



An Roinn Oideachais
Department of Education

ICT Day 4

Session 1

Overview of the seminar

Session 1

Review of Leaving Certificate Applied ICT Year One
Introduction to Module 3: Spreadsheets
Transdisciplinary links in the LCA programme

Tea/Coffee Break

Session 2

Skills acquisition through spreadsheets
Explore resources and supports relating to spreadsheets
Spreadsheet case study activity

Lunch

Session 3

Planning a learning outcomes based unit of learning
Revisit the key messages from today's seminar
Reflection and next steps

Key messages

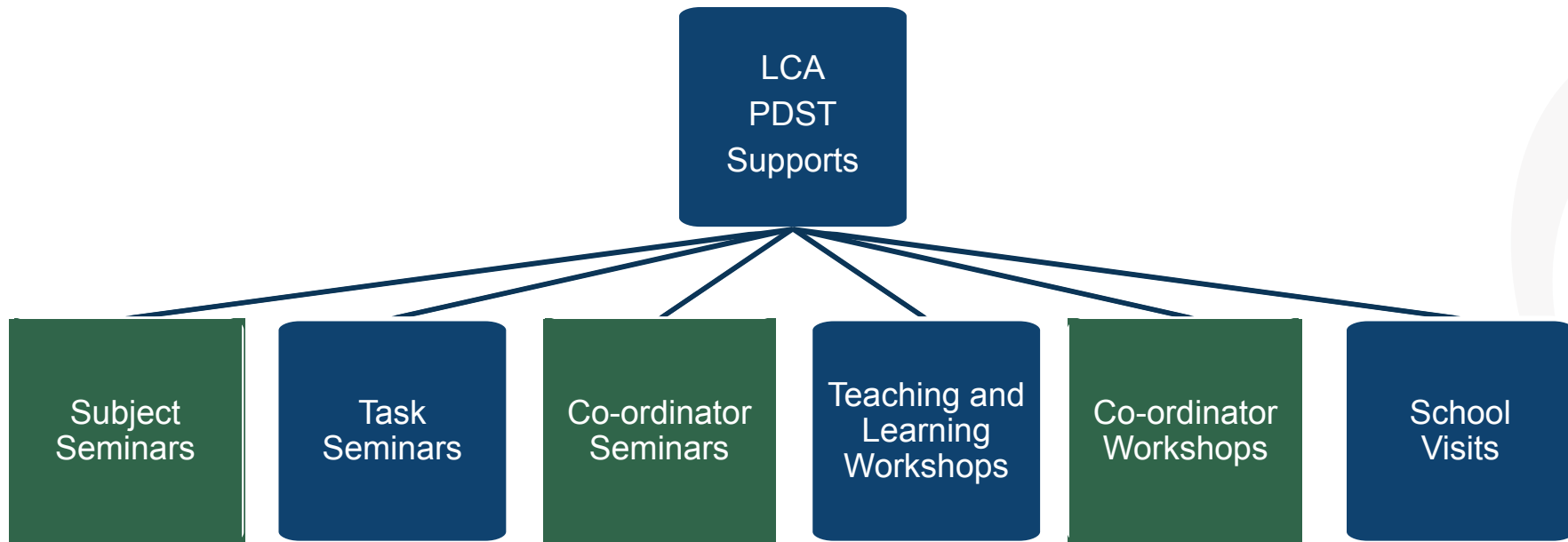
Subjects in LCA are inherently transdisciplinary, authentic and relevant to the current and future needs of all students

LCA courses support the use of a wide range of inclusive, differentiated, experiential teaching and learning approaches

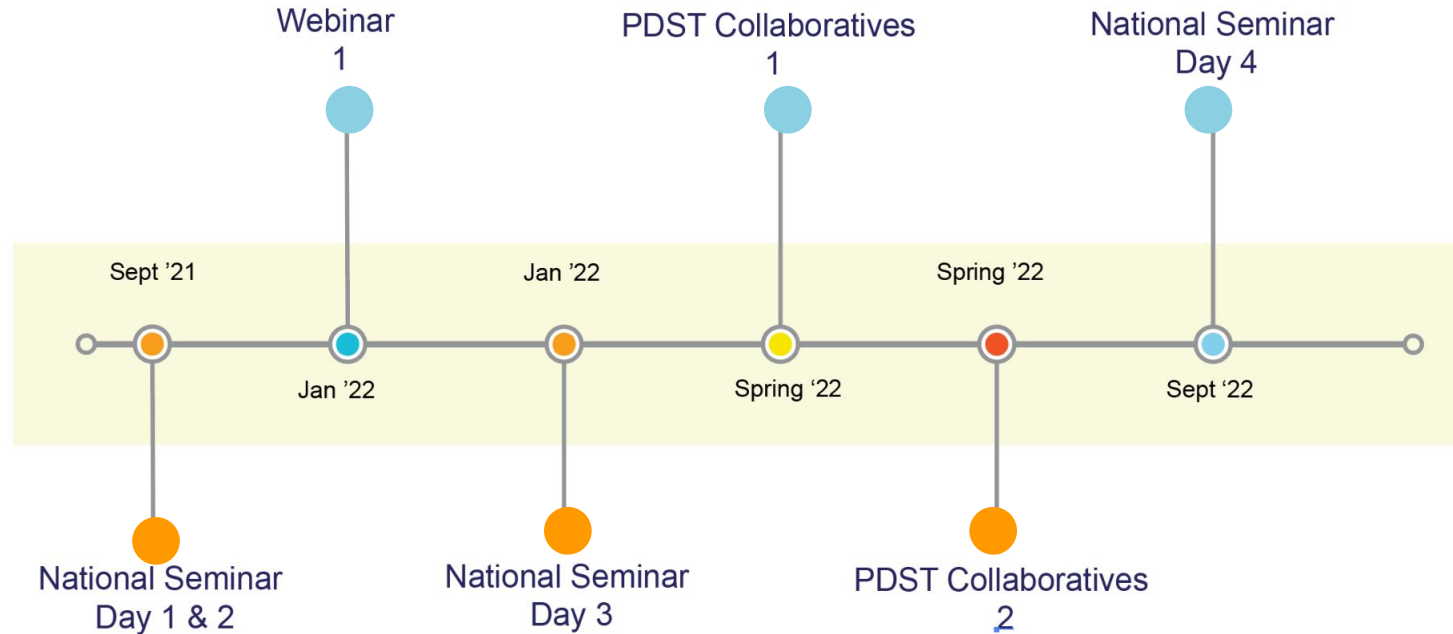
LCA ICT, Mathematical Applications, and English and Communications modules are strategically designed to support one another providing opportunities for rich and integrated learning experiences

