Chapter Nine
In What Ways Can We Plan Lessons for Home Economics Curriculum?
The Demonstration Lesson

As teachers you are already familiar with lesson planning. So you know that typically a lesson plan should include:

- a clear indication of the objective of the lesson
- the linking learning outcomes from the mandated curriculum document
- resources and/or materials required for the lesson
- an introduction, “hook”, or motivator
- the body of the lesson outlining the learning activities and transitions
- a conclusion or closing
- an indication of the formative and summative assessment

A demonstration lesson plan has these additional features in addition to the typical lesson plan:

- background information – notes that show an understanding of the basic principles, uses, safety, history related to the technique or skill being demonstrated

- pre-preparation – includes what must be done in advance of the lesson (e.g., soften butter, defrost frozen meat, pre-measure dry ingredients, get water boiling, etc., for foods; make samples, thread sewing machine or serger, etc. for textiles)

- commentary – what you are going to discuss as you proceed with the demonstration (e.g., clear explanations, names of equipment or tools, tips for success, safety measures, alternative approaches or tools that could be used, etc.)
A TEMPLATE FOR DEMONSTRATION LESSONS

COURSE & GRADE __________ SPECIFIC TOPIC: ________________

BACKGROUND INFORMATION/IMPORTANT POINTS TO MAKE ABOUT THE
TECHNIQUE/SKILL/RECIPE:
.
.
RELATED PLO'S:
.

OBJECTIVES (SWBAT):
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PRE PREPARATION:
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INTRODUCTION (e.g., show an example, show pictures of the techniques, explain the significance of the technique, a cartoon, video clip, problem solving scenario, etc.)

DEMONSTRATION

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QUESTIONS FOR UNDERSTANDING: (review the steps with the students and ask questions to see if they remember what they are to do)
1.
2.
3.

REVIEW THE CRITERIA FOR MARKING (explain how you will be monitoring their progress and the way you will mark this technique)

CLOSURE: (tell students what to do when they return to their seats)

REFLECTION:

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SAMPLE DEMONSTRATION LESSON FOR TEXTILE STUDIES

COURSE: Textiles 9  TOPIC: Shirt Style Sleeve Attachment

Assumed prior knowledge: Students will have already learned how to sew together and finish seams and how to ease stitch.

BACKGROUND INFORMATION/IMPORTANT POINTS TO MAKE ABOUT THE TECHNIQUE:

- The sleeve is sewn into the armhole before the garment side and sleeve seams are stitched.
- Typically this attachment method is used when there is a small enough difference between the curve of the sleeve and the curve of the arm hole.
- Ease stitching is not usually necessary. However, ease stitching will be necessary to attach the sleeves to the shirts sewn in the class.
- The shirt sleeve method of sewing in a sleeve is easier to use than the set-in sleeve method. It can also be called the factory style method.
- Sewing in a sleeve is tricky and takes some practice. When sewing in the sleeve it is important to make sure that the fullness is evenly distributed and that there are no puckers.

RELATED PLO'S:
- B2: "construct and repair simple garment and textile items using construction basics...”.

OBJECTIVES SWBAT:
- use appropriate techniques to attach a sleeve using the shirt style method

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<tr>
<th>CONSUMABLE SUPPLIES NEEDED:</th>
<th>EQUIPMENT NEEDED:</th>
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<tbody>
<tr>
<td>- shirt pattern pieces</td>
<td>- sewing machine</td>
</tr>
<tr>
<td>- fabric (woven fabric, light weight cotton or polyester cotton)</td>
<td>- bobbin</td>
</tr>
<tr>
<td>- thread</td>
<td>- scissors</td>
</tr>
<tr>
<td>- poster paper</td>
<td>- pins</td>
</tr>
<tr>
<td>- self-sticking velcro</td>
<td>- seam ripper</td>
</tr>
<tr>
<td></td>
<td>- iron</td>
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<tr>
<td></td>
<td>- tailor’s ham</td>
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PRE PREPARATION:
- Prepare and Photocopy shirt style sleeve attachment instruction handout.
- Prepare samples of various stages of the technique.
  A. Sleeve pinned in with gathers evenly distributed
  B. Sleeve sewn in with underarm and side seam open
  C. Completed sleeve attachment
- Prepare a poster with brief descriptions of each sample to velcro the samples to after the demonstration.
- Thread sewing machine and check tension

