

LEAVING CERTIFICATE AGRICULTURAL SCIENCE

PRACTICAL COURSEWORK ASSESSMENT

GUIDELINES FOR TEACHERS

Applicable to candidates presenting for the Leaving Certificate examination in 2014 and thereafter.

The government publication *Rules and Programmes for Secondary Schools* sets out the syllabus in Agricultural Science.

It states:

"The examination in Agricultural Science will consist of

- (a) a written examination and
- (b) an assessment of the work of the candidate during the course.

The assessment will be based on material set out in the syllabus, and marks, to a total of 100, will be awarded under the headings set out hereunder.

- (1) Identification of plant and animal types associated with agriculture.
- (2) Practical experience with crops, livestock, house and farmyard layouts.
- (3) Investigations carried out relating to ecology, soil science, animal physiology, plant physiology, genetics and microbiology."

Agricultural Science at Leaving Certificate level is marked out of a total of 400 marks.

A total of 300 marks (75%) is allocated to the terminal written examination and 100 marks (25%) to the coursework component. The breakdown of marks is summarised in the table below.

Allocation of marks			
Written paper	Coursework		
	(1) Identification	(2) Practical experience	(3) Scientific investigations
300	20	35	45

The detailed allocation of marks is given below in the relevant sections.

These guidelines are issued to assist teachers in the direction of candidates in the completion and presentation of their coursework and to assist teachers in their assessment of the work of candidates during the course. Examples or suggestions given in the guidelines are for illustrative purposes and are not intended to be exhaustive or limiting.

Candidates will present their coursework in the normal way. Monitors, appointed and trained by the SEC in the national standards, will monitor the teachers' assessments by review of the coursework and by interviewing a sample of candidates.

Teachers are reminded that in the Agricultural Science practical coursework component all work is assessed at a Common level.

1. Identification of plant and animal types associated with agriculture (20 marks)

Candidates are required to demonstrate their ability to:

- identify five common plants related to their experience of agriculture
- name the families to which the identified plants belong.

Identify plants: 5×1 mark
Name families: 5×1 mark } = 10 marks

Candidates are required to demonstrate their ability to:

- identify four common food-producing animals by the bodily characteristics specific to their breed
- identify six other animals related to agriculture and state their agricultural importance (Suitable animals might include e.g. parasites, disease vectors, soil-borne organisms).

Identify and state bodily characteristics of food-producing animals: 4×1 mark
Identify and state agricultural importance of other animals: 6×1 mark } = 10 marks

2. Practical Experience (35 marks)

Candidates are required to demonstrate that they have gained practical experience in the areas of crops, livestock and farm layout as outlined below.

(a) **Crops** – 15 marks

Two crops must be chosen from the following list, with only one crop to be chosen from each line:

- (i) A cereal
- (ii) Potatoes **or** a root crop
- (iii) Grassland
- (iv) Any other crop.

Both chosen crops must be treated under the headings given in the syllabus.

(b) **Livestock** – 10 marks

Any **one** type of livestock of which the candidate has practical experience is acceptable. Suitable headings might include e.g. types of enterprise, breeds, breeding principles, nutrition, husbandry, disease control, housing.

(c) **Farm layout** – 10 marks

Candidates are required to present a sketch plan indicating

- the farmhouse and buildings
- the farm

and to demonstrate their ability to discuss the farm buildings and how they provide the environmental conditions required on the farm and to demonstrate the physical/ aesthetic layout of the house in relation to the farm, farmyard and general surroundings. Suitable information/ discussion points might include e.g. planning for economy of labour, aspect, roadways, fencing, shelter, grazing methods, crops grown.

Candidates must maintain a record their practical experience, which may be gained through one or more of the following:

- experience on a family farm
- experience on an adopted farm
- suitable farm-based or garden-based investigations.

3. Scientific Investigations

(45 marks)

These scientific investigations are intended to be carried out over the full two years of the course. Candidates should be reminded that high marks can only be expected when as complete a range as possible of such work is presented that fulfils the criteria set out below and is consistent with laboratory work and fieldwork performed over the duration of the course.

Each candidate must maintain a written record of all scientific investigations carried out, under the following headings:

- Date
- Aim
- Method – to include relevant controls
- Diagram(s)
- Result
- Discussion
- Conclusion.

Work should be of an appropriate standard and must include evidence from enquiry-based laboratory or field investigations in each of the main areas of study listed below.

(a) **Ecology** – 10 marks

A detailed study of a named habitat to include at least three distinct lines of investigation e.g. drawing a map, qualitative survey, quantitative survey, field techniques used, biotic factors, abiotic factors, edaphic factors.

(b) **Soil Science** – 10 marks

An investigation to include at least three distinct aspects of soils e.g. soil texture, soil structure, soil composition, physical and chemical properties of soil, soil organisms.

(c) **Plant Physiology** – 10 marks

An investigation to include at least three distinct aspects of plant physiology e.g. plant structure in relation to function, plant-water relationships, plant nutrition, plant growth regulators, plant reproduction.

(d) **Animal Physiology** – 5 marks

An investigation to include at least two distinct aspects of animal physiology e.g. the structure and function of some of the principal body systems of a farm animal.

(e) **Genetics** – 5 marks

An investigation to include at least two distinct aspects of genetics e.g. any aspects of breeding or variation in agriculturally relevant plants or animals.

(f) **Microbiology** – 5 marks

An investigation to include at least two distinct aspects of microbiology in agricultural contexts e.g. presence and/ or effect of microorganisms in silage, milk, soil, water, feed.