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Food Scientist Activity

As a food scientist, your job is to study the food you are eating. Choose a new food you want to try out or use any food you have at home if you can't find or make a new food. Put on your lab coat and complete the 5 senses test! For each category, circle the word that best describes your food!

What does it look like?

color _____

shape _____



How does it taste?

spicy 

salty 

sweet 

juicy 

sour 

bitter 

How does it feel?

soft 

hard 

cold 

hot 

crumbly 

sticky 

creamy 

How does it smell?

meaty 

fishy 

toasty 

nutty 

sweet 

fruity 

minty 

How does it sound?

crispy 

crunchy 

bubbly 

chewy 

sizzling 

What is your final decision?



I love it!



It's okay



Not a fan



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At Home Pickling



During this activity, you learn how to pickle cucumbers at home! Pickling is a fun and tasty way to preserve cucumbers and enjoy them later. Follow the steps below to make your very own pickled cucumbers.

Equipment:

- Medium saucepan
- Spoon
- 1 quart (32 oz or 1 L) Jar
- Cutting board and knife
- Funnel (optional)

Ingredients:

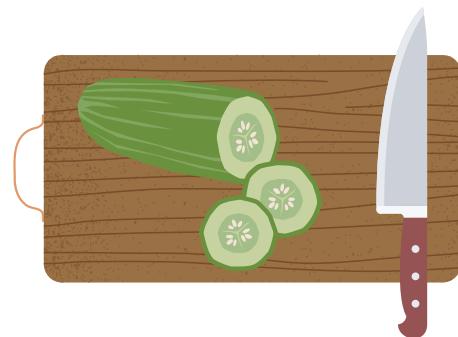
- 1-2 english cucumbers
 - 1 cup water
 - 1 cup white vinegar
 - 2 tsp sugar
 - 2 tsp salt
 - 2 springs of dills or 1 tbsp dried dill*
 - 1-2 garlic cloves, peeled and smashed*
- *Optional Ingredients

Directions

1

Veggie Prep

Wash and slice cucumbers into 1/4 inch thick rounds. Set them aside. Smash garlic cloves and separate dill from stems, if using fresh dill.



2

Brine Brewing

Sanitize mason jars by washing them with hot water. To make the brine, combine water, vinegar, salt, and sugar in a medium saucepan. Bring the mixture to a boil and stir to dissolve sugar and salt. Remove the pan from heat and cool to room temperature.



3

Pickle Packing

Pack the cut cucumbers, dill, and smashed garlic into your jar, leaving room for the brine. Add enough brine to cover the cucumbers.





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Ice Cream in a Bag

Master the art of making homemade ice cream with just a bag and a few simple ingredients - a truly cool adventure. You'll be amazed at how easy, fun, and utterly delicious it is to create your personalized ice cream right at home!

Ingredients & Equipment:

- 1 cup half and half cream
- 1.5 tsp vanilla extract
- 1 tbsp sugar
- Lots of ice cubes
- 1/4 cup salt
- 2 Ziploc bags, 1 small and 1 large
- Oven mitts or winter gloves

Directions

1

Prepare the Ice Cream Base

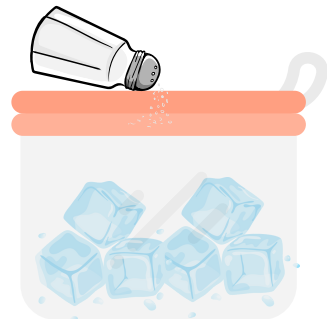
In the small Ziploc bag, add half and half cream, vanilla extract and sugar. Then seal the bag firmly, making sure to remove any excess air.



2

Prepare the Ice Bag

Fill the larger Ziploc bag halfway with ice cubes. Add 1/4 cup of the salt to the ice in the larger bag.



3

Get Ready to Shake

Place the sealed small bag with the ice cream base into the larger bag with ice and salt. You can double bag it if you are worried. Fill the larger bag with more ice cubes, ensuring that the small bag is surrounded by ice. Then seal the large resealable Ziploc bag securely.



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Ice Cream in a Bag

4

Shake it Up!

Put on a pair of oven mitts or winter gloves to protect your hands from the cold. Then shake the bag vigorously for about 6-10 minutes or until ice cream is thick.



5

Rinse

Remove the small bag from the large bag after shaking. Rinse the outside of the small bag with cold water to remove any salt residue.



6

Serve and Enjoy!

Use a spoon to mix the ice cream. Add in your favourite toppings like sprinkles, crushed cookies, or fresh fruit and enjoy!



