

The dreaded paper 3! It isn't easy. But it is far from impossible and in places very predictable with a lot of easy marks. You just have to prepare specifically for it in places, particularly the practical questions.

Myth number 1 - The paper is the longest, therefore, the most difficult

Not really true. Length of paper does not indicate anything about difficulty. In fact, the longer the better as you should have more time at the end to check over answers. It's better to have a 3 hour exam than a 1 hour exam. In 2018, many students said that paper 2 was the most difficult. And the 2019 was very fair as well.

Myth Number 2 – It's the practical paper

There are a lot of practical questions in the paper but it's far from the whole paper. There are many factual easy questions straight from the notes and there are AS questions as well. For example, in 2017, a 6 mark question asking to define a transition metal and to say which two elements aren't transition metals. A gift!! So don't listen to the negativity people say about paper 3 as it can get in your head.

This is the paper the practical papers are supposed to be reserved for but Chemistry is a practical subject and you could argue that every topic is practical based. So, there will be practical questions in papers 1 and 2 as well but a very different style to paper 3. Any paper 1 and 2 practical questions are things like nucleophilic substitution of halogenoalkanes or oxidation of alcohols, as they play a big part in the topic.

Myth number 3 – I need to know all the core practicals inside out

Not true at all. Just by looking at the past papers and sample papers it should be glaringly obvious that you don't need to know every little detail of every core practical.

The point of the core practicals is to demonstrate a technique or method. For example, in the synthesis of aspirin, the point of this practical is to teach you about recrystallisation. The aspirin part isn't important. Instead what you need to do is look at the practical as a whole and be able to answer: **what is the point or purpose of this practical?**

You don't need to learn step by step instructions on how to do a practical either. It's a waste of time. That's not the focus of these practicals. **Except** in two places: know the steps for **recrystallisation** and how to make a **standard solution** for titrations in detail.

Tip 1 - Analyse the papers.

This applies to any exam ever but paper 3 is a good example. Look at the general format, how the paper is structured and the **types** of question they are asking. It becomes predictable to a point.

But no matter how well prepared you are, there is always going to be fresh unexpected questions or weird questions as the students call them. And paper 3 has a lot of weird questions.

The important point is to be prepared so that you are expecting an element of weirdness, therefore it doesn't come as a shock or surprise and you don't panic.

There are certain big things they like to ask over the three papers especially if it has a practical element attached to it: buffers, K_c/K_p calculations, Born-Haber, redox potentials, transition metal reactions, drawing graphs in kinetics, titrations (various types), organic synthesis, organic techniques and NMR at A2. And to a lesser extent the AS topics: oxidation of alcohols, thermal decomposition of carbonates/nitrates, $PV = nRT$, titrations and $q = mc\Delta T$.

If something "big" hasn't come up in papers 1 and 2 then there is a good chance they will in paper 3. However, not everything will come up and not everything will be worth big marks.

Tip 2 – Practical questions

Having looked at the papers, it is clear that the practical questions have a lot of variety in them. There are different types of practical question. So, I'd be looking at this in much more detail at what *types* of practical question there are. Don't just class them as all the same.

Generally, there are 3 types of practical question:

1. **Straight out the notes** e.g. they could ask a normal question about thermal decomposition of carbonates, flame tests, what colour the copper complexes are etc. So everyone should know these and there are plenty other examples. These are very factual and you should know the answer before doing the question e.g. the C-I bond breaks first as it is the weakest bond when talking about hydrolysis of haloalkanes. Or in the 2018 paper the halogen displacement reactions were in question 1 to determine which halogen is most reactive. These are gift marks.
2. **Slight element of problem solving** but have been seen before. For example, they seem to like asking about rinsing apparatus such as burettes and pipettes or why does the experimental value differ from the theoretical value in $q = mc\Delta T$. Or giving you a piece of apparatus and asking what is wrong with it. With past paper practise you should be good at these quickly. Yes they will make up new questions but the answers can often be used over and over.
3. **Scenario based questions**. These are the ones that most students hate and fear the most. These are more unpredictable and the examiners can easily make up new examples. But again you can prepare for these, just to a lesser extent than the other types above. These are the questions where they change something in the experiment and ask how it affects the final result. The problem here is that there is no easy quick answer. But keep it in perspective. They maybe account for 10-15 marks out of 120.

