# Tutorial – How to present a calculation example

When presenting a calculation example, students should:

* Summarize the data needed to complete the calculation.
* Show all steps of the calculation.
* Present and derive all the necessary formulas.
* Always carry units.
* Keep several significant figures and only round off numbers when presenting the final result.
* Clearly highlight the final result.

### Example 1 – Volume of a sphere

The diameter of a sphere was measured using a vernier caliper: . Calculate the volume of the sphere in .

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| **Calculating the volume of a sphere** | *Comments* |
| Diameter of the sphere: | *We start by summarizing the data needed for this calculation.* |
|  | *The formula for the volume of a sphere of radius .* |
|  | *We use the fact that the radius is half the diameter . We keep several significant figures at this stage.* |
|  | *For the error propagation calculation, we need to calculate the partial derivative .* |
|  | *We are using the general formula for error propagation. Again, we keep several significant figures at this stage.* |
|  | *We now round the off the uncertainty to one significant digit and do the conversion to meter cube.* |
|  | *We then round off the answer for the volume to the same precision and do the conversion to meter cube.* |
| |  | | --- | |  | | *We present and highlight the final answer.* |