



Name _____

Make My Pickles



PUT IT UP!

The *PUT IT UP!* series of lessons in home food preservation includes six different food preservation methods: boiling water canning, making jam, pickling, freezing, drying, and pressure canning. Each method is divided into a beginning hands-on activity and an advanced hands-on activity. Activities may stand alone or be sequenced for cumulative learning. In addition to step-by-step procedures, reflection questions, and ideas for experimentation, each method also includes additional activities: a science-based fill-in-the blank challenge, a history-based word search, a glossary, a resource list, a knowledge test, and more.



On the following pages, *PUT IT UP! Make My Pickles* contains:

- ◇ Beginning Activity: Make My Refrigerator Pickles
- ◇ Advanced Activity: Can My Dill Pickles
- ◇ Additional Activities: Make My Pickles



Name _____

Date _____

Teacher _____

Make My Refrigerator Pickles



Brought to you by the
National Center for Home Food Processing and Preservation,
University of Georgia Cooperative Extension and Clemson Cooperative Extension

Credits and Acknowledgments

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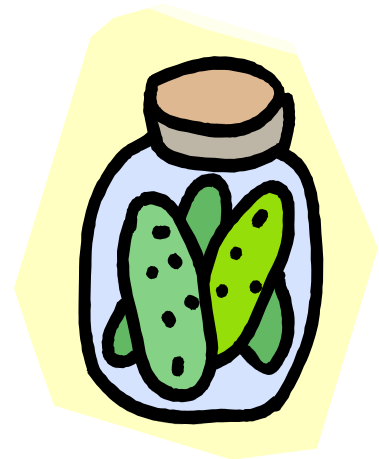
Special thanks to:

Pilot Program Leaders (and youth participants!)

from Clemson Cooperative Extension

& University of Georgia Cooperative Extension

and Advisory Committee members



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Pickling: A Preservation Exploration

You've probably seen pickles at a grocery store. Were they refrigerated, or at room temperature? Maybe you've tried a dill pickle spear as a side, or added pickle slices to a hamburger? In this food science exploration, you get to learn how to preserve your own pickles at home, using just a few simple ingredients.

Let's start with some basics of food science and preservation:

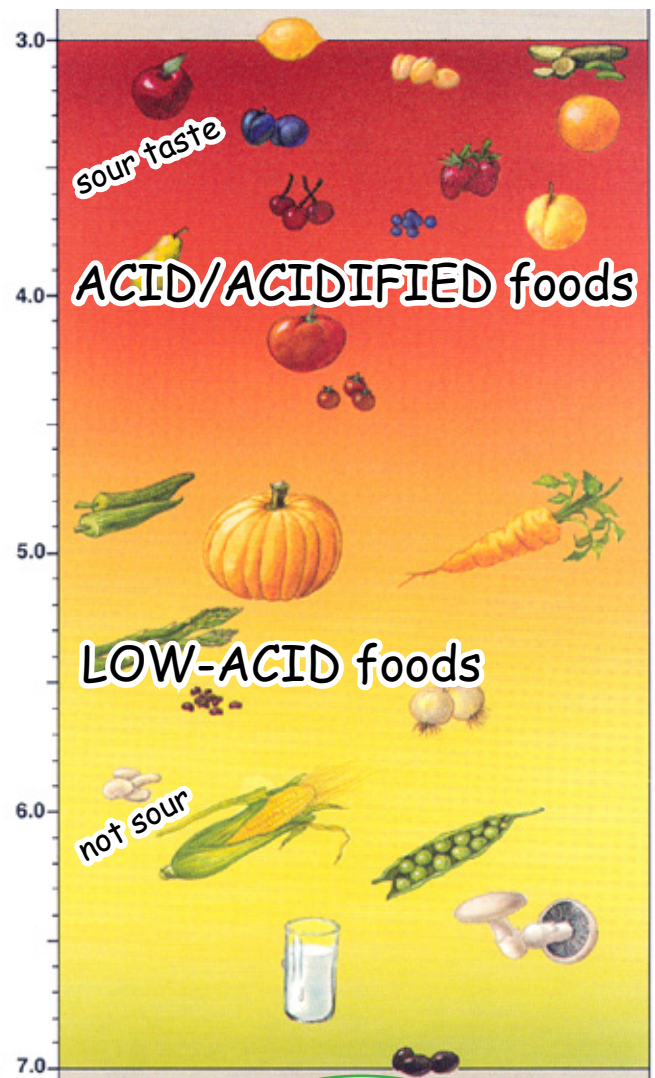
Preservation means to prevent decay, or in other words to stop a food from breaking down and spoiling. Rotten tomatoes, moldy bread, and stinky old milk are all examples of spoiled foods. Refrigeration and freezing are very common preservation methods used in modern households to extend the shelf-life of foods. Other home food preservation methods are canning, drying (or dehydrating), making jam, and pickling.

Pickling is a way to make a food acidic by the addition of an acid. Usually vinegar is used in pickle recipes because vinegar is very acidic. Overtime, the vinegar is soaked up into the pieces of cucumber (or whatever other vegetable or fruit you want to pickle). Once the vinegar has spread evenly throughout the solid food, it is said to be "acidified", or pickled!

Have you ever tasted the sour flavor of a lemon or lime? These citrus fruits are examples of foods that are naturally very acidic. In canning lingo, we call them **acid foods**.

Some foods are not very acidic naturally, and we call those **low-acid foods**. These foods might taste salty or sweet, be flavorful or bland, but they are not going to taste bitter or sour. Examples of low-acid foods are potatoes, peppers, corn, cheeses, eggs, and meats.