Student-centred activities should be used to highlight and develop the interdisciplinary nature and functionality of spreadsheets created in ICT, with relevance to daily life and throughout other subjects

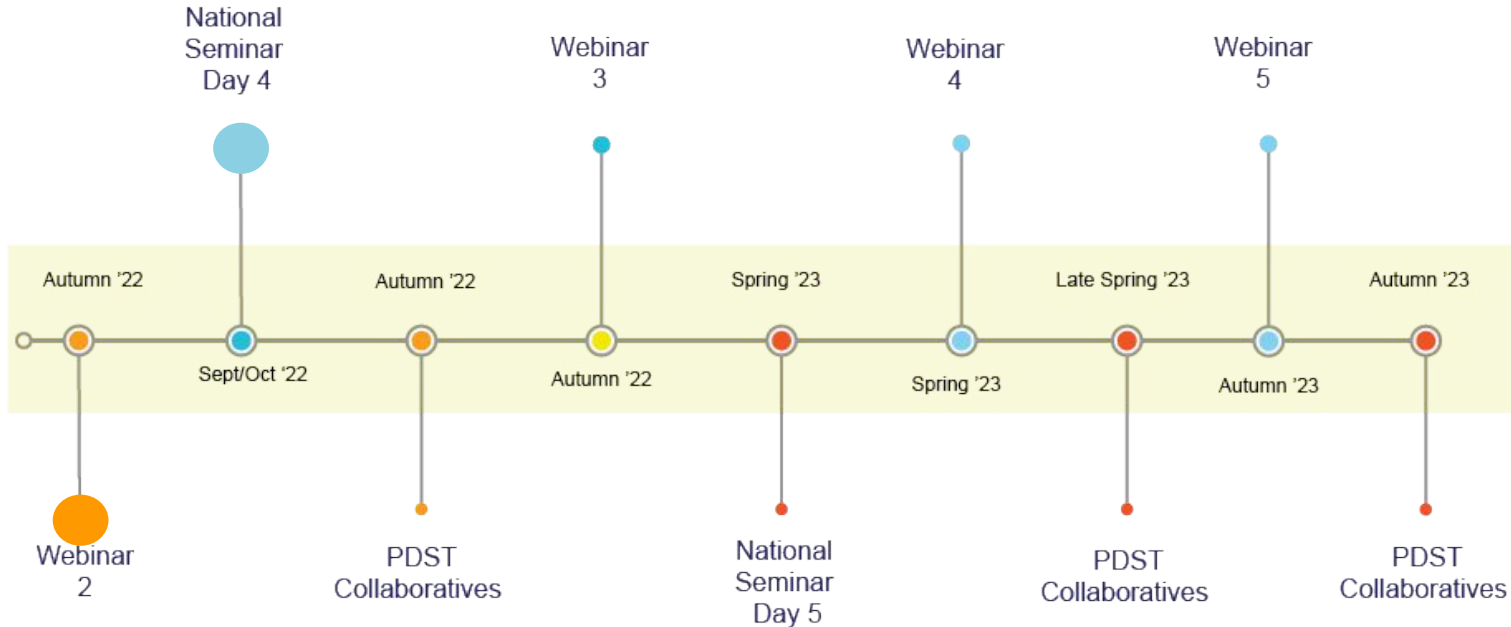
LCA Supports provided by PDST



CPD for the revised module descriptors



CPD for the revised module descriptors



Session 1

By the end of this session participants will have:

Reflected on our CPD journey and shared experiences from year one

Considered Module 3: Spreadsheets

Investigated transdisciplinary links which will support student learning in ICT and across other LCA subjects

Seminar Day 1 - 3 resources



<https://www.pdst.ie/post-primary/lca-day4-ict>

Reflecting on our learning

Seminar days 1-3

Five Data Tools for Creative Thinking

What has worked well for you?

What was the main challenge?

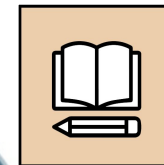
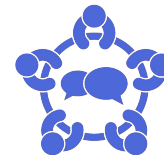
What changes have you made to your practice?

RESEARCH

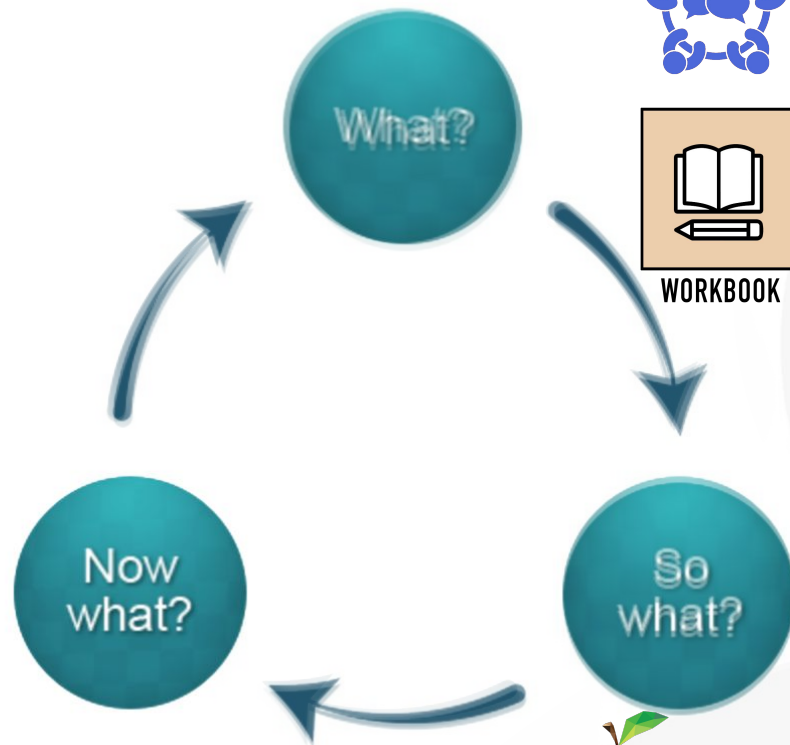
OECD Publishing

Consider how this model could support your three LCA students achieving the learning outcomes for module two.

