creative - imagination of Mr. Sylvan Goldman in Oklahoma on June 4, 1937. WOW!

I think a creative imagination is a wonderful thing to have,.don't you? I hope you have one!

The second picture is what a grocery cart looks like now!

In the United States, they are called "carts." In England, Ireland, Australia, and New Zealand, they are called a "trolly."

OKAY - Have fun grocery shopping!

Practically every kid enjoys having a birthday cake!

To bake a birthday cake - well, you need to know all about measuring ingredients - knowing math is important!

How about I give you a little information about birthday cakes?!

Then you can read Chef Dan's recipe and with a parent or grandparent - you could bake a birthday cake for someone you love!

The 1st cakes were for very rich and powerful emperors for their birthday celebrations in ancient Rome! And each cake was made with GOLDEN HONEY!

In the 1700s in Germany, people started putting candles on birthday cakes - to protect children from ghosts!!!!!

The song 'Happy Birthday' was composed in the early 1900s, and that's when people started singing and exclaiming 'Happy Birthday!" before they blew out the candles.

Do you know who wrote the song 'Happy Birthday?"

Ah.... I think you might want to look it up... it's called RESEARCHING! If you can READ, then you can be a RESEARCHER!

I doubt that there is any kitchen in the town I live in that doesn't have in its cupboards or refrigerator CANS OF FOOD!

Do you know that food was first preserved in tin cans in the 1700s in the country known for growing tulips! Do you know which country grows the most tulips? I'll give you a hint...it's also famous for wooden shoes and windmills!

The first canning factory was built in 1812 by a Mister Bryan Donkin,. Guess what country he lived in, Hint Hint.....that country currently has a Queen!

I wonder if the Queen ever eats food from a can?

Can openers didn't arrived in the United States until 1858. If you do the arithmetic, you will be able to know how many years ago that was. Go ahead! Do the math!

The lever type can opener that right now might be in your kitchen drawer is called the Lever-type can opener and it was designed by Mister Robert Yeates in 1855. What country do you think he lived in? I'll give you a clue.... it's a country where Charles Dickens who wrote A Christmas Carol and Oliver Twist lived. Did you figure out the answer?

Oh, and the electric can opener was invented in 1931. One was invented by a woman designer named Elisabeth Hess Bodie in Los Angeles, California and it was a big success as a Christmas present!

Be careful if you use a can opener...they are sharp! Always be careful!

My name is Franky. I'm 10 years old. I have two hobbies. I play baseball and I enter contests! I'm a kid who likes challenges and who likes to win!

I'm entering a STEAM IN THE KITCHEN contest. If I win, I get 100 dollars. Guess what I'll buy with my prize money? Tickets to the World Series baseball game! Whoa, so exciting!

For the contest, I'm writing an essay about OVENS! Whoa, ovens are so fascinating.

Archeologists have found that ovens can be dated all the way back to 29,000 years ago! They didn't have electricity then, so the ovens were actually roasting and boiling pits - hot coals covering pits in ashes.

Three thousand years ago, ovens made of bricks were found in mud-brick houses.

Do you like to eat bread? I sure do! I found out that it was the Greeks who were the first people to build ovens to bake bread. They made bread into different shapes and sold it to other people.

The first gas oven was invented by Mister James Sharp in 1826. And then - the electric oven in 1922 by Mister Gustaf Dalen.

Whoa! I found something else that is really fascinating - the ovens in American kitchens which are either gas or electric - are really called Wall Ovens!

In my essay, I'm including a famous painting titled "Woman Baking Bread" which was painted in 1854 by a Frenchman named Jean-Francois Millet.

I'm thinking when I grow up, besides being a baseball player, an engineer, a historian, I might also be a painter. I'm very ambitious! No one can ever accuse me of being lazy!!!!!!!

I'm 7 years old ! Suzie's my name! My favorite thing to do is jump roping! To be a great jump roping champion, I need to be healthy! And that means EATING HEALTHY!

No sireeeeeee! I'm not ever going to eat food that isn't healthy for me!

My father is a technician. He builds - guess what? Refrigerators! Yep! He builds REFRIGERATORS! Maybe he built the refrigerator that's in your kitchen right now!

I know a lot about refrigerators!

For instance.....Before the invention of the refrigerator, people stored food in ICEHOUSES they packed with snow!

Then one day, a man in Scotland (can you find Scotland on the map?) named William Cullen designed a small refrigerator. When? All the way back in 1775! Do you know how many years ago that was? If you don't, you can do simple math. Subtract 1775 from 2020 and you have the answer. I'll bet your refrigerator isn't that old!!!!!!!!

