



Cafeteria Comeback Lesson Plan for Homeschool

Overview

Raddish is designed by a dedicated team of teachers and chefs who believe the kitchen classroom is the tastiest place to learn. We love watching learning come alive when kids mix math, stir science, and taste culture!

Paired with the materials found in your Cafeteria Comeback box, this lesson plan divides your box into 3 45-90 minute lessons you can use and adapt to support your homeschool study, pre-k – middle school. Depending on your timeframe and child's age and engagement, these can be taught together or separated for a longer lesson. Please refer to the curriculum provided in your box: recipe guides, activity card, and introduction card. Happy cooking! Happy learning!

Lesson 1: Sloppy Joes and the Art of Organization

Activity Time: 45-90 minutes

Learning Outcomes

- Students will examine ways to organize their actions, space, and time.
- Students will learn what the term *organization* means.
- Younger students will choose either a time of day or an activity and organize the necessary process or materials.
- Younger students will document or label their new organizational system.
- Older students will choose how to get organized for studying or for an activity and organize the necessary process or materials.
- Older students will document their new organizational system and evaluate how it is working.
- Students will read and practice the **Featured Culinary Skill- Mastering Measuring Spoons.**
- Students will make and share Sloppy Joes with family and friends.



Materials

- Recipe guide, ingredients, and tools listed within.

Younger Students

- Toys or art supplies to sort
- Paper, markers, crayons
- (Optional) shoe boxes, yogurt containers, jars etc.

Older Students

- Organize Your Study Time
 - Paper and pencil
 - Calendar or agenda
 - Space organizational tools (pencil case, book shelf, clear desk)
 - Clock
- For activity organization: (possible materials)
 - Designated space
 - Tools for your activity (Lego, watercolors, music, etc.)
 - Paper, pencil to create a list or a plan

Resources

- Articles for parents to help kids get organized:
 - <http://kidshealth.org/en/parents/child-organized.html#>
 - <https://www.understood.org/en/school-learning/learning-at-home/teaching-organizational-skills/6-simple-tools-to-help-your-grade-schooler-get-organized?view=slideview>
- <https://www.freespirit.com/educational-games-posters-and-jars/real-organized-in-a-jar-helping-you-get-it-all-together/>

Videos

- Unmess Your Desk (3:50) <https://www.youtube.com/watch?v=daYyUIwRFjQ>
- 3 Hacks To Get Organized (4:43) <https://www.youtube.com/watch?v=yxP8v8itW4g>
- Organizational Strategies (2:35) <https://www.youtube.com/watch?v=H8-rjSXqr8c>

Books (optional)

- [Get Organized Without Losing It](#) by Janet S. Fox



1. Introduction- Everyday Habits

- **Ask:**
 - Do you put on your shoes before putting on your pants? Why not?
 - Do you butter your bread before you put it in the toaster? Why not?
 - Do you brush/braid your hair before getting in the shower? Why not?
 - What are other silly “out of order” questions you can think of?
- **Share:** These everyday habits are really ways in which we organize ourselves.
- Say No to Sloppy
 - **Read,** together with students, the *Say No to Sloppy* section of the Sloppy Joes recipe guide.
 - **Ask:** Do you use any or all of these tips? Have them provide examples.
 - Create a checklist
 - Clear away clutter
 - Fuel your body

- Have students share any other organizational tips that they use.
- **Ask:** Why is it important to organize? Have students work in pairs or small groups to come up with ideas of why organization is important.
- Have students share their ideas by:
 - Creating a quick skit
 - A slogan or catchy phrase
 - A poster or cartoon strip
- **Share:** *Organizing* is not just about being tidy. Mastering organization helps you in other areas as well. Learning is easier when you know where to find notes in your binder. It is easier to show that you have learned something when you can find your project to hand in. Finally, when you want to create something (a work of art, a delicious meal, a comedy routine) it is easier if you have the tools and the space to create.