LCA



WORKBOOK



Rolfe et. al (2001)

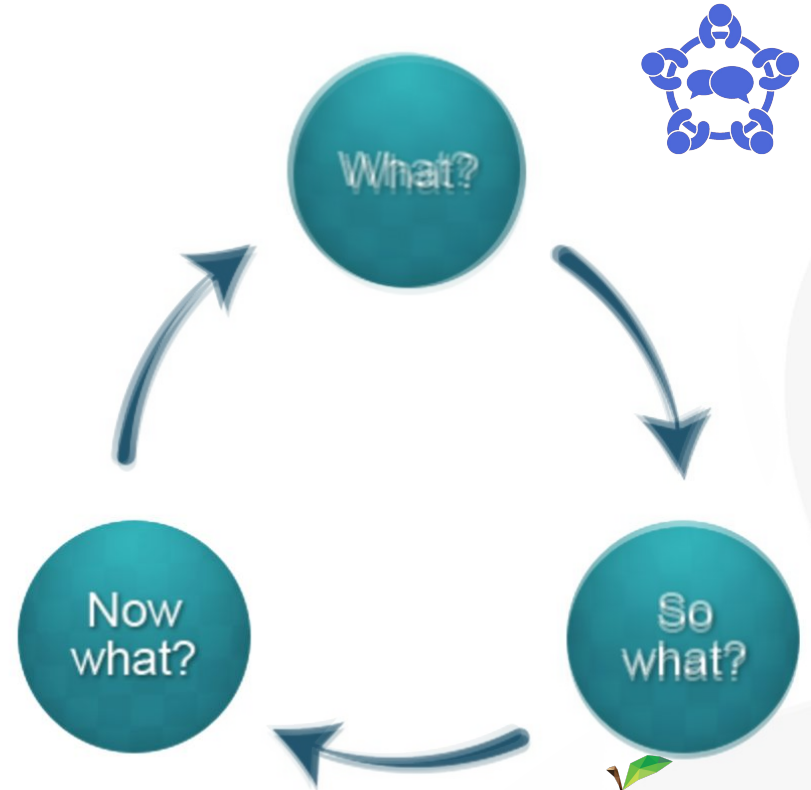
Reflecting on student learning

Seminar days 1-3

What has worked well for students?

What was the main challenge for students?

What changes have you made to your practice to make learning more effective?



Rolfe et. al (2001)

Student-centred approach to teaching, learning and assessment

ICT Specialism LO1:

Create spreadsheets involving different types of data such as VAT, percentages, currency, tax, time and dates, enter formulae to generate results.

ICT Specialism LO3:

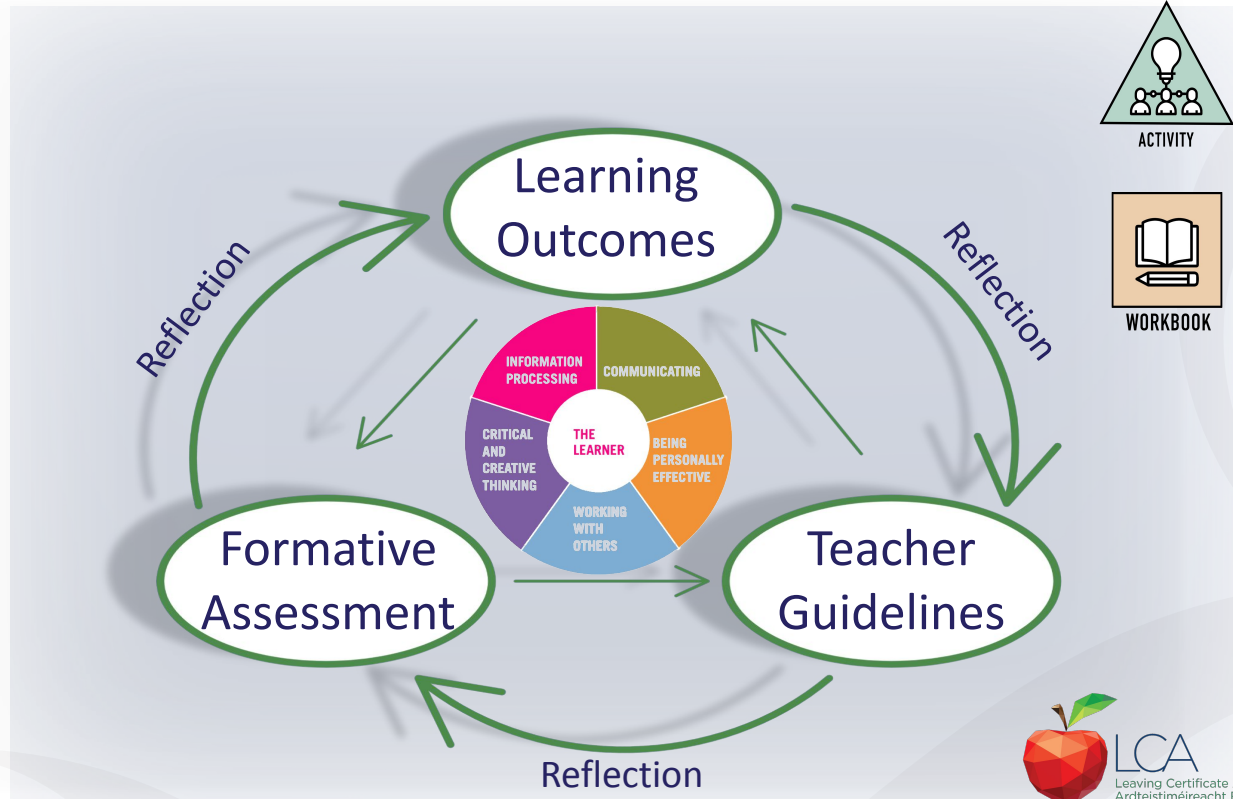
Create and **apply** formulae and recognise error values in formulae.