INTRODUCTION (3 minutes)
Have a selection of tops paired so that one had sleeves sewn in flat shirt and the other set in sleeves. Hand out them out in pairs to small groups of students and ask students if they can determine how the sleeves are different.
- Go over background information.
- Background information:
  o The sleeve is sewn into the armhole before the garment side and sleeve seams are stitched.
  o Typically this attachment method is used when there is a small enough difference between the curve of the sleeve and the curve of the arm hole.
  o Ease stitching is not usually necessary. However, ease stitching will be necessary to attach the sleeves to the shirts sewn in the class.
  o It is easier to use than the set-in sleeve method. The set-in sleeve method is used to set in a variety of different sleeves (e.g. fitted or gathered). In contrast, the shirt method is used to create a less fitted arm hole.
  o The shirt style method of sleeve attachment is also called the factory style method because it is easier to use in factory production.
**DEMONSTRATION**

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<tr>
<td>Review ease stitching</td>
<td>• Review settings for basting stitch.</td>
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<tr>
<td></td>
<td>• Demonstrate how to do ease stitching. – Sew 2 rows of stitches between the notches of the top of the sleeve. Sew on the seam line &amp; then sew 1/8 to 1/4 of an inch on the inside. Leave long tails of thread &amp; don't backstitch or otherwise secure your ends.</td>
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<tr>
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<td>• Emphasize that the point of ease stitching is to help fit the sleeve into the shirt properly.</td>
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<tr>
<td>Match notches and dots, and distribute fullness</td>
<td>• Show the sample of a sleeve that is pinned in with the gathers evenly distributed (Sample A).</td>
</tr>
<tr>
<td></td>
<td>• Emphasize that the right sides are pinned together.</td>
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<tr>
<td></td>
<td>• Point out the places where the dots and notches must match.</td>
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<tr>
<td></td>
<td>• Demonstrate how to pull the bobbin threads and distribute the fullness.</td>
</tr>
<tr>
<td>Sew in sleeve</td>
<td>• Match and pin shoulder seam with large dot, and notches to notches, side with sides</td>
</tr>
<tr>
<td></td>
<td>• Show how to gently pull the ease stitching threads and distribute the fullness, pin</td>
</tr>
<tr>
<td></td>
<td>• Sew the sleeve in place, backstitch either end</td>
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<tr>
<td></td>
<td>• Encourage students to go slowly when sewing in the sleeve.</td>
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<td></td>
<td>• Point out that if puckers occur, they can be ripped out and you can ease the sleeve back in at that point so that there are no puckers.</td>
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<tr>
<td></td>
<td>• Use Sample A to pass around so students can see.</td>
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<tr>
<td></td>
<td>• Show sample of sleeve sewn in with underarm and side seam open (Sample B). Point out that there needs to be stitching 3mm away from the first stitching and that the seam needs to be trimmed and finished with a zigzag stitch on the edge or serged.</td>
</tr>
<tr>
<td>Press seam toward the sleeve</td>
<td>• Using Sample B, demonstrate how to press the seam toward the sleeve using the tailor's ham.</td>
</tr>
<tr>
<td>Sew underarm and side seam</td>
<td>• Use Sample B to show how to pin the underarm and side seam together.</td>
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<tr>
<td></td>
<td>• Show a sample with the sleeve attached and the underarm and side seams finished (Sample C).</td>
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<tr>
<td></td>
<td>• Point out that a zigzag seam finish has been used.</td>
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<td>• Tell students to press the seam to one side of the shirt.</td>
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**QUESTIONS FOR UNDERSTANDING**
1. What is the purpose of ease stitching?
2. Why are the right sides pinned together?
3. How can you tell if the fullness is evenly distributed?
4. How do you fix a pucker?