2. Organization- In Action

Younger Students - Choose one activity below:



Organize Your Day

- Choose something that you do every day that you have a hard time with. (For example, getting ready in the morning.) Maybe you are always late, or forget a step, or can't find an important item that you need.
 - a. Think your way through that time of day. What happens first? Next? Imagine it from beginning to end.
 - Have students write a list of the actions or scribe for them.
 - b. What things do you need to be successful in this time of day? (Clothes, toothbrush, hairbrush, clock.)
 - Have student write a list of the items or scribe for them.
 - c. What does it look like at the end when you have completed everything that needs to get done? Describe.
 - Have student draw what they look like when the task is complete.
 - d. Put it all together!
 - Complete the *Organize Your Day Worksheet* (included.)
 - Brainstorm other ways to organize. (A laminated checklist that can be written on with dry erase marker or cards on a binder ring with numbered pictures of what needs to happen.)

Organize an Activity

- Choose something you like to do (e.g. build with Lego, paint with watercolors, or choreograph a dance)
 - a. Where do you do this activity? How much space do you need? Do you have to share the space with other people?
 - Have student record their answers or scribe for them.
 - b. What things do you need to do your activity? Where do you keep those things? How do you find everything that you need?
 - Have student write a list of the items or scribe for them.
 - c. How do you share your finished product?
 - Have student draw or describe their plan for showcasing their work.
 - d. Put it all together.
 - Put your plan into action and share your finished work with friends and family.



Older Students - Choose one activity below:

Organize Your Study Time

- **Ask:**
 - How do you keep track of assignment due dates or test dates?
 - How do you plan your studying so that you have time to get everything done?
 - What are some ways that you can improve your time management skills?
- Suggest different study tips:
 - Decide on the best time of day, for you, to do homework. Study at that same time every day.
 - Plan and schedule exactly what you need to accomplish.
 - Write down your study schedule and stick to it.
 - Create an environment that works for you.
 - Make sure you have space and tools that you need to be successful.
 - Work on the most difficult subjects first, before you get tired.
- Put it into action.
 - Write down you study schedule.
 - Create a study environment.
 - Study.
 - Evaluate how well your new study system is working.
 - Are you able to stick to the schedule?
 - Is the time and space that you chose conducive to successful studying?
 - Do you have everything that you need to study easily at hand when it is time to focus?
 - Adjust your plan if your system isn't perfect.

Organize an Activity

- Choose something you like to do (e.g. build with Lego, paint with watercolors, or choreograph a dance)
 - e. Where do you do this activity? How much space do you need? Do you have to share the space with other people?
 - Have student record their answers.



- f. What things do you need to do your activity? Where do you keep those things? How do you find everything that you need?
 - Have student write a list of the items.
- g. How do you share your finished product?
 - Have student draw or describe their plan for showcasing their work.
- h. Put it all together.
 - Put your plan into action and share your finished work with friends and family.

Extension Ideas

- Watch the videos below to get fun, economical ideas for kids creating storage and getting organized.
 - Unmess Your Desk (3:50)
<https://www.youtube.com/watch?v=daYyUlwRFjQ>
 - 3 Hacks To Get Organized (4:43)
<https://www.youtube.com/watch?v=yxP8v8itW4g>
 - Organizational Strategies (2:35)
<https://www.youtube.com/watch?v=H8-rjSXqr8c>
- Have a student help organize a room/space or another activity.

3. Kitchen Prep

- a. Read the Sloppy Joes recipe card together.
- b. Identify and gather ingredients.
- c. Gather tools.
- d. Read the **Featured Culinary Skill- Mastering Measuring Spoons.**
- e. Discuss kitchen safety. Specifically, stove top safety (Visit Raddishkids.com/pages/safety).

4. Prepare Sloppy Joes

- a. Ask children to read or describe each step.
- b. **Have students organize the ingredients and tools needed to make Sloppy Joes.**
- c. Together, follow the steps in the recipe.
- d. Give each child a turn to smash, and **measure**, and sweat the ingredients.
- e. When the Sloppy Joes are ready, eat, taste and share!
- f. While friends are eating share what you learned about organization.



Lesson 2: Tater Tots and Baked vs. Fried

Activity Time: 45-90 minutes

Learning Outcomes

- Students will learn what fat is and why we need it.
- Students will learn that there are three major types of fat: *unsaturated, saturated, and trans*.
- Students will learn how frying food causes chemical changes that are not healthy.
- Students will learn about some of the health problems that have been linked to eating fried foods.
- Students will have the opportunity to make some healthier snack options using the microwave or oven
- In the **Featured Culinary Skill** students will learn about **Using a Box Grater**.
- Students will make Tater Tots to share with their friends and family.