The Science behind it:

- The key ingredient to making ice cream is the salt. The salt lowers the temperature at which ice melts
- The ice needs to absorb heat to continue to melt. As the ice melts, it continues to draw heat from the ice cream ingredients, allowing the ice cream mixture to absorb the cold from the ice, freezing it.
- Shaking allows the transfer of heat to happen and also creates air in the ice cream mixture making it nice and creamy!

This activity has been adapted from:

The Best Ideas for Kids. (2021, April 30). Ice Cream in a Bag. Retrieved from <https://www.thebestideasforkids.com/ice-cream-in-a-bag/>

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DIY pH paper

In this project you will learn how to make your own pH paper that you can use to find out if a solution is acidic or basic (alkaline).

Equipment

- Red cabbage leaves
- Cooking pot
- Strainer
- 1-quart bowl
- Filter paper or coffee filters

Safety Notes:

- Adult supervision required.
- Do not mix strong acids and bases.
- Use appropriate caution when testing the pH of household cleaning solutions. Avoid skin contact, and follow all precautions on the product label.

1

Prepare a red cabbage indicator solution

1. Peel the leaves from the head of red cabbage and tear them into pieces.
2. Place the leaves in the cooking pot and cover with water.
3. Cook on medium heat for half an hour.
4. Allow the cooked cabbage to cool. Then pour off the liquid through a strainer to catch the cabbage pieces and into a bowl.
5. The solution is a deep blue, but will change color when the pH changes



2

Make pH paper

1. Soak 5 sheets of filter paper in the red cabbage solution for about 30 minutes.
2. Drain the excess solution from the sheets of filter paper, and set them out in a single layer on some paper towels to dry overnight.
3. When the sheets of filter paper are dry, cut them into strips.
4. The strips are now ready to test the pH of various solutions.



They start out **blue**, but will turn **green** in basic solutions and **red** in acidic solutions.

3

Test time!

1. Use the strips to test the acidity/alkalinity of various solutions around your house. See page 2 for examples!

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Fun with Food

The science of Taste

Our taste buds are little detectors on our tongues that help us taste different flavours. When we eat something, our taste buds send messages to our brain, and that's how we experience taste.

There are 5 basic flavours we can taste!

Sweet



Sour



Salty



Umami



Bitter



The science of Flavour

Aroma

The smell of food
When we eat, the smell of food combines with taste from our taste buds

Temperature

Hot or cold foods
Foods may taste different when they're hot or cold

Texture

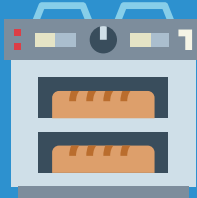
How food feels in our mouths
It can be smooth, crunchy, chewy or creamy

Cooking Methods

Boiling



Baking



Frying



Grilling



Steaming



Preserve Food

Pickling



Canning



Freezing



Drying



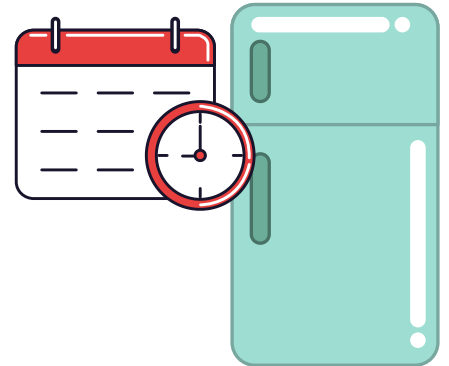
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At Home Pickling

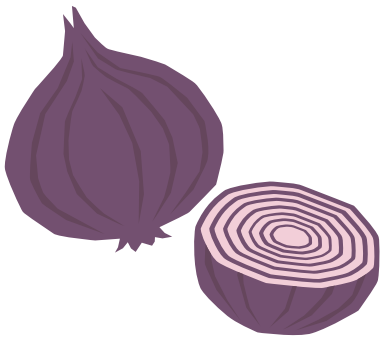


Waiting

Seal the jar and store in the refrigerator.
The flavour is best if stored for one week.



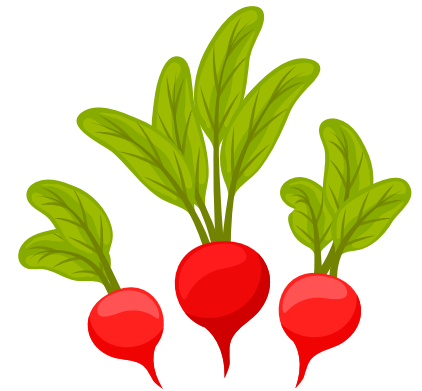
You can also try pickling...