When enough acid is added to a low-acid food, the two mix together and eventually the final product will be changed into an **acidified food**.



One of the most popular acidified foods is cucumbers (low-acid) that have vinegar (acid) added to become pickles!

Beginning Pickle Making Activity: Refrigerator Pickles

Time required:
2 hours procedure (+ 3 weeks additional pickling time)

Ingredients:

For about 4 pint jars (multiply as needed)

- 3½ pounds of about 4-inch long pickling cucumbers (about 14)
- 2 cups water
- 1 cup distilled or cider vinegar (5% acidity)
- ¼ cup Ball® Kosher Dill Pickle Mix*
- Any additional ingredients from 'Want to Experiment?' (optional)

Equipment needed:

- Gas or electric stovetop range with four burners
- Refrigerator
- Boiling water canner (or stockpot) with rack
- Wide-mouth pint canning jars
- Two-piece wide-mouth metal canning lids and bands
- Jar lifter
- Jar funnel
- Headspace tool
- Bubble freer or narrow spatula
- Liquid and dry measuring cups
- Medium saucepan
- Colander
- Large bowl
- Paring knife
- Cutting board
- Large spoon for stirring
- Ladle
- Spoon
- Permanent marker
- Paper towels
- Timer (may be on oven)
- Food-handling gloves (recommended, but optional)

Select firm, unwaxed, pickling cucumbers that are free of mold or rot. Refrigerate them if you will not use immediately.

If range is a smooth-top, the boiling water canner must have a flat-bottom.

Saucepan for heating brine and bowl for soaking cannot be copper, brass, iron, aluminum or galvanized; use stainless steel, glass or unchipped enamelware.

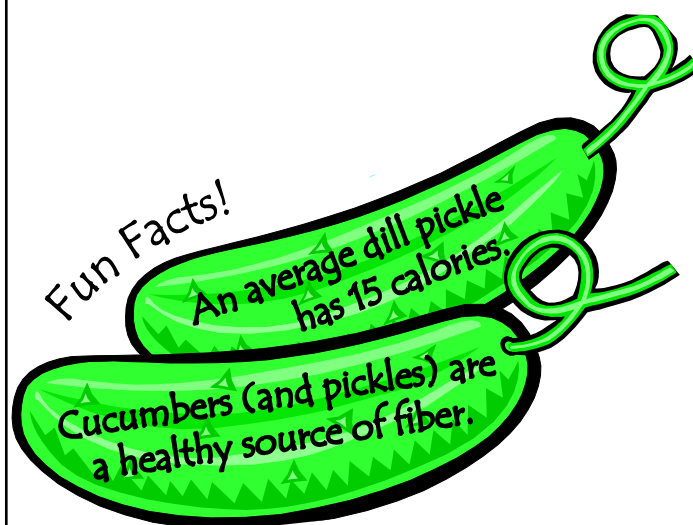
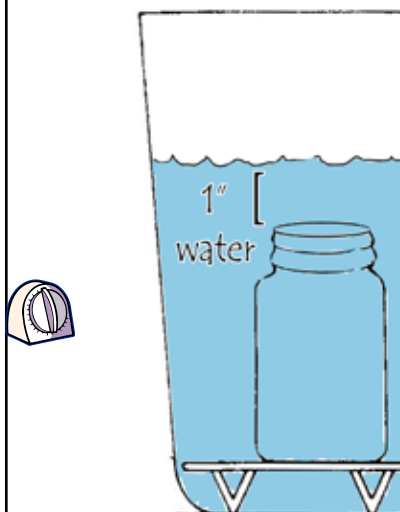
* This recipe is for use with Ball® Kosher Dill Pickle Mix. There are other pickles mixes that can be used, such as Mrs. Wages®. If you use another brand, follow the recipe on the insert or label of that product.

The Procedure:

Just Follow These Steps...

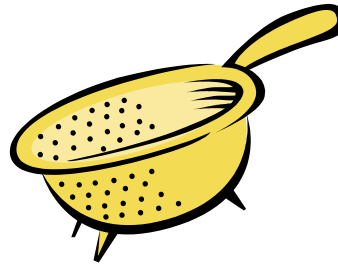
Part One: Preparing the Jars

1. Wash hands thoroughly with soap under running water for at least 20 seconds, rinse well, and dry.
2. Assemble equipment and ingredients.
3. Rinse and examine jars and discard any with cracks or chips. Examine ring bands and discard any with rust or bends.
4. ★ Sterilize empty jars by filling them with water and putting them right side up on the rack in a boiling water canner. Fill the canner with hot (not boiling) water to 1 inch above the tops of the jars. Boil 10 minutes at altitudes of less than 1,000 ft. At higher elevations, boil 1 additional minute for each additional 1,000 ft. elevation.
5. Leave jars in the canner until use. Allow cooling to near room temperature.
6. Use a permanent marker to label lids with your name, the name of the product and the date. Feeling creative? Make up a company name for your product.



Part Two: Preparing the Cucumbers

7. Rinse cucumbers in a colander immediately before using. Scrub well, giving special attention to the area around the stems.

