Leaving Certificate Agricultural Science

Phase 2 National Seminar Day 4

PDST
Professional Development Service for Teachers | An tSeirbhís um Fhorbairt Ghairmiúil do Mhúinteoirí

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Key Messages

- Using the Universal Design for Learning (UDL) framework and the Gradual Release of Responsibility (GRR) model to scaffold an inclusive learning environment

- Teachers view collaboration as a means to improve practical skills, student learning and to enhance their own professional development

- Reflecting on your CPD journey to date will allow you to appreciate how you have become more engaged with the specification, more resourceful, confident and active in teaching and learning

Think - Pair - Share

Question	My thoughts/Ideas	My Partners thoughts/ Ideas	Combined Ideas
What does this picture reveal to us about inclusion?			
What does inclusion mean to you?			
What inclusive practices have you used in Ag Science?			

Definitions of Inclusion

The NCSE define Inclusion as a process of:

Addressing and responding to the diversity of needs of learners through enabling participation in learning, cultures, and communities and removing barriers within and from education through the accommodation and provision of appropriate structures and arrangements to enable each learner to achieve the maximum benefit from his/her attendance at school.

Winter and O'Raw note that:

"The goal, therefore, is inclusion, not integration..... Essentially, the difference is between "being there" and "taking part" with integration prioritising the placement of students in particular settings and inclusion promoting actual participation and accommodation.""(Winter and O'Raw, 2010: 39).

Spratt and Florian (2013) use the term 'inclusive pedagogy' to describe "an approach to

teaching and learning that supports teachers to respond to individual differences between learners but avoids the marginalisation that can occur when some students are treated differently."

Committee on the Rights of the Child, describes it as:

"a set of values, principles and practices that seeks meaningful, effective, and quality education for all students, that does justice to the diversity of learning conditions and requirements not only of children with disabilities, but for all students."

Background Notes & readings for participants:

CRC Committee, General Comment 9 on Children with Disabilities (2006), UN Doc CRC/C/GC/9, 27 February 2007, para 67

(The Committee on the Rights of the Child is a body that monitors the implementation of the United Nations Convention on the Rights of the Child.)

Lani Florian & Jennifer Spratt (2013) Enacting inclusion: a framework for interrogating

inclusive practice, European Journal of Special Needs Education, 28:2, 119-135, DOI: 10.1080/08856257.2013.778111.

National Council for Special Education (2011). Inclusive Education Framework.Meath:NCSE

Winter,E.& O'Raw,P.(2010).Literature review on the principles and practices relating to inclusive education for children with special educational needs. Meath:NCSE. Available at https://ncse.ie/wp-content/uploads/2014/10/NCSE_Inclusion.pdf

https://www.cast.org/impact/universal-design-for-learning-udl

Inclusive Practice in the Agricultural Science Classroom

Key questions	Actions to be considered
How does the student support plan and student assessment data (standardised test results, junior cycle results and schools own assessment data) influence our teaching, learning and planning?	
Through considering frameworks such as UDL, how could we make our lessons more inclusive?	

Principles to Guide the Implementation Process

●Resources provided to support students with special educational needs should be used to facilitate the development of truly inclusive schools.

● Supports provided to students with special educational needs should be based on identified needs and be informed by regular reviews of progress (in consultation with parents and students) as outlined in the Continuum of Support Guidelines.

●The subject teacher has primary responsibility for the progress and care of all students in the classroom, including students with special educational needs.

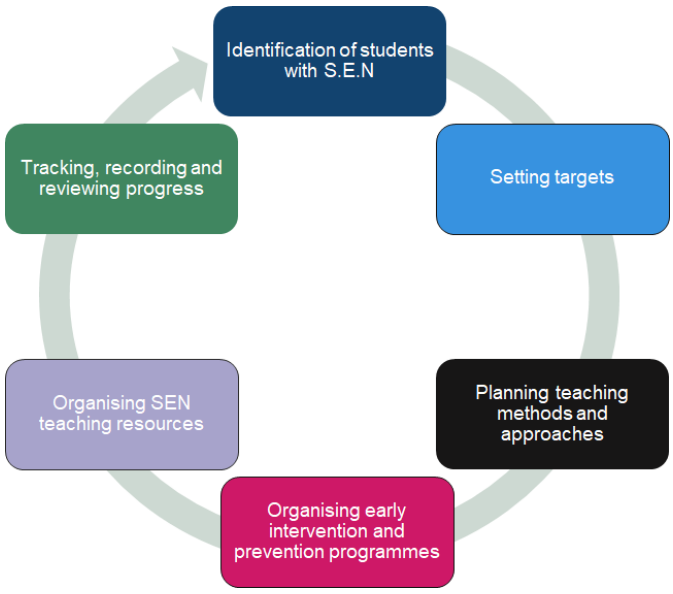
●Special education teaching supports provided to schools should be used solely for the support of students with identified special educational needs, including those students for whom English is an Additional Language (EAL). The special education teaching supports cannot be used to reduce the student-teacher ratio for general subject teaching or to provide additional subject options for students who do not have special education needs.