**REVIEW THE CRITERIA FOR MARKING**
• Criteria:
  • Fullness is evenly distributed
  • Sleeve seam is stitched evenly from the raw edge and backstitched.
  • Sleeve seam has been reinforced by stitching again 3mm from the first stitching, trimmed, and finished with a zigzag stitch. Or, serging has been used to finish the sleeve seam.
  • Sleeve seam has been pressed towards the sleeve.
  • Underarm and side seam were stitched all at once and backstitched.
  • Underarm and side seam are finished by trimming and zigzag stitching the raw edge or by serging. Seam is pressed towards one side of the shirt.

**CLOSURE**
• Tell students to pick up an instruction sheet for the shirt style sleeve and to continue working on their shirt.
• Tell students that there will also be a poster with samples on it that they can refer to.
SAMPLE DEMONSTRATION LESSON PLAN FOR FOOD STUDIES

COURSE & GRADE: FOODS AND NUTRITION 8

SPECIFIC TOPIC: SIFTING THE DRY INGREDIENTS TOGETHER

BACKGROUND INFORMATION/IMPORTANT POINTS TO MAKE ABOUT SIFTING:
1. Sifting puts air into the dry ingredients causing the flour mixture to rise during the baking process.
2. Sifting helps to separate some dry ingredients that tend to clump together.
3. Sifting distributes the ingredients thoroughly throughout the mixture.
4. Sifting is especially important in the making of a cake.

RELATED PLO'S:
A1 1. Select the proper equipment for the task.

OBJECTIVES
SWBAT:
• explain the purpose of sifting dry ingredients when baking
• demonstrate the technique of sifting dry ingredients using a sifter or a sieve

<table>
<thead>
<tr>
<th>CONSUMABLE SUPPLIES NEEDED:</th>
<th>EQUIPMENT NEEDED:</th>
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<tbody>
<tr>
<td>Flour</td>
<td>Apron</td>
</tr>
<tr>
<td>Baking powder</td>
<td>Medium size mixing bowl (glass)</td>
</tr>
<tr>
<td>Cinnamon</td>
<td>Sifter or sieve</td>
</tr>
<tr>
<td>Cocoa</td>
<td>Small measures</td>
</tr>
<tr>
<td>Baking soda</td>
<td>Dry measures</td>
</tr>
<tr>
<td>Cloves</td>
<td>Metal spatula</td>
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PRE PREPARATION:
• Purchase clear containers to hold the ingredients and wash in dishwasher.
• Transfer ingredients from my personal kitchen stock into the new containers.
• Make labels for the new containers and tape the contents on the lids.
• Assemble all of the supplies and equipment into a large container for transporting to class.
• Type the recipe for zucchini chocolate cake and make several copies, then place in my binder.
• Check that each of the previous bullets have been done by Sunday night.

INTRODUCTION:
Hold up a sifter and a sieve. Ask students “What are these?” “What are they used for?”

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<tr>
<td>1. Select a student to hand out recipes to each class member. Have students move to demo area bringing recipe and pen.</td>
<td>Sifting dry ingredients together is a technique used to combine and put air into the powdery ingredients before they are combined with the liquid ingredients in a recipe such as a cake, where an open grain and a light and fluffy texture are the desired outcomes of the finished baked product. Air is incorporated into the liquid ingredients also, but in a different way than by sifting.</td>
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<tr>
<td>2. Ask the students to scan the recipe for the phrase, &quot;Sift the dry ingredients together&quot;. (Step 2)</td>
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<td>3. Explain the equipment needed.</td>
<td>The equipment setup for sifting is quite simple. The sieve or sifter is placed inside a mixing bowl.</td>
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<tr>
<td>4. Accurately measure the dry ingredients and place in the sifter, starting with the flour. (Bring students up to the demo table to do the measuring.)</td>
<td>Explain that some recipes will state “x” ml of sifted flour – when sifted is placed in front of the ingredient than the ingredient must be sifted before measuring. This recipe states sift the dry ingredients this means that they have be</td>
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</table>
5. Sift the dry ingredients through the sifter. (Have a student come up to finish sifting after showing how.) measured first and sifting is used to mix the ingredients together. Then you hold the sifter just a little above the mixing bowl and squeeze the handle in and out until all the ingredients have passed through. If there are some little lumps left in the top of the sifter, you may have to crush them with a spoon before they will fall through the mesh. Make sure all the ingredients do pass through, even if it takes a little more time.