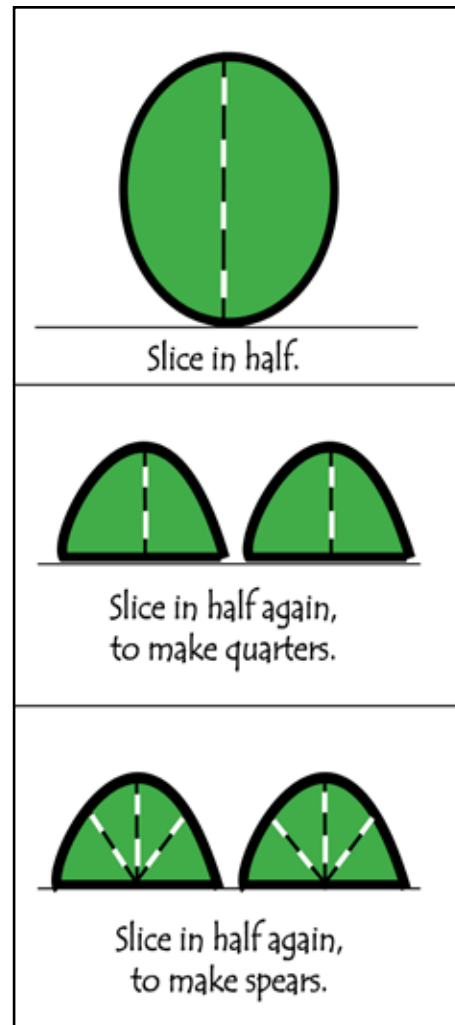


Leader demonstration: Knife skills

Grip the knife handle with dominant hand, wrapping fingertips behind knuckles for tight grip. Slice with a rocking motion, not a chopping down action. Always pay attention to keep your hands out of the path of the blade.

8. ★ Remove a 1/8 inch slice off each end of the cucumbers with a knife.

9. ★ Using a knife, slice cucumbers lengthwise in half, then in half lengthwise again until you have created spears. Place spears in a large bowl.



Fun Fact!

A town in Michigan claims to be the Christmas Pickle Capital of the World and holds an annual pickle parade led by the Grand Dillmeister.



Part Three: Making the Pickles

10. Measure and add water, vinegar and Ball® Kosher Dill Pickle Mix into a medium saucepan.
11. ★ Stir briefly and then turn burner to high heat to bring to a boil.
12. ★ Turn off heat and pour hot pickling liquid over cucumber spears in a large bowl. Let sit until the liquid cools to room temperature (about 30 minutes).
13. ★ Use jar lifter to remove jars from canner and place them on a flat surface. With clean/gloved hands, pack cucumber spears to fit tightly into the jars. Trim spears if needed to make sure 1/2-inch at the top of the jar is left empty.
14. ★ Ladle pickling liquid into jars leaving ½-inch from the top of the liquid to the top of the jar rim. This gap is called headspace.
15. Use bubble freer or spatula to release any air bubbles that are trapped in each jar. Measure headspace with headspace tool to ensure it is ½-inch. Add or remove liquid with a spoon if needed to maintain ½-inch headspace, and make sure all spears are completely covered by liquid.
16. Wipe jar rims with clean, damp paper towel.
17. Apply lids and ring bands, turning bands securely onto jars.
18. Place jars of pickles in a refrigerator. For best flavor, refrigerate for 3 weeks before eating, then share with family and friends! Be sure to keep them refrigerated and eat them all up within 3 months!

Try the Tight Pickle Test!

Are your spears packed tightly enough to prevent them from floating in your final product? To test them, slowly tilt the packed jar upside down (over a clean container)...if spears fall out, then it's not packed tight enough! Try to fit in as many as you can without squishing or over-packing your spears!



Fun Fact!

Americans consume more than 5.2 billion pounds of pickles each year – that's over 20 billion pickles! Enough to reach the moon and back more than two times!

Time to Reflect...

Write your responses to these questions.
Then, share your reflections with someone else.

What was your favorite part of making refrigerator pickles?

For you, what was the most challenging part of making the pickles?

What surprised you most in this activity?



If you could do this activity again, what is one thing you would change?
Why?

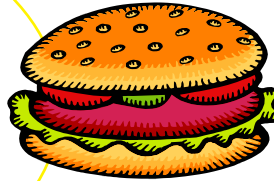
Do you think that making pickles is a useful skill? Why or why not?

How will you use what you have learned about making pickles?



Want to Experiment?

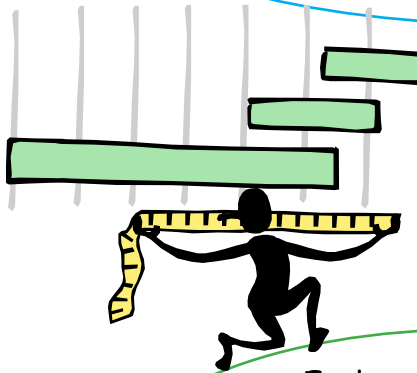
Add pickles to a hamburger or another type of sandwich. Chop dill pickles and add a tablespoon to pasta, tuna, or potato salad. For a quick snack, smother a dill pickle in cream cheese then wrap it in a thin slice of turkey.



Feeling brave? Try pickles with peanut butter, honey, or sour cream!



Compare home-canned pickles with store-bought pickles. How do tastes, textures, and appearances differ? Do you prefer one more than the other? Why?



Try growing cucumbers in a garden. Ask for help, and make sure the plants have enough space, sunlight, and water.



Evaluate the quality of your finished product — use a scale of excellent to poor for categories like: appropriate headspace, color, texture, consistency, and product labels.

Ask for help to follow directions for another pickle recipe, like Pickled Hot Peppers. Recommendations are in *So Easy To Preserve* and on the National Center for Home Food Preservation website (homefoodpreservation.com). Or, check grocery store shelves for different brands of mixes, follow their directions, and compare results.



Did you really like making pickles? Brainstorm, research, or just ask your leader about careers in which you get to play with food, like food science, cooking, or catering.



