

# The Cooking Merit Badge

## What Are The Cooking Merit Badge Requirements?

1. **Health and Safety.** Do the following:
  - a. *Explain to your counselor the most likely hazards you may encounter while participating in cooking activities and what you should do to anticipate, help prevent, mitigate, and respond to these hazards*
  - b. *Show that you know first aid for and how to prevent injuries or illnesses that could occur while preparing meals and eating, including burns and scalds, cuts, choking, and allergic reactions.*
  - c. *Describe how meat, fish, chicken, eggs, dairy products, and fresh vegetables should be stored, transported, and properly prepared for cooking. Explain how to prevent cross-contamination.*
  - d. *Discuss with your counselor food allergies, food intolerance, and food-related illnesses and diseases. Explain why someone who handles or prepares food needs to be aware of these concerns.*
  - e. *Discuss with your counselor why reading food labels is important. Explain how to identify common allergens such as peanuts, tree nuts, milk, eggs, wheat, soy, and shellfish.*
2. **Nutrition.** Do the following:
  - a. *Using the MyPlate food guide or the current USDA nutrition model, give five examples for EACH of the following food groups, the recommended number of daily servings, and the recommended serving size: a1) Fruits, a2) Vegetables, a3) Grains, a4) Proteins, a5) Dairy*
  - b. *Explain why you should limit your intake of oils and sugars.*
  - c. *Determine your daily level of activity and your caloric need based on your activity level. Then, based on the MyPlate food guide, discuss with your counselor an appropriate meal plan for yourself for one day.*
  - d. *Discuss your current eating habits with your counselor and what you can do to eat healthier, based on the MyPlate food guide.*
  - e. *Discuss the following food label terms: calorie, fat, saturated fat, trans fat, cholesterol, sodium, carbohydrate, dietary fiber, sugar, protein. Explain how to calculate total carbohydrates and nutritional values for two servings, based on the serving size specified on the label.*
3. **Cooking Basics.** Do the following:
  - a. *Discuss EACH of the following cooking methods. For each one, describe the equipment needed, how temperature control is maintained, and name at least one food that can be cooked using that method: baking, boiling, broiling, pan frying, simmering, steaming, microwaving, grilling, foil cooking, and use of a Dutch oven.*
  - b. *Discuss the benefits of using a camp stove on an outing vs. a charcoal or wood fire.*
  - c. *Describe with your counselor how to manage your time when preparing a meal so components for each course are ready to serve at the same time.*
4. **Cooking at Home.**

Using the MyPlate food guide or the current USDA nutrition model, plan a menu for three full days of meals (three breakfasts, three lunches, and three dinners) plus one dessert. Your menu should include enough to feed yourself and at least one adult, keeping in mind any special needs (such as food allergies) and how you kept your foods safe and free from cross-contamination. List the equipment and utensils needed to prepare and serve these meals.

*Then do the following:*

  - a. *Create a shopping list for your meals showing the amount of food needed to prepare and serve each meal, and the cost for each meal.*
  - b. *Share and discuss your meal plan and shopping list with your counselor.*
  - c. *Using at least five of the 10 cooking methods from requirement 3, prepare and serve yourself and at least one adult (parent, family member, guardian, or other responsible adult) one breakfast, one lunch, one dinner, and one dessert from the meals you planned. \**
  - d. *Time your cooking to have each meal ready to serve at the proper time. Have an adult verify the preparation of the meal to your counselor.*
  - e. *After each meal, ask a person you served to evaluate the meal on presentation and taste, then evaluate your own meal. Discuss what you learned with your counselor, including any*

*adjustments that could have improved or enhanced your meals. Tell how better planning and preparation help ensure a successful meal.*

5. **Camp Cooking.** Do the following:
  - a. *Using the MyPlate food guide or the current USDA nutrition model, plan a menu for your patrol (or a similar size group of up to eight youth, including you) for a camping trip. Your menu should include enough food for each person, keeping in mind any special needs (such as food allergies) and how you keep your foods safe and free from cross-contamination. These five meals must include at least one breakfast, one lunch, one dinner, AND at least one snack OR one dessert. List the equipment and utensils needed to prepare and serve these meals.*
  - b. *Create a shopping list for your meals showing the amount of food needed to prepare and serve each meal, and the cost for each meal.*
  - c. *Share and discuss your meal plan and shopping list with your counselor.*
  - d. *In the outdoors, using your menu plan for this requirement, cook two of the five meals you planned using either a lightweight stove or a low-impact fire. Use a different cooking method from requirement 3 for each meal. You must also cook a third meal using either a Dutch oven OR a foil pack OR kabobs. Serve all of these meals to your patrol or a group of youth. \*\**
  - e. *In the outdoors, prepare a dessert OR a snack and serve it to your patrol or a group of youth. \*\**
  - f. *After each meal, have those you served evaluate the meal on presentation and taste, and then evaluate your own meal. Discuss what you learned with your counselor, including any adjustments that could have improved or enhanced your meals. Tell how planning and preparation help ensure successful outdoor cooking.*
  - g. *Explain to your counselor how you cleaned the equipment, utensils, and the cooking site thoroughly after each meal. Explain how you properly disposed of dishwater and of all garbage.*
  - h. *Discuss how you followed the Outdoor Code and no-trace principles when preparing your meals.*
6. **Trail and backpacking meals.** Do the following:
  - a. *Using the MyPlate food guide or the current USDA nutrition model, plan a menu for trail hiking or backpacking that includes one breakfast, one lunch, one dinner, and one snack. These meals must not require refrigeration and are to be consumed by three to five people (including you). Be sure to keep in mind any special needs (such as food allergies) and how you will keep your foods safe and free from cross-contamination. List the equipment and utensils needed to prepare and serve these meals.*
  - b. *Create a shopping list for your meals, showing the amount of food needed to prepare and serve each meal, and the cost for each meal.*
  - c. *Share and discuss your meal plan and shopping list with your counselor. Your plan must include how to repackage foods for your hike or backpacking trip to eliminate as much bulk, weight, and garbage as possible.*
  - d. *While on a trail hike or backpacking trip, prepare and serve two meals and a snack from the menu planned for this requirement. At least one of those meals must be cooked over a fire, or an approved trail stove (with proper supervision). \*\**
  - e. *After each meal, have those you served evaluate the meal on presentation and taste, then evaluate your own meal. Discuss what you learned with your counselor, including any adjustments that could have improved or enhanced your meals. Tell how planning and preparation help ensure successful trail hiking or backpacking meals.*
  - f. *Discuss how you followed the Outdoor Code and no-trace principles during your outing. Explain to your counselor how you cleaned any equipment, utensils, and the cooking site after each meal. Explain how you properly disposed of any dishwater and packed out all garbage.*
7. **Food-related careers.**  
*Find out about three career opportunities in cooking. Select one and find out the education, training, and experience required for this profession. Discuss this with your counselor, and explain why this profession might interest you.*

## Health and Safety

*Do the following:*

*1a) Explain to your counselor the most likely hazards you may encounter while participating in cooking activities and what you should do to anticipate, help prevent, mitigate, and respond to these hazards*

Below are the three most common cooking-related hazards. **Each year, hundreds of thousands of Americans are admitted to hospitals on account of these three injuries and illnesses.** When working on your cooking merit badge, be aware of these hazards and stay safe.

