

## Rice Grains

Name - \_\_\_\_\_

Purpose -

Data and Calculations - Using the factor label method (unit conversions) where appropriate and respect significant figures throughout.

Part 1

a.) Find the mass of a single rice grain.

\_\_\_\_\_ g

b.) Calculate the mass of 100 rice grains using your measurement from part a.).

\_\_\_\_\_ g

Part 2

a.) Count out 100 *rice grains* and find their mass.

\_\_\_\_\_ g

b.) Calculate the mass of a single rice grain using your measurement from a.).

\_\_\_\_\_ g

Questions -

1.) Why is the mass measurement in part 1 above unsatisfactory?

2.) What assumption is made in calculation part 1b.), above, which may lead to an inaccurate mass?

3.) Which is the more satisfactory answer for the answer for the mass of a single rice grain, is it from part 1 or part 2 above?      Answer . . . . Part \_\_\_\_\_

Explain why . . . .

4.) Using this more satisfactory answer from question 3, calculate the number of rice grains that would be found in a 20.0 kg sack of rice.

5.) A realistic estimate of worldwide production of rice is  $3.50 \times 10^{12}$  metric tons per year. Given that 1 metric ton = 1000 kg, calculate how many rice grains this represents.

6.) How many moles of rice grains have been produced in the last 30 000 years? (assume that rice production has been constant and equal to today's production).