



# Leaving Certificate Agricultural Science Information Processing Workshop



Professional Development  
Service for Teachers

An tSeirbhís um Fhorbairt  
Ghairmiúil do Mhúinteoirí

[pdst.ie](http://pdst.ie)  



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## Participant Learning Outcomes

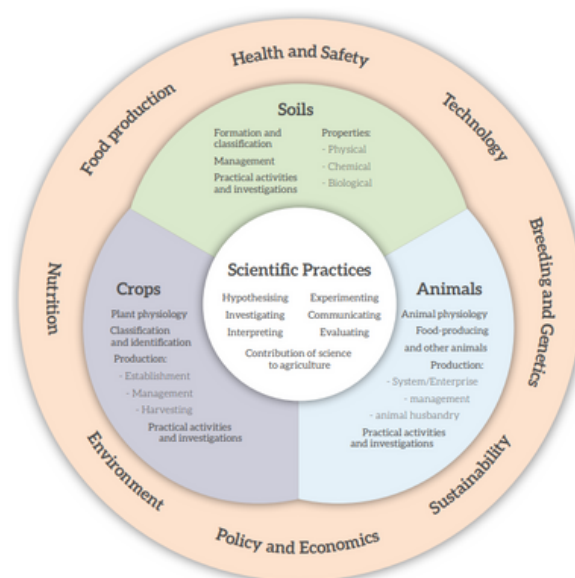
- Approach scientific practices in relation to the IIS with increased confidence
- Evaluate effective representations of data and information
- Develop success criteria in relation to presenting data
- Evaluate and summarise scientific information related to Agriculture
- Develop success criteria in relation to using a reference
- Evaluate the reliability and validity of a scientific study

## Key Messages

- Information is supplied in numerical, graphical and written forms. The role of a scientist is to interpret and analyse this, question its reliability and validity and see its relevance to their own study.
- Engagement with data and information, will help students acquire skills and values equipping them to take informed positions on scientific information, irrespective of how the information is presented.
- Examining the data and scientific claims of the work of other scientists, will build confidence in students helping them in the process of collating, analysing and critiquing their own primary data.
- In line with their school's DEIS action plan / school improvement plan teachers integrate the chosen whole-school approach to numeracy into their classroom practices and subject plans for their subject.

## Structure of the Specification

(pg 11, Agricultural Science Specification)



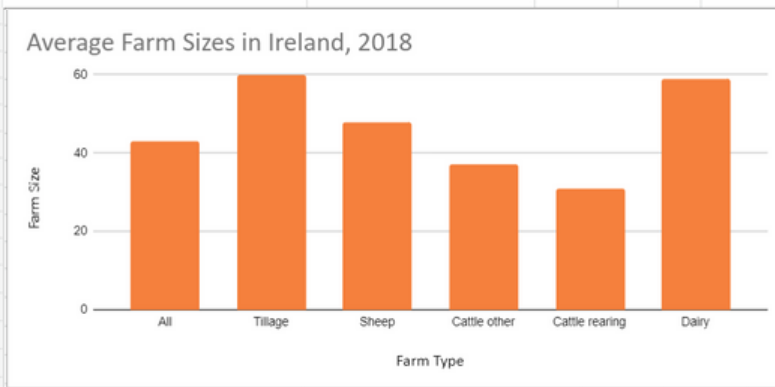
**Activity 1 (a) : Graph Suitability**

Suggest the advantages and disadvantages of the graphical representations of the given datasets