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Can My Dill Pickles



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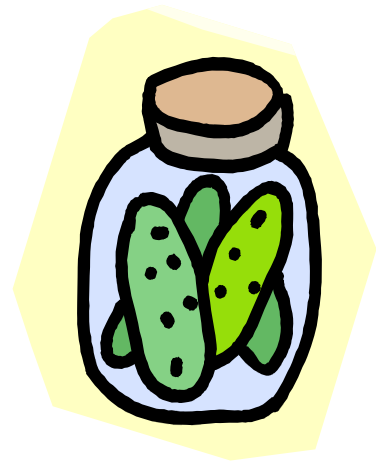
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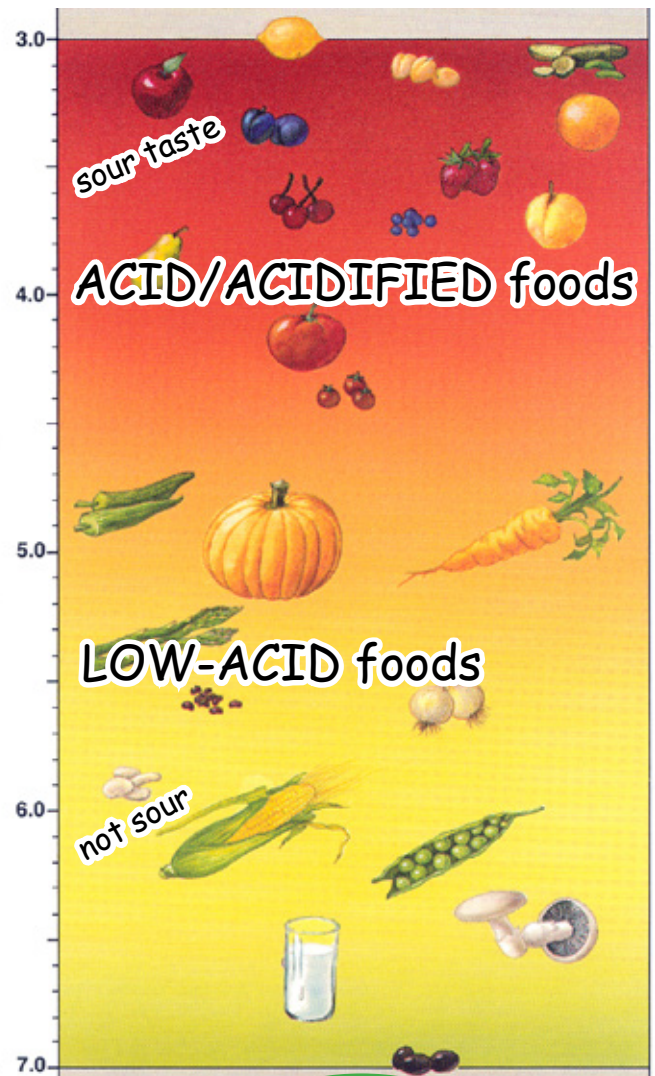
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When enough acid is added to a low-acid food, the two mix together and eventually the final product will be changed into an **acidified food**.



One of the most popular acidified foods is cucumbers (low-acid) that have vinegar (acid) added to become pickles!

Advanced Pickle Making Activity: Dill Pickles

Time required:

1 to 1-1/4 hour procedure + $\frac{1}{2}$ hour to $\frac{3}{4}$ hour additional processing
= 1 $\frac{1}{2}$ to 2 hours (+ 12 hours minimum for jars to cool + 3 weeks pickling time)

Ingredients:

For about 6 to 7 pint jars

- About 9 pounds/36 pickling cucumbers (3 to 4 inches long)
- 3 cups water
- 3 cups vinegar (5% acidity)
- 6 tablespoons canning salt
- 10 to 11 heads of fresh dill or 1 $\frac{1}{2}$ teaspoons dried dill weed or dill seed
- 3 to 3 $\frac{1}{2}$ tablespoons whole mustard seed
- 3 to 7 cloves of garlic (optional)
- Any additional ingredients from 'Want to Experiment?' (optional)

Equipment needed:

- Gas or electric stovetop range with four burners
- Boiling water canner (or stockpot) with rack
- Wide-mouth pint canning jars
- Two-piece wide mouth metal canning lids and bands
- Jar funnel
- Jar lifter
- Headspace tool
- Bubble freer or narrow spatula
- Colander
- Paring knife
- Cutting board
- Liquid measuring cups
- Measuring spoons
- Large stockpot
- Medium saucepan
- Large spoon for stirring
- Ladle
- Spoon
- Permanent marker
- Paper towels
- Thermometer
- Towel or cake-cooling rack
- Timer (may be on oven)
- Kitchen scissors (only if using fresh dill)

Select firm, unwaxed, pickling cucumbers that are free of mold or rot. Refrigerate them if you will not use immediately.

If range is a smooth-top, boiling water canner must have a flat-bottom.

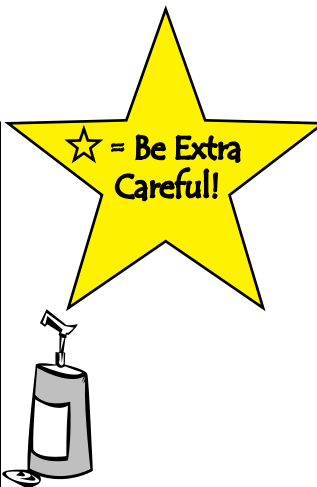
Saucepan for heating brine and bowl for soaking cannot be copper, brass, iron, aluminum or galvanized; use stainless steel, glass or unchipped enamelware.