Materials

- Recipe guide, ingredients, and tools listed within.
- Chart paper and markers
- Healthier Baked Snacks:
 - Kale Chips
 - curly kale
 - olive oil
 - salt
 - parchment paper
 - Plate (microwave) or sheet pan (oven)
 - Sweet and Spicy Nuts
 - mixed nuts
 - cayenne, salt, black pepper, Sriracha
 - honey
 - bowl (microwave) or sheet pan (oven)
 - Sweet Potato Chips
 - Large sweet potato
 - Olive oil



- Salt
- Peeler
- Parchment paper
- Plate (microwave) or sheet pan (oven)
- Crispy Microwave Potato Chips
 - Potatoes
 - Olive oil
 - Salt
 - Parchment paper
 - Plate (microwave) or sheet pan (oven)
 - Bowl of ice water
 - (Optional) spices

Resources

- Healthy Microwave Snacks: <https://www.biggerbolderbaking.com/microwave-snacks/>
- Fat Soluble Vitamins: <http://www.webmd.com/vitamins-and-supplements/tc/vitamins-their-functions-and-sources-topic-overview#2>
- Heart Disease Prevention: <https://www.livescience.com/34733-heart-disease-high-cholesterol-heart-surgery.html>
- Heart disease: <http://eschooltoday.com/heart-disease-basics/what-is-heart-disease.html>
- Science of Frying: <http://www.livestrong.com/article/470763-facts-on-why-baking-foods-is-better-than-deep-frying-foods/>
- Science of frying vs. baking: <https://food52.com/blog/19656-can-you-really-bake-when-a-recipe-tells-you-to-fry>
- Baked vs. Fried: <http://www.thehealthsite.com/fitness/why-is-baking-healthier-than-frying-ta1214/>
- Recommended Fat Intake for Children: www.healthyeating.sfgate.com/average-amount-of-fat-children-should-intake-daily-basis-7884.html

Videos

- Microwave Snacks in Minutes (8:09)
<https://www.youtube.com/watch?v=3JEhVYuKNsg>
- Crispy Microwave Potato Chips (7:02)
<https://www.youtube.com/watch?v=gFGpHL276xQ>



1. Introduction- Baked vs. Fried

- On a board or chart paper, make a chart with two columns (Bake & Fried). **Ask:**
 - What do you think of when you hear these words? Baked? Fried?
 - What tools do you need to fry? To bake?
 - What foods do people eat that are fried? Baked?
 - How does food taste that is fried? Baked?
- **Read** the *Baked vs. Fried* section of the recipe guide.
 - Take the information about **Technique, Cook time, Color & Texture,** and **Nutrition** and add it into the Baked vs. Fried chart you started above.
- **Ask:** What do you think is the biggest difference between frying and baking?
 - The answer is fat!
- Today you are going to learn about fat in food and that there are different kinds of fat. You will also learn that not all fat is bad! In fact, growing healthy bodies need some fat.

2. Fat Facts

- **Share:** Fat is a part of the foods that we eat.
- **Ask:**
 - What foods do you think have very little or no fat? (fruits and vegetables)
 - What foods do you think have plenty of fat? (butter, oil, meat, nuts)
- **Share:** Fat is an important part of a healthy diet.
 - Fats are important to fuel the body.
 - Fats are needed to absorb some vitamins (A, D, E, K) that you get from the fruits, vegetables, and foods that you eat.
 - Fats are needed to build hormones in the body.
 - Fats are needed to insulate the tissue of the nervous system that sends messages from your senses to your body parts to get them to move.
- **Share:** Your body stores fat when you eat too much.
 - Fat that is eaten but not burned as energy or used by your body to grow is stored by the body in fat cells. This is your body thinking ahead! It's planning for a time in the future when you might not have enough to eat. Like a bear preparing its body for the time of year when there is less food available before it hibernates.
- **Share:** Your body needs just the right amount of fat.