6. Have students observe sifted ingredients. Now, you may think, that we haven’t really changed anything. The same ingredients that went into the top came out the bottom. So how have we increased the value of our product? In three ways:

- We added air to the ingredients. The air expands on heating causing the cell structure of the product to expand, creating a light and fluffy texture.
- We broke down some of the ingredients that tend to clump and made them into finer particles to better incorporate them with the liquid in the next stage.
- We distributed the ingredients throughout the dry mixture. Now the cinnamon, cloves, baking powder, baking soda, and the cocoa are dispersed throughout the flour.

QUESTIONS FOR UNDERSTANDING:

1. Explain in your own words how sifting the dry ingredients together are accomplished.
2. How does one determine which of the dry ingredients to place in the sifter?
3. What are three good reasons to sift the dry ingredients together?
4. Can you think of an experiment we could do to measure the amount of air we added to the ingredients by sifting them together?
5. What could you do if you didn’t have a sifter or sieve and still wanted to combine the dry ingredients?

CLOSURE:

- When you come to the step that reads "sift dry ingredient together", in tomorrow’s lab what are you going to do?
- I challenge each of you in our next lab to be the student who produces the cake with the highest volume, because the cake with the highest volume will probably be the lightest and the fluffiest because it has the most air incorporated. Good luck to all of you!

REFLECTION:
Questions to Guide Demonstration Lesson Planning

1. Do you have a thorough understanding of the background knowledge required to explain the technique or skill?
   - Consider making a mind map (see Thickeners examples at the end of this chapter).
   - Consider the food science involved for food demonstrations (see examples at end of this chapter).
2. Have you considered safe use of the tools and equipment required?
3. Have you broken down the technique or skill into simple steps?
4. Have you practiced, practiced, practiced?
5. Do you have all the necessary supplies and equipment?
6. Have you tested all the electric equipment to see if it is working?
7. Do you have a "hook" or motivator at the beginning that will capture students’ attention?
8. Do you have enough information for your commentary?
   - You don’t have to talk non-stop but long silences make it harder to hold students’ attention. Have thought-provoking questions throughout your commentary.
9. Have you involved students in the demonstration?
10. Do you have visuals to support your plan?

Tips for Successful Food Demonstrations
• have your recipe and lesson plan where it can be viewed easily. Consider putting them in page protectors in case of accidental spills
• keep the work surface a clear as possible
  - don’t put all the ingredients on the demo table as it could block students’ view, instead have them on a tray close by. Organize supplies and equipment in order of use. Cover try with a clean tea towel.
  - remove items from the demonstration table after they have been used
  - clean up any spills. Have a wet dish cloth ready for use.
• maintain a pace that engages the students
  - have some items prepared in advance (e.g., chopped onion, pre-measured ingredients)
• use glass bowls and saucepans so students can see better
• model food safe practices (wear an apron, wash hands, tie hair back, use the proper equipment for the task, put a moist towel under bowl and cutting boards to stabilize, turn pot handles in, use pot holders and oven mitts, etc.)

Food for Thought
• Consider having students do demonstrations, either individually, in pairs or in small groups.
• Consider using videos for some demonstration lessons
• Consider having guest demonstrators (local chefs, multicultural workers, food producers, etc.) for some of your demonstration lessons
Tips for Running Labs

Get Ready:

1. Choose recipe or have students choose their own recipes
   - Convert recipes to metric if necessary
   - Have a cumulative grocery list / market order
   - Make sure recipes are no larger than 2 servings
   - Don’t let students double recipes if there are three in a kitchen
     (provide them with the amounts for 3 instead)
   - Plan the first couple of labs for before lunch or the last block in the day

2. Supplies
   - Check supplies on hand (do not assume that the flour supply is endless)
   - Buy needed supplies (or check into delivery if possible)
   - Store until needed
   - Use whatever method is acceptable at your school re receipts and charging groceries
   - One cardinal rule is “Have ONLY school items on the bill you hand in”
   - A second rule is “Never LOSE a receipt for a charged order”

Get Set:

3. Lab set-up
   - Have trays set up for each kitchen in quantities of two recipes
     OR
   - have students get ingredients from demo table (insist that students bring
     own tray and measuring utensils from own kitchens, supervise sharing of
     supplies, always hide extra amounts of coveted food items such as
     chocolate chips)
- distribute some food items yourself (cheese, blueberries, chocolate chips, a choice of pizza toppings, etc.)
- make sure staple items are available in every kitchen unit (flour, sugar, baking powder, salt, artificial vanilla, maybe oil and baking soda)
- decide about keeping a clean teatowel and dishcloth in each unit for the next lab (saves time)
- decide about apron use (rent aprons for the year, have a supply of aprons for students to use, require students to bring their own, have them make aprons in Tx 8, forget about the whole thing)

**Go!**

1. Starting the class
   - Have all students sit down at their tables before starting the lab for last minute instructions. Insist on everyone listening.
   - Pair up any students who do not have partners
   - Take attendance
   - Go very quickly over pertinent items (e.g. ask students what is most important to remember)
   - Have ONLY one person to the supply table from each kitchen
   - Make sure students know their duties for the lab (main cook, assistant cook, table setter, clean-up, etc.). Ask for a special duties person from each lab with four people. You will need that person to help you with cleanup.
   - Have a recipe handy at the supply table.
   - Cover recipes with plastic sheets if possible.

2. During the lab
   - In senior foods where you have not done a dem, do a “spot dem” when one group has gotten to a certain stage that you want others to see
   - Circulate widely and often
   - Be kind to your feet and sit on a high stool if you can find one.
   - Start putting away stuff as soon as possible
   - Short grade eights will want to work at the tables. It’s better if they work at the counters.
   - Ask students to peel vegetables etc. onto paper toweling and wrap garbage before throwing into bin.
   - If a particular step seems to be difficult, mark that step on the student lab sheets with a coloured dot (e.g. deciding when the fat has been cut into the flour enough). When the students get to the dot, they are supposed to call
you over to see their progress. (This also stops the frequent questioner – you can say “Are you at the dot yet?”)

- Keep track of the time. Students need at least 20 minutes to eat and clean up properly

3. Clean up

- Make it a standing rule that all members of a kitchen have to help each other and that the kitchen is dismissed together. Then one person won’t go running out, leaving the others with a mess to clean up.

- Have a form of shorthand on your lab marksheet to indicate particular circumstances (e.g. someone who left early, etc.)

- Stress the lab behaviour you want at the start of the class and you stand a better chance of getting it at the end.
Tips for Running Textiles Labs

1. Bobbin, bobbin who’s got the bobbin
   Develop a system for accounting for bobbin cases if you have machines with removable bobbin cases

2. Scissors count
   Separate paper scissors and sewing shears. Consider painting the handles different colours. Organized the shears so they can be accounted for quickly at the end of each class (e.g., mounted on a tack board).

3. Somebody stole my project!
   Develop a system of labelling and storage of student projects to avoid projects being misplaced or lost.

4. Who scratched their name on the new sewing machine?
   Be very clear about your expectations regarding treating school property with respect.
   Have a seating plan for the sewing machines so you know who is responsible for each machine in each class

5. If it makes a horrible noise, stop right away!
   Teach students early to identify what a smooth running sewing machine and serger sounds like and how to initiate procedures to avoid unnecessary costly repairs.

6. Make it clear what behavior is acceptable in your classroom (e.g., No personal listening devices, thank you! No food or drink either!)

7. Always check the iron temperature first

8. Consider having room monitors to make clean up at the end of the class more efficient.
An Example of Using a Mind Map to Brainstorm the Background Information for a Lesson that Involves Starch Cookery
Example of Food Science Background Information

For Baked Products:

Flour provides the structure for the baked product. Although many books claim that gluten is the protein in flour, technically it is a composite of the proteins gliadin and glutenin. The gluten forms when glutenin molecules cross-link to make a sub-microscopic network and associates with gliadin, which contributes viscosity and extensibility to the mix. In order for this to happen the flour must be combined with a liquid. In most baking the ingredients and the mixing method determines the extent of gluten development and the texture of the baked product. The gluten, or protein, in the flour, combines to form a web that traps air bubbles and sets. Starch in flour sets as it heats to add to and support the structure of the baked product.

