



Introduction to Cooking with Gas

Lesson 2: Blanching

ADVANCED



Introduction

Welcome to Introduction to Cooking With Gas. Today's topic is understanding how natural gas gets into kitchens, where it can be used to cook food. After you learn about how natural gas gets into your kitchen, you will learn how to cook with gas to make your own delicious tomato sauce.

This lesson can be completed in a classroom or at home. Your teacher will provide instructions for completing the assignment from home.

Opening Assessment

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 - b. through a pump under the house
 - c. through a well under the house
 - d. through smaller pipes connected to a meter
2. What does "blanching" mean?
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3. What is a range?
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4. What type of equipment do you use to blanch food?
 - a. a deep pot
 - b. a large bowl
 - c. a shallow pan
 - d. a baking sheet
5. How do you know if you have blanched tomatoes long enough?
 - a. if they feel hot
 - b. if the color has faded
 - c. if they are easy to slice
 - d. if the skin peels off easily

How Does Natural Gas Get Into the Kitchen?

Natural gas is the preferred energy source for many professional chefs and home cooks. Natural gas can be cheaper than other sources of energy such as electricity. Natural gas provides a reliable source of heat and allows cooks to fine-tune exactly how much heat they want. This leads to success in the kitchen and delicious meals at the table. When used properly, natural gas is very safe. Natural gas sounds like a great fuel to use in the kitchen. But how does it get to the kitchen in the first place?

Natural gas comes from deep within the Earth. To get this gas, gas companies drill down thousands of feet. They use wells and pumps to bring the gas to the surface. The gas travels to cities and towns through big pipes called gas mains. These mains are buried deep underground. From the gas mains, gas travels to homes, apartments and restaurants in smaller pipes. These pipes connect to a meter, which measures how much gas families and businesses use. Other pipes are connected to the meter. These pipes bring the gas right into kitchens where it can be used to run appliances.



Natural gas meter: Image credit [RadRafe](#)

Cooking with Natural Gas

There are many different types of natural gas ranges to choose from. A range is a combination cooktop and oven. To cook food in or on your range, you need a source of power to produce heat. For many professional chefs and everyday cooks, natural gas is the perfect choice. Ranges that run on natural gas offer excellent temperature control. They are easy to adjust, and running a range on natural gas can be cheaper than using electricity.

In order to get the most out of your gas range, you need to take care of it. Gas ranges should be cleaned regularly. You can wipe your range down after using it with paper towels and a mild dish soap, natural cleaning spray or vinegar (always make sure the range is cool first). You should do a deeper clean to remove grease and built-up grime about once a week. This includes taking off the grates, soaking them in warm water and dish soap and scrubbing them with a sponge or old toothbrush. You should also clean out the burner holes with a straw cleaner.

It is important to never leave a gas range unattended when in use. You should also make sure there are no objects made out of paper or plastic near the flames from the burners. These could melt or catch on fire. Finally, all handles on pots and pans should be turned in toward the middle or back of the range so that someone walking by will not knock them over accidentally.

Did you know that the flame on your gas range should be blue? If it is yellow or orange, it may be time for maintenance. Another sign that your gas range may need maintenance is if you smell a strong gas odor in your kitchen. If your oven is not heating like it should, it may also be time to call a professional to look at your range and make any necessary repairs.



Burning gas: Image credit [Petr Kratochvil](#)

Cooking Methods

There are three types of cooking methods that utilize natural gas:

1. **Moist cooking** involves cooking with moisture in either liquid or steam form.
2. **Dry cooking** involves cooking without any moisture.
3. **Combination cooking** combines moist and dry heat cooking.

Today, you will be learning about and preparing food using a moist cooking method.

Moist Cooking: Blanching

Moist cooking methods include boiling, simmering, blanching, steaming and poaching. Each method utilizes hot liquid (water or stock) in order to cook the food. This lesson will utilize a gas range, a deep pot, water, ice, a mixing bowl and the blanching cooking method.

Blanching is a moist cooking method. This means blanching uses water and/or steam to cook food. Blanching is often used with vegetables such as tomatoes, broccoli, carrots and green beans. To blanch food, you put it in boiling water. You don't leave the food in the water for very long – think seconds, not minutes. Blanching softens vegetables. It also makes their colors brighter. In the case of tomatoes, blanching makes them easier to peel.

