**Data Evaluation**

**How to Structure in Lab Report**

Keys:

* **Identify** possible error types
* **Relate** these to the ‘big 4’ qualities of data
* **Justify** your thinking: why this may have affected data; to what degree it may have
* **No absolutes -** use language like: ‘the most likely reason is…’; ‘this most probably…’; etc.
* **NOTE – refer to ‘Guidance for Analysis, Evaluation, & Conclusions**

**Evaluation of Data**

Reliability

* Overall judgement
* Go through several possible **‘random errors’** that may have impacted:
  + What is the source of error/uncertainty?
  + How might it have affected data?
  + To what degree may have it affected?
  + Justify thinking for each
  + How could it be improved?

Accuracy

* How close are your results to actual values?
  + The best you can usually do is compared to class average as a possible ‘true’ value.
* What are possible **‘systematic errors’** that may impact?
  + How?
  + To what degree?
  + Justify thinking
  + How could you improve?
* Key problems in accuracy = equipment not calibrated; need to repeat with other equipment to find out

Precision

* How consistent is the data?
  + Could you keep getting same results every time with this method?
  + Compare to class average – is it close, or not?
* How fine is the resolution of measuring equipment?
  + Usually this is small impact
* NOTE – this is the hardest one to be definite on

Validity

* Does the method allow you to actually test the aim?
* Are there any parts of the method that may not represent real life? How/why?
* To what degree can you apply these results to real life/other situations?