Chapter 6 Project

Metric Cooking

An activity to demonstrate the use of metric to US conversions in real life.

Your grandma lives outside of the country and has emailed you her famous apple pie recipe to use at an upcoming party. As you start to bake the pie on the day of the party, you realize grandma's recipe is written using only metric units. Looking through the supplies in your kitchen, you find a scale that measures weight in ounces and some measuring spoons that measure volume in $\frac{1}{8}$, $\frac{1}{4}$, and $\frac{1}{2}$ of a teaspoon and 1 whole tablespoon. In order to successfully bake the pie in time for the party, you must quickly convert the metric measurements to US measurements. You start with the pie crust ingredients.

Pie Crust

Ingredient	Metric Measurement	US Measurement
Flour	280 g	_____ oz
Vegetable Shortening	90 g	_____ oz
Unsalted Butter	50 g	_____ oz
Cold Water	90 ml	_____ tbsp
Salt	5 ml	_____ tsp

1. Fill in the third column of the pie crust table by converting the measurements of each ingredient using the correct conversion factors. Use 1 ml = 0.068 tbsp and 1 ml = 0.203 tsp. (**Note:** tbsp stands for tablespoon and tsp stands for teaspoon.)

2. The recipe requires the oven to be preheated to 230 °C, but your oven measures degrees in Fahrenheit. What temperature should you preheat your oven to?

While the oven is preheating, you begin to prepare the ingredients for the apple filling.

Apple Filling

Ingredient	Metric Measurement	US Measurement
Apples	1 kg	_____ oz
Sugar	100 g	_____ oz
Cornstarch	15 ml	_____ tsp
Cinnamon	2.5 ml	_____ tsp
Salt	0.5 ml	_____ tsp
Nutmeg	0.5 ml	_____ tsp
Butter	25 g	_____ oz

3. Fill in the third column of the apple filling table by converting the measurements of each ingredient using the correct conversion factors. Use 1 ml = 0.068 tbsp and 1 ml = 0.203 tsp.

4. Since the measuring spoons can only measure $\frac{1}{8}$, $\frac{1}{4}$, and $\frac{1}{2}$ of a teaspoon and 1 whole tablespoon, what is the most reasonable way to round each US volume measurement in each of the tables?

In addition to the usual recipe, your grandma has listed several variations on the recipe that depend on the taste of the apples. For bland apples, you should add 20 ml of lemon juice to the filling. For sour apples, you should increase the sugar to 140 g.

5. You taste the apples and decide you need to increase the sugar to 140 g. You have already added 100 g. How many more ounces of sugar do you need to add to reach 140 g?

6. You notice that the recipe requires a pie pan with a diameter of 23 cm. After measuring the pie pan you discover it is 9 inches in diameter. Is the pie pan the right size for the apple pie? What is its diameter in inches? Round to the nearest whole number.