Then, the story gets more exciting. In 1913, a man from Indiana (Look up and see when Indiana became a state) named Fred W, Wolf made a freezer at the top of refrigerators. I'm surprised that when we open a refrigerator door we don't hear a wolf howling! LOL!

And then in 1915, everybody in America could buy a refrigerator, but not everybody had enough money to buy one and some people still used ICEHOUSES!

In the 1950's, all refrigerators were white! But today, in 2020, the most popular colors are white, black, and silver. What's the color of your kitchen's refrigerator?

But.... wow... this is something to think about if you are into conserving energy. Refrigerators consume more energy than any other device in the house!!!!!!!!!!!!!

Refrigerators are so fascinating! Keeps food fresh! Eating spoiled food isn't healthy at all!

I'm Conchita, and I'm a dancer. When I'm dancing on stage, I have excellent timing.

BUT on most school days? I confess that I wake up late and have to rush around the house trying to get ready. On those mornings.... Well.... There's no time to sit at the table and eat a healthy breakfast. So.. what do I do?

I EAT TOAST!!!!!!

I'm so glad that Mr. Alan MacMasters all the way back in 1893 invented the first electric bread toaster! Do you know what country he lived in? Scotland! It would be so cool if someone invented a toaster that every time a piece of toasted bread popped up, the toaster would play musical bagpipes! LOL!

When he first invented the toaster, he didn't call it a toaster. Instead, he called it an ECLIPSE!

Then, it was called a NICHROME in 1905 when Mr. Albert Marsh designed the use of nickel and chromium as the heating elements.

Stores didn't begin selling electric toasters until 1909. How many years ago was that? Go ahead, do the math!

Oh wait, you know how toast pops up? Well, that didn't happen until 1921, when a Mister Charles Strite invented the first pop up toaster and one that could brown bread at the same time and make it pop up when it was finished.

Well, enjoy your breakfast toast! Some mornings, I love mine smothered with butter. On other mornings, I like peanut and jelly on my toast. And my grandma, she boils eggs and then puts them on top of the toast and calls it.. .. EGG ON TOAST with lots of pepper!

Okay.. time for me to go to dance class!

I'm Sammy! I just finished lunch and now I'm riding my bike. My mom is doing the dishes in the kitchen sink. She's always singing at the top of her lungs while she is washing dishes.

My mom is an engineer. She builds and fixes so many things, including the kitchen sink when it's clogged up or a pipe is cracked.

The history of the kitchen sink is so fascinating....

My mom thinks it's the most important thing in the kitchen! Wow!

The first kitchen sinks were actually.... BUCKETS FILLED WITH WATER!Outside! Can you imagine cleaning pots and pans, dishes and bowls, cups and glasses, spoons and forks... outside in winter in a snowstorm in cold bucket water??? YIKES! How did someone wash dishes in freezing water and wearing leather gloves?

In the 1850's - how many years ago was that? Go ahead, you can do the math! Pre-made sinks were called FARMHOUSE SINKS. They were only for very rich people and they were made out of BRICKS! WOW! A brick sink!

Then, in the 1900's they were made out of steel and even cement!

It wasn't until much later, that a separate drainage system was attached where dirty water could be drained through the pipes. Where do you think the dirty water goes when it's running down the pipes?

Then, sinks were made with nickel and copper so they could be rust proof and easy to clean. Then porcelain was added. Do you know what else is made of porcelain?

Then, faucets! Then, hot water! Then, cold and hot water faucets!

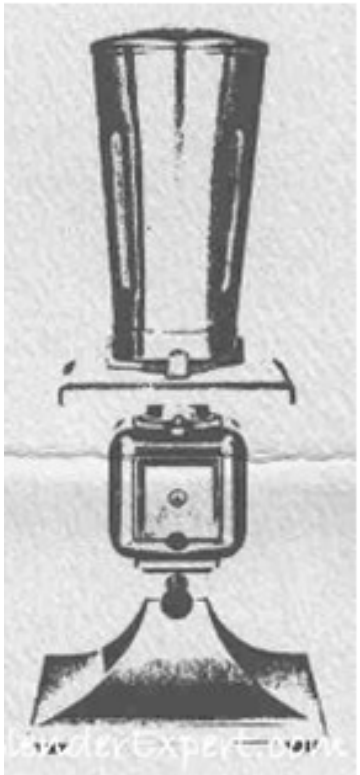
Ooops.. My mom has stopped singing. So, that means she's finished washing the lunch dishes... But.. soon it will be time for dinner and then.... More dishwashing in the kitchen sink! And more of mom's singing.