The Procedure:

Just Follow These Steps...

Part One: Preparing the Canner and Jars

1. Wash hands thoroughly with soap under running water for at least 20 seconds, rinse well, and dry.
2. Assemble equipment and ingredients.
3. ★ Fill canner half full of clean hot water, then place on a burner. Turn to medium heat to bring water to 140°F (almost simmering).
4. Rinse and examine jars and discard any with cracks or chips. Examine ring bands and discard any with rust or bends.
5. ★ Wash jars thoroughly in warm soapy water, rinse well. Submerge jars in the water in the canner on place upright on the rack to stay hot until use.
6. Use a permanent marker to label lids with you name, the name of the product, and the date.
7. Prepare two-piece lids according to the manufacturer's instructions.
8. ★ Heat 3-4 cups hot water in a medium saucepan for adding to canner, if needed.



**Think About It:
Vacuum Seals**

Vacuum seals form as jars cool, keeping air out of jars so that the food inside is less likely to spoil. Could a vacuum seal keep air out if there were cracks and chips in the jar?

Feeling creative?
Make up a company name for your products.



Fun Facts!

- ◆ You can hear the crunch of a good pickle at 10 paces (as scientifically measured by the Audible Crunch Meter).
- ◆ On average, American households purchase pickles every 53 days.

Part Two: Preparing the Cucumbers and Brine

9. Rinse cucumbers in a colander immediately before using. Scrub well, giving special attention to the area around the stems.

Leader demonstration: Knife skills

Grip the knife handle with dominant hand, wrapping fingertips behind knuckles for tight grip. Slice with a rocking motion, not a chopping down action. Always keep your hands out of the path of the blade.

10. ★ Remove a 1/8-inch slice off the blossom end of the cucumbers with a knife. If stem is still attached, cut off all but 1/4-inch. Carefully slice the cucumber lengthwise and then lengthwise again to create spears.

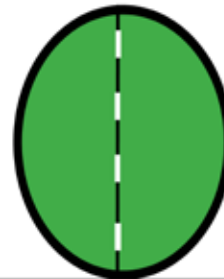
11. ★ If using fresh dill, then chop leaves finely with scissors, separating into small piles of 1½ heads per pile. If using garlic, then peel and slice cloves into thin slices.

12. ★ Make the pickling brine: Combine 3 c. water, 3 c. vinegar, and 6 TBS. salt in a large stockpot. Bring to a boil over high heat.

13. ★ Use jar lifter to carefully remove jars from the canner, emptying all water back into the canner. Place hot, empty jars on a dry towel spread out on a countertop.

Did You Know?

Soil trapped in the stem area can be a source of microorganisms that soften pickles, and the blossom end contains enzymes that cause softening at that end.



Slice in half.



Slice in half again,
to make quarters.



Slice in half again,
to make spears.

Fun Facts!

An average dill pickle
has 15 calories!

Cucumbers (and pickles) are
a healthy source of fiber.



Part Three: Packing the Jars

14. Place $1\frac{1}{2}$ heads of chopped dill, or $1\frac{1}{2}$ tsp. dried dill weed or dill seed in the bottom of each jar. Add $1/2$ tsp. mustard seed to each jar, and add $1/2$ to 1 clove of sliced garlic to each jar if desired.

15. Pack cucumber spears tightly into the jars.

16. ★ Rest funnel in jar opening and ladle boiling pickling solution into hot pint jar leaving $\frac{1}{2}$ -inch from the top of the liquid to the top of the jar rim. This gap is called headspace. Repeat for each jar.

17. Use bubble freer or spatula to release any air bubbles that are trapped. Be sure all spears are covered with liquid. Measure to ensure headspace is $\frac{1}{2}$ -inch in each jar. Add or remove spears or liquid with spoon, if needed.

18. Wipe jar rims with a clean, damp paper towel.

19. Apply lids according to manufacturer's directions. If using two-piece metal lids, turn bands onto jars until fingertip tight. Fingertip tight is when you meet firm resistance using two fingers and your thumb to twist the band onto the jar.

20. ★ Use a thermometer to check temperature of water in canner. Adjust burner to measure 140°F , if necessary.

Try the Tight Pickle Test!

Are your spears packed tightly enough to prevent them from floating in your final product? To test them, slowly tilt the packed jar upside down (over a clean container)...if spears fall out, then it's not packed tight enough! Try to fit in as many as you can without squishing or over-packing your spears!



Think About It: Fingertip Tight

Why do you think it is important that lids are tightened just right?

Hint: If a band is too tight, could air escape?

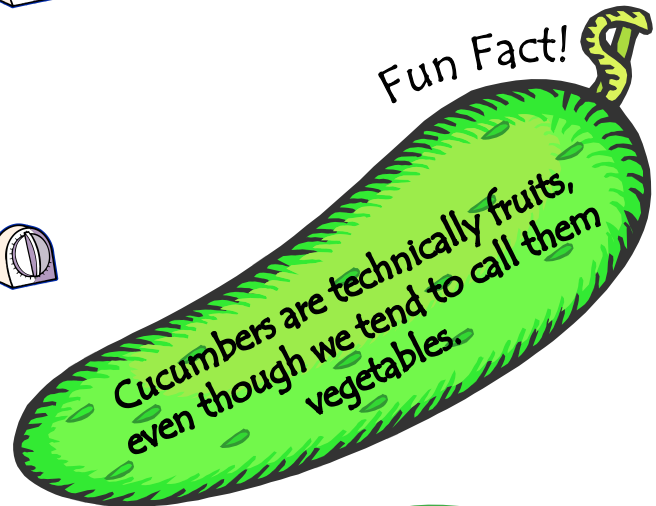
If a band is too loose, could liquid get out?