**Dataset 1** Teagasc National Farm Survey 2018 Results Emma Dillon, Brian Moran, John Lennon & Trevor Donnellan

Table 1: Average Farm Size & FFI per ha 2018

	size (ha)
Dairy	59
Cattle rearing	31
Cattle other	37
Sheep	48
Tillage	60
All	43

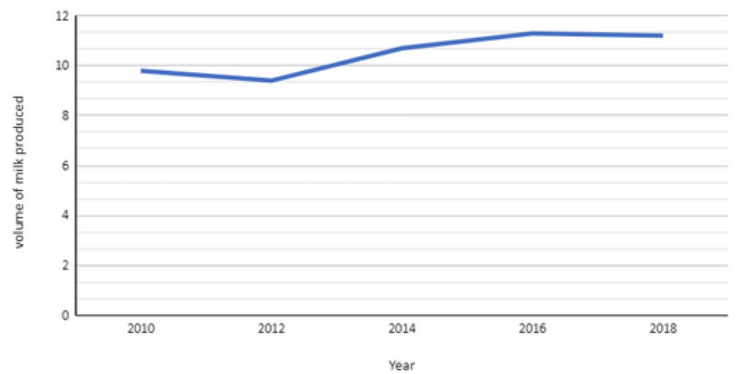


Advantages	Disadvantages

Dataset 2 Figure 20: Avg. Milk Produced & Sold per ha 2010 - 2018

YEAR	VOLUME OF MILK PRODUCED
2010	9.8
2012	9.4
2014	10.7
2016	11.3
2018	11.2

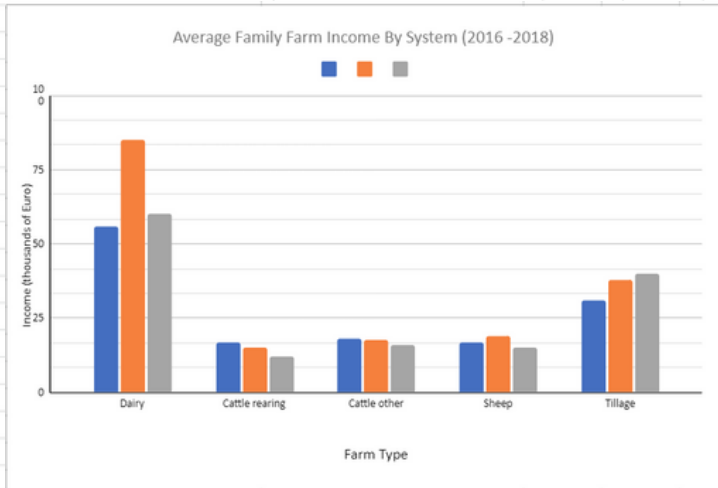
Volume of Milk Produced per Hectare (2010 - 2018)



Advantages	Disadvantages

**Dataset 3** Teagasc National Farm Survey 2018 Results Emma Dillon, Brian Moran, John Lennon & Trevor Donnellan

Average FFI by System 2016 - 2018	E,000 PER FARM	2016	2017	2018
Dairy		56	85	60
Cattle rearing		17	15	12
Cattle other		18	17.5	16
Sheep		17	19	15
Tillage		31	38	40



Advantages	Disadvantages

**Activity 1 (b) : Learning Intentions and Success Criteria for Graphing**

Develop learning intentions and success criteria for presenting data which allows for ease of interpretation.

**Learning Intentions**

At the end of this lesson I should be able to...

- 
- 
- 
- 
- 
- 

**Success Criteria**

My graph is ...

- 
- 
- 
- 
- 
-

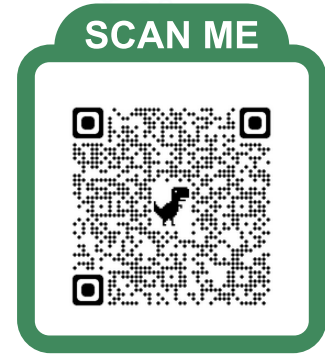


## Activity 2 (b): Research and Information Processing

**Step 1:** Please read this article: Available at:  
**6456\_Multi-species\_grassland\_swards\_POKiely\_AGRIP.pdf**  
 or by clicking on QR code. (Recommended time: 10min)

**Step 2:** Copy what you view as the eight key statements into the column on the left hand side. Since this is a collaborative effort if you've got more than eight that's fine too. (Recommended time: 5min)

**Step 3:** Working together can you prioritise what the four most important of these are when you consider linking it to the 2024 brief (Sustainable Food Production) and write how you might reference/paraphrase this correctly in the Background Research section of a report. (Recommended time: 10min)



8 Key Statements	4 Essential Statements (Paraphrased or Quoted correctly)

**Activity 2 (b) : Learning Intentions and Success Criteria for Referencing**

Develop learning intentions and success criteria for referencing the work of other people in your work.