ICT Specialism LO2:

Generate and interpret charts, graphs and data tables appropriate to the data, to effectively communicate information from a spreadsheet.

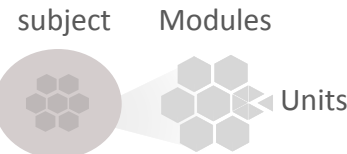
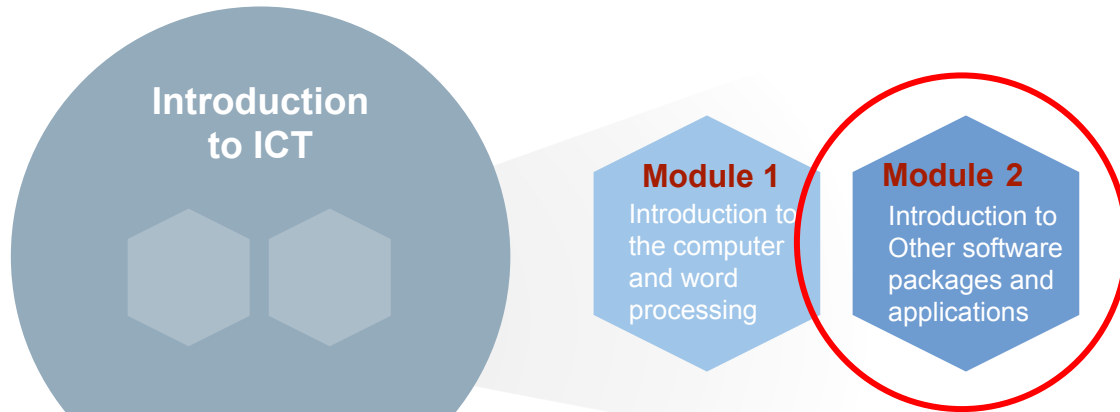
ICT Introduction Unit 1 LO1:

Identify suitable uses of spreadsheets.



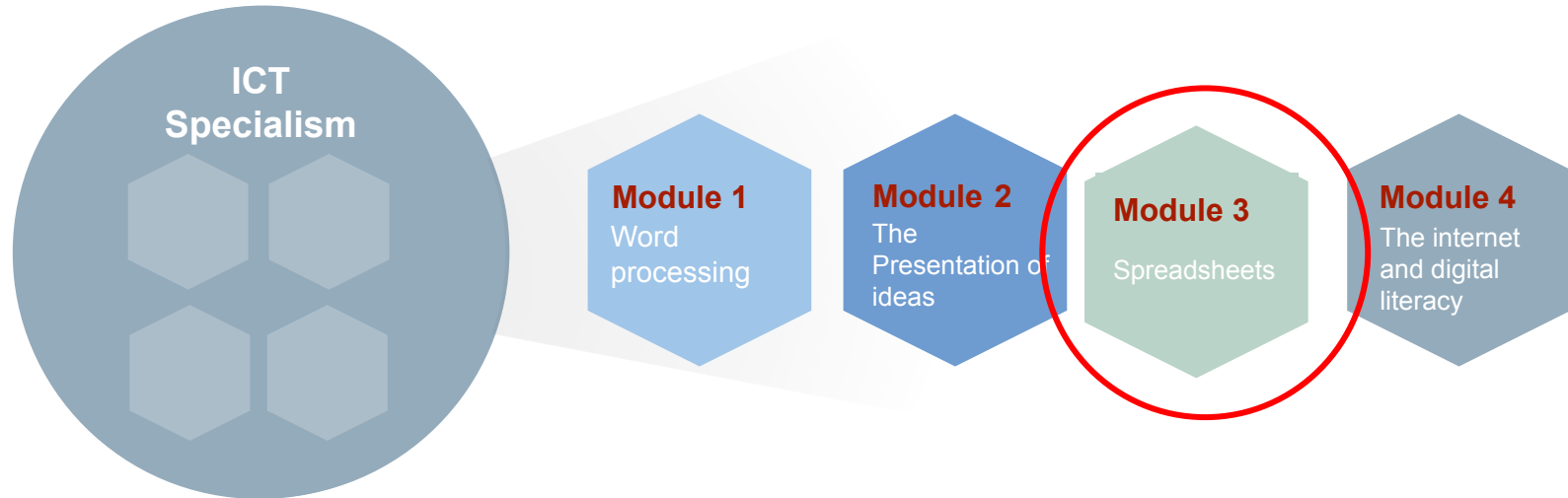
Modules in Introduction to ICT

There are **two** modules to be completed sequentially for the Introduction to ICT in the Leaving Certificate Applied Programme

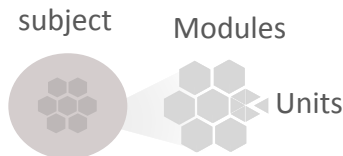


Modules in ICT Specialism

There are **four** modules to be completed sequentially in the ICT Specialism in the Leaving Certificate Applied Programme



A module is usually completed within a session.