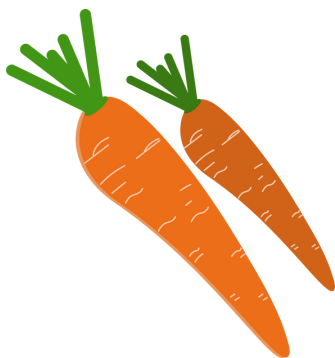
Red Onions



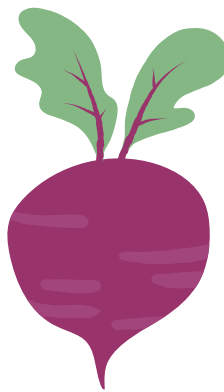
Garlic Cloves



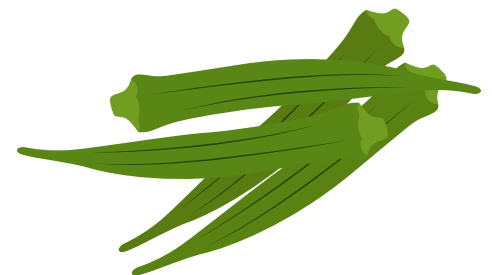
Radishes



Carrots



Beets



Okra

This activity has been adapted from:

Self Proclaimed Foodie. (2023, June 15). Easy Refrigerator Dill Pickles. Retrieved from <https://selfproclaimedfoodie.com/easy-refrigerator-dill-pickles/#wprm-recipe-container-32916>

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Potato Hydration Experiment



Did you know, our bodies are 50-70% water?

When we sweat, we lose some water and a little bit of salt. So, when there's salt in our sweat, the water in our bodies is attracted to it, and it moves towards the salt through a process called osmosis. Drinking water helps us stay hydrated when we lose water through sweating.

Let's see how salty or sugary foods affect our bodies!

You will need:

- A potato
- A knife
- A cutting board
- 3 bowls
- 2 tbsp sugar
- 2 tbsp salt
- Water



Instructions

1 Using a knife and cutting board, cut 3 equal sized pieces of potato.

Make sure to get help from an adult when using the knife!

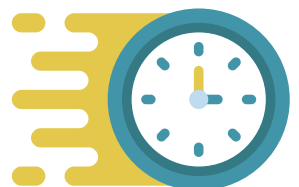


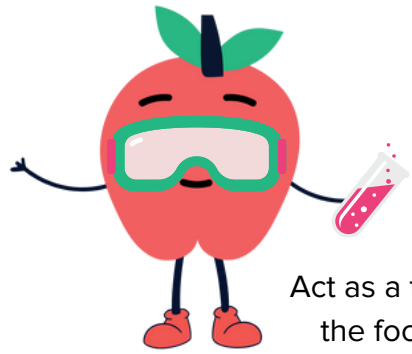
2 Place 2 tbsp of salt in one bowl, and 2 tbsp of sugar in another bowl. Fill all three of your bowls about 2/3 of the way with water. Stir the salt water and sugar water mixtures until dissolved.

3 Place one potato slice in each of the bowls with the plain water, saltwater, and sugar water. Be sure to label them so they don't get mixed up!



4 Wait 1-2 hours and observe what happens! Let us know your results in the Google classroom and what you think happened.

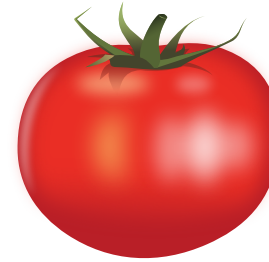




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pH Activity

Act as a food scientist to determine where foods belong on the pH scale. Draw a line from the food to its correct spot on the scale! Is the food acidic, basic, or neutral? Let's see!