Whole wheat or whole grain?
In Canada, when wheat is milled to make flour, the parts of the grain are usually separated and then are recombined to make specific types of flour, such as whole wheat, whole grain, white cake and pastry flour, and all purpose white flour. If all parts of the kernel are used in the same relative proportions as they exist in the original kernel, then the flour is considered whole grain. Under the Food and Drug Regulations, up to 5% of the kernel can be removed to help reduce rancidity and prolong the shelf life of whole wheat flour. The portion of the kernel that is removed for this purpose contains much of the germ as it contains fat and some of the bran. If this portion of the kernel has been removed, the flour would no longer be considered whole grain rather it is called whole wheat.

Products made from whole wheat or whole grain flour have a coarser texture and are smaller and heavier because bran particles cut through the gluten during mixing and kneading. You don’t sift whole wheat or whole grain flour as you will remove the bran and germ.

Oil/Fat coats the gluten molecules so that they can’t combine as easily which contributes to the baked products tenderness. The oil/fat also provides and carries flavor.

Sugar adds sweetness, as well as contributes to the products browning when baking. Mostly this is the result of caramelization but also the monosaccharide components of its hydrolysis (glucose and fructose) but it can also undergo Maillard reaction. Caramelization and Maillard reaction are classified as non enzymatic reactions. Enzymatic reaction are those where brown occurs on certain fruits and vegetables when exposed to air (oxidation).
The sugar tenderizes the baked product by preventing the gluten from forming because it hydroscopic (i.e., it attracts water) and will take some of the liquid away from the flour so that not as much gluten will be formed. Sugar also holds moisture in the finished product.
Brown sugar retains some of the molasses (how much determines the color – the darker brown the more molasses). It is moist and must be packed when measured. If it dries out
you can soften by putting a slice of bread or an apple wedge into the container and it will absorb the moisture and become soft again.

**Sweeteners:** White sugar is called sucrose; brown sugar has a little less sucrose and some molasses; honey is about 31% glucose and 38% fructose; corn syrup is mostly dextrose. If substituting honey for sugar in a recipe you need to reduce the amount sugar by 1/2 - 1/3, reduce the liquid by 1/5, add approximately 2 ml of baking soda (unless using sour milk or buttermilk) and reduce the oven temperature by 25°F to prevent excessive browning. To help that honey slide smoothly from your measuring utensils, simply lightly coat the utensil with a vegetable spray before measuring the honey.

**Eggs** contribute to the baked product in many ways. They are a leavening agent which means they help to make the baked product rise (the whisking incorporates air and because they are moist they will release steam when baking). The yolks add fat for a tender and light texture in the finished product and the protein in eggs contributes to the structure of the muffin when it coagulates upon heating.

**Liquid** helps carry the flavorings throughout the batter. It also forms gluten bonds and reacts with the starch in the protein for a strong but light structure. The liquid acts as steam during the baking, acting as a leavening gas and contributing to the tenderness of the baked product.

**Salt** strengthens gluten, tones down the sweetness and enhances the overall flavor. In yeast breads, salt helps moderate the effect of the yeast so the bread doesn't rise too quickly.

**Leavening**
Baking soda, baking powder, and yeast are classified as leavening agents. Both baking soda and baking powder are classified as chemical leavening agents. Air, steam and carbon dioxide are classified as leavening gases.

**Baking Soda** (sodium bicarbonate) is a chemical leavening agent that will produce carbon dioxide gas when combined with an liquid acid ingredient (e.g., lemon juice, vinegar, sour cream, yogurt, buttermilk, etc.).

**Baking Powder** is a chemical leavening agent that produces carbon dioxide when it come into contact with moisture. The ingredients of baking powder are acids in salt form, baking soda (sodium bicarbonate) and starch. The acid salt determines the nature of the baking powder and whether it is single acting or double acting (rising when mixing or rising when mixing and when baking). The acid salt will dissolve in the liquid and produce and acid that will react with the baking soda and create carbon dioxide gas that will bubble through the batter and get trapped in the gluten web causing the product to rise. The starch is usually cornstarch. Its function is to absorb any moisture which may be in the air and which would release the carbon dioxide prematurely when the lid is off the container. Single-action baking powder is no longer commonly used as it only works when it is mixed with the liquid ingredients, so the batter must be baked immediately. Double-action baking powder is the most commonly sold type of baking powder. It acts
twice, once when it is mixed with the liquid ingredients, and then again when the batter is heated in the oven. This is useful because there is less urgency with respect to getting the mixture into the oven.