### **Food/Bacterial Poisoning:**

**Foodborne illnesses are the most likely hazard you'll encounter when cooking** and can cause indigestion, diarrhea, vomiting, and hospitalization. Although you won't be able to tell visually whether food has gone bad, there are a few rules you can follow to help prevent this hazard from occurring:

1. **Always wash your hands and utensils before cooking.**
2. **Use all ingredients before the expiration date.**
3. **Don't consume anything that smells funny.**
4. **If you believe an ingredient may have gone bad, throw it out. It isn't worth the risk.**
5. **Use separate cutting boards for raw meats and vegetable products.**
6. **Avoid consuming any animal products that are not thoroughly cooked.**
7. **Clean stoves and countertops with a washed rag immediately after use.**
8. **Keep all of your cooking supplies and surfaces free of food residue.**

By following these basic health guidelines, you'll greatly reduce risks of food or bacterial poisoning. However, if you do get sick after consuming bad food, know that you should feel better within 48 hours. In the meantime, drink plenty of fluids and electrolytes. If your condition does not improve, seek medical attention.

### **Chemical Poisoning:**

Accidental poisoning is another common risk when cooking. Be extremely careful what you're adding to food, especially when using aerosol cooking sprays. The best way to reduce the risk of accidental poisoning is to keep cleaning and cooking supplies in separate rooms. **All poisons and insecticides should be far away from the kitchen.**

If you or someone you know has been poisoned, immediately call 911. In non-urgent cases (no symptoms) you can also call the poison control number: 1-800-222-1222. Symptoms of chemical poisoning could include nausea, vomiting, trouble breathing, abdominal pain, or abnormal skin color.

Most cases of chemical poisoning from food are not fatal if treated quickly (below 1%), so immediately contact medical attention and calmly explain the situation and the victim's symptoms. **When waiting for an ambulance, gather information on the poison (bottle, labels, packaging) for the medical team.** Do not try to induce vomiting in the victim.

## **Slips/Falls:**

Oil and grease can cause kitchen floors to become slippery. This becomes especially dangerous when a cook is surrounded by hot stoves, knives, and glassware. **To prevent slips, keep your kitchen floor clean and dry.** Move carefully, and wear footwear with reliable rubber grips whenever possible.

Falls can be mild or severe, depending on the situation. Always try to remove the victim from the risk of further harm, and extinguish any open flames that could spread. After those two risks are mitigated, provide care to the victim. **When treating a fall, check for concussions, broken bones, and general disorientation.**

*1b) Show that you know first aid for and how to prevent injuries or illnesses that could occur while preparing meals and eating, including burns and scalds, cuts, choking, and allergic reactions.*

## **Burns and Scalds:**

In the kitchen, burns are often caused by contact with hot objects such as heated metal, electrical sources, or open flames. **Scalds are burns that are caused by wet-heat, such as boiling fluids or steam.** To treat most types of kitchen related scalds or burns:

1. **Remove the person from further harm, and prevent any fires from spreading.**
2. **Run the burn under lukewarm water for 10 to 20 minutes.** Never use ice or cold water, as this could cause more damage.
3. **Allow the burn to dry, then lightly cover it with a clean layer of plastic wrap.**
4. **Ensure the victim is kept warm with a blanket,** but avoid touching the burned area.
5. **Painkillers such as ibuprofen can be used to treat pain** in the following days.

However, some serious burns will require emergency medical treatment. **Call 911 if the burn is:**

- **Blistered and at least the size of the victim's hand.**
- **White in color, or has charred the skin.**
- **Caused by either a chemical or electrical source.**
- **Causing the victim enormous pain.**

To reduce the likelihood of burns, you should:

- **Keep stoves turned off when not in use.**
- **Turn any pot/pan handles towards the back of the stove** to avoid snagging on clothing.
- **Keep your stove and oven clean and free of grease to prevent flare-ups.**
- **Avoid wearing loose clothing** when cooking.

## **Cuts:**

When handling knives, exercise extreme caution to avoid any accidental cuts. If someone cuts themselves and is bleeding, you should make sure they're out of further danger, then work to limit their loss of blood. After first calling 911, perform the following 5 steps:

1. **Clean the wound:** If possible, remove any dirt or debris from the wound to prevent infection. Do not pull out anything embedded in the wound as this could cause much more bleeding.
2. **Apply steady pressure to the wound:** Using a sterile cloth or bandage, press into the wound with a steady pressure to stop the bleeding.
3. **Immobilize the wound:** If blood soaks through the compress, do not remove it. Place another bandage over the first, and continue applying pressure. Eventually, the blood should clot and the bleeding should slow.
4. **Elevate the wound:** By raising the wound above the level of the heart, gravity helps to halt the blood flow. Lay the victim down and have them raise the wound as high as possible.
5. **Assist the victim until help arrives:** Once their wound has been treated, your task is to keep the victim as comfortable as possible until emergency medical personnel arrive. Ensure that they are not too hot or too cold, and talk to them to keep them calm.

**If someone is severely bleeding, skip to step 2 and immediately apply pressure to the wound.** Once the blood seeps through the first bandage, place another bandage over it and continue to apply pressure. Your goal should be to have the wound clot to the bandage. This will minimize blood loss and provide the victim with the best chance at survival.

#### **To lower your risk of accidental cuts or lacerations:**

- **Always use a sharp knife.** Dull blades require more pressure to cut things and increase your likelihood of slipping.
- **Always cut over a cutting board.** Don't hold things in your hand while cutting them.
- **When holding ingredients to cut, don't keep your fingers extended.** Curl your fingers into a loose fist so that any mistakes will not cause you to lose a finger.
- **Avoid putting hot glass into water,** as it could shatter.
- **Be careful opening metal cans,** as lids can be sharp.