- Experts say kids older than 2 should eat about a third of their calories (food energy) from fat.
- For more information: www.healthyating.sfgate.com/average-amount-of-fat-children-should-intake-daily-basis-7884.html
- **Share:** There are three types of fat:
 - **Saturated Fats:**
 - Found in meat and animal products (milk and cheese)
 - Eating too much saturated fat can raise your blood cholesterol levels and increase the risk of heart disease.
 - **Trans Fats:**
 - Found in some margarines, store bought snack foods and fried foods. If you see the word “hydrogenated” in the list of ingredients, then the food contains trans fats.
 - Trans fats raise your blood cholesterol levels and increase the risk of heart disease.
 - **Unsaturated Fats:**
 - Found in plant foods and fish. (Avocados, salmon, olives, walnuts, and vegetable oils)
 - May be good for your heart health when you use them instead of the other kinds of fats.

Extension Ideas

- Learn more about fat soluble vitamins, their functions, and their sources.
 - <http://www.webmd.com/vitamins-and-supplements/tc/vitamins-their-functions-and-sources-topic-overview#2>
- Research heart disease prevention:
 - <https://www.livescience.com/34733-heart-disease-high-cholesterol-heart-surgery.html>
 - <http://eschooltoday.com/heart-disease-basics/what-is-heart-disease.html>
- Sort items in your cupboard to see what kinds of fat they contain

3. Fast Healthy Snacks

- **Review:**
 - The main difference between frying and baking is the amount of fat used.
 - Your body needs some fat, but not too much, to function optimally.



- There are some kinds of fats that are better than others.
- Choose a healthy snack to prepare:
 - Kale Chips
 - Sweet Potato Chips
 - Potato Chips
 - Sweet and Spicy Nuts
- Go to www.biggerbolderbaking.com and choose the recipe you want to try.
 - You can watch a video of how to make it and see the recipe with ingredients and step by step instructions.

Extension Ideas

- Compare the ingredients, especially amount and type of fat you used to create your snack vs. a commercially made version.
- Can you make your favorite snack in a healthier way? Pick a snack, experiment with making it with less fat or a healthier fat, and then write your own recipe to share with others.

4. Kitchen Prep

- a. Read the title page together.
- b. Identify and gather ingredients and tools.
- c. Read the **Featured Culinary Skill- Using a Box Grater**
- d. Discuss kitchen safety. Specifically, oven safety (Visit Raddishkids.com/pages/safety).

5. Prepare Tater Tots

- a. Ask children to read or describe each step.
- b. Give each child a turn grating, scooping and baking.
- c. When the Tater Tots are ready eat, taste and share!
- d. Share with your family and friends how baked Tater Tots are healthier than fried.



Lesson 3: Chocolate Pudding and Thick Science!

Activity time: 60 minutes

Learning Outcomes

- Students will learn what it means to thicken a sauce.
- Students will learn the terms for different thicknesses of liquid.
- Students will learn how to thicken foods in a variety of ways.
- Younger students will act out how the different types of thickeners work.
- Older students will choose between a science experiment of how starches work as thickening agents or apply their new thickener knowledge to a recipe of their choice.
- Students will learn the term temper and how to achieve it with the **Temper, Temper!** section of the recipe guide.
- In the **Featured Culinary Skill** students will practice **Separating Eggs**.
- Students will make Chocolate Pudding.

Materials

- Recipe guide and ingredients and tools listed within
- Five Ways to Thicken and How They Work (included)

Younger Students

- (Optional) music and costumes

Older Students- Choose one of the below:

- Science Experiment
 - Experiment Instruction (included)
 - Corn starch, potato starch, tapioca, arrowroot
 - Tablespoon for stirring
 - Measuring cup
 - Water
 - Saucepan
 - Book
 - Cookie sheet
 - Small bowls for mixing starches
 - Stopwatch



- Thermometer
- Thickeners in Action
 - A recipe that requires a thickening agent. (For example, soup, sauce, custard, jam or jelly.)
 - Tools and ingredients necessary to make that dish.