There is a second step many people use after blanching food. This step is called "shocking." To shock food, you put it in a bowl of ice water after you take it out of the boiling water. This stops the food from cooking more than you want it to cook.



[Blanched carrots and broccoli](#)

Foods like green beans and broccoli cook well with the blanching method. Tomatoes and some fruits and nuts can also be blanched.

Throughout your lessons on moist cooking, you will learn how to blanch, how to cook various proteins, vegetables and starches and about other forms of moist heat.

Instructor Demonstration

Watch the instructor demonstration on proper natural gas range safety and how to use a pot of boiling water to blanch food. Answer the following questions as you watch the demonstration.

- What safety tips did the instructor give during the demonstration?
- How much water did the instructor put in the pot?
- How high did the instructor turn up the flame on the range?
- How did the instructor cut the X on the bottoms of the tomatoes?
- How did the instructor determine how long to cook the tomatoes?
- How did the instructor remove the tomatoes from the boiling water?
- What cooking tips did the instructor give during the demonstration?

Selecting and Preparing a Recipe

The following section can be completed at home if the preparing and cooking can be performed safely. Residential and commercial cooking equipment vary; while the information focuses on natural gas equipment, electric ranges and stoves may also be used to complete the cooking assignment.

Now you are going to make your own tomato sauce using tomatoes. Once cooked, the tomatoes will be heated in a pan with olive oil. You can flavor the sauce with salt, garlic, fresh herbs and other ingredients.

Your teacher will review your recipe and dish based on the criteria listed on the next page. If you are learning remotely, your teacher will provide you with instructions on how to submit your recipe and images or video of your completed dish.

Criteria	Excellent 3	Proficient 2	Emerging 1
Procedure	clearly followed given instructions and the example provided in the demonstration	somewhat followed given instructions and/or the example provided in the demonstration	did not follow given instructions and/or the example provided in the demonstration
Content (submitted photos, procedure, videos, etc.)	content and explanations were thorough and well detailed	included content and explanation but included few specific details	included little to no additional content or explanations and/or no specific details
Organization	organized when preparing and making their recipe	somewhat organized when preparing and/or making their recipe	not organized when preparing and/or making their recipe

Create Your Recipe

For this recipe you will need one item from the vegetable category and one item from the fat category. You can choose to add any additional toppings or flavors based on your dietary preferences, restrictions or allergies, as well as available ingredients. Before starting to cook, it is important to have all of your ingredients, tools and equipment prepared ahead of time, which chefs call “mise en place” or “everything in its place.”

Select a vegetable:

Roma tomatoes

Select a fat:

olive oil

Select additional seasonings:

salt
black pepper
crushed red pepper flakes
freshly squeezed lemon juice
fresh basil, finely chopped
fresh oregano, finely chopped
garlic, finely chopped

Safety first:

- Always keep a Class ABC fire extinguisher nearby.
- Make sure the pot of water is not filled to the top so it doesn't spill when it comes to a boil or overflow when you add the tomatoes.
- Make sure there are no pot holders, towels or other flammable materials next to the burner.
- Make sure there are no plastic or other meltable objects next to the burner.
- Always use pot holders to protect your hands from burning on the hot pot.
- Never use wet or moist pot holders, oven mitts or towels as they will conduct heat, burning your hands.
- Always pour hot liquids away from you.
- Use tongs or a slotted spoon to remove the vegetables from the boiling water.
- Practice knife safety when cutting any ingredients and use properly sharpened knives.

Equipment:

- | | |
|------------------------|--------------------------|
| • large pot | • knife |
| • large bowl | • colander |
| • sink | • tongs or slotted spoon |
| • gas range or cooktop | • tablespoon |
| • oven mitts | • wooden spoon |

Ingredients:

- 12 Roma tomatoes
- 2 tbsp olive oil
- water
- ice
- choice of additional seasonings

Procedure:

1. Fill the pot about $\frac{3}{4}$ full with water. Place it on the burner, then turn the burner on and move the knob to high.
2. Using the knife, cut a small "X" on the bottom of each tomato. This will make the skin easier to peel off after the tomatoes have been blanched.
3. Cut out the core, or middle, of the tomatoes.
4. When the water comes to a boil, use the tongs or slotted spoon to add tomatoes to the water. Add a few at a time, cooking in batches until you have a total of 12.
5. Fill the bowl with ice water.
6. Remove each batch of tomatoes after 45 seconds using the tongs or slotted spoon. Add the blanched tomatoes to the ice water. Add additional tomatoes to the boiling water. Remove the tomatoes from the ice water and place in the colander. Repeat these steps until all the tomatoes have been blanched, shocked and put in the colander. Turn the burner off.
7. Remove the skins from the tomatoes and discard the skins. You will know the tomatoes have been blanched long enough if the skin peels off easily.
8. While wearing oven mitts, dump the water from the pot down the sink. Make sure to pour the water away from you.
9. Using the knife and cutting board, cut the tomatoes into small pieces.
10. Add olive oil to the pot and heat on medium heat for one minute.
11. At this point, add additional seasonings to the olive oil and cook for one minute, stirring frequently.
12. Add the tomatoes to the pot.
13. Slice the lemon in half and squeeze the juice into the sauce.
14. Let the sauce cook on medium heat for approximately 15-20 minutes, stirring frequently with the wooden spoon.

Tips:

- Make sure to stir sauce frequently. If the sauce starts to burn or stick to the pan, turn the heat to medium-low.
- Be careful not to get lemon seeds in the sauce.

Activity

While your sauce is cooking on medium or medium-low heat, complete the activity:

You have just started a business selling your homemade tomato sauce in jars. Write down a name for your sauce. Create a name for your sauce and a label that includes a description and ingredient list to place on the jar. When you are writing the description, think about what would make people want to buy your sauce. What makes it better than or different from other sauces? Also, consider the cost and potential profit for making and selling the sauce. If it costs you \$2.50 to make a jar of sauce, how much will you charge for the sauce in order to make a profit? What would your monthly revenue be if you sold 100 jars per week?

4	3	2	1
<p>The student response ...</p> <ul style="list-style-type: none">• fully responds to each part of the writing prompt with relevant, strong details• has logical organization• uses effective language and word choice for purpose and audience• contains no errors in usage or grammar	<p>The student response ...</p> <ul style="list-style-type: none">• addresses each part of the writing prompt with sufficient details• has sufficient organization• uses mostly effective language and word choice for purpose and audience• contains minor errors in usage or grammar that do not affect meaning	<p>The student response ...</p> <ul style="list-style-type: none">• addresses some of the writing prompt with weak details• attempts organization• uses some language and word choice for purpose and audience• contains minor errors in usage or grammar that slightly affect meaning	<p>The student response ...</p> <ul style="list-style-type: none">• does not address a large portion of the writing prompt• lacks organization• rarely uses appropriate language and word choice for purpose and audience• contains major errors in usage or grammar that greatly affect meaning

Final Assessment

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 - d. a baking sheet
5. How do you know if you have blanched tomatoes long enough?
 - a. if they feel hot
 - b. if the color has faded
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 - d. if the skin peels off easily

Introduction to Cooking with Gas—Advanced

Lesson 2: Blanching

Teacher Guide

(1-2 class sessions depending on setting)

Introduction

This lesson covers a basic understanding of natural gas, including how it is brought into people's homes and businesses and how to maintain ranges that use natural gas. Then, students will learn how natural gas is used on a rangetop to blanch tomatoes and make tomato sauce. Keep in mind that students may have dietary preferences, restrictions or allergies that may need to be accommodated in order for them to complete the recipe. Note that students may have different types of appliances at home, such as an electric or induction range, which will not prevent them from completing the assignment. If the student is preparing food at home, ensure that appropriate adult supervision will be available.

This lesson could be completed in a classroom or at home. Suggestions and instructions will be given for both scenarios.

Opening Assessment Answer Key (3 minutes)

Use these questions to obtain a baseline for what your students know before beginning the lesson. The correct answers are highlighted.

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How Does Natural Gas Get Into the Kitchen?

(3 minutes)

Students will read about where natural gas comes from and how it arrives in people's kitchens for them to use. The following questions could be used for a class discussion or given to students to complete individually.

- Where is natural gas found?
- How do companies collect natural gas?
- How does natural gas come into people's homes?

Cooking with Natural Gas (4 minutes)

Students will read about the benefits of cooking with natural gas and how to maintain equipment used to cook with natural gas. The following questions could be used for a class discussion or given to students to complete individually.