For me - time to pedal and get my fun exercise! How many times can I make the pedals go round and round in 1 minute? To answer that, we need to know how many seconds are in a minute! ZOOOOOOOOOOM, and away I pedal!

I'm Susanna, but some people call me 'JUMPER.' Can you guess why? LOL!

Well, every single morning, either my mom or dad, or one of my foster parents, or my grandma or grandpa, make the delicious smoothies in the KITCHEN BLENDER for me. I help, of course. I drop in the fruits!!!!!

Strawberries! Blueberries! Mangoes! Bananas! And my favorite: Tangerines!



Of course, we couldn't make breakfast fruit smoothies if we didn't have a kitchen blender.

So, I would like to thank Mr. Stephen Poplawski for inventing the first kitchen blender way back in 1922. He was the first person to place blades that spin at the base of a container!

Then, ten years later (can you do the math and figure out what year it was?) the Stevens Electric Company did the machine that liquefied fruits and vegetables.

Then ten years after that (keep doing the math and figure out the year), a Mister Fred Osius improved the blender to prevent technical problems.

Guess how much a blender cost in 1937? $29.75. When you go to the grocery store, look to see how much they cost now!!!

One of the most popular blenders is called the Oster Blender invented by John Oster in 1924 - funny - he was a barber who cut hair! LOL!

Well, time to jump rope. Geez, drinking a fruit smoothie every morning gives me so much energy! Hmmmm... I wonder if jump roping will ever become an Olympic sport? If so, I'm sure I'll win the Gold Medal!

GIANT MOLASSES COOKIES

Dr. Annie Jump Cannon was the 1st woman to earn a PH.D - and proclaimed from Oxford University a "Scientific Doctorate" for her work as an ASTRONOMER. She classified thousand of stars in the sky!

After her hard work outdoors, perhaps she enjoyed spending time indoors - in her kitchen baking GIANT MOLASSES COOKIES

You will need to use:

1 and ½ cups of butter
2 cups of sugar
2 large eggs
1 and ½ cups of molasses
4 and ½ cups of flour
4 teaspoons of baking soda
1 and ½ teaspoons of cinnamon
1 teaspoon of cloves
¼ teaspoon of salt
1 and ¼ cup of chopped pecans
(make sure no one is allergic to nuts)
2/4 cup of sugar

In a large bowl, mix butter, sugar, flour, baking soda, cinnamon, cloves, salt, and pecans
Then make into gooey - really gooey - balls (about 2 inches wide) and then roll them in sugar.
Put in a pan and bake for 15 minutes.

Let them cool off before eating.

Maybe... just maybe.. Take a plate of the giant cookies outside and while eating, look up and try to count the stars!

GREEN TOMATO PIE

MISS CLARA BARTON certainly has a place in the realm of STEAM. She was a nurse during the American Civil War.and took care of soldiers! She began the American Red Cross.

She knew her way around hospitals, battlefields, and kitchens. Do you think she might have made this GREEN TOMATO PIE for the wounded soldiers?

You will need to use:

1 and 1/2 cups of sugar
5 tablespoons of flour
1 tablespoon of cinnamon
3 cups of sliced green tomatoes
1 tablespoon of apple cider vinegar
1 tablespoon of butter

In a bowl...combine all of the above ingredients.. Then put them in a pie crust and bake in the oven for 1 hour at 350 degrees.

Let it cool before slicing and dicing and eating!!!!!!!

Thank you Miss Clara Barton!

ASPARAGUS SOUP

Marion Angesi was the 1st woman mathematician in the United States, the 1st woman professor of mathematics, and the 1st woman to be called an expert in Calculus.

She lived between 1718 and 1799. Wonder if she knew Benjamin Franklin?!
Or, did she borrow Mrs. Franklin's recipe for making hot ASPARAGUS SOUP on those cold winter evenings when Benjamin Franklin - a great scientist and engineer - was inventing the stove, bi-focal eye glasses, and experimenting with electricity?

You will need to use:

1 teaspoon of canola oil
1 small chopped onion
5 cups of chopped asparagus
1 can of chicken broth
2 and ½ cup of fat free milk
2 tablespoons of butter
¾ teaspoon of salt
⅛ teaspoon of pepper
½ cup of half and half cream
1 tablespoon of lemon juice

Put the onions, asparagus, and broth in a pan and boil on the stove.
Then add everything else and bring to a boil on the stove
Then add them together and put in the lemon juice and then let it simmer - but don't let it get cold.