#### **Choking:**

Choking occurs when an object becomes lodged in a victim's windpipe and blocks their airflow. **If the person who's choking is still able to cough, weakly breathe, or speak, encourage them to cough up the object.** This means that they are still getting some air into their lungs. You can help them by using your palm to hit the top of their back in steady blows to help them cough.

*To respond to a choking emergency, imagine a torso as a bag of air. You're basically trying to abruptly squeeze that air out of the victim's windpipe. The quick burst of air pressure will dislodge the choking hazard and allow the victim to breathe.*

However, if a choking victim cannot speak, cough, or breathe, you'll need to take immediate action. **To respond to a choking emergency, perform the Heimlich maneuver:**

1. **Ask the victim if they're choking.** If they can't respond, proceed to step two. If they're able to weakly respond and breathe, use your palm to hit the top of their back. This will help them to cough and dislodge the object.
2. **Stand behind the person** and let them know you're about to help.
3. **Make a fist with one hand and place that fist on the person's abdomen** (right above their belly button). **Reach around the choking person and grab your closed fist.**

4. **Quickly pull your arms inwards and upwards in one sharp motion.** This should force air up and out their windpipe. Repeat this motion until an object flies from their mouth.
5. Check if they're able to breathe. If they still have objects in their windpipe preventing air flow, **continue the Heimlich maneuver until they are able to breathe on their own.**
6. If the victim loses consciousness, instruct someone else to call 911. Continue working to clear the person's airway.

Choking can easily be prevented. Here are a few things to keep in mind to avoid choking emergencies in the future. Food is the most common cause of choking. **Eating too quickly or not chewing your food will greatly raise your likelihood of choking.** If you find yourself choking, try to keep calm and gesture to your throat. You're also able to perform the Heimlich maneuver on yourself.

**To perform the Heimlich maneuver on yourself:** Lean over a rounded object or chair. Position the head of the object into your abdomen, and push down forcefully. Reposition after every 3 blows to push the most air possible out your windpipe. Repeat until the object is dislodged.

## **Allergic Reactions:**

Allergies are common. **In fact, about 1 in 15 US residents are allergic to some type of food.** When consuming the food they are allergic to, also called an allergen, a person with allergies may experience a range of negative symptoms, including itching, swelling, and even loss of breath.

**Anaphylactic reactions are one of the more dangerous symptoms of allergies and cause immediate swelling in the neck and face.** This often leads to difficulty breathing and can prove fatal if left untreated. However, most people with severe allergies carry an EpiPen.

An EpiPen can counteract most of the effects of an allergic reaction. **To use an EpiPen, remove the safety cap and press the needle into the victim's thigh.** Note that the effect of an EpiPen is temporary and the person must still quickly receive medical attention. More on allergies in section 1d.



*1c) Describe how meat, fish, chicken, eggs, dairy products, and fresh vegetables should be stored, transported, and properly prepared for cooking. Explain how to prevent cross-contamination.*

Food becomes dangerous when kept at warm temperatures for too long. Illness-causing bacteria tend to grow more quickly in foods stored in temperatures above 40°F. As a general rule, **it's best to ensure foods are stored and transported at the same or colder temperatures that they were kept in at the store.**

Store meats within sealed containers to keep their juices contained. Keep refrigerated or frozen until use, and cook to the required temperature to kill any common bacteria. Different types of meats are handled differently. Below are the FDA storage and preparation guidelines for various types of food when cooked over direct heat:

- **Red meats and pork:** Cook until the center reaches 160°F. Can be stored in the refrigerator for up to 5 days.
- **Chicken:** Cook to an internal temperature of 165°F. Chicken can only be stored in the refrigerator for up to a few days, and is one of the fastest meats to spoil.
- **Fish:** If not explicitly sushi-grade, cook to an internal temperature of 145°F. Fish can be stored up to 3 days in a refrigerator.
- **Eggs:** Cook until no longer runny. Raw eggs in their shells can usually last around 4 weeks in the refrigerator. To test if an egg is spoiled, simply put it into a deep bowl of water. If it floats, it's gone bad and the bacterial gases have made it buoyant.
- **Dairy products:** There are many different types of dairy products. As a general rule of thumb, consume by the best-by date. Toss it out if there is a strong sour smell, or if there are any visible signs of discoloration or mold.
- **Fresh vegetables:** Wash all fresh vegetables and fruits thoroughly before use. Do not consume if strongly discolored or rotting. However, you likely won't get serious food poisoning from expired vegetables or fruits. Although some can be left on your countertop, most fruits and vegetables should be stored in the refrigerator.

## **Cross Contamination:**

**Cross Contamination occurs when one food is unintentionally mixed with another.** For instance, if you are cutting meat on a cutting board and then cut vegetables on that same board, you run the risk of contaminating your vegetables. This may mean that although you've properly cooked your meat, the juices on your vegetables could still make you sick.

**To avoid cross-contamination, always wash your knives and cutting boards when preparing different types of food.** Store different foods separately, and clean any spilled juices immediately. Doing so will increase your food safety, and reduce the likelihood of any illnesses.



*1d) Discuss with your counselor food allergies, food intolerance, and food-related illnesses and diseases. Explain why someone who handles or prepares food needs to be aware of these concerns.*

**Food allergies can be deadly, and will often cause swelling in the victim's extremities or airways which could result in suffocation.** Just a small amount of the allergen can lead to a severe reaction, so exercise extreme caution when cooking for people with allergies. Read food labels, separate ingredients, and avoid cross-contaminating food.

Food intolerances are less severe than allergies, but can still cause significant discomfort and irritation. **Intolerances occur when an individual cannot properly digest the food.** Common intolerances include lactose and gluten (mainly found in dairy and wheat). If an individual with an intolerance consumes these foods, they will likely experience bloating, diarrhea, constipation, gas, headaches, or itching.

**Some of the most common food-related diseases are E. coli and botulism.** These diseases occur in foods that have been kept for too long, or in conditions that are too warm. They are caused by the growth of bacteria. Symptoms include cramps, fevers, vomiting, and pain, but will differ based on the type of disease that one contracts. **To avoid food-related diseases:**

- **Avoid consuming raw or undercooked foods, especially meats.**
- **wash your hands before eating or preparing food.**
- **Avoid consuming food from damaged packaging.**
- **Avoid drinking unclean water, or water that has been sitting for more than a few days.**
- **Wash all produce before consumption.**
- **Keep hot foods hot and cold foods cold.**

**One of the most serious symptoms of food-related illnesses is dehydration.** Drink plenty of fluids with electrolytes if you do contract a food-related illness, and **don't be afraid to seek medical attention if your condition fails to improve within 48 hours.**

When preparing food, you're entirely responsible for the safety of the people you're feeding. **Make sure that you've followed all food safety procedures, and check that those you're cooking for don't have allergies or intolerances.** By mitigating possible risks, you'll be able to keep your family safe and well-fed.