● Students with the greatest levels of need should have access to the greatest level of support, and whenever possible, these students should be supported by teachers with relevant expertise who can provide continuity of support.

●Schools should establish and maintain a core team of teachers to meet the needs of students with special educational needs. All members should have the necessary experience and access to continuing professional development to support the diverse needs of students with special educational needs.

These principles are further explored throughout this document and should inform a whole school approach to provision for students with special educational needs.

Guiding Actions



Actions to Support Schools in Planning and Documenting Provision for Students with Special Educational Needs at Whole-School Level

Action 1: **Identification of students with special needs**	Review existing information on students' needs, using school based data and information from primary schools, parents and external professionals. Engage in additional screening and data gathering as required, using informal and formal assessment approaches. Identify **all** students with special educational needs in the school. Match their needs to the appropriate level on the continuum of support.
Action 2: **Setting targets**	Based on identified needs, set clear targets for Support For All, School Support and School Support plus levels of the Continuum of Support.
Action 3: **Planning teaching methods and approaches**	Identify the level and type of intervention required to meet targets for each student on the Continuum of Support. Consider methodologies best suited to promoting meaningful inclusion such as differentiation, heterogeneous grouping, team teaching, small group and individual teaching. They should also be mindful that the interventions and supports that they are using are evidence-informed.
Action 4: **Organising early intervention and prevention programmes**	Based on identified needs, choose evidence informed early intervention / prevention programmes to address concerns. Identify time needed and staffing commitment required.
Action 5: **Organising and deploying special education teaching resources**	Cross reference the needs of students at School Support and School Support Plus levels and consider common needs that can be met through in class / team teaching,small group and individual support to ensure effective and efficient teaching and learning approaches. Agree which teacher(s) will cater for these students and where the teaching will occur. Be mindful of the requirement that students with the greatest level of need should receive the greatest level of support from teachers with relevant experience.
Action 6: **Tracking, recording and reviewing progress**	Establish a tracking and recording system, to ensure that the progress of all students in meeting their individual targets is monitored: • At **whole-school (Support for All) level** by all teachers. • At the **School Support (for some) and School Support Plus (for a few) levels** by subject teachers and special education teachers.

Menti Reflection

"As a teacher who differentiates instruction, you become both a facilitator and a collaborator" (Heacox, 2002).

Reflect on your experiential teaching practices.

The Gradual Release of Responsibility (GRR) Model

The GRR model emphasises differentiated instruction that supports and mentors students into becoming capable thinkers and learners when handling tasks with which they have yet to develop expertise in. It is a successful model and has been documented as an effective approach in teaching many subject areas and a variety of skills.

Stage 1 - **Modelled teacher centred instruction. Dialogic differentiation and think aloud strategies (I do)**: Explicitly describe the skills and strategies needed for researching. Teacher demonstrates, thinking aloud and verbalising while students are observing.

Stage 2 - **Guided instruction (We do)**: Students are encouraged to start using the skills and strategies modelled above in a whole class setting.

Stage 3 - **Collaborative learning - peer cooperation (you do):** students engage in collaborative learning where they actively use the skills and strategies modelled above. Working in scaffolded groups peer cooperation is encouraged. This is where we witness the gradual release of responsibility.

Stage 4 - **Independent learning - self assessing (you do it alone) :** students work independently using the new skills and strategies they have acquired. They can self assess their progress against agreed success criteria.