- What are some of the reasons people like to cook with natural gas?
- What can you do to keep your gas range working well?
- When should you call a professional to fix your range?

Cooking Methods (2 minutes)

Students will understand that there are three cooking methods that utilize natural gas: moist cooking, dry cooking and combination cooking.

Moist Cooking: Blanching (3 minutes)

Students will read about cooking with moist heat and the blanching technique. The following questions could be used for a class discussion or given to students to complete individually.

- What are the benefits to cooking with moist heat?
- What is blanching?
- Why do people shock food after they blanch it?
- What are some foods that can be blanched?

Instructor Demonstration (10 minutes)

The demonstration can either be performed in class or recorded for remote use. If the demonstration is done in person, consider bringing large pots of water to a boil while the students complete their readings so that the water is boiling in time for your demonstration.

You may also consider boiling the water for the students during this time so that the students will be able to cook along with the demonstration, or consider having the students start boiling their water during the demonstration so that they may begin cooking directly following the demonstration rather than waiting for the water to boil.

You could also consider preparing bowls of ice water for students, coring and cutting "Xs" into the bottoms of the tomatoes, setting up the necessary equipment and preparing the additional seasonings ahead of time while students are reading so that they can focus on blanching and peeling the tomatoes and cooking the sauce. Students should start cleaning up while the sauce is cooking.

- how a gas range works
- safety tips when using a gas range
- how to blanch, including tips for how to place food into and remove food from boiling water
- benefits of using blanching as a cooking technique
- how to cook tomatoes, noting how to check whether the tomatoes are done
- how to chop ingredients
- how to combine ingredients
- how to stir the sauce so that it does not burn
- how to safely use knives to cut ingredients

Students will use the following questions as a guide to either a class discussion after the demonstration or note taking during the demonstration:

- What safety tips did the instructor give during the demonstration?
- How much water did the instructor put into the equipment?
- How high did the instructor have the flame?
- How did the instructor determine how long to cook the tomatoes?
- What cooking tips did the instructor give during the demonstration?

Selecting and Preparing a Recipe (25 minutes)

Note to instructor: In order for students to have time to complete the sauce, prepare pots of boiling water, bowls of ice water and chopped ingredients (excluding the tomatoes) ahead of time. You can also cut "Xs" into the tomatoes and core them ahead of time for students as well.

If the students will be cooking in the classroom, ensure that the ingredients are available to the students ahead of time. Make sure that student allergies, dietary restrictions and preferences are taken into account. Also be sure to plan a few minutes at the end of class for cleanup.

If the students will be cooking at home, be sure to provide the list of ingredients or the "mise en place" ahead of time to give the students time to assemble the ingredients. Take into consideration the time the recipe typically takes to cook and the ability for students to purchase their ingredients from the grocery store.

Students will use the instructor demonstration as a guide to cook their own tomato sauce. Students will select a vegetable, fat and optional flavorings and toppings from a list in order to complete their recipe.

Students cooking at home can submit a description of the ingredients and procedure they used along with pictures of their completed dishes or a video of themselves cooking the recipe. Be sure to share instructions with your students on what to submit and how to share it with you.

Scoring Rubric:

Criteria	Excellent 3	Proficient 2	Emerging 1
Procedure	clearly followed given instructions and the example provided in the demonstration	somewhat followed given instructions and/or the example provided in the demonstration	did not follow given instructions and/or the example provided in the demonstration
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Activity (While sauce is cooking on medium/medium-low heat or as homework)

Students will engage in a writing activity based on the following prompt. Share the short answer scoring rubric with students before they complete their writing activity.

You have just started a business selling your homemade tomato sauce in jars. Create a name for your sauce and a label that includes a description and ingredient list to place on the jars. Write a description of your sauce that will go on the jars. When you are writing the description, think about what would make people want to buy your sauce. What makes it better than or different from other sauces? Also, consider the cost and potential profit for making and selling the sauce. If it costs you \$2.50 to make a jar of sauce, how much will you charge for the sauce in order to make a profit? What would your monthly revenue be if you sold 100 jars per week?

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Final Assessment: Answer Key (3 minutes or as homework)

Use these questions in conjunction with the discussion questions in each section to formatively assess student growth over the course of the lesson. Address any student misconceptions that remain at the end of the lesson. Consider having students compare their opening assessment with their final assessment to see how their understanding of cooking with gas improved over the course of the lesson.

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