

# Lesson 18

**Approximate Time:** 90 minutes

## How to Knead

**Introduction:** Recipes for baked products use nearly the same ingredients. However, breads, cakes, and cookies vary in the amount and kind of the basic ingredients. The chemistry among each ingredient determines the final appearance, flavor, and texture of the baked product. This is the science behind baking. A creative baker understands how the basic ingredients work together and uses that knowledge to create a variety of recipes. This is known as the art of baking. Here is a quick summary of the purpose of each baking ingredient. You can use this knowledge about baking ingredients as you pursue baking breads and other baked products.

- *Eggs* add color, flavor, and structure to baked products.
- *Liquids* such as milk, water, and fruit juice dissolve, add moisture, and help bind ingredients together.
- *Fats*, such as vegetable oils and solid shortening, add tenderness, richness, and moisture.
- *Sugar* adds sweetness and helps tenderize baked products.
- *Flour*, which contains gluten, provides the structure, or foundation, for baked products.
- *Leavening agents* produce gases that add lightness and cause baked products to rise. Three common leavening agents include: *Carbon dioxide*, which results when baking powder, baking soda, or yeast are dissolved in liquid; *Air*, which is incorporated into baked products by sifting flour, beating egg whites, kneading dough, and creaming batters; *Steam*, which results when oven temperatures convert liquids to steam and cause baked products to rise.

### Kneading Dough

Once you have a working knowledge about the ingredients used in baking, it is important to develop skills in combining ingredients in order to produce quality baked products. Kneading dough is one of the skills you will use when baking some dough products. For example, to produce tender, flaky biscuits and other soft-dough products, it is necessary to gently knead the dough with the palms of your hands.

**Learning Goals:** After studying this lesson, you will be able to:

- Explain how to knead a soft-dough product.
- Demonstrate how to knead the soft-dough product.

**Learning Activities:** To make successful soft-dough products, you will need to study the definition and process for kneading soft dough. Then follow steps 1 through 4 to complete this lesson.

- *Knead* means to fold the dough over toward you. Next, press the dough with the heel of your hand, turn the dough a quarter turn, fold it, and press again. Repeat this process in a rhythmic style until the dough is smooth and elastic. The dough should not stick to the board or pastry cloth. Kneading the dough helps develop gluten, which provides structure to baked products.
1. **Recipe choice** Choose a recipe for kneading soft dough that is part of this lesson. If necessary, write the recipe on a recipe card.
  2. **Lab plan** Create a *Work Schedule* and *Market Order* for your recipe. Obtain these forms from your teacher.
  3. **Performance test** In the foods lab, demonstrate for your teacher how to knead a soft-dough product.
  4. **Evaluation** Complete *Thinking About How to Knead* at the end of this lesson. Then complete the *Foods Lab Evaluation Rubric* supplied by your teacher.

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## ONE-RISE CARAMEL ROLLS

### ROLLS

1 Cup very warm water  
120 -130 F  
2 Tablespoons butter, soft  
3 to 3 ½ Cups flour  
1/4 Cup sugar  
1 teaspoon salt  
1 pkg. Active dry yeast  
1 egg

### TOPPING

1 Cup brown sugar  
1 Cup heavy whipping cream

### FILLING

½ cup sugar  
½ cup chopped nuts  
½ cup butter  
2 teaspoons cinnamon

\*Margarine may  
be used in place  
of butter

1. In a 9"x13" pan, stir together topping ingredients - brown sugar and whipping cream.
2. In a large bowl, blend warm water, butter, 1 ½ Cup flour, sugar, salt, yeast, and egg at low speed until moistened. Beat 3 min. at medium speed.
3. By hand stir in remaining flour. Approx. 1 ½ cups  
Knead on a floured cloth for 1 minute.
4. Press or roll dough into a 15"x 7" rectangle.
5. In a small bowl combine filling ingredients - Sugar, nuts, butter, cinnamon.
6. Spread filling over dough and roll up (Jelly roll fashion) tightly. Pinch edges to seal. (Roll up length-wise)
7. Cut into 20 rolls. Place rolls cut side down in cream and sugar mixture. Cover with a damp towel

Let rise in a warm place until double in size, approx 35-40 minutes.

Heat oven to 400 F. Bake 20 to 25 minutes until golden brown and rolls sound hollow when tapped. Cool 5 minutes and invert onto foil.

