

# Research & Digest

## STUDENT EDITION



## HOW TO ... REVISE

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Students at King James's are preparing for their exams. And every year they are a bit overwhelmed by how much they have to learn, and don't really know how to go about it. Luckily for you, researchers all over the world have been looking into this over the past few decades, and what they've found is really, really helpful. To make use of it, you just have to accept a few facts:

1. The first fact is that you are all going to be examined on a lot of skills and content, which will cover the topics you have studied for your GCSEs.
2. The second is that you have a limited amount of time in which to prepare for this. When we hand out our revision guides and do assemblies to help you prepare it feels like there is plenty of time to prepare. Unfortunately time is limited so you need to start revising as soon as possible.
3. The third fact is that your brains work in surprisingly similar ways to the brains of all students all over the world. What works, works, even if you don't like the sound of it.

So the good news is that there is a lot of research out there which tells us precisely how you can use your precious, limited time to learn a lot of material for a lot of exams over the course of a few weeks. Yes, there is such a thing as good revision and bad revision. How much you're doing matters, but the way in which you spend your time is even more important. In fact, the simplest way to look at revision techniques is to divide them up into the good, the bad and the ugly.

### GOOD 😊

**Let's start with the good.** There are a handful of revision techniques which have been shown, time and again, to be highly effective. I'll take you through them one by one, but of course you'll want to mix them up on your timetable.

- The first is known as The Testing Effect. Testing yourself, or being tested, makes you significantly better at remembering stuff. Now, in the short term, testing has a small positive effect - it's a good thing to do when you've got an exam tomorrow. Over the medium to long term, it has a really powerful effect, so it's an excellent thing to do when you've got a test in a month, or two months, or three. In one study, researchers put students into groups: one group studied the material on four occasions (SSSS); another group studied the material once before testing themselves on it three times (STTT). When they were examined on the material a week later, guess which group remembered the most? The SSSS group had read the material an average of 14.2 times and remembered 40% of it in the exam. The STTT group, who only had the chance to read the material an average of 3.4 times, remembered a whopping 61% of the content. Self-testing works. And it doesn't have to be complicated - flash cards are perfect, as is having a go at practice questions. Ask your teachers for subject-specific suggestions (and regular tests!). The reason that psychologists think this is so effective is that by testing yourself you are practising recalling information. In an exam, you have to remember things. So practising remembering those things makes you do well in exams.

- Another thing that works really well is known as interleaved practice. Essentially, this just means mixing things up. So rather than doing nothing but French one day and then lots and lots of science the next, spend half an hour on one subject before having a quick break and switching to another. Jump from topic to topic. This is particularly important when preparing for any sort of performance (and an exam is most definitely a performance). Lots of top athletes, musicians and so forth use it. The reason it matters is that when we're performing, we don't have time to warm up and get into the zone. You might be great at answering questions on the laws of thermodynamics after ten minutes spent revising them, but that's very different to having to answer a question on them in the middle of an exam when you've just been concentrating on writing about electrical circuits. To be good at jumping between topics, you need to practice jumping between topics.
- Finally, distributed practice really matters when you're preparing for your GCSEs. This simply means starting early and spreading your revision out over the time available, so that you can revise everything more than once. Revising a topic once is better than not revising it at all, but coming back to that topic a month later (and testing yourself on it) will add real power to your revision. You might feel that you've forgotten what you did a month ago, but relearning information makes it much easier to remember it in the long term. This is especially true when there's a lot to remember over the course of several weeks of exams. So make a revision timetable which cycles you through all your topics at least a couple of times.

## BAD ☹

Having said all this, most students - and this includes most really hard-working students - stick to bad revision strategies. Now, I'm not saying that the following techniques are useless - any revision is better than none - but you wouldn't catch me wasting my precious time on them. They include rereading material (revision books included), highlighting, and copying notes out. There are some other techniques that are only effective if they're done really well, like creating mind maps or using mnemonics (little memory aids). Stick to the techniques in the 'good' section. You'll get more marks for the same amount of time spent.

## UGLY ☹

Finally, we get onto the ugly, which I suspect you are already familiar with. Procrastination can take a huge amount of time and achieves... nothing. As does arguing with your parents about why you're not revising, sitting in detention because you've not revised, and putting your hands over your ears and pretending that this is not happening. It is. If you find yourself practising these techniques, ask your favourite teacher for some help. We've all been there (honestly). Sometimes you just need someone to sit with you while you make a revision plan, or set a timer for fifteen minutes of maths. We're here to help, so just ask.

If we know what works, and what doesn't, and what help is available and how to ask for it, why is it that so many students spend so much time on the 'bad' and the 'ugly' techniques and so little on the 'good'? It's because the good techniques take a little more effort. They're just that little bit more difficult, and, as humans, we have a tendency to want to take the easy route. In my research at the moment I keep coming across the idea of desirable difficulty. In short, difficulty is a good thing. We learn so much more when things are difficult - in lessons, in revision, and in life. It can just be a bit hard to get started. So I'm going to leave you with my favourite trick of all: the fifteen minute rule.