Part Four: Boiling Water Processing

21. ★ Use jar lifter to place jars of pickles one at a time on the rack in the boiling water canner. Keep jars upright at all times. Make sure water is 1 to 2 inches above tops of jars. Add hot water from the saucepan if needed, pouring between jars rather than directly on top of jars.
22. ★ Place lid on canner and turn heat to high. Bring water in canner to a vigorous boil before setting timer using the table to the right.
23. ★ Once water has boiled continuously for the recommended time, turn off heat and remove the canner lid, lifting the underside of the lid away from you to direct steam away from your face. Wait 5 minutes for contents to settle in jars.
24. ★ Remove jars one at a time with jar lifter, being careful not to tilt them. Place at least 1 inch apart on a dry towel. Place away from drafts of moving air.
25. Let jars cool undisturbed 12 to 24 hours.
26. Check for a vacuum seal on each jar. Remove ring bands from sealed jars and wipe jars. Store in a cool, dark, dry place.
- For best flavor, store for 3 weeks before eating, then share with family and friends!
- Store unsealed and opened jars in the refrigerator and eat within one week.

Altitude Adjustments and Processing Times for Dill Pickles in Pint Jars:

Altitude	Process Time
0-1,000 feet	10 minutes
1,001-6,000 feet	15 minutes
above 6,000 feet	20 minutes



Listen for lids to "pop!" as the vacuum pulls them down.

How to Test for a Vacuum Seal



Table information from: *So Easy To Preserve*.
Fun Facts from: Pickle Packers International, Inc. (2013).
Pickle facts. <http://www.ilovepickles.org/book/export/html/1>.

Time to Reflect...

Write your responses to these questions.
Then, share your reflections with someone else.

What was your favorite part of making dill pickles?

For you, what was the most challenging part of making dill pickles?

What surprised you most in this activity?



If you could do this activity again, what is one thing you would change?
Why?

Do you think that making pickles is a useful skill? Why or why not?

How will you use what you have learned about making pickles?

Want to Experiment?

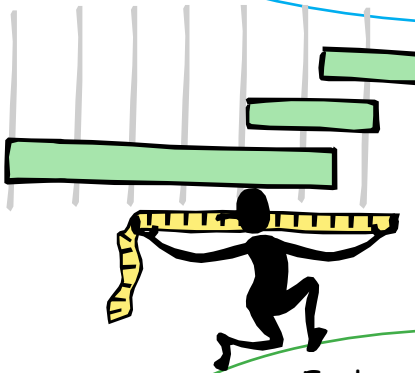
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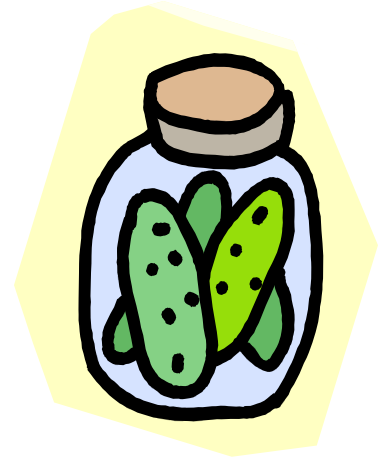
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All About Pickling

	<u>Pages</u>
FUNdamentals of Pickling.....	A.A. 4
pH Power?.....	A.A. 5
What's the Story of Pressure Canning?.....	A.A. 6
Why Do Pickles Need To Be Preserved?.....	A.A. 7
Glossary, Sources, and Resources.....	A.A. 8
What Do You Know About Pickling?.....	(A.A. 9)



Pickling is a science, so there are important facts and concepts at play. These FUNdamentals will help you understand the steps of the pickling procedure.



FUNdamentals of Pickling

Use the word bank at the bottom of the page to correctly fill in the blanks.
(Hint: The answers can be found in the pages of this activity book.)

_____ is a method of food preservation that adds a strong acid like vinegar to a low-acid food to turn it into an acidified food.

_____ is measured by pH value. Acid foods and acidified foods have a pH value of 4.6 or lower, low-acid foods have a pH higher than 4.6.

Unless properly acidified or pressure canned, low-acid foods are at risk of causing the potentially deadly food poisoning called _____.

Adding a proper amount of _____ to cucumbers increases acidity enough that the resulting pickles can be safely canned in a boiling water canner.

Microorganisms (bacteria, molds, and yeasts) may cause food to _____. Low temperatures slow the growth of microorganisms; high enough temperatures kill them.

The acid in acidified foods kills some _____ and slows the growth of others. A pH of 4.6 or lower prevents the growth of bacteria that cause botulism.

_____, Cooperative Extension, and the National Center for Home Food Preservation have science-based recipes for pickling, like the recommendations in the books *So Easy to Preserve* and *Complete Guide to Home Canning*.