## Lesson 18, continued

## Quick Cinnamon Rolls

Yield: About 8 portions

Amounts	Ingredients	Amounts	Ingredients
2 cups	Sifted all-purpose flour	3 tsp.	Baking powder
1 tsp.	Salt	¼ cup	Shortening
⅔–¾ cup	Milk	2 Tbsp.	Butter
½ cup	Brown sugar	½ tsp.	Cinnamon

## Directions:

- I. Preheat oven to 350°F.
2. Stir together sifted flour, baking powder, and salt in a mixing bowl.
3. Cut-in shortening, with a pastry blender or two knives, until mixture resembles coarse meal.
4. Add ⅔ cup of milk, and stir together quickly to make soft dough. Dough should not be sticky. If dough is too stiff, stir in remainder of milk.
5. Turn dough onto a well-floured pastry cloth or board, and knead gently 8 to 10 times with floured hands.
6. Roll dough into a rectangle (11 × 14 inches) and about ¼ inch thick.
7. Spread rolled dough with softened butter.
8. Combine brown sugar and cinnamon in small bowl. Sprinkle mixture over buttered dough.
9. Using your hands, roll dough starting from long side. Fasten by pinching dough along edge and ends of roll.
10. Cut into 1-inch pieces and place cut side up in a greased 8-inch round or square cake pan.
- II. Bake for 18 to 20 minutes until cinnamon rolls are golden brown.

## Nutrition Facts

Serving Size (80g)	
Servings Per Container 8	
Amount Per Serving	
<b>Calories 260</b>	Calories from Fat 90
% Daily Value	
<b>Total Fat 10g</b>	15%
Saturated Fat 3.5g	18%
Trans Fat 0g	
<b>Cholesterol 10mg</b>	3%
<b>Sodium 480mg</b>	20%
<b>Total Carbohydrate 37g</b>	12%
Dietary Fiber 1g	4%
Sugars 15g	
<b>Protein 4g</b>	
Vitamin A 2%	• Vitamin C 0%
Calcium 15%	• Iron 10%

## Tip for Success

- Using a long piece (about 18 to 20 inches) of unflavored dental floss, slide floss under rolled dough. Bring the ends together in a crisscross manner, and pull to slice through dough. Repeat until all rolls are cut.

(Continued on next page)

# SALZBREZELN

## PRETZELS

*In their native Germany, these twisted ring-shaped and salt-sprinkled breads are traditionally eaten as a snack with beer, but they make an especially savory and tasty accompaniment to many drinks. There are two main sorts of pretzel – hard and crisp or light and chewy. If you prefer your pretzel hard and crisp, omit the final rising after the dough has been shaped.*

### INGREDIENTS

- 2 tsp dry yeast
- 1½ cups (300ml) water
- 3½ cups (500g) unbleached flour
- 1½ tsp salt
- egg glaze, made with 1 egg and 1 tbsp water (see page 58)
- sesame seeds, poppy seeds, or coarse sea salt, for topping

**1** Sprinkle the yeast into ½ cup (125ml) of the water in a bowl. Leave for 5 minutes; stir to dissolve. Mix the flour and salt in a large bowl. Make a well in the center and pour in the dissolved yeast.

**2** Use a wooden spoon to draw enough of the flour into the dissolved yeast to form a soft paste. Cover the bowl with a dish towel and let “sponge” until frothy and risen, about 20 minutes.

**3** Mix in the flour. Stir in the remaining water, as needed, to form a stiff, sticky dough.

**4** Turn the dough out onto a lightly floured work surface. Knead until smooth and elastic, about 10 minutes.

**5** Put the dough in a bowl and cover with a dish towel. Let rise until doubled in size, 1½–2 hours. Punch down, then let rest for 10 minutes.

**6** Divide the dough into eight pieces. Shape each piece into a round roll and then into an oval (see page 55). Roll each oval backward and forward with your fingers, along the dough, until it forms a strip about 16in (40cm) long and is 1in (2.5cm) thick in the middle and ¼in (5mm) at each end.

**7** To shape the dough, follow the instructions, below. Place the pretzels on a lightly floured baking sheet and cover with a dish towel. Proof until each piece has doubled in size, about 45 minutes.

**8** Brush the egg glaze over each pretzel and sprinkle with the topping of your choice. Bake in the preheated oven for 15–20 minutes, until golden brown. Cool on a wire rack.

### VARIATION

#### *Salzstangen* (Salted Breadsticks)

- Make one quantity Salzbrezeln dough up to step 6.
- Divide the dough into two equal pieces, then roll each piece into a 12in (30cm) square.
- Using a sharp knife, cut each square in half diagonally, then in half again to form eight triangles. Starting at the widest end, roll up each triangle tightly like a cigar.
- Place the rolled sticks on two lightly floured baking sheets and cover with a dish towel. Proof until doubled in size, about 40 minutes. Preheat the oven to 425°F/220°C.
- Continue as directed in step 8.



