BBC BITESIZE

Hello. I'm Dr Alex Lathbridge and this is Bitesize Biology.

This series is all about exam techniques. Tips, tricks and advice to make sure you do as well as you can in that exam. This episode is all about command words.

Command words are your friends, because they are the words in the exam question that tell you how to answer them.

I'm trying to show you how to make sure you don't waste your time and mental energy where you don't need to.

Today we're going to look at six common command words:

State, Describe, Explain, Suggest, Calculate and Evaluate.

I've also got some great insights from real students who have already done their biology exams so listen out for their helpful hints.

As a general rule, it might help during your exam to find the command word in each question, and highlight it, so you know what the question is asking you to do.

Examiners can't give you marks if you answer too much or a one or two mark question, but not enough on a longer one.

Let's start with questions that include the word "state."

This is short and sweet. They just want you to write down simple information, so likely a single word, definition or sentence.

There is no need to give lots of information or explanation, don't waste your time.

Student: If a question asks you to state something it's asking you to give the name of something, it's a really short answer.

Student: When I see the word state, it means don't go into too much depth, give the definition, keep it brief.

So, an example question might be: state where the hormones oestrogen and testosterone are produced?

So, the answer to that would be: the ovaries and the testes, that's it.

If you start talking about the menstrual cycle you're not going to get any extra marks. Just give them what they want and move on.

Next, "describe" questions. Basically questions that say "describe" are asking you to say what you see. You might need to describe a fact or a biological process in the correct and logical order.

"Describe" questions might be worth one, two, three, four or even six marks. As a general rule, one mark for one thing described. A four-mark question should have four points in your answer, don't do anything extra if you don't have to.

Student: When I see describe in a question, you're basically saying what you see, going into no further depth, explaining why. Nothing more, nothing less.

Heads up, some "describe" questions will ask you to describe a trend or a pattern seen on a graph or in a set of results. Don't worry, there's an episode on data analysis in this series, so make sure you check that out.

So an example question might be:

Describe the similarities and differences between the processes of diffusion and osmosis.

How would you answer that?

For this question there are four marks, so we're going to write four different things at least.

All gases and liquids move by diffusion.

Only water moves by osmosis, across a partially permeable membrane.

Molecules move from high to low concentration in both processes.

This means molecules move down a concentration gradient.

Don't go overboard and write ten different things on the chance you might get a few correct, don't waste your time, but always, always try to write something.

Now let's look at those "explain" questions

These are questions that want you to give the reason how or why something happens.

This is where you want to bring out words like "because", "due to", "therefore", "this leads to."

But watch out! Some questions might ask you to both describe and explain, so make sure you do both of these.

Student: If I saw the word explain in a question, I'd try to add a bit more detail than a state question and describe what causes it and why.

Student: If you see explain in a question, give reasoning for your answer and use because.

So a question might be something like:

Cancer is a non-communicable disease. Explain how smoking can affect the development of cancer. Define risk factors in your answer.

Ok, so we've got four marks again so try to write at least four different points.

Do it in a logical order, to make it easy for the examiner to follow, and give you all the marks that you deserve.

So, you could say:

Risk factors are things that increase a person's chance of developing a disease.

They can be part of a person's lifestyle.

They can be substances in a person's body or their environment.

Smoking is a risk factor for lung cancer because tar in cigarettes is a carcinogen.

Now let's jump in to "suggest" questions.

They're a bit trickier, but they're pretty easy for you to do, once you've got your head around it.

These are questions that want you to apply your knowledge to a new situation.

And why they're tricky is because they'll sometimes have these situations that you've not seen before in your lessons or revision.

It's not a trap, they're just prompting you to use your knowledge in a new way.

Take a deep breath, highlight the science words in the question that you do know, and doing this will help you identify the topic that you have inside your brain, and you can base your answer around that

Student: When I see a suggest question, I take it as a sign to show off your own knowledge, when you look at the question you need to think about what can relate to it, don't look at the names that you don't know, focus on the stuff that you do know, and you know what's happening, and then you can link it to your own knowledge.

So, a question might be like:

Human papillomavirus (HPV) is vaccinated in girls and boys aged 12 – 13 years as part of the NHS vaccination programme. Suggest how this vaccine works.

This question is worth 4 marks.

First thing you might think is “help I don’t remember learning anything about HPV, did I miss a lesson?”

But don’t worry, scan through the question, you’ll see the word vaccination, we covered that in our episode on vaccination, antibiotics and painkillers.

So, this question is asking for your knowledge on how vaccination works, it's just been dressed up in a new way. Don’t let it bamboozle you.

Again, it’s four marks, so four points, don’t panic.

Think back to what I told you in that episode:

A dead or inactive form of pathogen is injected.

This triggers your lymphocytes to produce antibodies.

Antibodies are specific to antigens on the pathogen’s surface.

If the same live pathogen infects the body again, white blood cells are able to rapidly produce lots of antibodies, so you don’t get ill, so you’re immune.

Now let’s take a look at calculate questions.

Questions that include the word calculate are asking you to use some maths skills to work out an answer. You’re going to need to have some maths skills at your fingertips in order to get the marks, so make sure you listen to our episode all about maths.

Always show your working out for maths questions, because even if it's an easy calculation you can do in your head, you could get a mark for doing the right working out method, even if you get the wrong answer. It’s a no brainer, just show your working out.

You might be asked to calculate a percentage, or a mean (an average) from some information shown in a table or graph.

Student: For a calculate question it’ll be maths, so you need to show your working, and come to a final conclusion, look at units, always use a calculator, and it might be multiplying, dividing, changing units.

Finally, evaluate questions.

These are asking you to write down evidence for and against something in your answer.

You might get a question containing a short paragraph of text, which you’ll need to read through, and then use your biology knowledge and write down both advantages and disadvantages

An evaluate question might be something like:

Genetically Modified crops made by genetic engineering are used widely across the world.

Evaluate the use of genetically modified crops. (4 mark question)

So, you could say two positive things and two negative things.

Positive things are that GM crops can produce larger yields of crops, and can contain specific, useful nutrients.

and two negative points could be: we don't know the long-term effects of using them, so there could be a risk to humans and genetically modified genes could transfer to nature.

Try to write in full sentences, and remember, don't get stressed out, have the confidence.

So, there you go: state, describe, explain, suggest, calculate and evaluate.

Now these aren't the only command words that you might come across, we don't have time to get into them all today, but the same principle applies, they are the words that tell you how to answer the question.

There are more examples on the Bitesize website, so make sure you check those out.

I'm Dr Alex Lathbridge and this is Bitesize Biology. To listen to the rest of this series and more from our Bitesize podcasts, search for Bitesize on the BBC Sounds app.