June 2015 EMPA Feedback

1. Measurement/gradient out of range. This happened to quite a few of you. It only accounts for a small number of marks, but every mark counts. This is to do with how carefully you follow the instructions, how well you do the practical, and possibly how well you draw your gradient (if applicable).

2. Units. Every time they ask you for a quantity, including a gradient, consider what the units are. If you leave out the unit or get it wrong, you will lose a mark.

3. Measurement repeats / multiple oscillations etc. This is a tricky one - it's always hard to know how many oscillations they will want, and whether they want you to do repeats for a reading or a set of readings. You will have to use your judgement, and if in doubt, do more. e.g. if the oscillations are really slow, 10 may suffice. If they are really fast, count 20 oscillations. If you collect a set of results that was hard to collect, and that is likely to show variation if you did it again (e.g. capacitor discharge is tricky like this) then consider doing repeats.

4. Revise uncertainty, and the difference between absolute and relative uncertainty and how they are added together.

5. Make sure that for written explanations you ANSWER EXACTLY THE QUESTION THEY ASKED. Make sure you re-read the question after you have answered to check you have said the right things.

6. Do a BIG TRIANGLE for your gradient. There is no excuse for this!!!

7. Learn how and why a fiducial mark is used. This comes up all the time.

8. Remember that the quality of your data is important and there are marks for it. If you have a straight line or a curve of best fit, there should be no more than 1 point which is more than 2mm from the curve.

9. There are sometimes absurdly hard questions in the EMPA that are way more challenging than any question on a normal A Level paper. Don't let this put you off, and don't worry if you can't answer some questions at all. Everyone else feels the same way you do, and you can usually still get an A* without managing to answer the super hard questions.