*1e) Discuss with your counselor why reading food labels is important. Explain how to identify common allergens such as peanuts, tree nuts, milk, eggs, wheat, soy, and shellfish.*

Food labels can provide useful information such as the food serving size, macronutrient information, and ingredients. **By reading food labels, you'll have a better idea of what you're putting into your body, and be able to make healthier choices.**

In addition to giving you valuable information about a food's nutritional value, **labels can also be helpful when preparing food for an individual with allergies and can identify possible allergens.** Before cooking for a group, be sure to ask for each member's dietary preferences, as well as if they have any allergies.

**The allergens: peanuts, tree nuts, milk, eggs, wheat, soy, and shellfish cause around 90% of all food allergies in the US.** The bottom of most food labels provide an allergy warning for common allergens that can cause a reaction. By reading food labels, you'll reduce your chances of triggering an allergy and become a more informed consumer.

## Nutrition

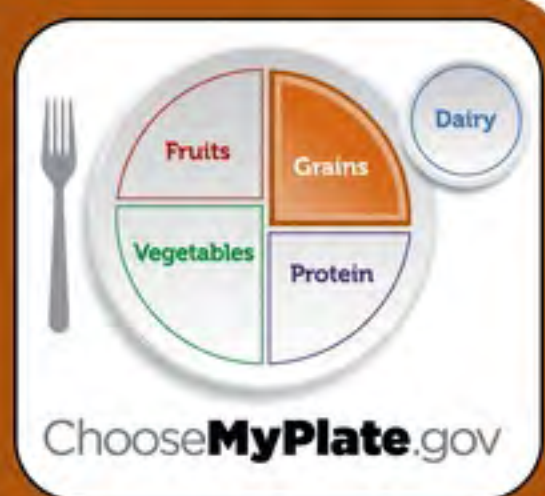
*Do the following:*

*2a) Using the MyPlate food guide or the current USDA nutrition model, give five examples for EACH of the following food groups, the recommended number of daily servings, and the recommended serving size:*

- **Fruits      Vegetables      Grains      Proteins      Dairy**
- **Fruits:** Examples of fruits include apples, pears, bananas, strawberries, grapes. For boys and girls between the ages of 14 and 18, it's recommended that you consume 1 1/2 to 2 cups of fruits per day. This is usually done in three servings that are each 1/2 cup. A single banana or apple is roughly equal to one cup of fruit.
- **Vegetables:** Examples of vegetables include broccoli, carrots, tomatoes, peas, and celery. You should eat as wide a variety of vegetable colors as possible. For boys and girls between the ages of 14 and 18, it's recommended to consume 2 1/2 to 3 cups of vegetables per day. About 12 baby carrots, one ear of corn, or three spears of broccoli will equal a cup of vegetables.
- **Grains:** Examples of grains include rice, breads, oatmeal, tortillas, or quinoa. It's recommended that boys and girls between 14 and 18 years old consume 6 and 8 ounces of grains per day, respectively. An ounce of grains can take the form of a regular slice of bread, five whole wheat crackers, or one packet of oatmeal.
- **Proteins:** Examples of proteins include meats, poultry, eggs, nuts, and beans. It's recommended that girls ages 14-18 consume 5 ounces of proteins per day, whereas boys 14-18 consume 6 1/2 ounces of proteins per day. An ounce of protein can take the form of a small chicken breast, one can of tuna, or one cup of lentil soup.
- **Dairy:** Examples of foods containing dairy include milk, yogurt, cheese, soy milk, and creams. It's recommended that both boys and girls 14-18 years old consume 3 cups of dairy. There's actually been some recent research done that indicates people shouldn't be consuming too much dairy. Do your own research, and avoid consuming dairy that's high in saturated fats and sugars.



# What's MyPlate All About?





*2b) Explain why you should limit your intake of oils and sugars.*

Sugars and oils are high in calories, but provide little nutritional value. You should limit your consumption of these types of foods, as **overconsumption of sugar is linked to fast weight gain and obesity**. Moreover, excessive sugar consumption will eventually cause diabetes, which is incurable and causes your body to function incorrectly.

**Saturated-fat oils are linked to negative health conditions such as heart disease and high blood pressure.** By overconsuming sugars, oils, and fats, over time your arteries will begin to clog, and you'll be faced with serious health problems.

Since your body tends to crave the foods that you eat often, avoid binging on sugary or fatty foods. **Don't let yourself get accustomed to eating sugary or oily foods, and you'll be able to more easily maintain a healthy lifestyle for years to come.**

*2c) Determine your daily level of activity and your caloric need based on your activity level. Then, based on the MyPlate food guide, discuss with your counselor an appropriate meal plan for yourself for one day.*

With your parent's permission, **input your weight, age, height, and physical activity information into [Freedieting.com's calorie calculator](https://freedieting.com/calorie-calculator)** (no login required). The results will first show you your body's daily recommended caloric needs.

Right below your results should be a section that says, "See meal plans for." Click that, and you'll find appropriate 1-day meal plans and foods for your recommended caloric intake. You can also take the number representing your daily caloric needs and Google "(your number) calorie 1 day meal plans" to find other useful meal recommendations.

*2d) Discuss your current eating habits with your counselor and what you can do to eat healthier, based on the MyPlate food guide.*

I don't know you personally, but I'm guessing that you eat more sugar than you should. Don't worry, I do too :P. For this requirement, **think through the foods that you eat regularly for breakfast, lunch, and dinner**. Watch out for the sugars, fats, and artificial ingredients that you might be eating too much of.

For most scouts, **a healthier diet would likely mean eating more fruits and vegetables**. Also, eating fewer carbs and sugars, and more plant-based proteins will generally lead to better overall health. In the next section, we'll be discussing the components that make up your food, as well as the types of ingredients you should limit or avoid eating.

2e) Discuss the following food label terms: calorie, fat, saturated fat, trans fat, cholesterol, sodium, carbohydrate, dietary fiber, sugar, protein. Explain how to calculate total carbohydrates and nutritional values for two servings, based on the serving size specified on the label.

I've rearranged the order of terms to make these concepts easier to understand. Don't worry, they're all there! Read through each of the points first, and then fill out your merit badge worksheet. I promise you'll learn more this way.