pH scale

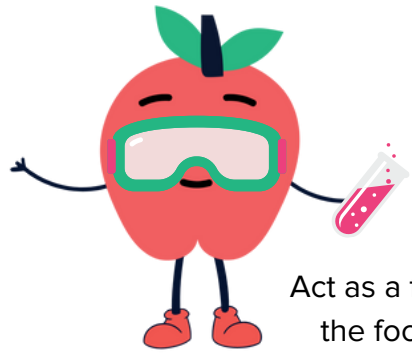


0 1 2 3 4 5 6 7 8 9 10 11 12 13 14

Acidic

Neutral

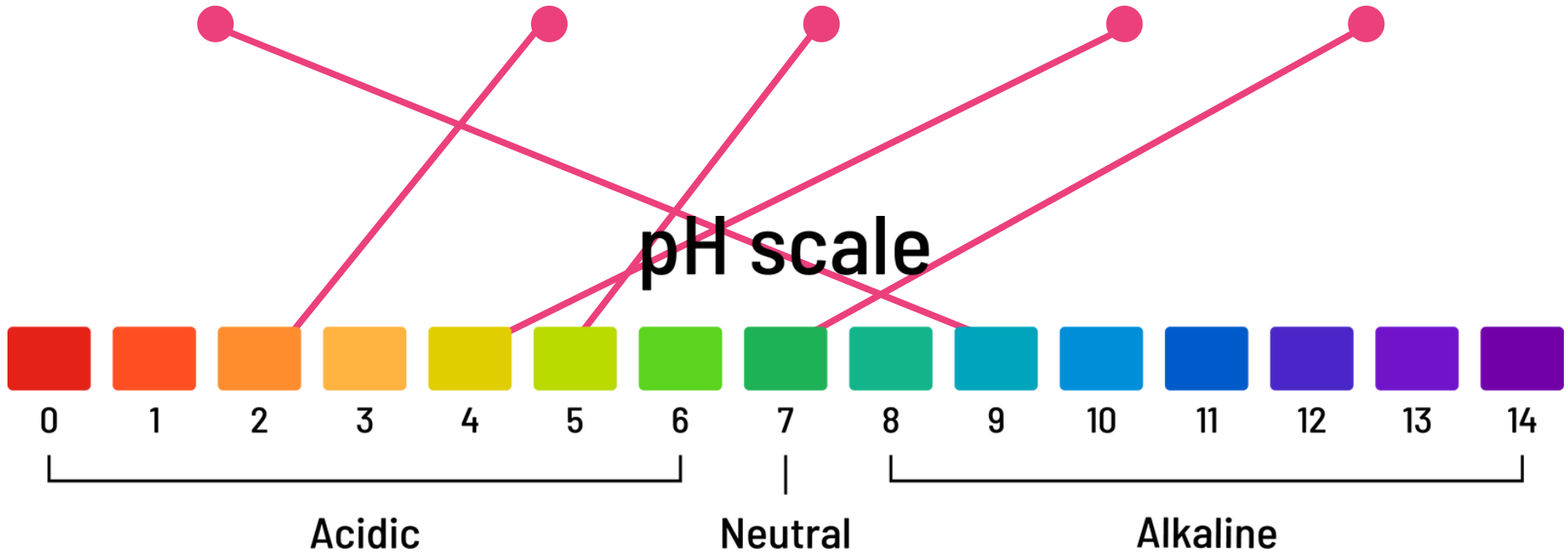
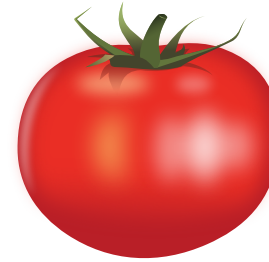
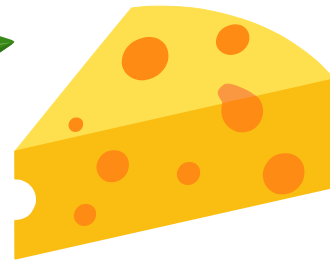
Alkaline



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pH Activity Answers

Act as a food scientist to determine where foods belong on the pH scale. Draw a line from the food to its correct spot on the scale! Is the food acidic, basic, or neutral? Let's see!



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DIY pH paper

Red Cabbage Colour Indicator Chart

PH	pH less than 7 = Acid			pH more than 7 = Base		
	2	4	6	8	10	12
Colour	Red	Purple	Violet	Blue	Blue-Green	Green-Yellow



Lemon Juice



Vinegar



Orange Juice



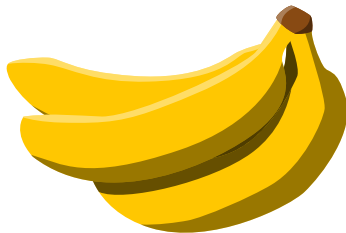
Tomato Juice

Note:

if you test the pH of saliva, do not put the pH paper in your mouth! Instead, spit some saliva into a clean container and dip the paper into the saliva.



Black Coffee



Bananas



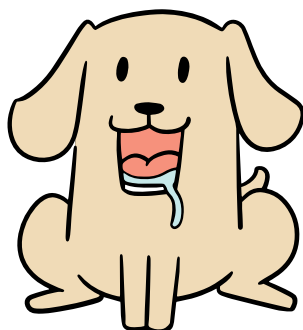
Water



Baking Soda Solution



Milk



Saliva



Eggs



Soapy Water

This activity has been adapted from:

Science Buddies Staff. (2022, March 3). Make Your Own pH Paper. Retrieved from https://www.sciencebuddies.org/science-fair-projects/project-ideas/Chem_p041/chemistry/make-your-own-ph-paper