There are a few approaches to improve at these:

Approach one: Do all the new spec paper 3's but **only** look for these questions. Don't do the whole paper. The aim is to bombard yourself with these questions over and over in a short space of time. After a while you should start to naturally get better at them as your brain gets used to the style. It's a different way of thinking and you need to practise it. The reason students aren't very good at these questions is simply lack of practise. Think of how much time you spend on them in class, not much I'd bet. You can also use the old Edexcel Unit 5 or 6 papers, or AQA or OCR A papers, use anything just for more practise.

Approach two: an extension of approach one. When you do these questions look for patterns. What might have been a random/weird question the first time you saw it, might become normal after

seeing it 3 or 4 times. I'd start to accumulate sheets of these answers, write it all down. You don't even have to do the questions initially, just read the answers from the marking schemes and write down the answers. The aim is to get better at the questions but also to narrow down the possibilities of getting a completely "new" question. Often you'll see something in an exam that looks similar something you did once before and that is a huge bonus even if you can't remember it exactly.

Approach three: problem solving approach. You will still have to problem solve no matter how good you get at this. So just accept it. And don't worry if you don't get all of these questions correct every single time. Even 50% on these is good enough.

So when you do get one of these questions you need to be prepared to work out the answer. If they leave water in a flask for example, how does that effect the titre etc. **You need to think your way through it step by step.** The answer will not appear out of nowhere. But the answer is usually either something increased or decreased in value, so at worst it's 50:50. And having looked at a lot of questions, the answer is usually increased. If all else fails you can say increase based on the majority of the answers so far...but of course try to work it out first!

Overall on these practical questions, if you split them into types and then work on each type individually and have a bit of strategy, you will get good marks. Remember everyone hates these questions so you don't need to aim for perfection. Do well on the normal practical questions, then the tough ones don't matter so much.

Tip 3 – Keep it real!

It is important not to develop a mental block about paper 3. It's just different from the other papers. You could view it as a good thing as most students are terrified of it before they even start and will do badly. So if you can keep reasonably positive, you could gain a lot of marks versus the rest of the Edexcel students. This starts by viewing it as just another paper. Keep it in perspective.

Tip 4 – Look for the easy marks.

This is very important. I had a good look at the 2017 paper and the first 3 and a half questions were actually quite easy. That's 40 marks out 120. If you were well revised, you could easily get 30-35 marks here. It noticeably gets more difficult in the middle and more practical based. But you now know you don't need to get 80% in this section, damage limitation, even 50% is ok on the more difficult practical questions.

So, alongside point 3, don't get on a negative spiral and let the tough questions put you off. You can view it as two exams within the one paper. The weird/hard part and the easy part. Make sure you do well on the easy parts and the pressure is off. Then tell yourself you only need 50% on the really hard questions. That's the same for any exam though, it just needs emphasised for paper 3.

Having looked at all the paper 3's available, it does feel a bit like a rollercoaster. Easy then hard then weird then normal...back and forth. But you can't afford to get on their rollercoaster as it can cause you to freak out at some questions. Just remember no matter how hard you find a certain part, there are plenty easy marks elsewhere. Don't be affected by the tough questions.

Also, remember everyone else is finding it hard.

Tip 5 – Make your study sessions difficult

It is undoubtedly beneficial to look at other syllabuses past papers. Just getting exposure to things you are not familiar with can help prepare you for the weird questions. **The more difficult you make your life when revising, the more pleasant the exam will be.** Most students do it the other way round.

Also, in Edexcel paper 3 2017, question 7c was copied word for word from an old OCR A F325 paper! They didn't even change the numbers. Most students couldn't do this question but imagine if you had done OCR A F325 January 2013 question 6e when revising, you would have got 4/4 in 2 minutes.