- **Calorie:** A calorie is **a unit measuring how much energy an amount of food will provide to your body**. Almost all food contains calories. On a food label, the calories listed indicate how many calories you'll be eating in one serving. Scientifically speaking, a calorie is the energy needed to raise the temperature of 1 kilogram of water by 1°C.
- **Fat:** Lipids/fats are one of the three basic macronutrients (Fats, carbs, and proteins) and play a necessary role in maintaining a healthy diet. However, consuming fats too often can lead to obesity along with other health problems. Eat fewer fatty foods, as **lipids contain more calories per gram than either proteins or carbs**. We'll be talking more about fats in just a bit.
- **Carbohydrate:** Carbohydrates (also called carbs) are also one of your body's three essential macronutrients, and can be found in sugars, starches, and fibers. Most people consume carbs as their main source of fuel. Common sources of carbohydrates include breads, vegetables, grains, and whole fruits.

However, not all carbs are created equal. **There are two types of carbohydrates: refined (also called simple) carbs and whole (also called complex) carbs**. Whole carbs are good for your body and include unprocessed foods like vegetables, brown rice, and whole grains.

On the other hand, refined carbs are bad for you. Filled with added sugars and missing essential vitamins, bad carbs are often cheaper but provide little nutritional value. Examples of bad carbs include sodas, pastries, ice cream, as well as most junk foods you'd find in the supermarket.

- **Protein:** Protein is the third and final macronutrient that makes up a balanced diet. Your body uses proteins to repair body tissue and build muscle. Your proteins also release enzymes, hormones, and other chemicals that support a healthy lifestyle.

By eating foods that are rich in proteins, you'll be able to repair your body and build muscle after a long day of Scouting activities. The highest-quality proteins come from lean food sources such as fish, poultry, beans, and plants.

Consuming processed protein sources such as bacon, sausages, and cheap red meats can increase your chances of heart disease. **To choose the best sources of protein, look for foods that are low in fats and high in micronutrients and fiber.**

- **Cholesterol:** The next few sections are all about fat. Cholesterol is a fatty substance that produces vitamin D, hormones, and other helpful substances in your body. However, **eating fatty foods can cause high cholesterol which will lead to artery blockages** and other serious medical issues.

You have two different types of cholesterol: HDL and LDL. This stands for high-density lipoprotein and low-density lipoprotein. What you need to remember is that **HDL is good, while LDL causes artery blockages and is bad.**

Fatty foods like eggs, beans, avocados, and fish are high in HDLs and good sources of fat to consume. However, foods like butter, animal fats, and pastries are high in LDLs, and should be avoided. We'll be going into more detail on different types of fats in just a bit.

- **Saturated fat:** Saturated fats are one of the worst types of fats to consume. Overconsumption of saturated fats has been linked to increased cholesterol, higher risks of cancer, and heart disease. Some foods that are high in saturated fat include whole milk and fatty cuts of red meat.
- **Trans fat:** Try to avoid consuming trans fats. Not only do **trans fats increase your LDL cholesterol, they also lower your 'good' HDL cholesterol.** This can greatly increase your risk of heart disease.

Trans fats have become less common after the FDA proposed banning these fats in processed foods. However, be careful of frozen foods, as well as fast foods and french fries, as these have been found to contain trans fats along with other unhealthy fats.

- **Dietary Fiber:** Fiber helps you poooop! 😊 Just making sure you were still paying attention. But seriously, dietary fiber is an important part of a healthy diet. **By consuming fiber daily, you'll have regular bowel movements.** This, in turn, will reduce your risk of colon cancer and support healthy cholesterol levels.
- **Sodium:** Sodium is mainly found in salt, and is a necessary part of your daily diet. However, **consuming too much sodium can lead to high blood pressure.** Try to consume your dietary recommendation of sodium, and avoid processed foods as they often contain more salts and sugars.
- **Sugar:** Don't hate me for saying this, but sugar is really bad for you. Seriously. While sugars can be found naturally in most foods, much of what we eat today also contains large amounts of added sugars.

The problem with sugars is that they're high in calories but provide no additional nutrients. **Along with making you fat, consuming sugars too often can lower your overall energy.** Over time, this will lead to more serious conditions like diabetes and heart disease.

***Explain how to calculate total carbohydrates and nutritional values for two servings, based on the serving size specified on the label.***

Nutrition Facts	
8 servings per container	
<b>Serving size</b>	<b>2 oz (56g)</b>
Amount Per Serving	
<b>Calories</b>	<b>200</b>
% Daily Value*	
<b>Total Fat</b> 1g	1%
Saturated Fat 0g	0%
Trans Fat 0g	
<b>Cholesterol</b> 0mg	0%
<b>Sodium</b> 0mg	0%
<b>Total Carbohydrate</b> 42g	15%
Dietary Fiber 3g	11%
Soluble Fiber 2g	
Insoluble Fiber 1g	
Total Sugars 1g	
<b>Protein</b> 7g	
Vitamin D 0mcg	0%
Calcium 12mg	0%
Iron 2mg	10%
Potassium 118mg	2%
Thiamin 0.5mg	40%
Riboflavin 0.2mg	15%
Niacin 5mg	30%
Folate 199mcg DFE (112mcg folic acid)	50%
Not a significant source of added sugars.	
* The % Daily Value tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.	
INGREDIENTS: SEMOLINA (WHEAT), DURUM WHEAT FLOUR, VITAMINS/MINERALS: VITAMIN B3 (NIAZIN), IRON (FERROUS SULFATE), VITAMIN B1 (THIAMINE MONONITRATE), VITAMIN B2 (RIBOFLAVIN), FOLIC ACID. CONTAINS WHEAT INGREDIENTS.	
THIS PRODUCT IS MANUFACTURED ON EQUIPMENT THAT PROCESSES PRODUCTS CONTAINING EGGS.	
Barilla America, Inc. - Northbrook, IL 60062	
Made in the U.S.A. with U.S.A. and imported ingredients.	
Call 1-800-922-7455 with any comments or questions.	

Here's the food label from a box of pasta in my cabinet.

- The serving size, listed at the top of the box, says that one serving equals 56 grams.
- The total carbohydrates per serving are listed below sodium and above protein. There are 42 grams of carbohydrates per serving.
- On the far right-hand side of the total carbohydrate section, the food label says that 42 g of carbohydrates is 15% of the total carbs you should consume each day.
- If you decide to eat two servings, multiply all of the nutritional values by two.
- In two servings, your total carbohydrates would be 84 grams and represent 30% of your daily carb intake.