**Baked Products are usually classified by the ratio of dry ingredients to wet ingredients**

Pour Batters 1:1; Drop Batters 2:1; Soft Doughs 3:1, and Stiff Doughs 4:1.

**Cakes** are classified as: foam (leavened by an egg white foam); butter (cakes made with fat); or chiffon (a combination of both, i.e., contains some fat and eggs beaten into a foam).

Cookies are classified as: drop, rolled, moulded, bar, pressed or refrigerated. Cooks like to make the distinction between a cookie sheet – flat, no edges and a jelly roll pan – has edges so you could bake a low flat cake in it. Also the importance of having a shiny pan that reflects the heat versus a dark on that absorbs the heat and can burn the bottom of the cookies.

**Muffin Method** – refers to the method of mixing where the dry ingredients are combined in one bowl and a well in the dry ingredients is made. The liquid ingredients are combined separately and then poured into the well. The batter is then mixed by “light stirring”. The resulting batter will be lumpy. Over beating the mixture will cause too much gluten to form which will cause the muffin to be tough. Muffins that are overmixed will get pointy tops and if you cut through the point you will find large tunnels instead of an even grain.

**Conventional/Standard/Creaming Method** – refers to the method of mixing where the sugar and fat are creamed together, then the egg and flavouring are beaten in, then the dry and liquid are added alternatively beginning and ending with the dry ingredients. In creaming the sugar crystals cutting into soft fats like butter help form the structure of the product by making small holes which are filled with CO2 when the leavening agents react. These small gas bubbles, locked into the semi-solid fat mixture, remain in the final batter, and expand as the product is baked. This serves as a form of leavening agent. If the fat and crystalline sugar is adequately creamed, the entrapped air bubbles are more evenly dispersed. This leads to more even rising within the baked product.

**Biscuit Method - Cutting in shortening** in a pastry or biscuit results in a final product with a flaky consistency. This is because each separate little lump will melt in the oven’s heat and thus create a break in the structure of the product.

**Yeastbreads** - yeast is the leavening agent in these recipes. Under the right conditions, this micro-organism, will grow and produce carbon dioxide that will make the product rise. The right conditions include warmth, moisture and food. The sugar and flour provide the food for the yeast. If there was no sugar the yeast would grow but it would be much slower as it would have to digest the starch in the flour to release the sugar. In
yeastbread recipes the function of the salt is to control the yeast. Too much salt will kill the yeast.
The temperature of the water is critical – too hot may kill the yeast, too cold will retard its growth. Many recommend that you actually measure the temperature of the water and make sure that it is between 49-54°C (120°-130°F).
The purpose of kneading is to distribute evenly the gas that is produced by the yeast, to increase the elasticity of the gluten, and to blend the ingredients. In particular it straightens the gluten strands so they can expand and hold the carbon dioxide produced by the yeast. You know the dough is well kneaded when it is no longer sticky, when you look closely at the surface you see tiny gas blisters, and it is smooth and elastic.
Once kneaded the dough is allowed to rise. This is called the first rising or preliminary fermentation. The yeast is fermenting the sugar and the sugar from the starch in the flour and producing carbon dioxide and alcohol. After the first rising the dough is punched down. This is also called degassing as it releases the gas from the dough, especially the large gas bubbles and this makes a finer crumb. The dough is then shaped and allowed to rise again. This is called proofing. When approximately double in size it is baked.
The high heat will create the final fermentation or final production of carbon dioxide before the yeast is killed by the heat, it will cause all the moisture to convert to steam and that also contributes to the final rising, the starch will gelatinize and the gluten coagulates to create the final shape of the product. The last rising in the oven is called “oven spring”.

In the quickbread dough (scones, biscuits) usually the kneading is done gently, and only a few times (e.g., 6-8 times) while in yeast bread dough the treatment of the dough can be much more vigorous and usually lasts 6-8 minutes. The difference is that in quickbread dough the purpose is to align the gluten strands so that the resulting product has a flaky texture.