Resources

- Lesson Plans:
 - Polymers: http://beam.ucla.edu/sites/default/files/docs/Polymer_Fun.pdf
 - Starches as thickening agents: <https://www.education.com/science-fair/article/starch-thickening-agent/>
 - Iodine test for starch: <http://study.com/academy/lesson/how-to-test-for-starch-lesson-for-kids.html>
- Starches: <http://study.com/academy/lesson/what-is-starch-definition-function-chemical-formula.html>
- Thickeners: <http://www.wikihow.com/Thicken-Sauce>
- Starch as a thickener & potential issues: <http://www.thekitchn.com/how-do-starches-thicken-a-sauce-weve-got-chemistry-218821>

1. Introduction- What is Thick?

- **Ask:**
 - What does thick mean? Name some things that are thick. (a wall, a book)
 - What is the opposite of thick? (Thin.) Name some things that are thin. (a piece of paper, a slice of tomato)
 - Can a liquid be thick or thin? Name some liquids that are thin and thick. (water vs a milkshake)
- **Share:** There are words to describe different thicknesses of liquid:
 - **Thin** liquids:
 - water, coffee, tea, clear broth, clear juice, milk.
 - **Nectar** thickened: Should pour in a continuous stream without "breaking" into drops.
 - tomato juice and buttermilk
 - **Honey** thickened: Sticks to the sides of a cup like honey. Pours very slowly.
 - honey and cream soups
 - **Pudding** thickened: Will hold its shape when scooped with a spoon.



- **Ask:** Why would you want a liquid to be thick? (Sauces, Jello, etc.)
- **Read** the *Temper, Temper!* section of the Recipe Guide to learn about why it's important to gradually warm eggs when making a sauce
- **Share:** Today we are going to learn about different ingredients and techniques used to thicken liquids. Then we will use the techniques in a game, or science experiment and put them into practice when making Chocolate Pudding.

2. Science of Thickeners

- **Share:** When cooking, there are times that we want to change the thickness of a liquid, like a sauce or soup, so that it won't just slide off the noodles or the spoon! There are several ingredients and techniques that can help us.
- **Read** with students- *Five Ways to Thicken and How They Work Chart* (included)
 - Discuss when you would use each thickener and why
 - Have students compare the methods and discuss which ones might be easier or harder to do.

Extension Ideas

- There are more ways to thicken! (Beurre Manie or adding potato flakes) Research and add them to the chart.

3. Thickeners at Work and Play?

Younger Students

- Review *5 Ways to Thicken and How They Work* (included) for yourself and with the students.
- Play a game to act out how the different thickening agents work.
 - Designate a **space**, like a carpet, that will be the pan or the bowl.
 - Give students their **roles**, either the liquid, or the thickener.
 - Teacher can be the heat or the **action(s)** necessary. You can call out or use music to indicate when heat or action is being applied to the mixture.
 - Have students **act out** what happens before, during, and after the process of thickening with each type of process.
 - Have students **guess** which thickening process they just acted out.
 - Follow up with **discussion** questions about whether the thickening was successful or not. And what the "sauce" the students created looks like at the end.



- **EXAMPLE: Tempering**
 - **Space**- The carpet is the pot. Off the carpet is the bowl.
 - **Roles**- Student one (or group 1) is the eggs. Student two (or group 2) is the warm liquid.
 - Ask: If you were an egg, what would you look like? Feel like? If you were a warm liquid what would you feel like? How would you be moving?
 - **Action**- Say:
 - First I have a pot of liquid keeping warm on the stove. (Student 2 acts that out.)
 - Next, I am cracking the eggs into a bowl. Then, I am whisking the eggs. (Student 1 acts that out.)
 - Next, I am ladling a small bit of warm liquid into my whisked eggs. (Student 2 moves a hand off of the carpet and puts it onto Student 1's shoulder and moves with them being whisked.)
 - Now I am ladling a bit more warm liquid and whisking it with the eggs. (Student 2 moves their other hand.)
 - Ok, now I have added a whole cup of warm liquid to my eggs and whisked them completely together.
 - For the next step, I will add my entire bowl of egg mixture slowly back into the pot of warm liquid (mix of group 1 and 2 slowly pour themselves back into the pot on the carpet).
 - Finally, I will heat my egg and liquid mixture to a boil and then simmer until it thickens. (both groups move together up to a boil, bubbling and bumping into one another, then as the heat lowers to a simmer they slow down and start to stick together into a close group).
 - Teacher can use fast or loud music to show the heat of boiling and then slow or quiet music to depict simmering.
 - **Guess**-
 - Ask: What thickening process did you just act out?
 - **Discuss**- Ask:
 - What happens if when tempering you dump all the hot liquid in at once? (Scrambled eggs!)



