

Experiment: Estimating the mass of a rice grain.

Aim To understand how digital equipment and data processing affects the uncertainty.

Apparatus

- 1 accurate balance (+/- 0.01g)
- 100 rice grains
- 1 weighing boat

Method

1. Using a small accurate balance, measure the mass of one rice grain.
2. Do the same thing with two, and take an average
3. Repeat the procedure with 10 rice grains.
4. Make one last measurement with 100 rice grains, and calculate averages.

Results

Number of Rice grains	Total Mass	Units	Uncertainty of one measurement	Average mass of rice grain.	Overall uncertainty
1					
2					
10					
100					

Questions

1. Complete the uncertainty of each measurement in the table?
Which method 1 – 4 gives the most precise measurement? Explain Why.

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2. Complete the Overall uncertainty column.
Note: If you divide a total mass by two you must divide the uncertainty by two.
Which method 1 – 4 gives the most precise measurement? Explain Why.

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