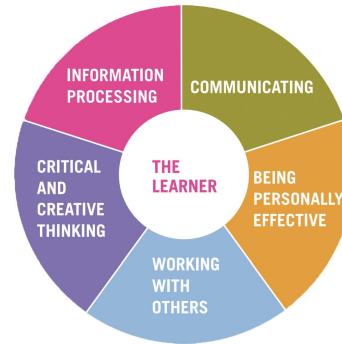
Effective student-centred planning

UNIT 1: BASIC SPREADSHEET THEORY

Learning outcomes

The student will be able to:

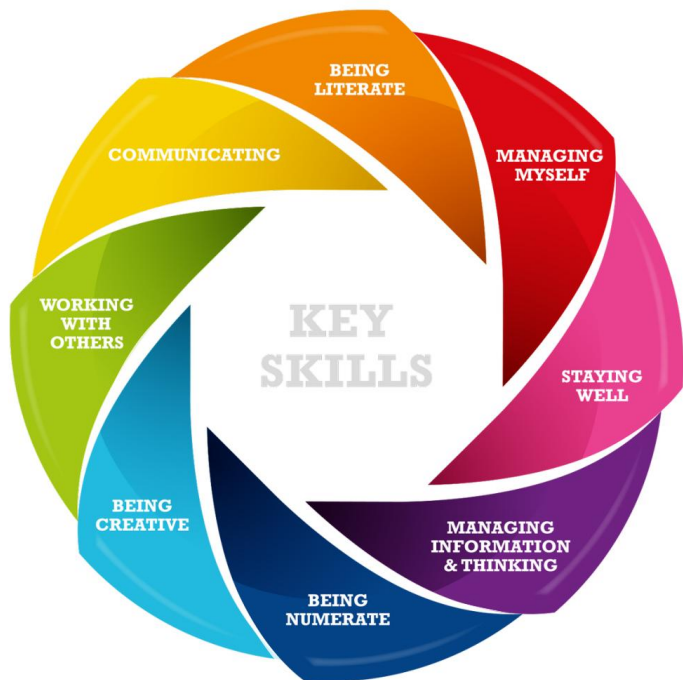
1. Understand the uses and functions of spreadsheets.
2. Create new spreadsheets based on default templates.
3. Work proficiently with spreadsheets and convert to other file formats.
4. Enter and manipulate data in worksheets and create logical formulas using standard functions.



Learning
Outcomes
Page 34

Building upon junior cycle key skills

How will these skills transfer and develop in your LCA class?



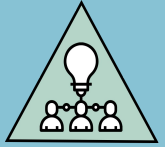
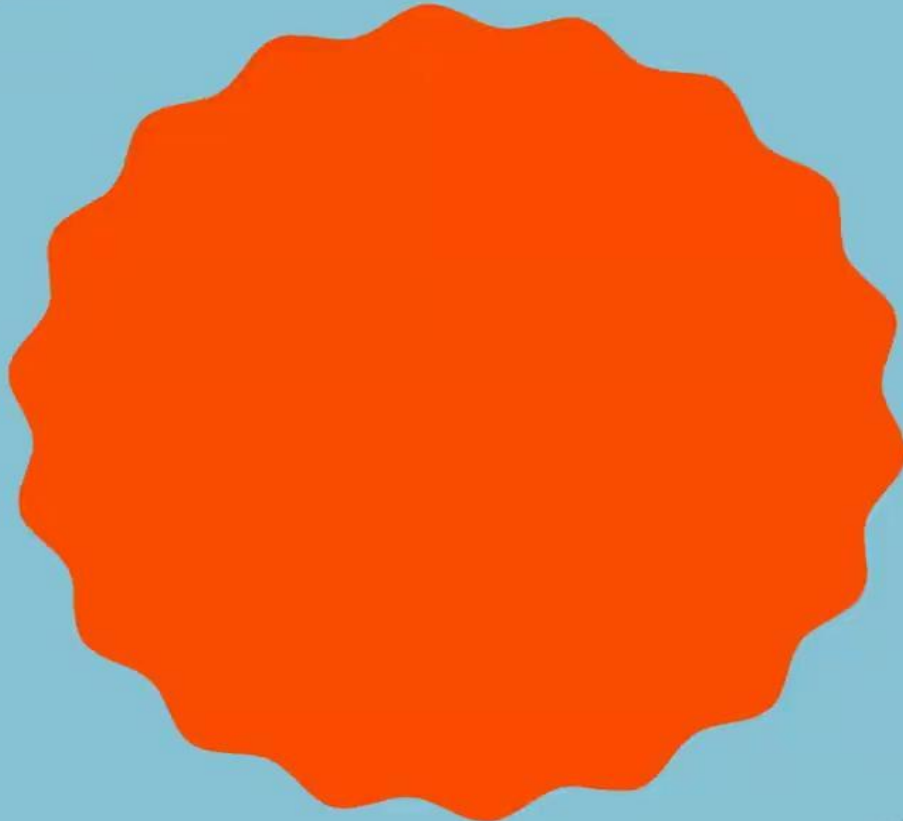
Junior Cycle



Senior Cycle

Scavenger hunt to explore learning outcomes

made with
Biteable.com



ACTIVITY



made with
Biteable.com



Considerations for use of spreadsheets



ACTIVITY



Mod 3 Unit 1 - LO 4

Enter and manipulate data in worksheets and create logical formulae using standard functions

Mod 3 Unit 2 - LO 3

Create and apply formulae and recognise error values in formulae

Mod 3 Unit 3 - LO 3

Create formulae using cell references and arithmetic operators (addition, subtraction, multiplication, division)

Mod 3 Unit 2 - LO 1

Create spreadsheets involving different types of data such as VAT, percentages, currency, tax, time and dates, and enter formulae to generate results

How have your students encountered spreadsheets?

Are there times when a spreadsheet might have been of benefit to your LCA students?

Can your students create formulae?

Do your students understand error values?

