Name: _____

# Moles of Food

## Objective

Your objective in this lab is to determine the amount of a food item that will provide you with one mole of sodium and the amount that will provide you with one mole of potassium. You will find the amount in grams for each and the amount in mL for each.

## Materials

- cereal box
- can of vegetables
- can of fruit
- box of juice
- can of tomato juice

## Safety

- Always wear safety goggles when handling chemicals in the lab.
- Wash your hands thoroughly before leaving the lab.
- Follow the teacher's instructions for cleanup of materials and disposal of chemicals.
- Food in the lab should be considered a chemical not for consumption.

## Procedure

1. Record the type of food you have been given in the data table below.
2. Analyze the serving data on each food container.
3. Determine the amount of Sodium (Na) in each serving and the amount of Potassium (K) in each serving. Record the amount of each in the data table below.
4. You will need to know the mass in grams of one serving and the volume in mL of one serving. *Show all of your calculations in the space below.*

## Data

| Type of Food | Amount of Na | Amount of K | Serving Size |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

**Calculations**

| Helpful conversions: |
|---|
| 1 cup = 236 mL |
| Density of the juice drink = 1 g/mL |
| Density of the tomato juice = 1.007 g/mL |

**Analysis**

1. What food item will provide 1 mole of sodium in the least volume? What is that volume?

2. What food item will provide 1 mole of sodium in the least mass? What is that mass?

3. What food item will provide 1 mole of potassium with the least volume? What is that volume?

4. What food item will provide 1 mole of potassium with the least mass? What is that mass?

5. What food item will provide a minimum of 1 mole of both sodium and potassium with the least volume? What is that volume?

6. What food item will provide a minimum of 1 mole of both sodium and potassium with the least mass? What is that mass?