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LC Agricultural Science Project - a guide

Everything you need to know about the
practical coursework assessment



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The Agricultural Science practical coursework assessment is worth 100 marks or 25% of the total marks available in this subject. This means that if you are willing to put the work in you can go into the written exam in June with a really good grade.

In this guide I will try and explain all the main things you need to know to maximise your grades in this part of the course .

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Who grades your exam?

The Ag Science project is very bit unusual in that **your teacher grades your work**. Your teacher will assign each student a mark out of 100. For obvious reasons then it's really important that you listen to the advice given by *your* teacher as different teachers will want the work done in different ways. If possible you should try and give your work to your teacher for review at least once before you submit it for the last time. Listen carefully to the feedback they give you and make the necessary changes.

In order to verify your teacher's results an external examiner will visit your school usually some time in April. The external examiner's role is to look through all of the work and make sure that the marks assigned by your teacher fit national standards. The external examiner is also required to interview at least four students randomly picked from the class. If you are picked for interview don't panic. It normally just involves an informal chat about your experiments and your farm project. They are not trying to catch you out.

It's really important that you **do not plagiarise anything in your farm project** and it is entirely your own work. If you have copied something from the internet it's going to be really obvious to the external examiner (if your teacher has not noticed already). **Make sure you understand everything you have written about in your project** and be able to back it up and expand on it when interviewed.

The Ag Science project can be broken down into three parts with the marks as follows

▶	Farm Project	35 marks
▶	Investigations/Experiments	45 marks
▶	Animal and Plant Identification	20 marks



The Farm Project - Overview

Officially known as “Practical Experience” but more commonly known as the farm project this part of the coursework involves you writing about your own farm or an “adopted farm” that you visited or a combination of the two. It is worth a total of 35 of the 100 marks assigned to the practical coursework.

Most students choose to type their projects on a computer. I suggest you consider using an online word processor such as Google Docs within Google Drive (free with any gmail email account). Using this makes it easy to share with your teacher to get feedback and you don't have to worry about older versions of MS Word or constantly having to save your work.

The 35 marks for the farm project are broken down as follows.

Livestock	10 marks
Two Crops	15 marks
Farm Layout	10 marks

I suggest all projects should have a Cover page with your name and exam number and if possible a photo showing you (and your class) on the farm you will be writing about. I also suggest you include a contents page showing the page numbers of each section and also a short introduction page where you outline whose farm you have studied and what livestock/crops you have chosen to write about.



Livestock

You can choose any one farm animal here. Most students will choose dairy cattle, beef cattle or sheep but you can also choose horses, pigs or poultry. You should always choose the livestock animal you know best and have the most interest in. If you don't have your own farm then you should stick with the livestock that your teacher suggests.

Each teacher will advise you differently so remember as they will be correcting your work it's important to listen to *their* guidance. For my students I suggest breaking it up into a series of headings. For each heading a student should have:

- ▶ **Title** Each section should have it's own title
- ▶ **Text** personal observations mixed with background research done from books and online
- ▶ **Image** You should try to include lots of *photos taken by you* during a farm visit and try to keep shots taken from the Internet to an absolute minimum. It is better to have a poorly taken image that you took on your phone than a perfect image taken from an online search. If needs be you could also leave a gap for a sketched diagram. Just remember to label everything clearly.

In terms of headings you could consider including some of the following headings but again listen to the guidance of your teacher.

- ▶ **Introduction** What livestock animal have you chosen? what farm? When did you visit?
- ▶ **Breeds** What are the main breeds? What are the characteristics of the breed? Why that breed?
- ▶ **Breeding Management** AI? Stock bull/Ram? Heat Detection? Calving/lambing
- ▶ **Animal Husbandry** What does farmer have to do to animals throughout their lifespan?
- ▶ **Feeding** What is feed? Grazing management? Supplements?
- ▶ **Housing** What is the set up? When in sheds?
- ▶ **Diseases & Health** What are the main diseases? How can farmer minimise disease?



Two Crops

In this part of the practical experience you must choose two crops for a total of 15 marks. Most students choose Grassland as one of their crops and your second crop could be something like Potatoes, wheat, Barley, Oats or whatever crop you feel you know best based on your experience. Note: you cannot choose two root crops or two cereal crops together i.e. You could not do a project on wheat and Barley or Carrots and Parsnips.