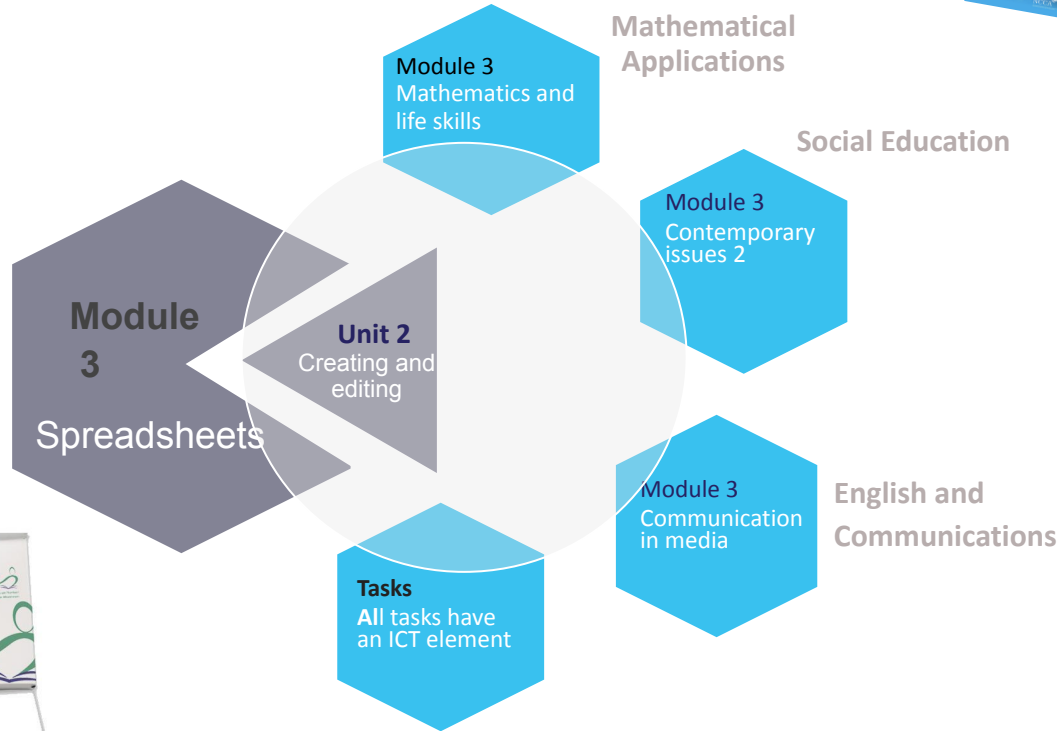
What data can your students input?



Sourcing data for spreadsheets

Transdisciplinary links within the LCA programme

ICT
Specialism

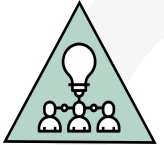


ICT Specialism LO1:
Create spreadsheets involving different types of data such as VAT, percentages, currency, tax, time and dates, enter formulae to generate results.

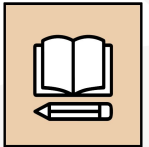
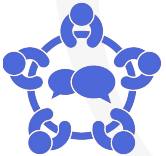
ICT Specialism LO2:
Generate and interpret charts, graphs and data tables appropriate to the data, to effectively communicate information from a spreadsheet.

ICT Specialism LO3:
Create and **apply** formulae and recognise error values in formulae.

ICT Introduction Unit 1 LO1:
Identify suitable uses of spreadsheets.



ACTIVITY



WORKBOOK



Session 1

At the end of this session participants have:

Reflected on our CPD journey and shared experiences from year one

Considered Module 3: Spreadsheets

Investigated transdisciplinary links which will support students learning in ICT and across other LCA subjects



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End of Session 1



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ICT Session 2

Session 2

By the end of this session, participants will have:

Explored the skills needed to manipulate a spreadsheet to best effect with multiple applications to students life

Collaborated with colleagues to explore a range of resources and supports to facilitate students in creating and utilising spreadsheets

Used a case study to approach authentic problem solving through the use of spreadsheets

Developing spreadsheet skills

Where are your students?



Apple Numbers



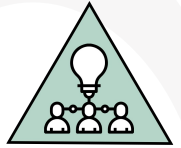
Google Sheets



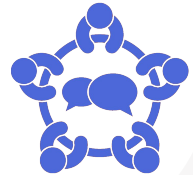
Microsoft Excel



WORKBOOK



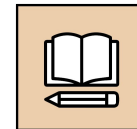
ACTIVITY



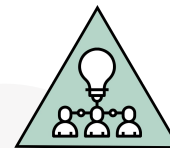
Supporting spreadsheet skill development

Príobairíocht

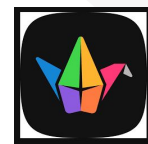
How might we encourage further development of spreadsheet skills through the use of digital tools on spreadsheets? How can we progress from basic spreadsheet skills to more advanced skills? How can we ensure that students are engaged with spreadsheets?



WORKBOOK



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Further skills acquisition through use of spreadsheets

Shared

They tend to be interactive, participatory and collaborative

Purposeful

To the student

Agentic

Students tend to have responsibility within these practices

Non-linear

Dipping in to sections of data, flicking through, rather than following a linear route from the beginning to the end of the text

Multimedia

Students' uses of literacy combine the uses of paper-based and electronic media

Multimodal

On the whole, students reading and writing combines the use of symbols, numbers, colour, etc

Generative

Involving sense-making and creativity

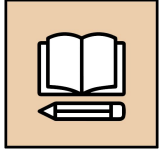
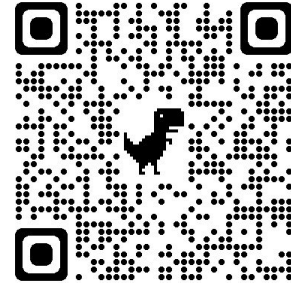
Self determined in terms of activity, time and place

Spreadsheet terminology

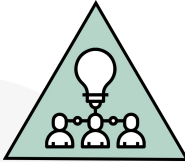
What key terms should your students' know?

<https://tinyurl.com/ymdzmwrz>

Students can record
and maintain a
glossary of key terms



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How would you define these terms in a user friendly way for your students?