- What does it look like to have a perfectly thickened end product? (The eggs and liquid are all combined and holding closer together (thick) instead of separate (far apart).)

Older Students

- Review *5 Ways to Thicken and How They Work* (included) for yourself and with the students.
- **Share:** What is a starch?
 - A starch is the way that plants store their energy. Plants mostly hold this energy in their seeds, which are used to create new plants, or they hold this energy in their roots, which feeds the plant. Chemically, starches are chains of sugar molecules held together.
 - For more information on the chemical composition of starch: <http://study.com/academy/lesson/what-is-starch-definition-function-chemical-formula.html>
- **Share:** How do starches work?
 - Starches absorb liquid.
 - All starches work by absorbing water (or other liquid) into individual starch grains. The amount of liquid the particular starch is able to absorb and how concentrated the starch grains are in the liquid affect the thickness of the final dish.
 - Starches need heat.
 - A starch and cold liquid together won't thicken. For that you need heat. Without heat, the starch grains will sink to the bottom of the sauce/soup/etc. without sucking up enough liquid to thicken it.
 - As the liquid heats, its molecules begin to move quickly around. Then these molecules bump into the grains of starch, disrupting their structure enough to cause the granules to suck up water. At a certain point during heating, the solution reaches a balance where the starch grains are still mostly intact but have absorbed as much liquid as they can.
- Have students choose one or both of the following ways to explore with thickeners:
 - **Science Experiment- Starches as Thickening Agents**
 - See the *Science Experiment- Starches as Thickening Agents* (included)
 - Gather materials



- Have students record and share their results
- **Thickeners in Action**
 - Choose a recipe that requires a thickener.
 - Gather ingredients and tools necessary to make that recipe.
 - Review the technique necessary to successfully thicken.
 - Make the recipe.
 - Share your result with friends and family and explain to them how the thickening works.

4. **Kitchen Prep**


- a. Read the title page together.
- b. Identify and gather ingredients and tools.
- c. Read the **Featured Culinary Skill- Separating Eggs.**
- d. Discuss kitchen safety. Specifically, hand washing (Visit Raddishkids.com/pages/safety).

5. **Prepare Chocolate Pudding**

- a. Ask children to read or describe each step.
- b. Give each child a turn separating, tempering and whisking.
- c. While the Chocolate Pudding is chilling, post results of your experiment or practice acting out one of the thickening methods to perform for your friends and family.
- d. Once the Chocolate Pudding is ready, gather your family and friends together to Eat, Taste, and Share!
- e. While everyone is enjoying their Chocolate Pudding, you can explain to them the science behind tempering and how it made the pudding so thick and velvety smooth!