Here it is: you can do anything for fifteen minutes. Try it and see for yourself. Sit down to revise for fifteen minutes and, more often than not, you'll look up half an hour later and find that you've covered a whole topic. It's magic. After all, I only sat down to work on this for fifteen minutes, and now look at what's happened.



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# LEARN TO STUDY USING... Retrieval Practice

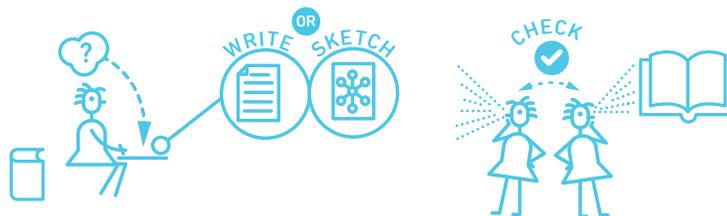
PRACTICE BRINGING INFORMATION TO MIND

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## HOW TO DO IT

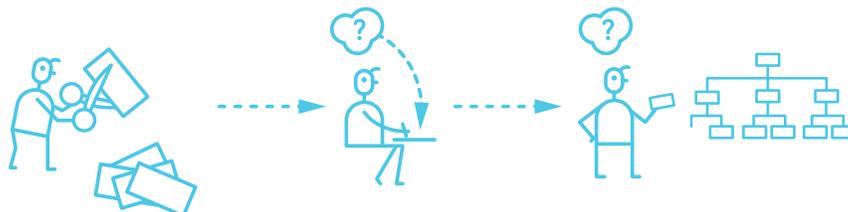
Put away your class materials, and write or sketch everything you know. Be as thorough as possible. Then, check your class materials for accuracy and important points you missed.



Take as many practice tests as you can get your hands on. If you don't have ready-made tests, try making your own and trading with a friend who has done the same.



You can also make flashcards. Just make sure you practice recalling the information on them, and go beyond definitions by thinking of links between ideas.



## HOLD ON!



Retrieval practice works best when you go back to check your class materials for accuracy afterward.



Retrieval is hard! If you're struggling, identify the things you've missed from your class materials, and work your way up to recalling it on your own with the class materials closed.



Don't only recall words and definitions. Make sure to recall main ideas, how things are related or different from one another, and new examples.

## RESEARCH

[Read more about retrieval practice as a study strategy](#)

Roediger, H. L., Putnam, A. L., & Smith, M. A. (2011). Ten benefits of testing and their applications to educational practice. In J. Mestre & B. Ross (Eds.), *Psychology of learning and motivation: Cognition in education*, (pp. 1-36). Oxford: Elsevier.



LEARN TO STUDY USING...

# Spaced Practice

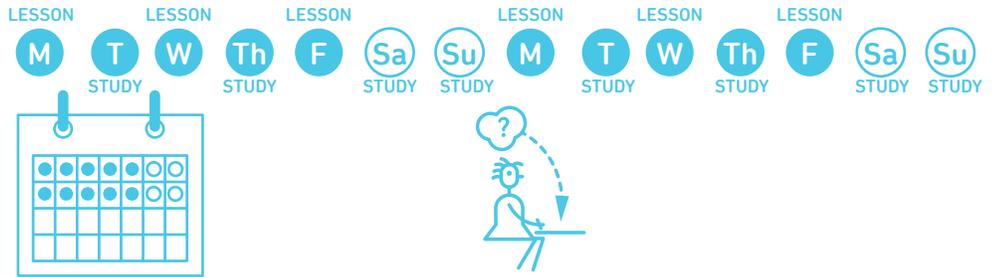
SPACE OUT YOUR STUDYING OVER TIME

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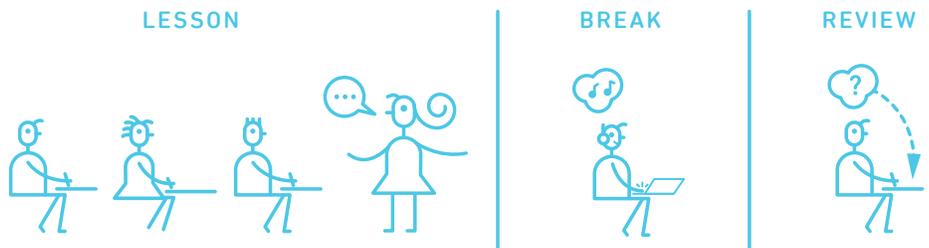


## HOW TO DO IT

Start planning early for exams, and set aside a little bit of time every day. Five hours spread out over two weeks is better than the same five hours all at once.



Review information from each class, but not immediately after class.



After you review information from the most recent class, make sure to go back and study important older information to keep it fresh.



## HOLD ON!

- 1 TESTING
- 2 SPACING
- 3 SKETCHING



When you sit down to study, make sure you are using effective study strategies rather than just re-reading your class notes.



This may seem difficult and you may forget some information from day to day, but this is actually a good thing! This forces you to retrieve information from memory (see Retrieval Practice poster).



Create small spaces (a few days) and do a little bit over time, so that it adds up!

## RESEARCH

[Read more about spaced practice as a study strategy](#)

Benjamin, A. S., & Tullis, J. (2010). What makes distributed practice effective? *Cognitive Psychology*, 61, 228-247.