

## *Barn Raising Story Problems*

**Subject:** Social Studies: Agriculture

**Grade Level:** 5-8

**McRel Standards: US History** Era 6: The development of the Industrial United States (1870-1900)

**Benchmark:** Understands how the rise of corporations, heavy industry, and mechanized farming transformed American society.

**Iowa Model Math: Algebra** Understands, analyzes, solves and applies Standard equations.

**Connections** Recognizes and applies mathematics in contexts outside of mathematics

**Communication:** Organizes and consolidates his/her mathematical thinking through communication.

**Anticipatory Set:** A traditional barn raising often brought hundreds of people together to complete the enormous task. Families would begin arriving at dawn and work until dusk. The men assembled the barn by pegging the mortises and tenons, hoisting the bents and eventually adding the roof. The women prepared massive amounts of food necessary to feed the workers. Even the children had jobs, assisting either the women or men. Barn raisings are still held today.

**Purpose:** For students to improve ability to solve math story problems and to see the connections between math and a barn raising.

**Objective:** Students will be able to solve the math story problems.

**Teaching to the Objective:**

1. Teacher will hand out barn raising math story problems.
2. Students will solve math story problems and show their work.
3. Students will be able to explain the thinking process that they used to solve the problems when they present their solution to the class

**Assessment:** Student will turn in to the teacher the completed story problems.

## *Barn Raising Story Problems*

1. If a loaf of bread has 20 slices and 24 loaves of bread are needed to feed 30 men for 8 days during a barn raising, how many slices per day does one man eat?
2. If each of the 45 lemon drop pies has 8 slices and the 30 men eat exactly one slice each one of the barn raising's 8 days, how many slices of lemon drop pie will be left over?
3. There are 10 servings of sweet apples and prunes per crock. Some of the men don't like sweet apples and prunes. There is just enough to feed the men who like them one serving each of the barn raising's 8 days. How many men like sweet apples and prunes?
4. If 5 pounds of butter are used in an 8 day barn raising, how many ounces of butter are needed each day? (Hint: 16 ounces per pound)
5. The 5 gallons of maple syrup exactly covers the 350 doughnuts. How many doughnuts does 1 gallon of maple syrup cover?
6. Farmer John wants to serve Roasted Beef Brisket at his barn raising. He is planning on 100 men and about 75 women for the noon meal. How many times will he have to increase the recipe to feed the entire crew? Figure the quantity for each ingredient on the recipe so that Farmer John's wife will know how much of each ingredient to have.

## Roasted Beef Brisket

Makes 12-16 hearty servings

5 pounds fresh brisket (not rolled), well trimmed	1 tsp. black pepper
4 garlic cloves, peeled	3 tbsp. lemon juice
2 tsp. salt	½ cup water
1 ½ tsp. paprika	1 large onion
	3 small bay leaves

- Farmer John is planning on building a new barn. His plan is to have two walls of the barn 75 feet long and two sides of the barn 60 feet wide. What is the perimeter of the barn in feet? What is the total area of the barn?
- Farmer John is trying to figure out whether to add a second floor on his barn to hold the hay for his cattle. How much area would he add to the barn if he added a second story?

*Story problems 1-5 courtesy of "Raising the Barn: Barn and Farm Life Activity Workbook" Barn Again! in Indiana*