Exploring formulae to develop the functionality of spreadsheets

Learning outcomes in the Specialism course also reference formulae

3.1.2 Create new spreadsheets based on default templates.

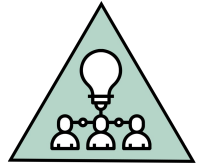
3.1.4 Enter and manipulate data in worksheets and create logical formulae using standard functions.

3.2.1 Create spreadsheets involving different types of data such as VAT, percentages, currency, tax, time and dates, and enter formulae to generate results.

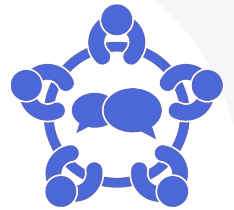
3.2.3 Create and apply formulae and recognise error values in formulas.

3.3.2 Create and apply formulas using standard spreadsheet functions such as sum, average, minimum, maximum, count and round functions.

3.3.3 Create formulas using cell references and arithmetic operators (addition, subtraction, multiplication, division).



ACTIVITY



Application of spreadsheet skills in other subject areas

ICT Specialism - Module 3

UNIT 1: BASIC SPREADSHEET THEORY Introduction to ICT - Module 2

UNIT 1: SPREADSHEETS

1. Understand the uses and functions of spreadsheets.
 1. Identify suitable uses for spreadsheets.

UNIT 2: CREATING AND EDITING

2. Create a spreadsheet and enter numeric and character data, apply formulae while understanding their purpose to generate results, format cells and generate a chart and print it.
 1. Create spreadsheets involving different types of data such as VAT, percentages, currency, tax, time and dates, and enter formulae to generate results.

Mathematical Applications

Personal Finance

Module 3: Life skills

LO 4: Communicate findings in words/tables/charts or graphs.

Using your LCA students' life experience to engage with spreadsheets



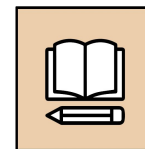
Cloze test

On your table you will find a card representing one student from

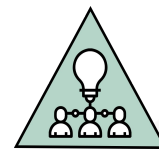
What skills did your assigned student acquire?

Share your thoughts with those in your group.

the whole group.



WORKBOOK



ACTIVITY



Session 2

By the end of this session, participants will have:

Explored the skills needed to manipulate a spreadsheet to best effect with multiple applications to students life

Collaborated with colleagues to explore a range of resources and supports to facilitate students in creating and utilising spreadsheets

Used a case study to approach authentic problem solving through the use of spreadsheets



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

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End of Session 2



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ICT Session 3

Session 3

By the end of this session participants will have:

Collaborated with colleagues to plan a unit of learning

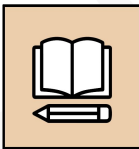
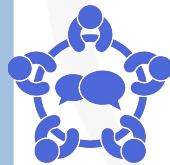
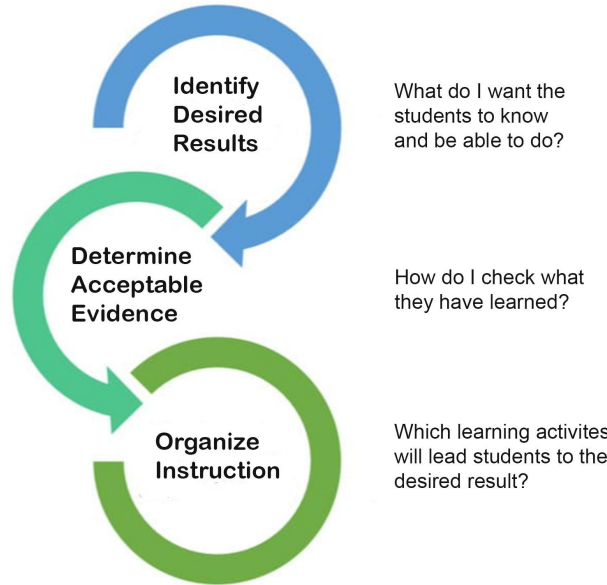
Reviewed the key messages from today's seminar

Reflected on the key messages from today's seminar
and what does this mean for your practice

The backward design process Planning and design outcomes based approach to a unit of learning

‘Learning outcomes
teachers to plan the
assessment.’

NCCA Focus on Learning



WORKBOOK

Wiggins and McTighe (1998)

Planning a learning outcomes based unit of learning

Consider your three student ability profiles

Select the learning outcome(s) from the unit that you wish to progress with your students

Design an activity with teacher guidelines and the learning outcome(s) in mind



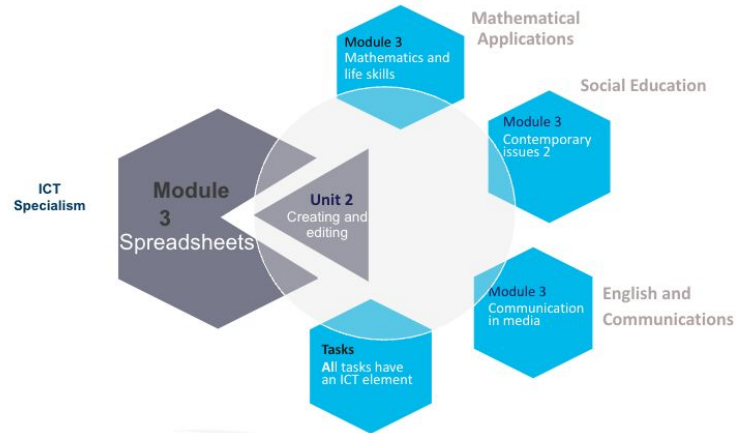
This activity can be recorded in images, text, orally or blended

Review of our learning from today

What new learning have I experienced today?

Key Message 1,
 Subjects in LCA are inherently transdisciplinary, authentic and relevant to the current and future needs of all students.

