Oide
Tacú leis an bhFoghlaim Ghairmiúil i measc Ceannairí Scoile agus Múinteoirí
Supporting the Professional Learning of School Leaders and Teachers

Senior Cycle Sciences Professional Learning Booklet Day 1 - 2024/25

Looking at the Evidence

Extract you were working with	
Expert Group Discussion	
Reflection	How can we incorporate these key messages into our senior cycle classrooms?

Investigating in the Science Classroom Activity

Action Verb	Students should be able to
Outline	give the main points; restrict to essentials
Investigate	observe, study, or make a detailed and systematic examination, in order to establish facts and reach new conclusions

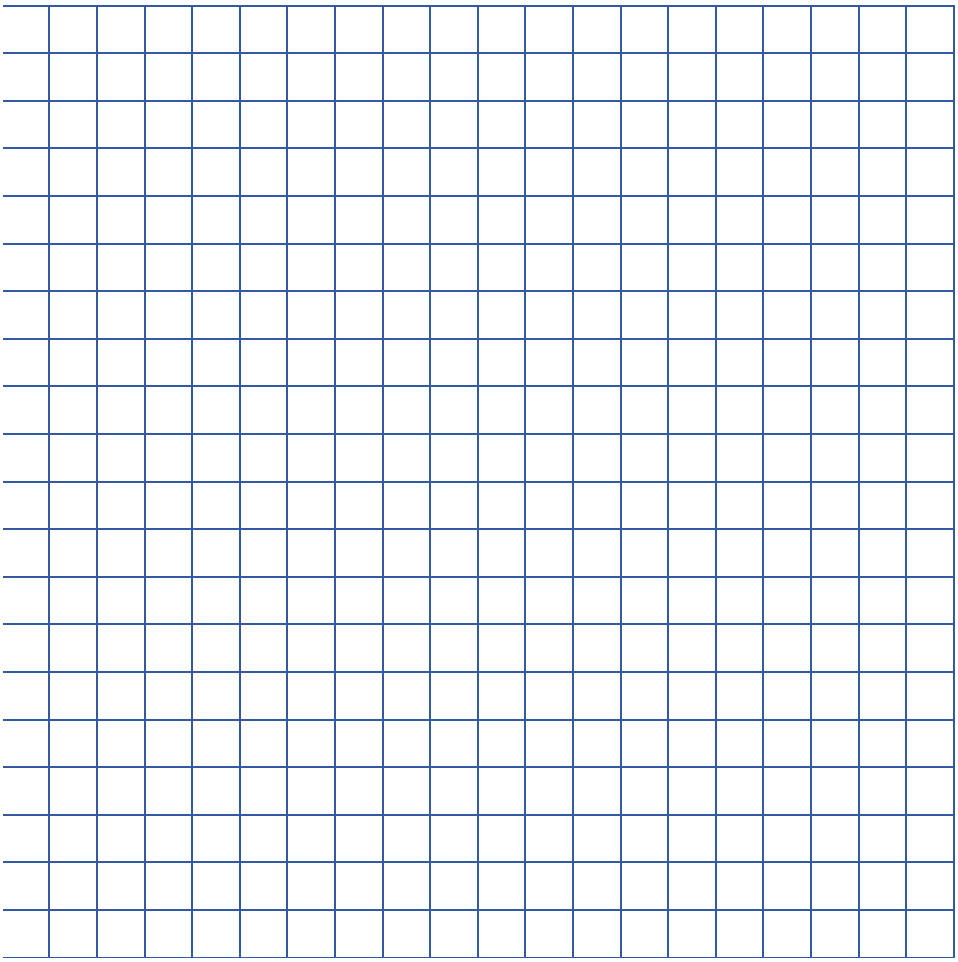
- **Engage with at least 2 sources of secondary data in resource pack 1**
- **In your group collect primary data from the equipment provided in resource pack 2**
- **Collaboratively discuss the learning/knowledge/findings from all the resources**
- **Use your findings to develop a research question**

Research findings	

Investigating in the Science Classroom

Primary Data Collection	

If required to graph your primary data collection



Investigating in the Science Classroom

Discussion	
Research Question	
Hypothesis	

In this activity which aspects of the unifying strand could you engage with?	

Linking to the Specifications

In the space below consider how this activity links to other aspects of the specification such as the Cross Cutting Themes and the Contextual Strands?

Cross Cutting Themes: Health, Sustainability and Technology	
Biology: SPL 3 g examine the role of infectious agents, environmental factors and/or genetic susceptibility in the development of different cancers in an organism; evaluate solutions to address the development of cancers	
Chemistry: BM 2 b relate observed physical properties for a range of compounds to the type of intermolecular forces, accounting for trends	
Physics: WMET 4 d investigate solar irradiance and its impact on life on earth using secondary sources	
List any other relevant links to the specifications	

Department Planning

Step 1 - Consistent Approaches

In your departments consider the following prompts regarding planning for a consistent approach in the development of scientific practices.

We will highlight connections across the scientific practices for Biology, Chemistry and Physics.

We will plan to implement teaching, learning, and assessment strategies to develop essential scientific practices in our students.

We will agree upon a list of understandings for key scientific terms.

Our students will engage in active learning that supports them in developing scientific practices.

We will assess our students' progress regularly in developing scientific practices

We will adapt approaches to suit each learner in their context.

In our Junior Cycle Science plan, we will outline the stages at which we develop scientific practices (skills) in our students.

As students progress from Junior Cycle to Senior Cycle, we can create opportunities to advance their scientific practices.

Our department is committed to the incremental development of scientific practices.

Reflection

Step 2 - Consistency of Scientific Language

U1	Scientific knowledge	Nature of scientific knowledge	Clear communication
	Modify over time	Global enterprise	Bias in sources
	Peer review	Reproducibility	Conduct research
	Recognising bias	Referencing	Secondary data
U2	Scientific question	Prediction	Objectivity
	Hypothesis	Random error	Systematic error
	Fairness	Safety	Review and reflect on skills and thinking
	Integrity	Accuracy	Precision
	Repeatability	Communicating results	Design investigations
	Plan investigations	Conduct investigations	Data
	Qualitative	Quantitative	Primary data
	Critically analyse data	Justify conclusions	Draw conclusions
	Anomalous observation	Selection of suitable equipment	
U3	Relevance	Social factors	Sustainability
	Scientific discovery and invention	Impact on Society	Ethical factors
	Economic factors	Media-based arguments	

Step 3 - Department Planning

As a department discuss the following in relation to today's learning intention:

What have we identified as a need in the science department of our school?
What action(s) will be implemented?
What are our next steps? Suggestion: As a department identify when carrying out investigations from the contextual strands in biology, chemistry and physics the scientific practices that will be progressed in term 1 of 5th year, etc.

Scientific Practices Progression

Year	Term 1	Term 2	Term 3
5th Year			
6th Year			
Progression