**To begin**  
Sponge method  
Time: 20 minutes  
(see page 44)



**Rising**  
1½–2 hours  
(see pages 50–51)



**Proofing**  
45 minutes  
(see page 57)



**Oven temperature**  
425°F/220°C



**Baking**  
15–20 minutes  
Steam optional  
(see page 63)



**Yield**  
8 pretzels



**Yeast alternative**  
½ oz (15g)  
cake yeast  
(see page 41)

### FORMING THE PRETZELS



*Once the dough has been divided and shaped into strips, pick up the two ends of each strip to make a loop. Cross the ends over twice and then press them down on either side of the dough loop; repeat these actions with each strip of dough.*

**Cheese dip:**

- 8 ounces VELVEETA Pasteurized Prepared Cheese Product, cubed
- 1 package (3 ounces) cream cheese, softened
- 1 to 2 tablespoons milk
- Prepared mustard

Combine cheeses in a microwave-safe bowl. Microwave on high for 2-3 minutes or until melted, stirring occasionally. Stir in milk. Serve pretzels with cheese dip and mustard. **Yield:** 1 dozen.

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**Honey Mustard Dip:**

3/4 C. mayo  
3 T. Dijon mustard  
3 T. honey

Combine all ingredients into a bowl and whisk together.

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**Pretzel dip:**

1 16oz sour cream  
1 pkg dry Ranch Dressing  
1 c. cheddar cheese

Combine ingredients. Microwave on high for 2-3 minutes or until melted, stirring occasionally.

## GARLIC KNOTS

1 PACKAGE ACTIVE DRY YEAST

$\frac{3}{4}$  C WARM WATER

$\frac{1}{2}$  † SUGAR

$\frac{1}{2}$  † SALT

2 T OLIVE OR VEGETABLE OIL

2 C FLOUR

1. PREHEAT OVEN TO 400 DEGREES.

2. LIGHTLY GREASE A COOKIE SHEET WITH OIL.

3. DISSOLVE YEAST IN WARM WATER IN A LARGE BOWL.

a single cell, microscopic plant, fungi

comes in pkg, block or compressed (needs refrig), jar (needs refrig)

needs: moisture, food and warmth

moisture - liquid Milk adds nutrient value

food - sugar

warmth - water - too hot, kills - too cold, keeps sleeping

bread won't rise - small dense loaves

gives off carbon dioxide What else gives off CO<sub>2</sub> - fermentation of sugar

heat makes carbon dioxide expand and rise

2. STIR IN SUGAR, SALT, OIL AND 1  $\frac{3}{4}$  CUPS OF THE FLOUR

sugar feeds yeast, salt slows down the yeast growth

shortening makes bread tender improves keeping quality

fat - shortens the gluten strands, makes it tender, increases keeping quality, soft crumb

Flour gives structure and body - liquid added gluten develops

Could we add whole wheat? 1/3 to 2/3 add nutrient value

What happens if we add all whole wheat? Less gluten, smaller, heavier bread

3. TURN ONTO A WELL-FLOURED SURFACE (FLOUR WITH REMAINING  $\frac{1}{4}$  CUP FLOUR). KNEAD UNTIL SMOOTH AND ELASTIC, ABOUT 5 MINUTES.

Kneading - mixes ingredients, helps develop gluten, activates yeast

Gluten gives elasticity to dough, strength to hold gas bubbles

Approximate amount of flour - relative to developing smooth elastic dough

Knuckle test for readiness

5. DIVIDE DOUGH INTO 4 EQUAL PARTS.

What nutrient found in breads? Carbs

6. CUT EACH PART INTO 3 PIECES.

7. SHAPE INTO A ROPE.

8. TIE IN A KNOT.

9. PLACE KNOTS ON COOKIE SHEET.

10. BAKE FOR 12-14 MINUTES.

How do you know bread is done - brown, tap for hollow sound

11. WHILE BAKING, MIX THE FOLLOWING INGREDIENTS IN A BOWL FOR ROLLING COOKED KNOTS IN:

1/3 C OIL

1-2 CLOVES GARLIC, MINCED

2 † CHOPPED PARSLEY

1 † SALT

$\frac{1}{2}$  † PEPPER

12. TRANSFER COOKED KNOTS ONTO A COOLING RACK FOR 1 MINUTE.

13. ROLL KNOTS IN THE ABOVE MIXTURE UNTIL COATED AS DESIRED.

## Thinking About How to Knead

**Directions:** Respond to the items below in the space provided. If necessary, use an additional sheet of paper for your responses and attach it to this lesson activity.

1. In your own words, explain how to knead soft dough.

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2. Why is it necessary to knead soft-dough products?

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3. Use cookbooks or other resources to locate four or five recipes that require kneading dough ingredients. Write the names of the recipes, the resources, and the page numbers on which the recipes can be found in the resources.

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4. How would you complement your soft-dough product? Explain how you would use it in a meal plan.

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