Sourcing data for spreadsheets, Transdisciplinary links within the LCA programme

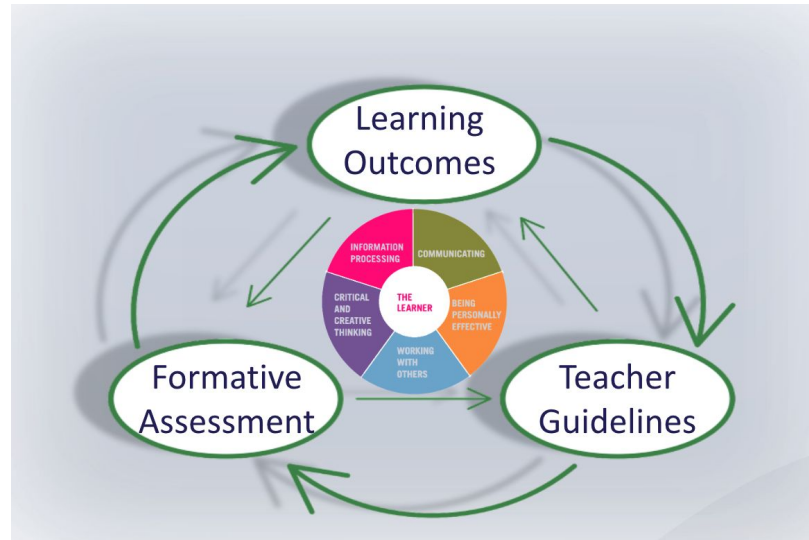


What are the implications for my teaching?

What new learning have I experienced today?

Key message 2

LCA courses support the use of a wide range of inclusive, differentiated, experiential teaching and learning approaches.



What are the implications for my teaching?

What new learning have I experienced today?

Key message 3

LCA ICT, Mathematical Applications, and English and Communications modules are strategically designed to support one another providing opportunities for rich and integrated learning experiences.

Transdisciplinary Links to support student learning

ICT Specialism - Module 3 UNIT 1: BASIC SPREADSHEET THEORY

1. Understand the uses and functions of spreadsheets.

UNIT 2: CREATING AND EDITING

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Mathematical Applications

Personal Finance
 Module 3: Life skills

Learning outcome 4

Communicate findings in words/tables/charts or graphs.



Sean wants to have enough money for his debts and holidays



He also wants to have money saved up for college

What are the implications for my teaching?

What new learning have I experienced today?

Key message 4

Students centred activities should be used to highlight and develop the interdisciplinary nature and functionality of spreadsheets created in ICT with relevance to daily life and throughout other subjects in the the LCA programme.

Further possible skills acquisition through use of spreadsheets

Shared

They tend to be interactive, participatory and collaborative .

Purposeful

To the student.

Generative

Involving sense-making and creativity.

Agentic

Students tend to have responsibility within these practices.

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Reflected on the key messages from today's seminar
and what does this mean for your practice

Key messages

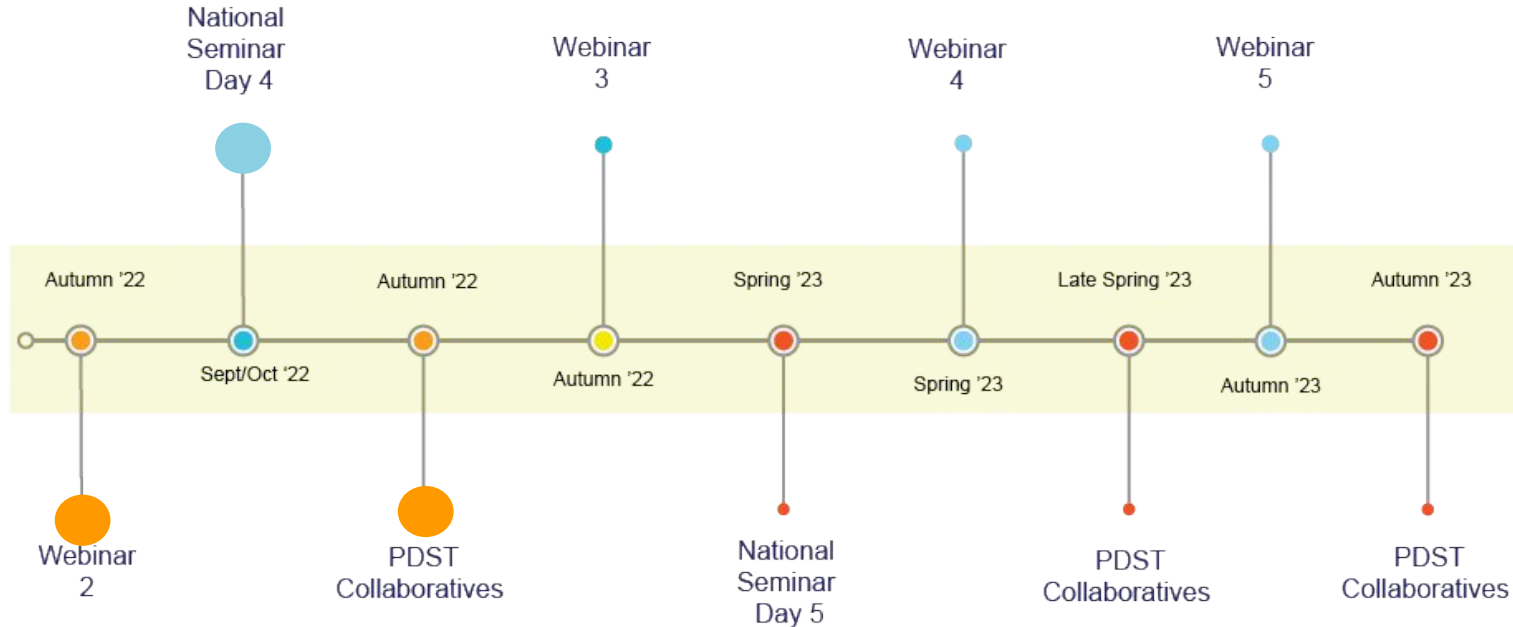
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End of seminar