Word bank: VINEGAR, USDA, BOTULISM, PICKLING, ACIDITY, MICROORGANISMS, SPOIL

pH Power

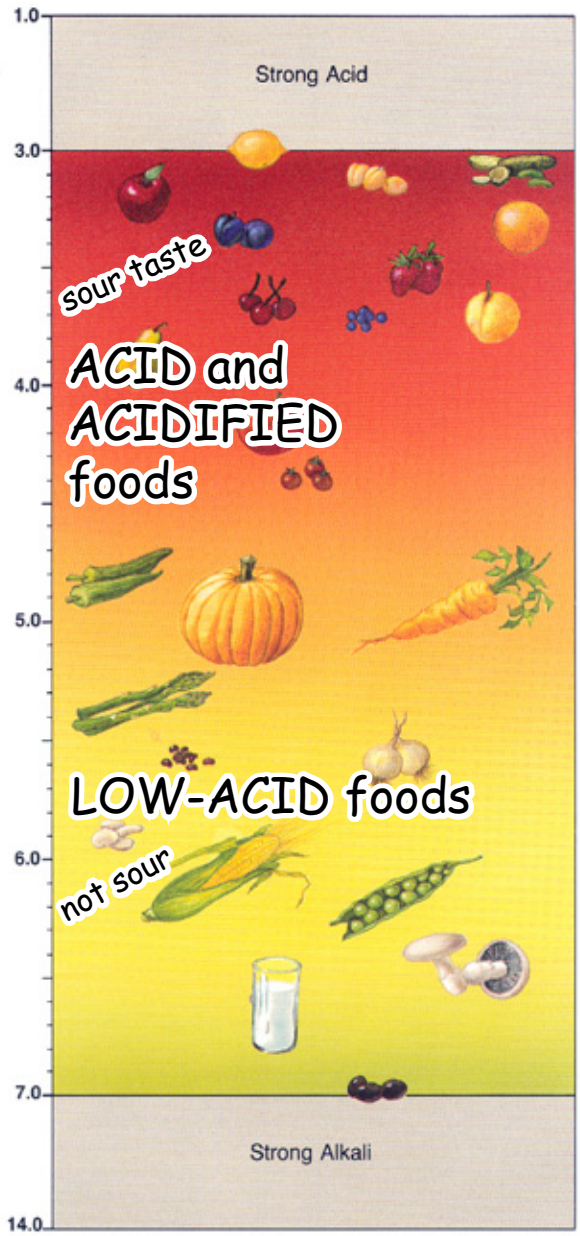
Do You Know what pH is?
 pH is a measure of acidity, on a scale from 0 to 14.

Foods are classified as **Acid, Acidified** or **Low-Acid** according to their pH value. Acid and Acidified foods have a pH of 4.6 or less and Low-Acid foods have a pH above 4.6.

What's the difference between acid foods and acidified foods?
 Acidified foods have acid added to them (like vinegar) or produce their own acid (from fermentation) to lower their pH to 4.6 or less. Acid foods (like lemons) naturally have a pH of 4.6 or less.

use a **boiling water canner**

use a **pressure canner**

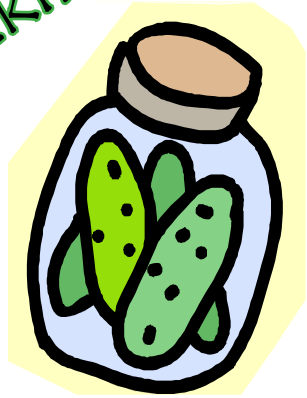


The table below shows pH values of several common foods. Under the "Acid, Low-Acid, or Acidified" column, write how that food is classified.

Food	pH Value	Acid, Acidified, or Low-Acid?
Vinegar	2.0-3.4	
Dill Pickles	3.2-3.5	
Sauerkraut	3.4-3.6	
Cream Cheese	4.8	
Cucumbers	5.1-5.7	
Peppers	5.1	
Cabbage	5.2-6.0	
Okra	5.5-6.4	

What's the Story of Pickling?

Search the puzzle for the 15 UPPERCASE, underlined words from the history notes below!



- Over 4,000 years ago, inhabitants of Northern India brought cucumber seeds to the Tigris Valley. This fertile location called MESOPOTAMIA is now parts of Iraq, Iran, Syria, and Turkey.
- Soon after CUCUMBER plants spread, people learned to preserve them by pickling them in brine (salt and water solution), making pickling one of the oldest methods of food preservation.
- Cleopatra, the last pharaoh of Ancient Egypt, believed that eating pickles kept her BEAUTIFUL.
- DILL weed, used in dill pickles, was brought to Western Europe from Sumatra in 900 A.D.
- The word "PIKEL" first appeared in English in approximately 1400 A.D. and meant a spicy sauce served with meat. The Dutch word "PEKEL" meant a brine used to preserve food.
- Did you know AMERICA got its name from a pickle peddler?! Before exploring the New World in the late 1400s, AMERIGO Vespucci stocked ships with his homemade pickled vegetables. He understood the nutrition of pickles, which contain enough VITAMIN C to prevent scurvy.
- In the late 1400s, Christopher Columbus rode on SHIPS packed with pickles, bringing them to our present day U.S.A.. He also grew cucumbers in Haiti for pickling.
- In the 1700s, founding father George Washington collected over 400 VARIETIES of pickles.
- In 1820, Nicholas Appert constructed the first pickle PRODUCTION plant in America.
- In the late 1800s, in New York City, pushcarts selling "pickles for a PENNY" were very popular.
- DEEP FRIED pickles first appeared in Arkansas in 1963 and can now be found across the U.S.A..
- According to the United States Department of Agriculture (USDA), each U.S. citizen eats roughly 8.5 POUNDS of pickles per year.



Why So Much Vinegar?

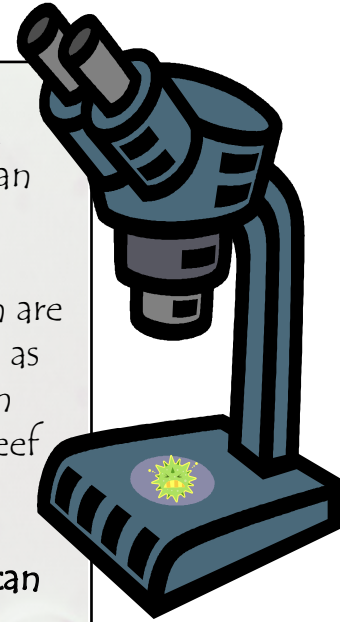
To stop microorganisms from growing!