Organize Your Day

Title _____

Picture	To Do	What I Need
	Wake up when my alarm goes off.	Alarm clock

Five Ways to Thicken and How They Work

Adapted from wikihow.com

Method	Ingredients	Steps	Uses
Starch Slurry	<ul style="list-style-type: none"> • Starch (corn or potato) or flour (tapioca, arrowroot, or rice) • Measuring spoons • Cold Water • Whisk 	<ol style="list-style-type: none"> 1. Select starch or flour. 2. Measure into a one Tablespoon of starch for every cup of liquid you want to thicken into a separate bowl. 3. Whisk together equal parts cold water and starch. (For every Tbsp of starch add one Tbsp of cold water.) Whisk until there are no lumps. 4. Whisk the slurry into your sauce. Add it slowly, whisking the whole time. 5. Bring to a simmer. To release the starch molecules, you must heat the sauce to a simmer, otherwise the starch won't thicken. Also, you want to cook out the raw taste of the starch. 	<ul style="list-style-type: none"> • Soups • Gravies • Fruit toppings • Savory or sweet sauces
Food Gums	<ul style="list-style-type: none"> • Xantham gum • Agar • Pectin • Guar gum 	<ol style="list-style-type: none"> 1. Select gum. 2. Guar gum: Add to oil called for in the recipe. Agar: Mix with water and heat before adding. Pectin: Add directly to sauces in the last 15 minutes of cooking. Boil for at least 1 minute. Xanthum gum: Add directly to sauces in the last 15 minutes. Will thicken without boiling. 	<ul style="list-style-type: none"> • Xantham - dressings and sauces • Agar – dairy-based products • Pectin - jams and jellies • Guar gum - baked goods to increase fiber
Roux	<ul style="list-style-type: none"> • Oil • Butter • Meat drippings • Sauce pan • Pot • Whisk 	<ol style="list-style-type: none"> 1. Select fat. 2. Decide how thick you want your sauce. 1 Tbsp fat and flour per cup of liquid= thin 2 Tbsp fat and flour per cup of liquid =medium 3 Tbsp fat and flour per cup of liquid = thick 	<ul style="list-style-type: none"> • Gravy • Soup • Savory sauces

		<ol style="list-style-type: none"> 3. Add fat to a pan over medium heat and melt. Stir in an equal amount of flour and whisk until fully incorporated and starting to froth. 4. Remove from heat and allow to cool. 5. Whisk cooled roux into your sauce. Bring to a simmer and allow to cook for 20 minutes to cook out raw flour taste. 6. Taste and adjust seasonings. 	
Tempering with Eggs	<ul style="list-style-type: none"> • Egg yolks (see Culinary Skill how to Separate Eggs) • Bowl • Pot • Whisk 	<ol style="list-style-type: none"> 1. Separate eggs. Keep the yolk in a bowl. 2. Whisk yolks together. 3. Slowly ladle small portions of warm sauce into the egg yolks. This allows you to heat it without cooking the egg and ending up with scrambled eggs. 4. Once you have added up to a cup of your warm liquid to the eggs, whisk the egg mixture back into your sauce. 5. Bring the sauce to a boil and simmer until thickened. 	<ul style="list-style-type: none"> • Custards • Puddings • Cream sauces
Reduction	<ul style="list-style-type: none"> • Liquid • Pot 	<ol style="list-style-type: none"> 1. Put your liquid over low to medium heat. 2. Allow it to simmer and stir occasionally. 3. As the water evaporates the sauce will reduce in quantity and thicken. It may reduce to a half or less of its original volume. 4. Reduce until it is as thick as you want it to be. A cooking term for the desired thickness is <i>nappe</i>, which means that it will coat the back of a spoon without running off. 5. Make sure to taste and adjust seasonings. 	<p>This method works by water evaporating out of the liquid leaving a thicker and more concentrated sauce behind. It particularly concentrates sweet, sour and salty flavors.</p> <ul style="list-style-type: none"> • Sauces • Soups

Science Experiment- Starches as Thickening Agents

Experiment by Cy Ashley Webb www.education.com

Problem:

How do different starches act as thickening agents in food?

Materials:

- Corn starch, potato starch, tapioca, arrowroot
- Tablespoon for stirring
- Measuring cup
- Water
- Saucepan
- Book
- Cookie sheet
- Small dessert dishes or small bowls for mixing starches
- Stopwatch
- Thermometer

Procedure

Dissolving the Starch

1. Measure one cup of water. Add two tablespoons of this water to two tablespoons of starch. Stir until dissolved. Keep adding water, one tablespoon at a time, until the starch dissolves. Continue doing this until the consistency is roughly that of yogurt.
2. Put the unused water into a saucepan and heat it until it is approximately 150 degrees. Add the starch-water solution. Stir until it is completely dissolved. Continue stirring over the heat for seven minutes.

Testing the Thickness

3. Make a ramp by placing the edge of a book with a 1"-2" binding under the short edge of a cookie sheet.
4. Pour one tablespoon of your flour solution onto the high end of the ramp.
5. Start your stopwatch and measure how fast the thickened solution flows to the bottom of the ramp. Thicker solutions will flow more slowly.

Repeat both procedures for every starch you are working with. Make a data sheet, noting the time it takes for the starch to flow to the bottom of the ramp.