Okay - can you add all measurements of all the ingredients?
Surely, Professor Marion Agensi could!

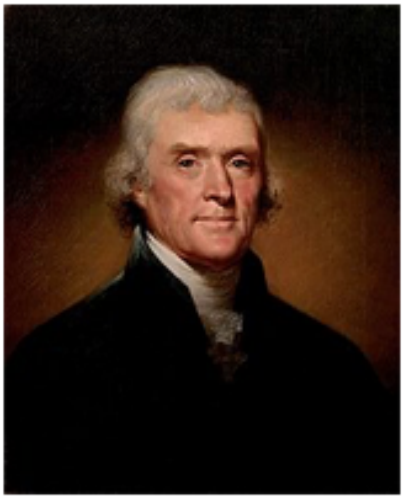
CHUNKY APPLE CAKE

It's believed that Thomas Jefferson's kitchen cooks made CHUNKY APPLE CAKE for him during the Revolutionary War period.

Before he became the 3rd President of the United States, Thomas Jefferson was a Master Gardner who grew vegetables and fruits in his place called Monticello.

You will need to use:

½ cup of butter
2 cups of sugar
2 large eggs
2 cups of flour
1 and ½ teaspoons of cinnamon
1 teaspoon of nutmeg
½ teaspoon of salt
12 teaspoon of baking soda
6 cups of chopped sweet apples



For the sauce you will need to use:

1 cup of butterscotch sauce
½ cup of brown sugar
½ cup of butter
½ cup of whip cream

In a large bowl put the butter, sugar, nutmeg, and add eggs 1 at a time.... Stir.....

Then add everything else...
and finally stir in the apples.

Spread it all in a pan and bake at 350 degrees for nearly 60 minutes... don't burn it.. Keep checking..
Then, in a separate pan put all the ingredients for the sauce together.. Bring to a boil

Then let both the cake and sauce cool off..
And then... pour the sauce over the cake

FINISHED! DELICIOUS!

A Colonial American desert from the 1700's.

GEORGE AND MARTHA WASHINGTON's CARROT CAKE

America's 1st United States President will always be a great hero! GEORGE WASHINGTON! The President and his wife, MARTHA WASHINGTON lived on battlefields during the Revolutionary War - sewing dirty and torn uniforms of the soldiers. However... they also entertained many people at supper parties in their mansion named Mt. Vernon. And.... it is reported that the CARROT CAKE was their favorite dessert the cooks baked in the Washington kitchen.

You will need to use:

2 cups of flour
1 tablespoon of cinnamon
2 tablespoons of baking soda
1 teaspoon of salt
¾ cup of canola oil
2 cups of sugar
4 eggs
2 cups of grated carrots

Combine all the ingredients in a large bowl...

pour into a pan..

Bake for 1 hour at 350 degrees.

Might be extra tasty to bake
and eat on the 4th of July!!!!!

APPLE-MAPLE SNACK CAKE

Chef Dan loves this cake made with flavors of maple syrup, warm spices, and apples. He found it in DIABETIC LIVING MAGAZINE.

You take:

1 cup of white -whole-wheat flour
1 teaspoon baking powder
3/4 teaspoon of apple pie spice
1/4 teaspoon of salt
1/2 cup packed brown sugar
1/4 cup pure maple syrup
1/4 cup of melted butter
1 egg
2 teaspoons of vanilla
1 1/2 cups of peeled and chopped cooking apples
1/4 cup of sliced almonds

Directions:

Have your kitchen adult preheat the oven to 350 degrees (don't do it yourself). Grease an 8 inch square baking pan (you can do this yourself).

In a bowl, stir together the flour, baking powder, apple spice, and salt.

In another bowl, combine everything else.

Then pour both into the pan and bake for 23 minutes. Have your kitchen adult take it out of the oven (don't do it yourself).

Let it sit and cool!

One slice has 151 calories, 13 grams of sugar, and 24 grams of carbs.

Enjoy!

Chef Dan loves fruits, applesauce, and ice cold popsicles!

He found this recipe for FRUITY APPLESAUCE POPS in the Diabetic Living Magazine!

Here's how you and your Kitchen Adult can make it!

Take:

1 medium size (32 ounce) jar of unsweetened applesauce

2 cups of fresh (not canned) but FRESH raspberries, blackberries, blueberries, strawberries and sweet cherries

Directions:

In a large bowl, stir the applesauce and berries together.