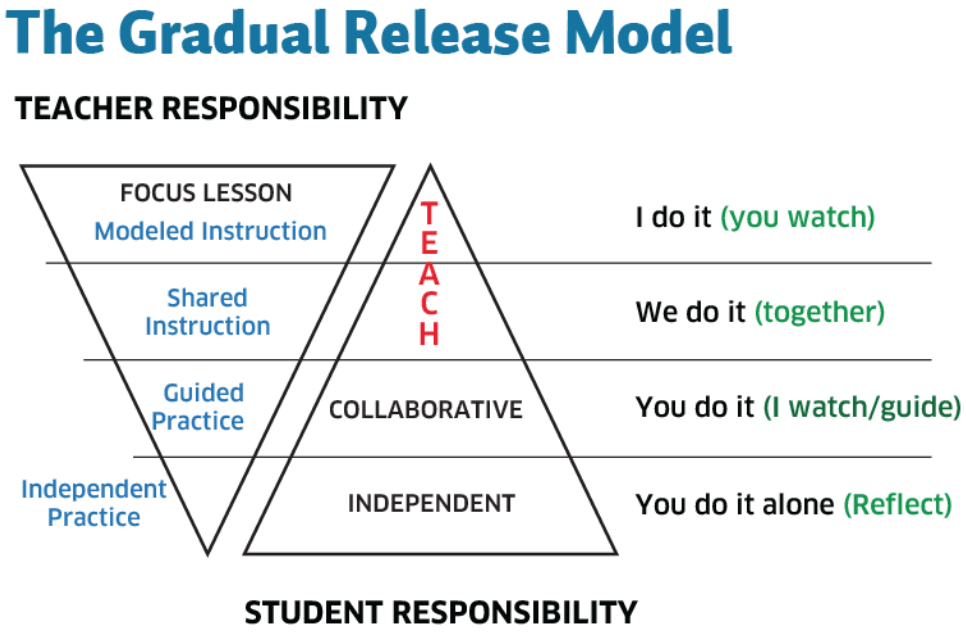


Figure 1: The Gradual Release Model

"Fisher & Freyer, 2008"

How to Use the Gradual Release of Responsibility Model

GRR Stage	Teacher Focus	Student Focus
Stage 1 Modelled teacher centred instruction The focus lesson I do it – you watch	· Establish purpose based on learning outcomes / skill sort. · Use dialogic differentiation – instructional scaffolding. · Models think aloud strategies · Demonstrations · Explicitly describe the skills and strategies required	· Actively observing and listening
Concrete **Stage 2** Guided instruction Shared instruction We do it – together	· Uses questions, prompts and cues. · Encouraging students to start using skills and strategies from stage 1. · Use whole class setting · Uses formative assessment to close learning gap	· Start contributing ideas and information. · Discussing ideas with teacher · Start using skills that have been modelled.
Stage 3 Collaborative learning Peer cooperation You do it – I watch / guide	· Provide written and verbal feedback · Creating heterogeneous groups · Facilitating carefully scaffolded instructions	· Engage in collaborative learning · Actively using new skills and strategies · Peer cooperation and peer assessment · Being scientifically literate · Consolidating understanding
Stage 4 Independent practice Using the new skills You do it alone – Reflection Abstract	· Offers support and encouragement · Uses formative assessment	· Work independently applying new skills and understanding · Self-assessing their progress · Applying new skills and knowledge in familiar and unfamiliar situations

Working with the GRR Model

How would I use the GRR model to develop effective research skills?

Notes from stage 1:

Notes from stage 2:

Notes from stage 3:

Notes from stage 4:

Using the GRR model to develop research skills for IIS

How could I use this model in my classroom?

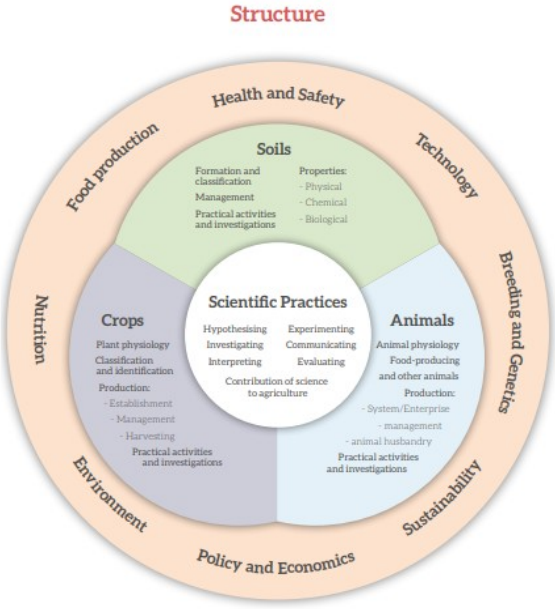
Enhancing Inclusion in the Agricultural Science Classroom

How would I use the GRR model and support documents to enhance the inclusive classroom?