Again you should follow the same advice of trying to break down each crop into a series of headings, each with a title, some text and a photo taken by you. Some possible headings for crops could include:

Crops - Grassland

- ▶ **Introduction** What farm have you studied.
- ▶ **Varieties** What types of grass? Clover in the seed mix? Sowing technique?
- ▶ **Grassland Management** what grazing system used? rotation of paddocks
- ▶ **Grass Preservation** Silage/hay making process? Pit/bales? How many cuts? When?

Crops - Potatoes (or any other crop)

- ▶ **Introduction** What farm have you studied.
- ▶ **Varieties** What types of potato are there
- ▶ **Cultivation** How to grow? How to plant seed?
- ▶ **Diseases/Pests/ Disease prevention** Main diseases and how to prevent
- ▶ **Harvesting** When? How? How much? Storage?



Farm Layout

This part of the coursework is worth 10 marks and you're required to present a sketch plan of:

- ▶ **1. The farmhouse and Buildings**
- ▶ **2. The Farm**

It is best to these as two separate sketches on A3 paper and then add colour using colouring pencils. Google Earth or Google maps can be helpful for getting an aerial view of the area to be sketched. Your teacher or the farmer might also be able to supply you with a farm map. Make sure all your sketches have a title, scale bar and a North arrow and you clearly label everything.

The farmhouse and Buildings sketch should show all the main buildings and their function while the farm sketch will be more zoomed out and show the entire farm, with all the paddocks and house shown.

You should be able to explain and discuss the layout of the farm and buildings as it's likely you will be asked this by either your teacher or the external examiner. Some discussion points could include access/roadways, fencing, shelter, grazing methods and crops grown.



Experiments (Scientific Investigations)

Again, your initial grade will be given by your teacher so you should always listen carefully to *their* advice on how they want the write-ups done. Generally speaking your teacher will be grading you on all the experiments covered by your class over during the two year course.

There is a requirement that you have covered experiments in each of the main areas of study which are:

- ▶ **Ecology** - 10 marks, A detailed study of a named habitat with at least three distinct lines of investigation.
- ▶ **Animal Physiology** - 5 marks, at least two distinct aspects of animal physiology.
- ▶ **Soil Science** - 10 marks, at least three distinct aspects of soil science.
- ▶ **Genetics** - 5 marks, at least two distinct aspects of Genetics.
- ▶ **Plant Physiology** - 10 marks, at least three distinct aspects of plant physiology.
- ▶ **Microbiology** - 5 marks, at least two distinct aspects of Microbiology.

All experiments should be written up in a copy and you should always try to include the following headings:

- ▶ **Date**
- ▶ **Labelled Diagram**
- ▶ **Aim**
- ▶ **Result**
- ▶ **Method**
- ▶ **Conclusion/ Discussion**

It's important you understand all of the experiments that you did as it is likely that you will be asked questions on them if you are chosen for interview. Make sure you have a clear understanding of the aims, set up, results and conclusions of all of the experiments you have written up.



Animal and Plant Identification

A total of 20 marks will be awarded for plant and animal identification. Normally your teacher will assess you on this either as a formal test or as part of an interview they conduct. Either way it is likely that if you are selected for interview by an external assessor you will be questioned on this again. This part of the course work can be divided into two parts.

Plant identification (10 marks)

You will be asked to identify at least 5 common plants and the families to which they belong. Often your teacher will layout a series of photographs or actual plants and you will be asked to name them along with the family to which they belong. It's definitely worth spending some time learning off the names of all the more common plant families:

- ▶ **Graminea** Grasses, wheat, Barley
- ▶ **Polygonacea** Docks
- ▶ **Leguminosae** Clover
- ▶ **Ranunculacea** Buttercup
- ▶ **Solanacea** Potatoes
- ▶ **Umbelliferae** Cow Parsley
- ▶ **Compositae** Ragwort, Dandelion
- ▶ **Utricaceae** Nettles
- ▶ **Cruciferae** Turnips, Kale, Cabbage, Charlock

Animal identification (10 marks)

In this section you need to be able to identify four (4 X 1 mark) common food-producing animals normally from pictures. You will need to be able to identify specific breeds so make sure you know the difference between say a Jersey and Holstein-Friesian cow or Mountain Blackface and suffolk sheep.

You will also be asked to identify six (6 X 1 mark) other animals related to agriculture and for each you must be able to explain why that animal is important for Agriculture. For example you could be shown a picture of a liver fluke and you must be able to say 1. it's a liver fluke and 2. that it is an endoparasite that damages cattle and sheep.