Then, using a spoon, put the cold mixture into ice pop containers. Cover them up and freeze them in freezer. You can put a popsicle stick in, too!

Each popsicle will be only 32 calories or so and only 6 grams of sugar, and have lots, lots, lots, lots, and lots of Vitamin C!

Enjoy - especially on a hot summer day! But, they are delicious year round, too, even in the winter!

Hello, young scientists!
I, Grandpa Giggles,
have an exciting activity for you!

I'm sure you've heard water doesn't run uphill, but it can in this simple experiment!

You'll need two paper towels, a glass of water, and a bowl. Make sure to do this experiment in the sink in case there's a leak!

Roll up the paper towels and twist them together tightly to form a "wick" for the water to travel through. Then, place one end in the glass and the other in the bowl, just like in this picture!

Soon, you'll see the water oozing through the paper towel to the bowl. It may take a bit of time, so you can check back once in a while to see how it's doing.

When the water level in the bowl is the same as in the glass, the water stops moving. Try moving the glass to something above the bowl when this happens to get the rest of the water out!

How does this happen? The reason is because the paper towels have many tiny holes between its fibers for the water to travel through. When water moves through these little spaces, it's called "capillary action." This is how plants move water from their roots to their leaves!

Okay - Have fun learning!

295 Bottle Barometer

YOU WILL NEED:
saucer
water
plastic soda bottle
index card
tape

You already know that the layer of air surrounding the earth exerts a pressure of more than fourteen pounds on every square inch.

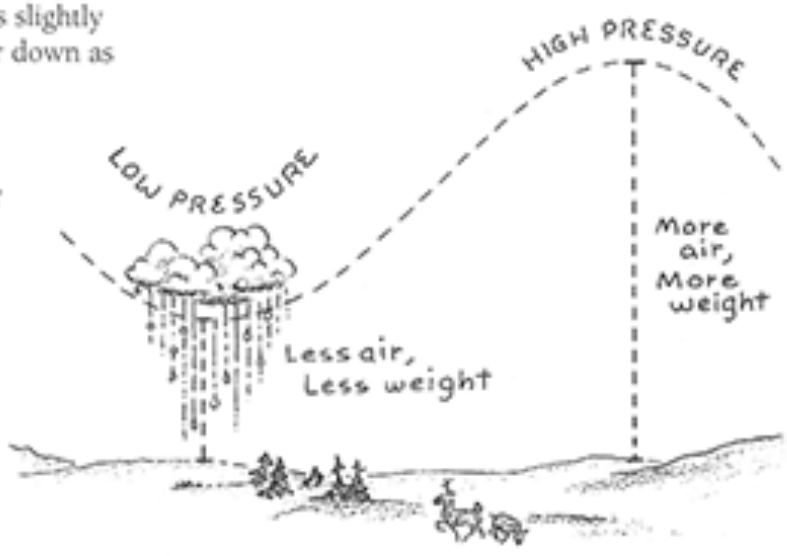
More than three hundred years ago Evangelista Torricelli, an Italian physicist, first figured out a way to measure this atmospheric pressure. He balanced a column of mercury with a column of air. You can make a barometer with ordinary tap water that will work like his.

What to do: Fill the saucer halfway with water. Pour water into the bottle until it is about three-quarters full. Keeping your thumb on the mouth of the bottle, turn the bottle upside down. Then remove your thumb and quickly put the mouth of the bottle into the saucer of water. Tape a strip of the index card on the outside of the bottle, as it is in the illustration.

What happens: The water doesn't pour out of the bottle. Instead, the water level drops slightly and comes to rest. Then, it moves up or down as the air pressure changes.

Why: Air pressing against the water prevents it from running out. The water stops moving downward when the water pressure is balanced by the pressure of the atmosphere.

Mark the index card at the point where the water settles, and you will be able to chart whether the water goes up or down in the bottle. An increase in air pressure sends the water up. When there is a decrease it drops down. When the water in the bottle drops down, you can expect warmer, wetter weather.



318 Act I: All Mixed Up!

YOU WILL NEED:
¼ cup of flour
¼ cup of salt
glass
spoon
hot tap water

Chemists often talk about solutions and suspensions, and also emulsions and mixtures. In a solution, one substance is thoroughly dissolved in another (salt and water). In a suspension, one substance is mixed throughout the other, but is not dissolved (soil and water).