## Cooking Basics

*Do the following:*

*3a) Discuss EACH of the following cooking methods. For each one, describe the equipment needed, how temperature control is maintained, and name at least one food that can be cooked using that method: baking, boiling, broiling, pan frying, simmering, steaming, microwaving, grilling, foil cooking, and use of a Dutch oven.*

### Baking

- **Overview:** Baking involves using direct, dry heat to cook food. Typically, you would keep your dish in a tray and then place it into an oven for a set length of time.
- **Equipment needed:** Food is typically baked, either covered or uncovered, within a preheated oven. You'll usually place the food on a tray or dish to bake, but you can also leave it on the wire oven racks.
- **How temperature is maintained:** An oven will heat to a set temperature using metal heating coils. Make sure that your oven has had the time to reach your desired temperature before placing any food inside. When an oven's doors are opened, heat will escape quickly. Resist the urge to open your oven door after placing the food inside.
- **Example dish:** People often bake potatoes, casseroles, or brownies in the oven.

### Boiling

- **Overview:** Boiling starchy foods, such as rice and pasta, in water, helps them to soften and break down. At sea level, water boils when its temperature reaches 212°F.
- **Equipment needed:** At the very least, you'll need a medium to large pot, water, a stirring utensil, and a source of heat. A pot lid will also help the water to boil faster.
- **How temperature is maintained:** Whether you're using a fire or a stove, the pot will be heated from the bottom, eventually bringing the water to a boil. When you drop in the food to be boiled, the water temperature will suddenly decrease, but quickly rise again.
- **Example dish:** Eggs, pastas, or starchy vegetables like asparagus are just a few examples of foods that can be prepared by boiling.

### Broiling

- **Overview:** By placing a dish on the top rack of your oven and activating the overhead heating element, you'll be able to 'broil' it. Broiling cooks food at high and direct heats, which is great for caramelizing sugar or toasting bread
- **Equipment needed:** Similar to baking, all you'll need is a pan, an oven, and some oven mitts.

- **How temperature is maintained:** The dish is cooked by a metal heating element attached to the roof of the oven. Broiling is usually done at 500°F. Very few dishes are broiled for more than a minute.
- **Example dish:** Fish and steaks are sometimes broiled, but the high heat will destroy herbs and can cause things to easily burn. I've put dishes covered in cheese under the broiler to melt and create a nice crust.

## Pan Frying

- **Overview:** Food is cooked on a metal pan placed above a direct heat source. When pan-frying, you won't be able to quickly cook for large groups, as your pan can typically only hold a few portions.
- **Equipment needed:** You'll need a pan, a heat source, and a spatula. Some pan-fried dishes also use oil, which will help to keep your food from sticking.
- **How temperature is maintained:** Pan temperatures can be maintained by adjusting the stove, or by moving the food to warmer areas of the pan. A thin layer of oil will also help to distribute heat and allow your food to cook more evenly.
- **Example dish:** Scrambled and sunny side up eggs are pan fried. Steaks can be pan fried. Vegetables are often pan fried. Foods that are sautéed are also considered pan fried. Almost everything can be pan fried!

## Simmering

- **Overview:** Simmering is like boiling, but is done in water that is slightly below 212°F. The point of simmering is to allow sauces to break down and for flavors to meld together.
- **Equipment needed:** To simmer a dish, all you'll need is a heat source, a pot, and a spoon. Avoid using a lid, while simmering, so that the water doesn't fully boil.
- **How temperature is maintained:** When getting water to simmer, first turn the heating element to high. Once the water begins to boil, turn the heat to low. In a few seconds, the boiling water will subside into a light simmer.
- **Example dish:** Many soups and sauces are simmered for a long time at low heat. This helps vegetables and meats to soften and break down.

## Steaming

- **Overview:** You can steam food by placing it above boiling water and letting it cook in the hot vapors. This helps ingredients to retain their vitamins and minerals which would otherwise leach into the water if boiled.
- **Equipment needed:** There are different tools used when steaming, such as steamer baskets and specialized lids. At the very least, you'll need a pot, boiling water, and a porous tray to hold the food being steamed. A lid helps foods to be steamed more quickly.

- **How temperature is maintained:** Since water boils at a constant temperature, the steam's heat will also stay the same. All you need to do is keep water warm enough to boil.
- **Example dish:** Veggies, dumplings, and buns are just a few of the many types of foods that are commonly steamed.

## Microwaving

- **Overview:** Putting food into a microwave causes the water molecules in the food to vibrate. This, in turn, creates heat and cooks your food. In case you were wondering, microwave radiation is 100% safe.
- **Equipment needed:** To microwave food, you'll need a microwave, a source of electricity, and a microwave-safe dish to place your food on. FYI, you can't microwave metal and some types of plastics, as they tend to cause fires.
- **How temperature is maintained:** As long as the microwave is running, the water molecules in your food will continue to heat up. This could cause overcooking, so be careful of how much time you add.
- **Example dish:** Almost all leftovers can be microwaved. Additionally, there are many TV dinner-type meals that are made to be prepared by microwaving. However, high-fat foods tend not to microwave well.

## Grilling

- **Overview:** Food is grilled by applying direct heat by its surface. Most commonly, the food is placed on a wire grid above an open flame or hot coals.
- **Equipment needed:** To grill, you'll need a wire grid to support your food, a fire, and some way to hold the grid above the flames. You'll also need tongs or a spatula to flip your food, as well as a brush to clean the grill once you've finished.
- **How temperature is maintained:** Food can be grilled either on an open flame or above hot coals. Either way, you'll need to start a fire and bring it to a steady heat before placing any food on your wire grid. If you're using wood, make sure that all of the saps have burned away before cooking your food above the smoke.
- **Example dish:** Burgers, hotdogs, vegetables, and skewers are all examples of foods commonly cooked by grilling. Fun fact: The difference between grilling and barbecuing is that barbecuing has the lid placed over the food, allowing the heat to come from all sides.

## Foil Cooking

- **Overview:** Foil cooking is an easy way to cook quality food while camping. Simply wrap your ingredients in foil, sealing the package so it's airtight, and place it under hot coals to cook.
- **Equipment needed:** To cook with foil, you'll need some heavy-duty aluminum foil, a heat source, and a pair of tongs. Foil cooking can be done in an oven but is best suited for cooking a delicious meal around a campfire.
- **How temperature is maintained:** You'll want to place your foil package in a bed of hot coals. Hot coals cool slowly, which will help your meal to cook evenly. If you're cooking with foil in an oven, set it to the desired temperature and leave it alone.
- **Example dish:** Shrimp, chicken, tomatoes, and potatoes are just a few of the many ingredients that can go into a foil cooked hobo pack! These foil-wrapped hobo packs are delicious and were one of my favorite parts of Scouting.



