

Leaving Certificate Agricultural Science & LCA Ag/ Hort Polytunnel Day





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Please cite as: PDST Agricultural Science Workbook, 2022

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Key Messages

1. By creating an outside learning environment that promotes student’s engagement with practical activities you will enrich and deepen the learning experience of all students providing a real life agricultural context.
2. Practical field investigations will provide opportunities for students to further apply the scientific method which in turn will stimulate, promote and support practical coursework.
3. The use of outdoor learning as a non-linear pedagogical approach, will support curriculum strands, the cross cutting themes and the development of key skills while also fostering sustainable and environmental considerations of food security.

Key Skills

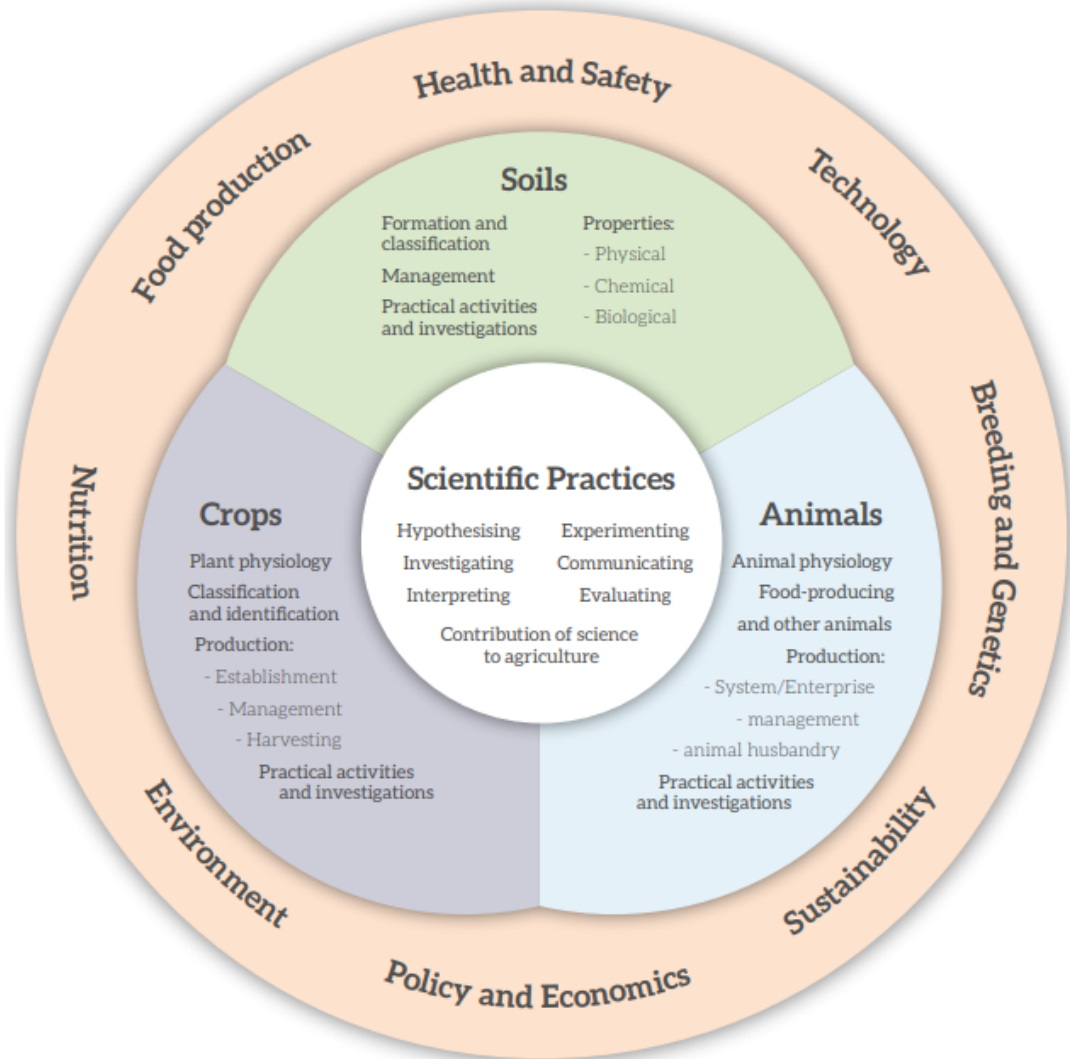


Figure 5: Key skills of senior cycle

“The progressive development of scientific inquiry, problem solving, curiosity and self confidence in the learner will be facilitated through guided discovery, laboratory and field work, experimental investigations, and field based assessments”

(p7 , Agricultural Science Specification)

Overview of the Specification



(Overview of the specification, Agricultural Science Specification 2018, Page 11)

Session 1

Activity 1 (A) Instructions:

Using the equipment provided find the pH of our soil sample using 3 different methods (pH Paper, pH Probe & Universal Indicator)

Results / Calculations:

Considerations for the soil: Implications of your results

What is the pH of the soil?