In an emulsion, one liquid "floats" in another, but is not dissolved. The spread mayonnaise is a perfect example of an emulsion. But a mixture, unlike the above, is made up of different substances that do not dissolve into one another or stay together. Salt and flour may be really mixed up, but don't you be! Try this experiment and find out what's going on.

What to do: Stir flour and salt together in the glass (do not add the water yet). Is it thoroughly mixed? Add the hot water to fill the glass. Stir well and wait about 30 minutes; then reach in with your finger and taste the water.

What happens: The water at the top tastes salty, and white covers the bottom of the glass.

Why: Salt and flour is a perfect mixture. These substances are so different that they cannot dissolve or chemically mix in any way. They also react differently to water. While the flour floats and then sinks to the bottom of the glass, the salt dissolves into the water to form a salt solution above the flour.

Save the mixture for the next experiment, "Act II: Bring Back the Substance."

341 Color Me Gone

YOU WILL NEED:

- cup of dark tea (hot or iced tea can be used)
- 1 lemon, cut into quarters

What happens to tea when you put lemon into it?

What to do: Squeeze a little of the first piece of lemon into the tea. Continue to increase the amount of lemon in the tea until all of the quarters are fully squeezed and used up.

What happens: The lemon causes the color of the tea to completely fade.

Why: The citric acid in lemon is a bleaching agent that reacts chemically with the dye in the tea to lighten it.

342 Detergent Derby

How do laundry detergents work?

YOU WILL NEED:

- 2 medium-size jars, one with lid, filled with water
- pieces of white string
- 1 tablespoon (15 mL) of liquid or dry laundry detergent

What to do: Add the detergent to one of the jars. Screw the lid on, shake the jar, and remove the lid. The other jar will contain only plain water. Now drop three or four pieces of string into each jar and watch what happens to the strings.

What happens: The strings in the jar of plain water float on the surface, while the strings in the detergent water soon sink to the bottom.

Why: The strings that dropped to the bottom of the glass of detergent water had become water-soaked. The water and detergent mixture is an emulsion, or liquids floating in one another. This emulsion caused the strings to get wetter faster. The simple idea of using detergent as a "wetting agent" helps to remove dirt from clothes.

Keep materials for the next experiment, "Clean as a Whistle."

354 The Gas Guzzler

A car is called a gas guzzler when it wastes gas. In this experiment, gas wastes water. Try it and see!

YOU WILL NEED:

- piece of coffee filter, about 4 inches (10 cm) square
- 3 teaspoons of baking soda (sodium bicarbonate)
- shallow bowl of water
- rubber band
- tall, narrow jar filled with water
- permanent marker pen
- magnifying glass

What to do: Place the baking soda in the middle of the square of the filter. Gather the filter together to make a pouch and fasten the top with a rubber band. Place the baking soda pouch in the tall jar of water and place your hand over the opening. With your hands in place on the bottom and the top of the jar, turn the jar upside down and place its opening in the bowl of water. Remove your hands. Mark the water line on the jar. Watch the glass jar with the hand lens. Be patient; you must wait at least an hour for results.

Why: As the baking soda in the pouch is dissolved by the water, it produces carbon dioxide gas (CO_2). This gas needs room in the jar, so it displaces the water, or forces some of it out of the jar, lowering the water level.

What happens: Bubbles rise from the pouch in the bottom of the jar to the top of it. Some bubbles cling to the sides of the jar. Within an hour, the water drops slightly, but noticeably, below the marked water line.

STEAM IN THE KITCHEN was created by the Sierra Association of Foster Families in Reno, Nevada.

Why did we create it? Because we want ALL children to be SMART! HEALTHY! HAPPY!

Perhaps you are inspired to become a Scientist? Engineer? Technology Expert? Artist? Mathematician? We hope you found learning about the history of kitchen appliances inspiring!

Here's the wonderful people who were the creators and advisors and cheerleaders for STEAM IN THE KITCHEN:

Joseph Galata - Designer, Researcher, Writer

Ceci Wade - Artistic Graphic Editor

Chef Dan Shirley - Humanitarian

Masha Dosti - Character Artist

Chrissi Barnett - Graphic Artist

Jill Wells - Advisor

Oh....

1) please share STEAM IN THE KITCHEN with a friend, parent, grandparent and 2) if you want to hear fun children's stories about friendship, go to

kidsandfriendship.com

For your parents, grandparents, and other adults to learn about the Sierra Association of FosterFamilies, encourage them to go to

educatingfosteryouth.org