## Dutch Oven

- **Overview:** Dutch ovens are large and heavy pots that can be placed directly onto a heat source. They're often made of cast iron and are great for cooking a variety of dishes, especially on a campout.
- **Equipment needed:** To cook food with a Dutch oven, you'll need a Dutch oven! You'll also need a tool like pliers to lift the lid off, as well as a heat source like coals to maintain a steady temperature.
- **How temperature is maintained:** When camping, Dutch ovens can be placed over hot coals or smoldering firewood. Since the metal around a dutch oven is thick, it will maintain a constant heat while cooking. You can also place coals on the lid of a Dutch to ensure the top of your dish is cooked.
- **Example dish:** Cobblers, casseroles, stews, and soups are just a few examples of dishes that you can make in a Dutch oven. In my troop, Dutch ovens were a central part of camp cooking. When cooking for a patrol, no other cooking tool compares to the quality of easy food that you'll be able to make by using a Dutch oven.

*3b) Discuss the benefits of using a camp stove on an outing vs. a charcoal or wood fire.*

Camp stoves and open fires are two methods you can use to prepare food while on a campout. In the table below, I'll be comparing the benefits of using a camp stove on an outing, versus starting a fire.

*Camp Stoves*

- **Practical.**
- **Quick to set up and begin cooking a meal.**
- **Avoids open flames that could damage the campsite.**
- **Very safe when used by experienced scouts.**
- **Able to be started in practically all weather conditions.**
- **Easy to control heat when cooking.**
- **Allowed on almost all campsites and trails.**

*Charcoal/Wood Fire*

- **Fun!**
- **Takes time to light and begin cooking.**
- **May damage the campground if made outside of a fire pit.**
- **Can be dangerous, even for experienced scouts.**
- **Can't be started in conditions that are too windy or wet.**
- **Difficult to control heat while cooking.**
- **Can only be made in designated locations.**

Personally, I think that both open fires and camp stoves have their place in scout campouts. **Stoves are reliable tools for quickly cooking meals, and are especially useful when pressed for time.** Fires should only be lit in designated fire pits, but are great for cooking creative meals and helping scouts to bond.

*3c) Describe with your counselor how to manage your time when preparing a meal so components for each course are ready to serve at the same time.*

To manage your time when preparing a meal, you'll first need to **think through how long each component will take to cook.** Start the ingredients with longer cooking times first. Wait until the meal is almost ready to prepare the warm, quick-cooking ingredients. This will ensure that the meal is warm and fresh when being served.

For instance, if you're preparing a burger and potatoes, you'll want to start the potatoes before any other components so that they have time to fully cook. That way, your burger will finish cooking around the same time that your potatoes come out. None of your dishes will be eaten cold!

## Cooking at Home

*Using the MyPlate food guide or the current USDA nutrition model, plan a menu for three full days of meals (three breakfasts, three lunches, and three dinners) plus one dessert. Your menu should include enough to feed yourself and at least one adult, keeping in mind any special needs (such as food allergies) and how you kept your foods safe and free from cross-contamination. List the equipment and utensils needed to prepare and serve these meals.*

Using the knowledge that you've learned in this guide, create a nutritious meal plan to follow over the course of three days. **For inspiration, I'd Google 'three-day meal plans'** to see if any recipes jump out at you. Write out your three-day meal plan and use this list to complete the following requirements.

To make this requirement easier, **I'd recommend talking to your parents about actually following your meal plan for the next three days.** That way, you'll know the cost of the ingredients, you'll be able to prepare the meals, and you'll have your family's help in completing the dishes.

*Then do the following:*

*4a) Create a shopping list for your meals showing the amount of food needed to prepare and serve each meal, and the cost for each meal*

You can find the estimated cost of your meals by searching each ingredient in Amazon. Usually, most supermarket products will be listed, so add everything you need to the online shopping cart basket. Amazon will tell you the total cost of your list.

*4b) Share and discuss your meal plan and shopping list with your counselor.*

Discuss your list and its costs with your counselor. Was it more or less expensive than you expected? Does your meal plan cover your nutritional requirements? What is this a harder requirement to complete than expected?

*4c) Using at least five of the 10 cooking methods from requirement 3, prepare and serve yourself and at least one adult (parent, family member, guardian, or other responsible adult) one breakfast, one lunch, one dinner, and one dessert from the meals you planned. \**

Now it's time to get cooking! **The easiest methods to demonstrate will likely be:**

- **Baking (casserole)**
- **Broiling (melt cheese on casserole at end)**
- **Boiling (boil eggs/veggies)**
- **Pan-frying (fry eggs/sausage)**
- **Microwaving (cook leftovers)**

*4d) Time your cooking to have each meal ready to serve at the proper time. Have an adult verify the preparation of the meal to your counselor.*

*4e) After each meal, ask a person you served to evaluate the meal on presentation and taste, then evaluate your own meal. Discuss what you learned with your counselor, including any adjustments that could have improved or enhanced your meals. Tell how better planning and preparation help ensure a successful meal.*

Once you've made the meals, ask for feedback and consider what you can improve on next time. **A good idea when cooking is to taste your food throughout its preparation.** Then, add spices like salt and pepper accordingly.

**Planning and preparation are key to cooking successful meals.** By making sure you have all the ingredients beforehand, understanding how long things will take to cook, and preparing your most time-consuming ingredients first, your cooking skills will rapidly improve.

## Camp Cooking

Do the following:

5a) *Using the MyPlate food guide or the current USDA nutrition model, plan a menu for your patrol (or a similar size group of up to eight youth, including you) for a camping trip. Your menu should include enough food for each person, keeping in mind any special needs (such as food allergies) and how you keep your foods safe and free from cross-contamination. These five meals must include at least one breakfast, one lunch, one dinner, AND at least one snack OR one dessert. List the equipment and utensils needed to prepare and serve these meals.*

5b) *Create a shopping list for your meals showing the amount of food needed to prepare and serve each meal, and the cost for each meal.*

5c) *Share and discuss your meal plan and shopping list with your counselor.*

5d) *In the outdoors, using your menu plan for this requirement, cook two of the five meals you planned using either a lightweight stove or a low-impact fire. Use a different cooking method from requirement 3 for each meal. You must also cook a third meal using either a Dutch oven OR a foil pack OR kabobs. Serve all of these meals to your patrol or a group of youth. \*\**

5e) *In the outdoors, prepare a dessert OR a snack and serve it to your patrol or a group of youth.\*\**

5f) *After each meal, have those you served evaluate the meal on presentation and taste, and then evaluate your own meal. Discuss what you learned with your counselor, including any adjustments that could have improved or enhanced your meals. Tell how planning and preparation help ensure successful outdoor cooking.*

Your troop should have a standard way of preparing meals on each campout. **Speak with your patrol leader and ask to be in charge of the camp menu during an upcoming camp.** Make sure to prepare a meal using either a Dutch oven, foil packs, or kebabs. If you don't have a Dutch oven, I'd recommend making foil pack vegetables or hobo packs!