Which method for calculating Ph is most accurate and why?

How many repeats should I do and why?

What crop would be suitable to grow in this soil and why?

Do I need to take any actions for optimal growth / improve the pH and if so how do I achieve this?

Reflection:

Activity 1 (B) Instructions:

Using the equipment provided determine what nutrients are present/ absent in the soil sample

Results / Calculations:

Considerations for Scientific Practices (Strand 1):

What nutrients are present?

What crop would be suitable to grow in this soil and why?

What are the implications for a crop growing in this soil?

Do I need to adjust the fertility of the soil? How might I achieve this?

Reflection:

Activity 2 instructions:

Using the equipment and charts provided in packs :

Determine the soil texture using the following 3 methods:

1. Hand test
2. Soil sedimentation
3. Soil Sieve

Results / Calculations:

Considerations for Scientific Practices (Strand 1):

What is the soil type?

Is it desirable for crop growth?

Do I need to improve the soil (add OM / compost)? How would I achieve this?

What properties do you predict the soil will have?

Consider the properties of the soil you have identified (drainage, pore space and aeration etc.)

Reflection:

Activity 3 Instructions:

Using the equipment provided find the infiltration rate of a compacted and uncompacted soil

Results / Calculations:

Considerations for Scientific Practices (Strand 1):

Reflection:

Activity 4 Instructions: Capillarity of soils

Using the equipment provided find the capillarity of the soil

Results / Calculations:

Considerations for Scientific Practices (Strand 1):

Reflection:

Activity 5 Instructions:

Using the equipment provided determine the soil pore space

Results / Calculations:

Considerations for Scientific Practices (Strand 1):

Reflection:

Session 2

Calculation of seeding rates: 1 Hectare = 10,000 sq m²

<u>Potatoes:</u>	<u>Barley:</u>
<u>Kale:</u>	<u>Peas:</u>
<u>Oil Seed Rape:</u>	<u>Leafy Greens:</u>

Uses / benefits of a micro bit and sensors:

Session 3

LCA Agriculture/ Horticulture Skills	Qr code to Video
<p>Cuttings:</p> 	<p>Taking pelargonium cuttings:</p> 
<p>Grafting:</p> 	<p>Grafting for beginners:</p> 
<p>Splitting:</p> 	<p>How to split and divide plants - Useful tips</p> 

Considerations for planning

When growing plants at your school, the following considerations may be taken into account:

- What crops have you selected to teach off the specification?
- What is your teaching sequence for crops?
- What plants will you sow and when?
- How will you align growing crops with your units of learning?
- Can I devise a plan incorporating the growing cycles of different crops and align this with my units of learning?
- What learning will the students derive from these activities?
- What key skills will the students attain from these activities
- Care and maintenance of the plants?
- How might you cater for students using the polytunnel to complete an IIS or Assessment Task?
- For LCA Ag/Hort what are some suitable activities for Key Assignments, Assessment Tasks and Practical Performance Tests?

Other Considerations

- Complete a list of equipment and seeds you require and where to source them?
- Are there possible learning opportunities that overlap for students of different groups e.g. JC Sci/TY Ag/ LC Ag/Hort / Y5 Ag Sci/Y6 Ag/Biology?
- Are there ways to make your space more of an outdoor classroom?
- Whiteboard/posters/radio/fruit bushes,rhubarb planted outside?
- Are there opportunities to link these activities to something other projects e.g. Green Flag?

Planning for Year 5

5th Year				
Term	September	October	November	December
Autumn				
	January	February	March	
Spring				
	March	April	May	
Summer				

Planning for Year 6

6th Year				
Term	September	October	November	December
Autumn				
	January	February	March	
Spring				
	March	April	May	
Summer				

Additional Information

Recommended equipment list for agricultural science specification:

<https://www.gov.ie/pdf/?file=https://assets.gov.ie/100168/fca07e2d-86fc-41a1-9b15-5b92363dbeda.pdf#page=null>



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The PDST is funded by the Teacher Education Section (TES) of the Department of Education and Skills (DES) and is managed by Dublin West Education Centre.