Have you heard about **microorganisms**? Sometimes called "germs", they are tiny creatures that cannot be seen with human eyes unless aided by a microscope. Most microorganisms are helpful, and even necessary for life, but some are harmful.

Three types of microorganisms that spoil food most often are **molds, yeasts and bacteria**. You may have seen masses of mold as fuzzy spots on spoiled bread; pink shiny spots on spoiled cream cheese may be thousands of yeasts; slime on spoiled ground beef is caused by millions of bacteria.

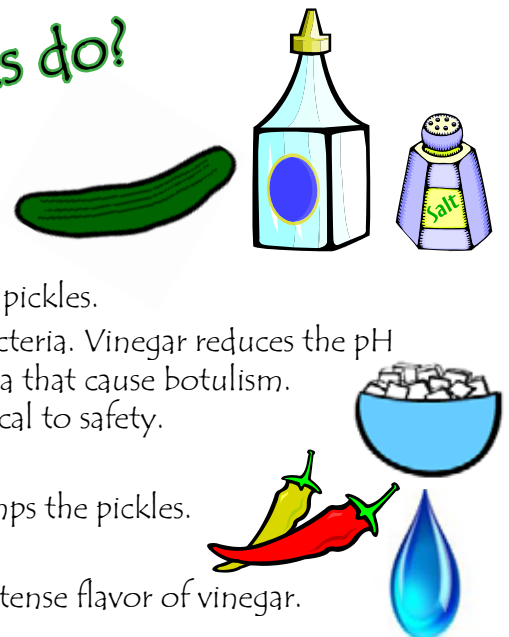
Most spoilage bacteria cannot grow in acidic conditions. Some foods are naturally acidic, like lemons, but other foods can be **acidified by the addition of an acid**. For example, by adding vinegar to pickles. Also, acid is produced by fermentation as cabbage turns into sauerkraut.

However, some molds and yeasts are able to grow in acidic conditions at room temperature. **To prevent spoilage from molds and yeasts, refrigeration or a boiling water canning process is used.** The high temperature of boiling water kills microorganisms, and the cold temperature of the refrigerator (32°F to 40°F) slows the growth of microorganisms.



What do each of the ingredients do?

- ◊ **Vegetables and fruits** supply color, texture, and flavor to pickles.
- ◊ **Vinegar** provides taste and prevents spoilage from most bacteria. Vinegar reduces the pH to a level that prevents the growth of the bacteria that cause botulism. Using vinegar that contains 5% acetic acid is critical to safety.
- ◊ **Salt** provides taste in pickles and helps prevent spoilage.
- ◊ **Sugar**, in recipes where it is used, contributes taste and plumps the pickles.
- ◊ **Spices and seasonings** contribute taste.
- ◊ **Water** helps cover pickles in brine while also diluting the intense flavor of vinegar.



Glossary

Acid is a substance measuring below 7.0 on the pH scale and it tastes sharply sour.

Acetic acid is a type of acid found in vinegar.

Acid foods (or acidic foods) are foods with a pH at or below 4.6.

Acidified foods are foods that acid is added to in order to lower the pH to 4.6 or below.

Bacteria are a type of microorganism that grow on food and can cause spoilage or sickness.

Botulism is a disease caused by the *Clostridium botulinum* toxin that can cause death.

Enzymes are natural proteins that speed up the rate of reactions necessary for life.

Fermentation is a chemical process of breaking down food sugars and changing them to acids.

Headspace is the empty space between the top of a food product and the lid of the jar.

Low-Acid foods are foods with a pH above 4.6 such as vegetables, meats, poultry and fish.

Microorganisms are living creatures so small that you need a microscope to see them.

Mold and Yeast are types of microorganisms that grow on food and can cause spoilage.

Oxidation is chemical and physical change caused by oxygen interacting with a substance.

Sauerkraut is finely chopped cabbage that is fermented in a water and salt brine.

Vacuum is empty space created when air is pushed out of a container and cannot re-enter.

Sources and Resources

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Name: _____

Date: _____

What Do You Know About Pickling?

If you think the statement is true then circle "True",
and if you think the statement is not true then circle "False".

- | | | |
|---|------|-------|
| Pickling is based on science. | True | False |
| Refrigerating or canning pickles makes them last longer than if left at room temperature. | True | False |
| Low temperatures (like in refrigerators) and high temperatures (like in canners) speed up the growth of microorganisms (like bacteria, molds, and yeasts) that spoil foods. | True | False |
| Most microorganisms grow best in very acidic conditions. | True | False |
| It is not safe to can low-acid foods in a boiling water canner. | True | False |
| When filling jars for canning, it is safe to fill the jar with food product all the way up to the lid. | True | False |



If you agree with a statement below then circle "I agree",
and if you don't agree with the statement then circle "I disagree".
There are no correct answers, just answer honestly with what is true for you.

- | | | |
|--|---------|------------|
| I like to make my own snacks and other foods at home. | I agree | I disagree |
| It's fun to prepare and preserve food. | I agree | I disagree |
| I know how to make pickles (with the help of an adult). | I agree | I disagree |
| I can get everything I need to make pickles at home. | I agree | I disagree |
| I will use pickle recipes and instructions from USDA or other science-based sources. | I agree | I disagree |
| Sometime when I am at home, I will try to make pickles (with the help of an adult). | I agree | I disagree |