

6A – COUNTING BY WEIGHING

Analysis

Table 1 – Particle data

Item	Mass (g)
Mass of one particle	
Mass of ten particles	
Average mass of one particle	
Mass of cup	
Mass of cup + particles	
Mass of particles	

1. Develop a method for finding the number of particles in the cup without counting them. Describe your method and use it to calculate the number of particles in the cup. Show your work for your calculation.
2. Calculate the mass of 100,000 particles. Show your work.
3. You have a 50.0 kg container of particles. How many particles are in the container? Show your work.

- ④ 4. Calculate the mass of one mole of particles. Show your work.

- ④ 5. How many 8-oz cups would you need to hold one mole of your particle? Show your work.

Questions

- ④ 1. Why is it more accurate to calculate the mass of one particle from ten particles rather than just weighing one?

- ④ 2. How can the procedure be modified to improve the accuracy of the predicted versus actual number of particles in the sample?