**Learning Intentions**



At the end of this lesson I should be able to...

- 
- 
- 
- 
- 
- 

**Success Criteria**

My referencing is ...

- 
- 
- 
- 
- 
-

### Activity 3: Assessing the Reliability and Validity of a Scientific Study

A milk processor carried out an investigation to “determine the average milk volume of purebred Holstein dairy cows over the course of a week”. The data they collect is presented below.

	<u>Age</u>	<u>Breed:</u>	<u>Day 1:</u>	<u>Day 2:</u>	<u>Day 3:</u>	<u>Day 4:</u>	<u>Day 5:</u>	<u>Average milk volume:</u>
<b>Cow 1</b>	7	Holstein	2	2.2	2.2	2	2	2
<b>Cow 2</b>	7	Holstein	2.4	2.4	2.4	2.4	2.4	2.4
<b>Cow 3</b>	7	Holstein x Jersey	2	2	2	2	2	2
<b>Cow 4</b>	9	Holstein	2	2	2.4	1.8	1.8	1.8
<b>Cow 5</b>	5	Holstein x Jersey	2	1.6	2.2	2.6	2	2.2

The data collected from the investigation was used by the milk processor to draw the conclusion that: “Purebred Holstein dairy cows on average produce 2L of milk over the course of a week”. Assess the **reliability** and the **validity** of this investigation.

**Is the study reliable?**

Give Reasons for your answer:

**Is the study valid?**

Give Reasons for your answer:

## Reflection / Notes

From engaging in this workshop consider how you might incorporate some of these activities into the teaching and learning in your classroom.

Some questions you might like to consider are:

1. Where in your work plan might you fit these activities?
2. What modifications do you need to make to support all learners?
3. What activities do you already use in your classroom to develop information processing skills?

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## Notes

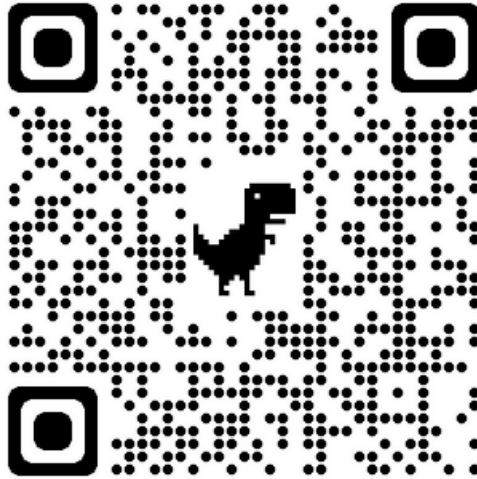
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## Notes

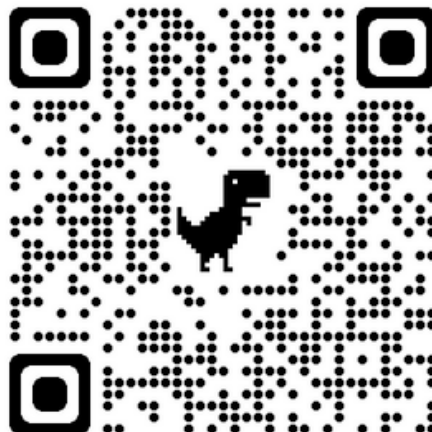
A series of horizontal blue lines for writing notes, with a vertical red margin line on the left side.

## Useful Links

Tutorials for Agricultural Science teachers and students using Excel:  
<https://www.youtube.com/playlist?list=PLhzN9lgHGTb4W2zqo8XznxAtncOGwkRYK>



State Examinations Commission Information Note on Coursework:  
<https://www.scoilnet.ie/uploads/resources/37517/37319.pdf>





**An Roinn Oideachais**  
Department of Education



**Dublin West Education Centre**  
Ionad Oideachais Bhaile Átha Cliath Thiar

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