What similar strategies have I previously used?

What differentiated supports will I now provide for inclusion?

Candy Floss Grapes Engagement Activity



Notes from video:

Connecting to the specification:

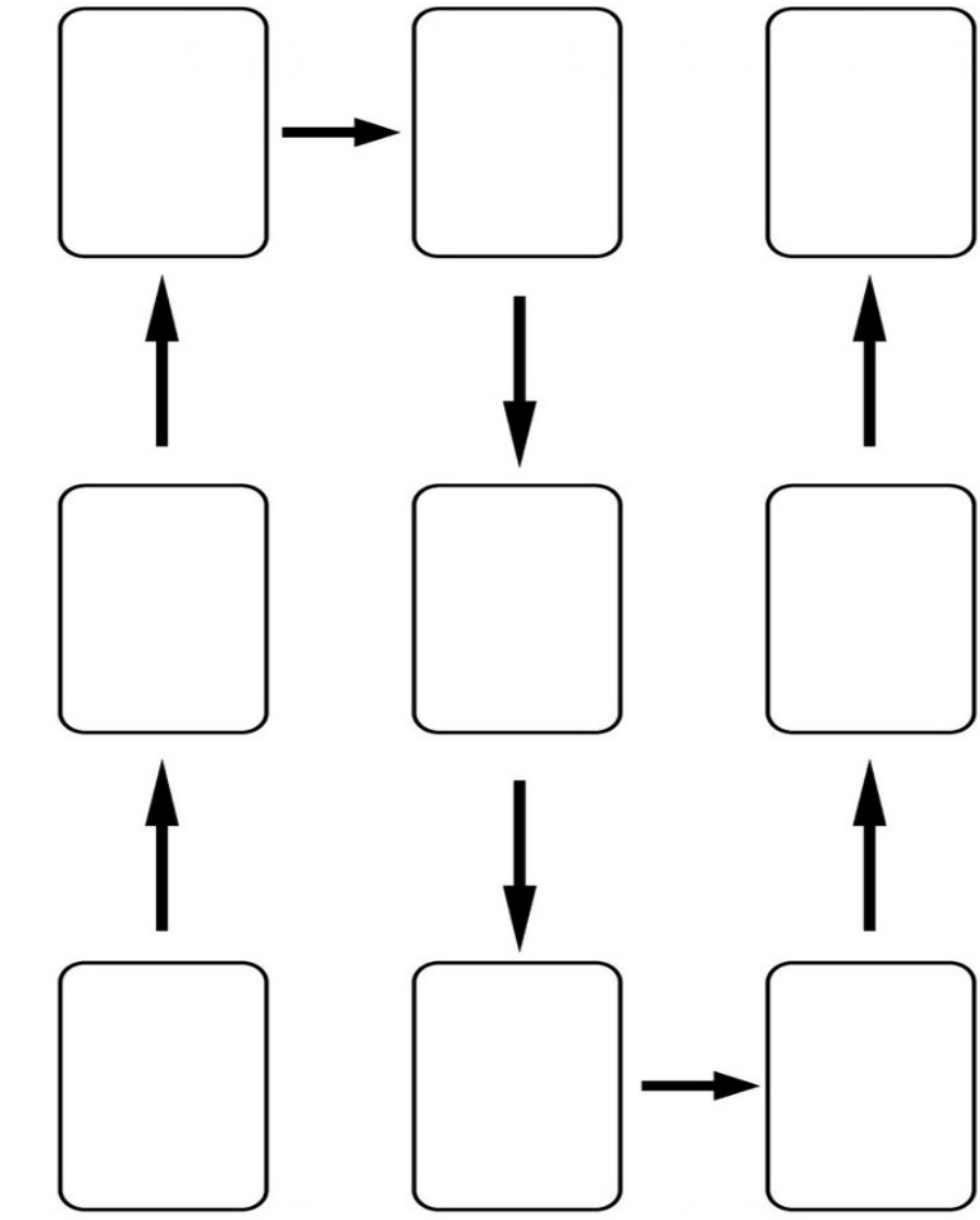
Think - Pair - Share

*3.3.2 (K) - Investigate the complexity associated with the genetic inheritance of traits by **hybridising** two varieties to determine the **rate of transfer** of the required trait (e.g. petal colour) to the next progeny**