5g) *Explain to your counselor how you cleaned the equipment, utensils, and the cooking site thoroughly after each meal. Explain how you properly disposed of dishwater and of all garbage.*

Some main points to cover when speaking with your merit badge counselor could include how you:

- **Avoided leaving or burying food waste (this attracts animals).**
- **Properly sanitized cooking utensils.**
- **Wiped down large cooking equipment.**
- **Kept the campsite free of food waste and cleaning chemicals.**
- **Didn't waste too much water.**



To dispose of dishwater and garbage, according to the official BSA website, you should:

*Strain dishwater through a small strainer or bandana. Put the food particles in a sealable plastic bag and pack them out. Spread the strained dishwater over a wide area at least 200 feet from the nearest water source, campsite, or trail. Scattering dishwater in a sunny area will cause the water to evaporate quickly, causing minimal impact.*

**Dispose of the strained food waste in a sealed trash bag.** Throw this bag, along with any other garbage you may have, in a designated dumpster after you've arrived back from the camp.

*5h) Discuss how you followed the Outdoor Code and no-trace principles when preparing your meals.*  
**To recap, here are the Leave No Trace principles and Outdoor Code:**

*The 7 Leave No Trace Principles:*

1. **Plan ahead and prepare.**
2. **Travel and camp on durable surfaces.**
3. **Dispose of waste properly.**
4. **Leave what you find.**
5. **Minimize campfire impacts.**
6. **Respect wildlife.**
7. **Be considerate of other visitors.**

*The Outdoor Code:*

**As an American, I will do my best to –**  
**Be clean in my outdoor manners.**  
**Be careful with fire.**  
**Be considerate in the outdoors.**  
**Be conservation minded.**

Some of the main points you could cover after following these guidelines include:

- **Avoiding damaging the campsite with open flames.**
- **Keeping food waste contained by sealing it in trash bags.**
- **Avoiding food waste by planning effectively.**
- **Making sure that the cooking did not attract wild animals by straining and packing out food waste.**

## Trail and backpacking meals

Do the following:

6a) *Using the MyPlate food guide or the current USDA nutrition model, plan a menu for trail hiking or backpacking that includes one breakfast, one lunch, one dinner, and one snack. These meals must not require refrigeration and are to be consumed by three to five people (including you). Be sure to keep in mind any special needs (such as food allergies) and how you will keep your foods safe and free from cross-contamination. List the equipment and utensils needed to prepare and serve these meals.*

6b) *Create a shopping list for your meals, showing the amount of food needed to prepare and serve each meal, and the cost for each meal.*

6c) *Share and discuss your meal plan and shopping list with your counselor. Your plan must include how to repackage foods for your hike or backpacking trip to eliminate as much bulk, weight, and garbage as possible.*

6d) *While on a trail hike or backpacking trip, prepare and serve two meals and a snack from the menu planned for this requirement. At least one of those meals must be cooked over a fire, or an approved trail stove (with proper supervision).\**

6e) *After each meal, have those you served evaluate the meal on presentation and taste, then evaluate your own meal. Discuss what you learned with your counselor, including any adjustments that could have improved or enhanced your meals. Tell how planning and preparation help ensure successful trail hiking or backpacking meals.*

6f) *Discuss how you followed the Outdoor Code and no-trace principles during your outing. Explain to your counselor how you cleaned any equipment, utensils, and the cooking site after each meal. Explain how you properly disposed of any dishwater and packed out all garbage.*

Backpacking meals are a bit more difficult to plan and prepare than camping meals. **Be sure to pack light and avoid foods that need to be chilled.** You'll most likely need to bring a small, portable camp stove, but you can also get away with making an open fire if conditions allow.

If we're being completely realistic here, backpacking meals probably won't fall under your typical MyPlate health guidelines. However, you can do your best to have as nutritious a meal as possible. **Here's some lightweight and healthy ingredients that I'd recommend for backpacking:**

### **Breakfasts**

- Oatmeal packets
- Trail mix with plenty of nuts
- Powdered eggs
- Fresh or dried fruit
- Oats
- Granola bars

## Lunches

- Carrot sticks
- Tortillas
- Crackers
- Hard cheese
- Dry salami
- Packaged tuna/salmon
- Hot dogs
- Celery

## Dinners

- MRE's
- Instant noodles
- Lentils
- Rice
- Dried veggies
- Instant potatoes
- Couscous

Be sure to avoid leaving any food scraps in the wilderness. **A great way to filter dishwater after washing your mess kit is by poking a few small holes in a plastic bag, filling the bag with some brush, and then pouring the dishwater through the bag.** This will filter out for any food particles. Afterward, tie off the top of the bag and pack it out.

## Food-related careers

*7) Find out about three career opportunities in cooking. Select one and find out the education, training, and experience required for this profession. Discuss this with your counselor, and explain why this profession might interest you.*

### **1. Chef:**

There are many different types of chefs, but they all have one thing in common – they're great at cooking food. **Most high-level chefs attend school and are educated in the culinary arts.** Afterward, chefs gain experience by working in restaurants and cooking different types of cuisines.

The highest-paid chefs are called 'executive chefs'. These individuals create their own recipes and lead teams of chefs in fancy restaurants. For most to make it as a chef, they'll need to gain years of kitchen experience, working their way up from being a line cook.

### **2. Restaurant Manager:**

Restaurant managers make sure that all of the different parts of a restaurant are running smoothly. They're typically responsible for upholding food quality, managing staff, supplying the kitchen, and maintaining health standards.

Since every restaurant is different, restaurant managers may need to do more or less based on the scope of their role. **To become a restaurant manager most people will need years of experience working in a restaurant, as well as a college degree based in operations.**

### **3. Food Scientist:**

Food scientists help to research, develop, and improve the foods that you see on your grocery store shelves. There are many different types of food scientists, but they all must understand proper nutrition and be aware of government food regulations. **To become a food scientist, you'll typically need at least a bachelor's degree in a related stem field.**