Question	My thoughts/Ideas	My Partners thoughts/ Ideas	Combined Ideas
Investigate			
Complexity			
Hybridising			
Rate of transfer			

Method for 3.3.2(K)

***3.3.2 (K) - Investigate** the **complexity** associated with the genetic inheritance of traits by **hybridising** two varieties to determine the **rate of transfer** of the required trait (e.g. petal colour) to the next progeny**



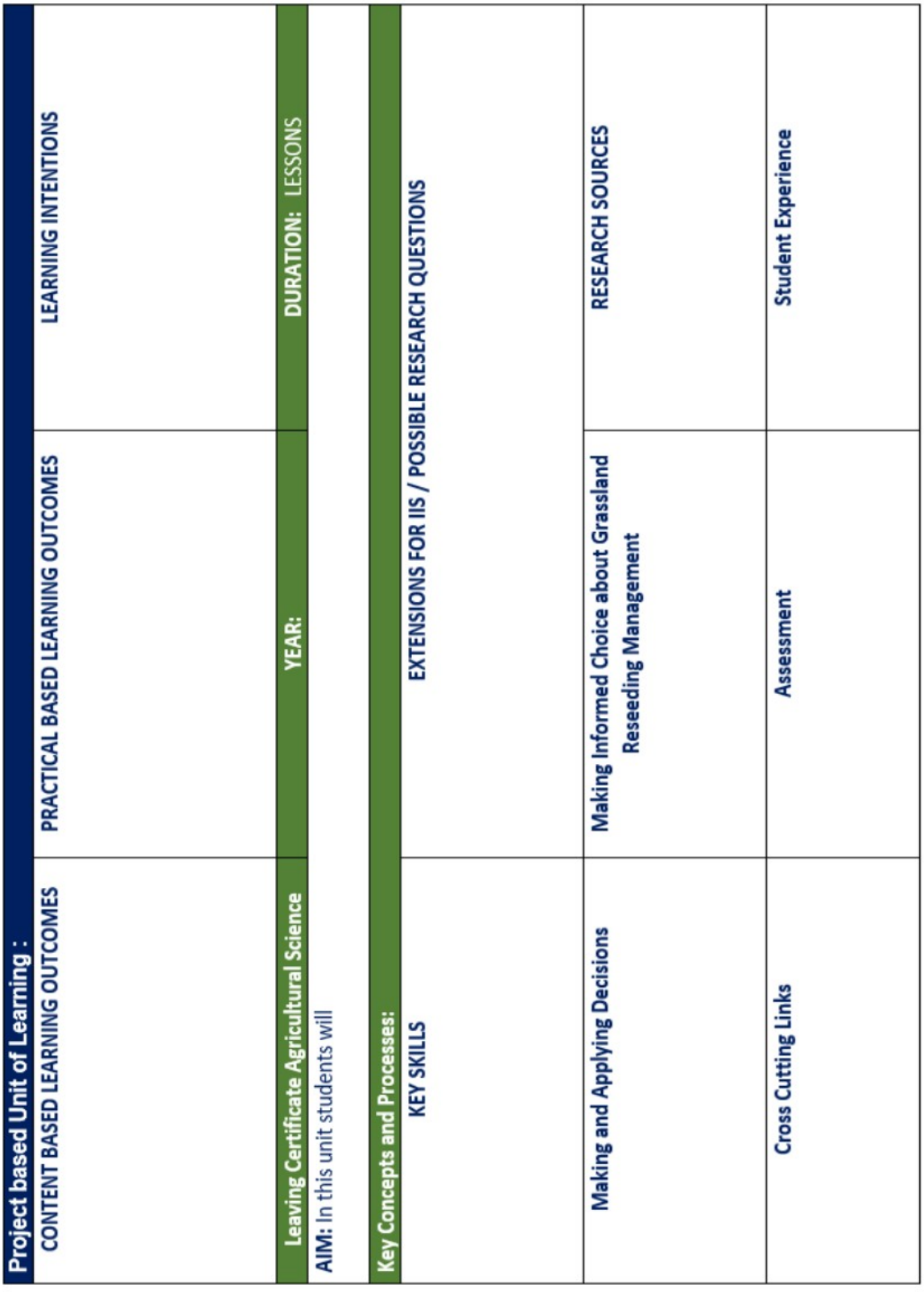
Monohybrid Crosses

F1:

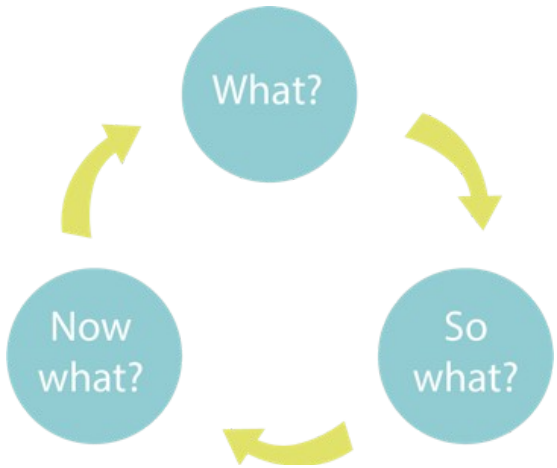
F2:

F3:

Project Based Learning



Rolfe Model of Reflection



Descriptive Level of Reflection	Theory and Knowledge Building	Action Oriented (Reflexive) Reflection
What?	So What?	Now What?
What is the problem/ difficulty/ reason for being stuck/ reason for feeling bad/ reason we don't get on/etc...? What was my role in the situation? What was I trying to achieve? What actions did I take? What was the response of others? What were the consequences? ❖ For the client? ❖ For myself? ❖ For others? What feelings did it evoke? ❖ In the client? ❖ In myself? ❖ In others? What was good/bad about the experience?	So what does this tell me/ teach me/ imply/ mean about me/ my client/ our relationship/ my client's care/ the model of care I am using/ my attitudes/ my client's attitudes/ etc...? So what was going through my mind as I acted? So what did I base my actions on? So what other knowledge can I bring to this situation? ❖ Social policy ❖ Legislation ❖ SW Theory ❖ Personal So what could / should I have done to make it better? So what is my new understanding of the situation? So what broader issues arise from the situation?	Now what do I need to do in order to make things better/ stop being stuck/ improve my clients care/ resolve the situation/ feel better/ get on better/ etc...? Now what broader issues need to be considered if this action is to be successful? Now what what might be the consequences of this action? Now what what planning is required to activate the new direction?

Rolfe Model Template for Reflection

What?	
So what?	
Now what?	

Activity 1: Jigsaw Activity- Key Take Home Messages

Station 1: Scientific practices and Coursework

Station 2: Teaching and learning

Station 3: Written assessment

Expert group notes:

Feedback from other groups

Group 1:

Group 2:

Group 3:

Learning log - Reflecting on active learning in my classroom

Student centred learning

Developing key skills

Assessment
Student voice
Collaboration & planning

Personal Reflection

Actions to be taken:	
Steps to be taken:	
Resources you will need (links, people etc):	

Additional Information

Pea Trait	Dominant trait		Recessive trait		Numbers in second generation (F2)
Seeds					
Seed shape	Round		Wrinkled		5474:1850
Seed colour	Yellow		Green		6002:2001
Whole plants					
Flower colour	Purple		White		705:224
Flower position	Axial		Terminal		651:207
Plant height	Tall		Short		787:277
Pod shape	Inflated		Constricted		882:299
Pod colour	Green		Yellow		428:152

www.biotechlearn.org.nz

How to cross pollinate peas:

https://www.youtube.com/watch?v=Pq7-JGRmFBc

Teagasc Webinar 18 - Role of grass breeding and evaluation to increase the sustainability of pasture-based systems:

https://www.youtube.com/watch?v=jqp_lK2U0XQ&t=1181s

Notes

An Roinn Oideachais
Department of Education

Dublin West Education Centre
Ionad Oideachais Bhaile Átha Cliath Thiar

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